

Water Resources Data New Jersey Water Year 1999

Volume 1. Surface-Water Data

Water-Data Report NJ-99-1



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



Prepared in cooperation with the New
Jersey Department of Environmental
Protection and with other agencies

CALENDAR FOR WATER YEAR 1999

1998

OCTOBER							NOVEMBER							DECEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
				1	2	3	1	2	4	4	5	6	7			1	2	3	4	5
4	5	6	7	8	9	10	8	9	10	11	12	13	14	6	7	8	9	10	11	12
11	12	13	14	15	16	17	15	16	17	18	19	20	21	13	14	15	15	17	18	19
18	19	20	21	22	23	24	22	23	24	25	26	27	28	20	21	22	23	24	25	26
25	26	27	28	29	30	31	29	30						27	28	29	30	31		

1999

JANUARY							FEBRUARY							MARCH						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
					1	2		1	2	3	4	5	6		1	2	3	4	5	6
3	4	5	6	7	8	9	7	8	9	10	11	12	13	7	8	9	10	11	12	13
10	11	12	13	14	15	16	14	15	16	17	18	19	20	14	15	16	17	18	19	20
17	18	19	20	21	22	23	21	22	23	24	25	26	27	21	22	23	24	25	26	27
24	25	26	27	28	29	30	28							28	29	30	31			
31																				
APRIL							MAY							JUNE						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
				1	2	3							1			1	2	3	4	5
4	5	6	7	8	9	10	2	3	4	5	6	7	8	6	7	8	9	10	11	12
11	12	13	14	15	16	17	9	10	11	12	13	14	15	13	14	15	16	17	18	19
18	19	20	21	22	23	24	16	17	18	19	20	21	22	20	21	22	23	24	25	26
25	26	27	28	29	30		23	24	25	26	27	28	29	27	28	29	30			
							30	31												
JULY							AUGUST							SEPTEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
				1	2	3	1	2	3	4	5	6	7				1	2	3	4
4	5	6	7	8	9	10	9	9	10	11	12	13	14	5	6	7	8	9	10	11
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		



United States Department of the Interior

U.S. GEOLOGICAL SURVEY
Water Resources Division
Mountain View Office Park
810 Bear Tavern Road, Suite 206
West Trenton, New Jersey 08628

I am pleased to announce the release of our Annual report "Water Resources Data for New Jersey, Water Year 1999". This report was prepared by the U.S. Geological Survey, in cooperation with the State of New Jersey as well as many local and federal government agencies.

For the first time, this report is being published in three volumes:

Volume 1.--Surface-water streamflow data.

Volume 2.--Ground-water level data.

Volume 3 --Water-quality data.

This volume contains surface-water data, such as stream discharge, elevations of lakes and reservoirs, major surface-water diversions and tidal elevations. Special sections are devoted to low-flow and crest-stage data as well as to summaries of tidal-crest elevations in the New Jersey estuaries and intracoastal waterways.

Streamflow data again are presented in the format that was introduced in the 1988 report. The format includes extensive tabular presentations of streamflow statistics. Also, station numbers are included in the table of contents, and tables of discontinued surface-water stations are presented.

The New Jersey District of the U.S. Geological Survey has made a home page available on the world wide web. Real-time data for more than 30 stream-gaging stations around the State, peak-flow files for many gaging stations, ground-water level data, water-quality data, monthly hydrologic conditions and links to other sites of interest may be accessed. This information is available at:

<http://nj.usgs.gov/>

Copies of this report in paper or microfiche are for sale through the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia 22161. Data can also be provided by file transfer (ftp), or on floppy disk. When ordering, refer to U.S. Geological Survey Water-Data Report NJ-99-1 (for Volume 1), NJ-99-2 (for Volume 2), or NJ-99-3 (for Volume 3). For further information on this report, or to change or remove your address from our mailing list, please contact me at the above address, telephone (609) 771-3980, or send e-mail to wbauers@usgs.gov.

Sincerely,

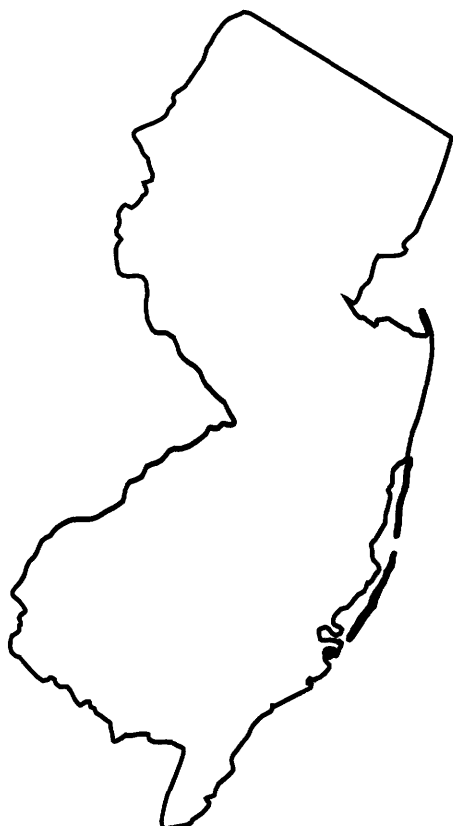
William R. Bauersfeld, Chief
Hydrologic Data Assessment Program

Water Resources Data New Jersey Water Year 1999

Volume 1. Surface-Water Data

By T.J. Reed, G.L. Centinaro, J.F. Dudek, V. Corcino, and G.C. Steckroat

Water-Data Report NJ-99-1



Prepared in cooperation with the New Jersey Department of Environmental Protection and with other agencies



UNITED STATES DEPARTMENT OF THE INTERIOR

BRUCE BABBITT, *Secretary*

U.S. GEOLOGICAL SURVEY

Charles G. Groat, *Director*

For information on the water program in New Jersey write to

District Chief, Water Resources Division
U.S. Geological Survey
Mountain View Office Park
810 Bear Tavern Road, Suite 206
West Trenton, New Jersey 08628-1099

PREFACE

This volume of the annual hydrologic data report of New Jersey 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 water quality 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 New Jersey are contained in 3 volumes:

Volume 1. Surface-Water Data

Volume 2. Ground-Water Data

Volume 3. Water-Quality Data

This report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey who collected, compiled, analyzed, verified, and organized the data and who typed, edited, and assembled the report. The authors had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to U.S. Geological Survey policy and established guidelines. The following individual contributed significantly to the completion of the report.

Robert D. Schopp

M.D. Morgan word processed the text of the report. G.L. Simpson, W.H. Ellis and D.K. Sun drafted the illustrations.

The data were collected, computed, and processed by the following personnel:

G.A. Brown	J. Gibs	G.L. Mattes	E.A. Pustay	K.M. Smith
M.J. Deluca	B. Gray	R.C. McTigue	R.G. Reiser	A.B. Spehar
H.A. Doyle	K.L. Hibbs	J.P. Nawyn	M.L. Riskin	A.M. Thomas
R.W. Edwards	G.K. Holzer	J.H. Oden	J.A. Robertson	
J.A. Fager	W.D. Jones	R.L. Owre	K. Romanok	
N.C. Geraldo	D.S. Kauffman	A.R. Protz	J.J. Scudder	

This report was prepared in cooperation with the State of New Jersey and with other agencies under the supervision of William R. Bauersfeld, Chief of the Hydrologic Data Assessment Program; under the general supervision of David A. Stedfast, Associate District Chief; Eric Evenson, District Chief, New Jersey; and William J. Carswell, Jr., Regional Hydrologist, Northeastern Region.

REPORT DOCUMENTATION PAGEForm Approved
OMB No. 0704-0188

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

1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE September 2000	3. REPORT TYPE AND DATES COVERED Annual--October 1, 1998 to September 30, 1999	
4. TITLE AND SUBTITLE Water Resources Data - New Jersey, Water Year 1999, Volume 1 Surface-Water Data			5. FUNDING NUMBERS	
6. AUTHOR(S) T.J. Reed, G.L. Centinaro, J.F. Dudek, V. Corcino, and G.C. Steckroat				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Geological Survey, Water Resources Division Mountain View Office Park 810 Bear Tavern Road, Suite 206 West Trenton, NJ 08628			8. PERFORMING ORGANIZATION REPORT NUMBER USGS-WDR-NJ-99-1	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Geological Survey, Water Resources Division Mountain View Office Park 810 Bear Tavern Road, Suite 206 West Trenton, NJ 08628			10. SPONSORING / MONITORING AGENCY REPORT NUMBER USGS-WDR-NJ-99-1	
11. SUPPLEMENTARY NOTES Prepared in cooperation with the New Jersey Department of Environmental Protection and with other agencies.				
12a. DISTRIBUTION / AVAILABILITY STATEMENT No restriction on distribution. This report can be purchased from National Technical Information Services, Springfield, Virginia 22161			12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) Water-resources data for the 1999 Water Year for New Jersey are presented in three volumes, and consists of records of stage, discharge, and water quality of streams; stage and contents of lakes and reservoirs; and water levels and water quality of ground water. Volume 1 contains discharge records for 90 gaging stations; tide summaries at 7 gaging stations; and stage and contents at 38 lakes and reservoirs. Also included are stage and discharge for 115 crest-stage partial-record stations and stage-only at 33 tidal crest-stage gages. Locations of these sites are shown in figures 6 and 7. Additional water data were collected at various sites that are not part of the systematic data-collection program. Discharge measurements were made at 72 low-flow partial-record stations and 104 miscellaneous sites.				
14. SUBJECT TERMS *New Jersey, *hydrologic data, *surface water, *streamflow, flow rate, gaging stations, lakes, reservoirs, water temperatures,			15. NUMBER OF PAGES 318	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT	

CONTENTS

	Page
Preface.....	iii
List of surface-water stations, in downstream order, for which records are published.....	vii
List of discontinued surface-water discharge stations.....	x
List of discontinued crest-stage partial-record stations.....	xiii
List of discontinued low-flow stations.....	xv
List of discontinued tidal crest-stage and tidal gaging stations.....	xxii
Introduction.....	1
Cooperation.....	1
Summary of hydrologic conditions.....	2
Precipitation and reservoir contents.....	2
Streamflow.....	3
Special networks and programs.....	4
Explanation of records.....	4
Station identification numbers.....	13
Downstream order system.....	13
Latitude-longitude system.....	13
Records of stage and water discharge.....	13
Data collection and computation.....	13
Data presentation.....	14
Station manuscript.....	14
Data table of daily mean values.....	15
Statistics of monthly mean values.....	16
Summary statistics.....	16
Identifying estimated daily discharge.....	17
Accuracy of the records.....	17
Other records available.....	17
Water temperature.....	17
Current water-resources projects in New Jersey.....	17
Water-related reports for New Jersey completed in recent years.....	18
Water-related articles for New Jersey completed in recent years.....	22
Water-related factsheets for New Jersey completed in recent years.....	22
Access to USGS water data.....	23
Definition of terms.....	23
Selected references.....	25
Publications on Techniques of Water-Resources Investigations.....	26
Station records, surface water.....	36
Discharge at partial-record stations and miscellaneous sites.....	247
Crest-stage partial-record stations.....	247
Low-flow partial-record stations.....	264
Miscellaneous sites.....	271
Tidal crest-stage stations.....	282
Index.....	286

ILLUSTRATIONS

Figure 1. Monthly precipitation at three National Weather Service locations	9
2. Combined usable storage in 13 major water-supply reservoirs	10
3. Monthly mean discharge at index gaging stations	11
4. Annual mean discharge at index gaging stations	12
5. System for numbering wells and miscellaneous sites	13
6. Map showing location of gaging stations and surface-water quality stations	32
7. Map showing location of low-flow and crest-stage partial-record stations	34
8. Map showing counties in New Jersey	36
9. Map showing hydrologic cataloging units and codes in New Jersey	37

TABLES

Table 1. Precipitation conditions for Water Year 1999 prior to Tropical Storm Floyd (October 1, 1998, to August 31, 1999)	3
2. Precipitation conditions for Water Year 1999 including Tropical Storm Floyd (October 1, 1998, to September 30, 1999)	3
3. Continuous gaging stations with 20 years or more years of record, and record lows for minimum monthly mean discharge during the 1999 water year (Continued)	5
4. Instantaneous peak discharge for water year 1999 and maximum instantaneous peak discharge for period of record prior to the 1999 water year at selected sites in New Jersey	8

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

Note.--Data for partial-record stations and miscellaneous sites for surface-water discharge are published in separate sections of the data report. See references at the end of this list for page numbers for these sections.

[Letter after station name designates type of data: (d) discharge, (e) elevation, gage height or contents]

	Station number	Page
<u>HACKENSACK RIVER BASIN</u>		
Hackensack River at West Nyack, NY (d).....	01376800	38
Hackensack River at Rivervale (d).....	01377000	40
Pascack Brook at Westwood (d).....	01377500	42
Hackensack River at New Milford (d).....	01378500	44
Reservoirs in Hackensack River basin (e).....		46
Diversions in Hackensack River basin.....		48
<u>PASSAIC RIVER BASIN</u>		
Passaic River near Millington (d).....	01379000	49
Passaic River near Chatham (d).....	01379500	51
Rockaway River:		
Green Pond Brook at Picatinny Arsenal (d).....	01379773	53
Green Pond Brook below Picatinny Lake, at Picatinny Arsenal (d).....	01379780	55
Green Pond Brook at Wharton (d).....	01379790	57
Rockaway River above reservoir, at Boonton (d).....	01380500	59
Rockaway River below reservoir, at Boonton (d).....	01381000	61
Whippany River near Morristown (d).....	01381400	63
Whippany River at Morristown (d).....	01381500	65
Whippany River near Pine Brook (d).....	01381800	67
Passaic River at Pine Brook (d).....	01381900	69
Pompton River:		
Pequannock River (head of Pompton River) at Macopin Intake Dam (d).....	01382500	71
Wanaque River at Awosting (d).....	01383500	73
Ringwood Creek near Wanaque (d).....	01384500	75
Wanaque River at Wanaque (d).....	01387000	77
Ramapo River at Suffern, NY (d).....	01387420	79
Ramapo River near Mahwah (d).....	01387500	81
Ramapo River at Pompton Lakes (d).....	01388000	83
Pompton River at Pompton Plains (d).....	01388500	85
Passaic River at Little Falls (d).....	01389500	87
Saddle River at Ridgewood (d).....	01390500	89
Saddle River at Lodi (d).....	01391500	91
Passaic River at Newark (e).....	01392590	93
Reservoirs in Passaic River basin (e).....		95
Diversions in Passaic River basin.....		98
<u>ELIZABETH RIVER BASIN</u>		
Elizabeth River at Ursino Lake, at Elizabeth (d).....	01393450	100
<u>RAHWAY RIVER BASIN</u>		
Rahway River near Springfield (d).....	01394500	102
Rahway River at Rahway (d).....	01395000	104
<u>RARITAN RIVER BASIN</u>		
Four Bridges, South Branch Raritan River at.....	01396190	106
South Branch Raritan River near High Bridge (d).....	01396500	108
Spruce Run at Glen Gardner (d).....	01396580	110
Mulhockaway Creek at Van Syckel (d).....	01396660	112
Spruce Run at Clinton (d).....	01396800	114
South Branch Raritan River at Stanton (d).....	01397000	116
Neshanic River at Reaville (d).....	01398000	118
North Branch Raritan River near Far Hills (d).....	01398500	120
Lamington (Black) River near Pottersville (d).....	01399500	122
Rockaway Creek:		
South Branch Rockaway Creek at Whitehouse Station (d).....	01399670	124

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

	Station number	Page
<u>RARITAN RIVER BASIN--Continued</u>		
North Branch Raritan River near Raritan (d).....	01400000	126
Raritan River at Manville (d).....	01400500	128
Millstone River:		
Stony Brook at Princeton (d)	01401000	130
Beden Brook:		
Pike Run at Belle Mead (d).....	01401650	132
Millstone River at Blackwells Mills (d).....	01402000	134
Raritan River below Calco Dam, at Bound Brook (d).....	01403060	136
Middle Brook:		
West Branch Middle Brook near Martinsville (d)	01403150	138
Bound Brook:		
Green Brook at Seeley Mills (d)	01403400	140
Stony Brook:		
East Branch Stony Brook at Best Lake, at Watchung (d)	01403535	142
Stony Brook at Watchung (d)	01403540	144
Lawrence Brook at Westons Mills (d)	01405030	146
South River:		
Matchaponix Brook:		
Manalapan Brook at Spotswood (d)	01405400	148
Reservoirs in Raritan River basin (e).....		150
Diversions in Raritan River basin.....		151
<u>SHREWSBURY RIVER BASIN</u>		
Navesink River:		
Swimming River (head of Navesink River) near Red Bank (d)	01407500	152
<u>SHARK RIVER BASIN</u>		
Shark River near Neptune City (d)	01407705	154
Jumping Brook near Neptune City (d).....	01407760	156
Diversions in Shark River Basin.....		158
<u>MANASQUAN RIVER BASIN</u>		
Manasquan River at Squankum (d).....	01408000	159
Manasquan River near Allenwood (d).....	01408029	161
Reservoir in Manasquan River basin (e).....		163
Diversions in Manasquan River Basin.....		163
<u>METEDECONK RIVER BASIN</u>		
North Branch Metedeconk River near Lakewood (d).....	01408120	164
South Branch Metedeconk River near Lakewood (d).....	01408150	166
<u>BARNEGAT BAY</u>		
Barnegat Bay at Mantoloking (e).....	01408168	168
Barnegat Bay at Bay Shore (e).....	01408200	169
<u>TOMS RIVER BASIN</u>		
Toms River near Toms River (d).....	01408500	170
<u>BARNEGAT BAY</u>		
Barnegat Bay at Waretown (e).....	01409110	172
Barnegat Bay at Loveladies (e).....	01409135	173
<u>MULICA RIVER BASIN</u>		
Mullica River near Batsto (d)	01409400	174
Batsto River at Batsto (d).....	01409500	176
Batsto River at Pleasant Mills (e)	01409510	178
Wading River:		
Oswego River at Harrisville (d).....	01410000	179
East Branch Bass River near New Gretna (d).....	01410150	181
<u>GREAT EGG HARBOR RIVER BASIN</u>		
Great Egg Harbor River at Folsom (d)	01411000	183
<u>TUCKAHOE RIVER BASIN</u>		
Tuckahoe River at Head of River (d).....	01411300	185

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

	Station number	Page
<u>MAURICE RIVER BASIN</u>		
Maurice River:		
Little Ease Run near Clayton (d)	01411456	187
Maurice River at Norma (d)	01411500	189
<u>DELAWARE RIVER BASIN</u>		
Delaware River at Port Jervis, NY (d)	01434000	191
Neversink River at Godeffroy, NY (d)	01437500	193
Delaware River at Montague (d)	01438500	195
Flat Brook near Flatbrookville (d)	01440000	197
Paulins Kill:		
East Branch Paulins Kill near Lafayette (d)	01443280	199
Paulins Kill at Blairstown (d)	01443500	201
Yards Creek near Blairstown (d)	01443900	203
Pequest River at Pequest (d)	01445500	205
Delaware River at Belvidere (d)	01446500	207
Lehigh River at Glendon, PA (d)	01454700	209
Musconetcong River near Bloomsbury (d)	01457000	211
Delaware and Raritan Canal at Port Mercer (d)	01460440	213
Delaware River at Trenton (d)	01463500	215
Assunpink Creek near Clarksville (d)	01463620	217
Assunpink Creek at Trenton (d)	01464000	219
Crosswicks Creek at Extonville (d)	01464500	221
Delaware River at Burlington (e)	01464598	223
South Branch Rancocas Creek:		
North Branch Rancocas Creek:		
Greenwood Branch:		
McDonalds Branch in Lebanon State Forest (d)	01466500	224
Greenwood Branch at New Lisbon (d)	01466900	226
North Branch Rancocas Creek at Pemberton (d)	01467000	228
Pennsauken Creek:		
South Branch Pennsauken Creek at Cherry Hill (d)	01467081	230
Cooper River at Haddonfield (d)	01467150	232
Schuylkill River at Philadelphia, PA (d)	01474500	234
Raccoon Creek near Swedesboro (d)	01477120	236
Reservoirs in Delaware River basin (e)		238
Diversions and withdrawals in Delaware River basin		244
Discharge at partial-record stations and miscellaneous sites		247
Crest-stage partial-record stations		247
Low-flow partial-record stations		264
Miscellaneous sites		271
Elevation at tidal crest-stage partial-record stations		282

DISCONTINUED SURFACE-WATER DISCHARGE STATIONS

The following continuous-record surface-water discharge stations in New Jersey have been discontinued. Daily streamflow records were collected and published for the period of record, expressed in water years, shown for each station. Those stations with an asterisk (*) after the station number are currently operated as crest-stage partial-record stations. Discontinued project stations with less than 1 year of record have not been included. Information regarding these stations may be obtained from the District Office at the address given on the back side of the title page of this report.

Discontinued Surface-Water Discharge Stations

Station name	Station number	Drainage area (mi ²)	Period of record
Wallkill River near Unionville, NY	01368000	140	1938-81
Auxiliary outlet of Upper Greenwood Lake at Moe, NJ	01368720	----	1968-80a
Passaic River near Bernardsville, NJ	01378690	8.83	1968-77
Passaic River at Hanover Neck, NJ	01379580	132	1993-97b
Russia Brook tributary at Milton, NJ	01379630	1.64	1969-71
Rockaway River at Berkshire Valley, NJ	01379700	24.4	1985-96
Beaver Brook at Splitrock Reservoir, NJ	01380000	5.50	1925-46, 1976-88a
Passaic River at Towaco, NJ	01381950	355	1993-97b
Pequannock River at Riverdale, NJ	01382800	83.9	1994-97
Wanaque River at Monks, NJ	01384000	40.4	1935-85
Cupsaw Brook near Wanaque, NJ	01385000	4.37	1935-58
Erskine Brook near Wanaque, NJ	01385500	1.14	1934-38
West Brook near Wanaque, NJ	01386000	11.8	1935-78
Blue Mine Brook near Wanaque, NJ	01386500	1.01	1935-58
Pompton River at Mountain View, NJ	01388910	371	1993-97b
Deepavaal Brook near Fairfield, NJ	01389130	1.37	1993-97b
Passaic River at Paterson, NJ	01389800	785	1897-1955
Hohokus Brook at Ho-Ho-Kus, NJ	01391000*	16.4	1954-73, 1977-96
Weasel Brook at Clifton, NJ	01392000	4.45	1937-62
Third River at Passaic, NJ	01392210	11.8	1977-97
Second River at Belleville, NJ	01392500	11.6	1938-64
Elizabeth River at Irvington, NJ	01393000	2.90	1931-38
Elizabeth River at Elizabeth, NJ	01393500	20.2	1922-73
East Fork East Branch Rahway River at West Orange, NJ	01393800	.83	1972-74
West Branch Rahway River at Millburn, NJ	01394000	7.10	1940-50
Robinsons Branch at Goodmans, NJ	01395500	12.7	1921-24
Robinsons Branch at Rahway, NJ	01396000	21.6	1939-96
Walnut Brook near Flemington, NJ	01397500*	2.24	1936-61
Back Brook tributary near Ringoes, NJ	01398045*	1.98	1977-88
Holland Brook at Readington, NJ	01398107	9.00	1978-95
North Branch Raritan River at Pluckemin, NJ	01399000	52.0	1903-06
Lamington (Black) River at Succasunna, NJ	01399190	7.37	1976-87
Lamington (Black) River near Ironia, NJ	01399200	10.9	1975-87
Upper Cold Brook near Pottersville, NJ	01399510	2.18	1972-96
Axle Brook near Pottersville, NJ	01399525*	1.22	1977-88
South Branch Rockaway Creek at Whitehouse, NJ	01399690	13.2	1977-86
Rockaway Creek at Whitehouse, NJ	01399700	37.1	1977-84
North Branch Raritan River at North Branch, NJ	01399830*	174	1977-81
Peters Brook near Raritan, NJ	01400300	4.19	1978-95
Macs Brook at Somerville, NJ	01400350	.77	1982-95
Millstone River at Plainsboro, NJ	01400730*	65.8	1964-75, 1987-89
Baldwins Creek at Baldwin Lake, near Pennington, NJ	01400932	2.52	1963-70
Honey Branch near Pennington, NJ	01400953	.70	1967-75
Millstone River at Carnegie Lake, at Princeton, NJ	01401301*	159	1972-74, 1987-89
Millstone River near Kingston, NJ	01401500	171	1934-49

DISCONTINUED SURFACE-WATER DISCHARGE STATIONS--Continued

Station name	Station number	Drainage area (mi ²)	Period of record
Royce Brook tributary at Frankfort, NJ	01402590	.29	1969-74
Royce Brook tributary near Belle Mead, NJ	01402600	1.20	1966-74, 1980-95
Raritan River at Bound Brook, NJ	01403000	779	1903-09, 1945-66
West Branch Middle Brook near Somerville, NJ	01403160	3.83	1983-86
Green Brook at Plainfield, NJ	01403500*	9.75	1938-84
Bound Brook at Middlesex, NJ	01403900*	48.4	1972-77, 1997-98
Bound Brook at Bound Brook, NJ	01404000	49.0	1923-30
Lawrence Brook at Patricks Corner, NJ	01404500	29.0	1922-26
Lawrence Brook at Farrington Dam, NJ	01405000	34.4	1927-90
Matchaponix Brook at Spotswood, NJ	01405300	43.9	1957-67
South River at Old Bridge, NJ	01405500	94.6	1939-88
Deep Run near Browntown, NJ	01406000	8.07	1932-40
Tennent Brook near Browntown, NJ	01406500	5.25	1932-41
Matawan Creek at Matawan, NJ	01407000	6.11	1932-55
South Branch Metedeconk River at Lakewood, NJ	01408140	26.0	1973-76
Cedar Creek at Lanoka Harbor, NJ	01409000	55.3	1933-58, 1971
Oyster Creek near Brookville, NJ	01409095	7.43	1965-84
Westecunk Creek at Stafford Forge, NJ	01409280	15.8	1974-88
West Branch Wading River near Jenkins, NJ	01409810	84.1	1974-96
Absecon Creek at Absecon, NJ	01410500	17.9	1946-85
Great Egg Harbor River at Sicklerville, NJ	01410784	15.1	1996-98
Great Egg Harbor River tributary at Sicklerville, NJ	01410787	1.64	1972-79
Fourmile Branch at New Brooklyn, NJ	01410810	7.74	1973-79
Great Egg Harbor River near Blue Anchor, NJ	01410820	37.3	1972-79
Maurice River at Brotmanville, NJ	01411485	88.1	1992-94
Blackwater Branch at Norma, NJ	01411495	12.5	1992-94
Maurice River near Millville, NJ	01411800	191	1992-94
Maurice River at Union Lake Dam at Millville, NJ	01411878	216 (revised)	1993-94
Menantico Creek near Millville, NJ	01412000	23.2	1931-57, 1978-85
West Branch Cohansey River at Seeley, NJ	01412500*	2.58	1951-67
Cohansey River at Seeley, NJ	01412800	28.0	1978-88
Loper Run near Bridgeton, NJ	01413000	2.34	1937-59
Delaware River near Delaware Water Gap, PA	01440200	3,850	1964-96
Paulins Kill at Columbia, NJ	01444000	179	1908-09
Pequest River at Huntsville, NJ	01445000	31.0	1940-62
Pequest River at Townsburry, NJ	01445430	92.5	1977-80
Beaver Brook near Belvidere, NJ	01446000	36.7	1923-61
Brass Castle Creek near Washington, NJ	01455160	2.34	1970-83a
Pohatcong Creek at New Village, NJ	01455200	33.3	1960-70
Beaver Brook near Weldon, NJ	01455355	1.72	1969-71
Musconetcong River at outlet of Lake Hopatcong, NJ	01455500	25.3	1928-75
Musconetcong River near Hackettstown, NJ	01456000	68.9	1922-73
Delaware River at Riegelsville, NJ	01457500*	6,328	1906-71
Delaware and Raritan Canal at Carnegie Lake, NJ	01460490	---	1951-99ab
Delaware and Raritan Canal at Kingston, NJ	01460500	---	1947-91
Delaware River at Lambertville, NJ	01462000	6,680	1898-1906
New Sharon Run at Carsons Mills, NJ	01463587	6.63	1976-77
Shipetaukin Creek tributary at Lawrenceville, NJ	01463657	.78	1976-77
Little Shabakunk Creek at Bakersville, NJ	01463690	3.98	1976-77
Thorton Creek at Bordentown, NJ	01464525*	.84	1976-77

DISCONTINUED SURFACE-WATER DISCHARGE STATIONS--Continued

Station name	Station number	Drainage area (mi ²)	Period of record
South Branch Rancocas Creek at Vincentown, NJ	01465850	64.5	1961-75
Middle Branch Mount Misery Brook in Lebanon State Forest, NJ	01466000	2.82	1953-65, 1977
Mill Creek near Willingboro, NJ	01467019	4.12	1975-78
Mill Creek at Levitt Parkway, at Willingboro, NJ	01467021	9.12	1975-77
Mantua Creek at Pitman, NJ	01475000	6.05	1940-76
Still Run near Mickleton, NJ	01476600	3.98	1957-66
Oldmans Creek near Woodstown, NJ	01477500	18.5	1932-40
Salem River at Woodstown, NJ	01482500	14.6	1940-85, 1989
Alloway Creek at Alloway, NJ	01483000	20.3	1953-72

a Not published, on file at U.S. Geological Survey, West Trenton, NJ.

b Stage only.

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

DISCONTINUED CREST-STAGE PARTIAL-RECORD STATIONS

The following crest-stage partial-record stations in New Jersey have been discontinued. Annual maximum gage height and discharge measurements were made for the period of record shown for each station

Station name	Station number	Drainage area (mi ²)	Period of Record (water years)
Musquapsink Brook near Westwood, NJ	01377475	2.12	1965-86
Tenakill Brook at Cresskill, NJ	01378350	3.01	1965-78
Wolf Creek at Ridgefield, NJ	01378615	1.18	1965-86
Rockaway River at Warren Street, at Dover, NJ	01379845	52.1	1981-97
Pequannock River at Riverdale, NJ	01382800	83.9	1981,1984,1994-97*
Fleischer Brook at East Paterson, NJ	01389905	1.78	1965-66
Saddle River at Paramus, NJ	01391110	45.0	1965-78
Sprout Brook at Rochelle Park, NJ	01391485	5.56	1965-78
Weasel Brook at Clifton, NJ	01392000	4.45	1938-62*,1963-78,1989-90
Second River at Belleville, NJ	01392500	11.6	1937-64*,1963-95
East Fork East Branch Rahway River, at Orange, NJ	01393810	.83	1972-78
South Branch Raritan River near Bartley, NJ	01396117	11.7	1970
Lamington River near Whitehouse, NJ	01399550	57.3	1978-79
South Branch Rockaway Creek at Whitehouse Station, NJ	01399690	13.2	1977-86*, 1987-88
Rockaway Creek at Whitehouse, NJ	01399700	37.1	1978-84*, 1985-95
Lamington River at Lamington Road, near North Branch, NJ	01399760	97.6	1978-79
Little Bear Brook at Penns Neck, NJ	01400822	1.84	1971, 1975, 1979-95
Woodsville Brook at Woodsville, NJ	01400850	1.78	1957-58, 1964-80
Stony Brook at Glenmoore, NJ	01400900	17.0	1957-95
Stony Brook at Pennington, NJ	01400947	26.5	1965-78
Honey Branch near Pennington, NJ	01400953	.70	1966, 1967-74*
Honey Branch near Mount Rose, NJ	01400960	1.28	1969-78
Honey Branch near Rosedale, NJ	01400970	3.83	1967-78
Duck Pond Run at Clarksville, NJ	01401200	5.21	1965-85
Beden Brook near Hopewell, NJ	01401520	6.67	1967-85
East Branch Middle Brook at Warrenville, NJ	01403080	2.71	1994-95
Green Brook at North Plainfield, NJ	01403470	8.01	1972-78
Green Brook at Dunellen, NJ	01403700	20.7	1972-77
Bound Brook at South Bound Brook, NJ	01404080	65.0	1972-77
Lawrence Brook at Farrington Dam, NJ	01405000	34.3	1927-90*, 1991-95
Manasquan River near Georgia, NJ	01407830	10.6	1969-95
Manasquan River at Allenwood, NJ	01408030	63.9	1969-95, 1971*
Cedar Creek at Lanoka Harbor, NJ	01409000	53.3	1933-58*, 1971*, 1979-84, 1993
Oyster Creek near Brookville, NJ	01409095	7.43	1966-85*, 1991
Westecunk Creek at Stafford Forge, NJ	01409280	15.8	1973-88*, 1991
Mullica River near Atco, NJ	01409375	3.22	1975-87
Hays Mill Creek near Chesilhurst, NJ	01409402	7.13	1975-78
Wildcat Branch at Chesilhurst, NJ	01409403	1.03	1975-87
Pump Branch near Blue Anchor, NJ	01409407	6.20	1975-77
Blue Anchor Brook near Blue Anchor, NJ	01409409	3.01	1975-87
Great Egg Harbor River at Berlin, NJ	01410775	1.88	1964-71
Fourmile Branch at New Brooklyn, NJ	01410810	7.74	1972-79*, 1980-91
Menantico Creek near Millville, NJ	01412000	23.2	1931-57*,1978-84*,1985-95
Cohansey River at Seeley, NJ	01412800	28.0	1978-88*, 1989-95
Pequest River at Huntsville, NJ	01445000	31.0	1940-62*, 1963-95
Pequest River at Townsbury, NJ	01445430	92.5	1978-80*, 1981-93
Furnace Brook at Oxford, NJ	01445490	4.29	1966-78
Beaver Brook near Belvidere, NJ	01446000	36.7	1923-61*, 1962-95

DISCONTINUED CREST-STAGE PARTIAL-RECORD STATIONS--Continued

Station name	Station number	Drainage area (mi ²)	Period of record
Pohatcong Creek at New Village, NJ	01455200	33.3	1960-69*, 1970-95
Musconetcong River at outlet of Lake Hopatcong, NJ	01455500	25.3	1929-75*, 1976-95
Musconetcong River near Hackettstown, NJ	01456000	68.9	1922-73*, 1974-95
Crosswicks Creek at New Egypt, NJ	01464400	41.2	1968-94
Crosswicks Creek at Groveville, NJ	01464505	98.2	1968-74
Doctors Creek at Allentown, NJ	01464515	17.4	1968-95
Doctors Creek at Groveville, NJ	01464520	25.3	1968-79
Blacks Creek at Mansfield Square, NJ	01464530	19.7	1978-95
Assiscunk Creek near Columbus, NJ	01464582	10.9	1978-95
South Branch Rancocas Creek at Vincentown, NJ	01465850	64.5	1962-75*, 1976-95
Southwest Branch Rancocas Creek at Medford, NJ	01465880	47.2	1983-95
Southwest Branch Rancocas Creek at Route 70, at Medford, NJ	01465882	47.9	1978-82
Middle Branch Mount Misery Brook in Lebanon State Forest, NJ	01466000	2.82	1953-65*, 1967-78
Parkers Creek near Mount Laurel, NJ	01467010	2.68	1967-71
South Branch Pennsauken Creek at Maple Shade, NJ	01467080	8.10	1964-68
Cooper River at Kirkwood, NJ	01467130	5.10	1964-80
Cooper River at Lawnside, NJ	01467140	12.7	1964-68
North Branch Cooper River near Marlton, NJ	01467160	5.34	1964-88
North Branch Cooper River at Ellisburg, NJ	01467180	10.5	1964-75
Cooper River at Camden, NJ	01467190	35.2	1967-73, 1994
Newton Creek at West Collingswood, NJ	01467312	4.51	1964-68
South Branch Big Timber Creek at Blackwood, NJ	01467330	20.9	1964-84
North Branch Big Timber Creek at Laurel Springs, NJ	01467350	6.55	1964-68
Mantua Creek at Pitman, NJ	01475000	6.05	1940-76*, 1977-94
Raccoon Creek at Mullica Hill, NJ	01477110	15.6	1940, 1978-95
Oldmans Creek near Harrisonville, NJ	01477480	13.8	1975-95
Salem River at Woodstown, NJ	01482500	14.6	1940*, 1942-84*, 1985-88, 1989-90*, 1991-95

* Operated as a continuous-record gaging station.

DISCONTINUED LOW-FLOW STATIONS

The following low-flow partial-record stations in New Jersey have been discontinued. Stream flow measurements were made during periods of base-flow, for the period of record shown for each station. These measurements, when correlated with the simultaneous discharge at nearby continuous-record sites, will give a picture of the low-flow potentiality of a stream.

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
Wallkill River at outlet of Lake Mohawk, at Sparta, NJ	01367620	4.38	1979-86
Wallkill River at Franklin, NJ	01367700	29.4	1959-64, 1982-83, 1985, 1987-90
Beaver Run near Hamburg, NJ	01367750	5.59	1966-72
Papakating Creek at Pelletstown, NJ	01367800	15.8	1959-64
West Branch Papakating Creek at McCoys Corner, NJ	01367850	11.0	1967-72
Clove Brook above Clove Acre Lake, at Sussex, NJ	01367890	19.2	1967-72
Clove Brook at Sussex, NJ	01367900	19.7	1959-64
Black Creek near Vernon, NJ	01368950	17.3	
Musquapsink Brook near Westwood, NJ	01377475	2.12	1964-72, 1975, 1978, 1981-86
Tenakill Brook at Cresskill, NJ	01378350	3.01	1964-73, 1975
Dwars Kill at Norwood, NJ	01378410	4.23	1973-80
Norwood Brook at Norwood, NJ	01378430	2.03	1973-80
Hirshfeld Brook at New Milford, NJ	01378520	4.54	1965-72
French Brook at New Bridge, NJ	01378530	.46	1965-72
Coles Brook at Hackensack, NJ	01378560	7.00	1965-72
Wolf Creek at Ridgewood, NJ	01378615	1.18	1964-72
Passaic River at outlet Osborn Pond, at Osborn Mill, NJ	01378700	10.1	1961-68
Great Brook at Green Village, NJ	01378750	7.92	1961-65
Primrose Brook near New Vernon, NJ	01378800	4.68	1961-65
Great Brook near Basking Ridge, NJ	01378850	23.1	1961-65
Black Brook near Meyersville, NJ	01378900	11.7	1959-63
Harrisons Brook at Liberty Corner, NJ	01379150	3.74	1964-67
Dead River near Millington, NJ	01379200	20.8	1961-67, 1973-75, 1986-89
Passaic River at Stirling, NJ	01379300	84.1	1968-70, 1972-73, 1983-84
Passaic River at Lower Chatham Bridge, near Chatham, NJ	01379550	116.0	1964, 1984, 1988-89
Passaic River at Hanover, NJ	01379570	128.0	1963-66, 1973, 1987-89
Rockaway River at Dover, NJ	01379750	30.8	1963-66, 1983-86
Hibernia Brook at outlet of Lake Telemark, NJ	01380050	2.53	1966-72
Stony Brook near Rockaway Valley, NJ	01380300	8.43	1963-67, 1985-86
Crooked Brook near Boonton, NJ	01381150	7.86	1963-66
Whippany River near Morristown, NJ	01381400	14.0	1964-72
Jacquis Brook at Greystone Park State Hospital, NJ	01381470	1.39	1967-73
Watnong Brook at Morris Plains NJ	01381490	7.77	1966-72, 1995
Whippany River near Whippany, NJ	01381600	48.5	1963-66, 1973
Troy Brook at Troy Hills, NJ	01381700	10.1	1961-66, 1972-73
West Brook at Troy Hills, NJ	01381750	1.32	1961-66
Pequannock River near Stockholm, NJ	01382050	5.39	1959-64
Kanouse Brook at Newfoundland, NJ	01382360	3.87	1963-67
Macopin River at Macopin Reservoir, NJ	01382450	5.25	1970-73
Belcher Creek at Stowaway Road, at West Milford, NJ	01382870	5.44 (revised)	1973-77
Belcher Creek tributary at West Milford, NJ	01382880	.61	1973-77
Belcher Creek at West Milford, NJ	01382890	7.27	1973-77, 1995
Morsetown Brook at West Milford, NJ	01382910	1.31	1973-77
Green Brook near West Milford, NJ	01382960	1.47	1973-77
Cooley Brook near West Milford, NJ	01382990	1.34	1973-77

DISCONTINUED LOW-FLOW STATIONS--Continued

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
Stag Brook near Mahwah, NJ	01387520	1.35	1963-70,1972
Darlington Brook at Darlington, NJ	01387600	3.38	1963-67
Ramapo River near Darlington, NJ	01387670	131	1963-66,1982-83
Bear Swamp Brook near Oakland, NJ	01387700	3.25	1963-67
Ramapo River tributary 5 at Oakland, NJ	01387930	.86	1963-67
Acid Brook at Pompton Lakes, NJ	01387950	1.79	1963-67
Haycock Brook at Pompton Lakes, NJ	01387980	4.18	1963-64,1973-77
Pompton River at Two Bridges, NJ	01389000	372	1963-68,1984,1986-88
Goffle Brook at Hawthorne, NJ	01389850	8.77	1963-67
Hohokus Brook at Wyckoff, NJ	01390700	5.31	1963-67
Valentine Brook at Allendale, NJ	01390800	2.48	1963-67
Saddle River at Paramus, NJ	01391110	45.0	1964-69,1971-72
Sprout Brook at Rochelle Park, NJ	01391485	5.56	1964-72
Third River at Nutley, NJ	01392200	11.4	1963-73
Elizabeth River below Chancellor Avenue, at Irvington, NJ	01393200	5.14	1955,1961-62,1966
West Branch Elizabeth River near Union, NJ	01393350	2.53	1989-98
South Branch Rahway River at Colonia, NJ	01396030	9.41	1979-86
South Branch Raritan River tributary 7 at Budd Lake, NJ	01396080	.21	1973-1977
South Branch Raritan River at outlet of Budd Lake, NJ	01396090	5.03	1964,1973-77,1980-83
South Branch Raritan River at Bartley, NJ	01396120	12.5	1964-73,1990
Drakes Brook at Reger Road at Flanders, NJ	01396160	11.6	1965,1990
Drakes Brook at Bartley, NJ	01396180	16.6	1964-73,1975-76,1988-90
Stony Brook at Naughtright, NJ	01396220	3.34	1964-67,1973,1990-98
South Branch Raritan River at Middle Valley, NJ	01396280	47.7	1963-67,1973,1975,1982-92
South Branch Raritan River at Califon, NJ	01396350	58.5	1975-76,1989-90
Spruce Run near High Bridge, NJ	01396590	15.5	1973-77
Spruce Run near Clinton, NJ	01396600	18.1	1959-64
Mulhockaway Creek at Van Syckel, NJ	01396670	11.8	1973-77
Mulhockaway Creek near Clinton, NJ	01396700	20.5	1959-64
Capoolong Creek at Lansdowne, NJ	01396900	14.1	1959-65
Prescott Brook at Round Valley, NJ	01397100	4.61	1958-63
Assiscong Creek at Bartles Corners, NJ	01397290	2.98	1981-89
Neshanic River near Flemington, NJ	01397800	11.4	1981-89
Third Neshanic River near Ringoes, NJ	01397900	9.24	1981-89
Back Brook near Reaville, NJ	01398052	11.4	1981-89
Pleasant Run at Centerville, NJ	01398075	8.11	1982-89
India Brook near Mendham, NJ	01398220	4.36	1964-67
North Branch Raritan River near Chester, NJ	01398260	7.57	1964-67,1980-92
Dawsons Brook near Ironia, NJ	01398300	1.04	1964-67
Burnett Brook near Chester, NJ	01398360	6.64	1964-67
Peapack Brook at Gladstone, NJ	01398700	4.23	1964-67
Peapack Brook at Far Hills, NJ	01398850	11.7	1964-67,1973-76
Mine Brook at Far Hills, NJ	01398950	7.78	1964-67,1973-76
Middle Brook at Burnt Mills, NJ	01399100	6.67	1964-67,1976
Lamington River near Chester, NJ	01399280	17.3	1963-64,1973,1990

DISCONTINUED LOW-FLOW STATIONS--Continued

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
Cold Brook at Oldwick, NJ	01399540	5.32	1973-76
Rockaway Creek at McCrea Mills, NJ	01399570	17.0	1961-65
South Branch Rockaway Creek tributary at Lebanon, NJ	01399600	1.02	1958,1960-64
Rockaway Creek at Whitehouse, NJ	01399700	37.1	1959-62,1964-65,1973
Chambers Brook near North Branch, NJ	01399820	4.71	1964-72
Chambers Brook at North Branch Depot, NJ	01399900	10.2	1959-64,1976
Millstone River at Applegarth, NJ	01400560	15.0	1960-64,1971-72
Millstone River at Hightstown, NJ	01400580	19.7	1960-64,1969-74
Rocky Brook at Hightstown, NJ	01400593	9.58	1965-72
Peddie Brook at Hightstown, NJ	01400596	3.07	1965-72
Millstone River at Locust Corner, NJ	01400600	37.5	1959-64,1971-72
Cranbury Brook at Old Church, NJ	01400670	3.69	1960-64
Cranbury Brook at Cranbury Station, NJ	01400700	9.56	1959-64,1971-72
Bear Brook near Hickory Corner, NJ	01400750	3.46	1960-65
Little Bear Brook at Hickory Corner, NJ	01400770	1.88	1960-64
Bear Brook near Grovers Mill, NJ	01400800	9.52	1959-64
Bear Brook at Princeton Junction, NJ	01400810	12.4	1962-67,1971-72
Millstone River at Princeton Junction, NJ	01400820	78.5	1960-61
Woodsville Brook at Woodsville, NJ	01400850	1.78	1957-59,1965-73
Stony Brook at Pennington, NJ	01400947	26.7	1965-72
Honey Branch near Rosedale, NJ	01400970	3.83	1957-59,1971-72
Stony Brook at Clarksville, NJ	01401100	46.5	1959-64
Duck Pond Run at Clarksville, NJ	01401200	3.74 (revised)	1954-55,1960-67
Beden Brook near Hopewell, NJ	01401520	6.67	1965-72
Rock Brook at Blawenburg, NJ	01401590	8.02	1962-67,1971-72
Pike Run near Rocky Hill, NJ	01401700	22.2	1959-63,1971-72
Ten Mile Run near Blackwells Mills, NJ	01401800	4.36	1960-64,1971-72
Six Mile Run at Blackwells Mills, NJ	01401900	16.1	1960-67,1971-72
Royce Brook at Manville, NJ	01402700	11.7	1960-64
East Branch Middle Brook at Martinsville, NJ	01403100	8.45	1959-64
Bound Brook at South Plainfield, NJ	01403330	9.55	1979-86
Cedar Brook at South Plainfield, NJ	01403350	7.10	1979-86
Ambrose Brook at Middlesex, NJ	01404060	13.9	1979-91
Mill Brook at Highland Park, NJ	01404180	1.41	1979-86
Lawrence Brook at outlet of Davidsons Mill Pond, NJ	01404300	12.2	1973-77
Oakeys Brook near Patricks Corner, NJ	01404400	4.75	1973-77
Beaverdam Brook near Patricks Corner, NJ	01404700	1.51	1973-77
Milford Brook at Englishtown, NJ	01405170	4.86	1982,1984-91
McGellairds Brook at Englishtown, NJ	01405180	14.9	1982,1984-91
Pine Brook at Clarks Mills, NJ	01405210	4.66	1982,1984-91
Matchaponix Brook near Englishtown, NJ	01405240	29.1	1978-88
Barclay Brook near Englishtown, NJ	01405285	4.94	1977-88
Manalapan Brook near Manalapan, NJ	01405335	16.0	1979-88
Manalapan Brook at Bridge Street, at Spotswood, NJ	01405440	43.9	1973-76
Iresick Brook at East Spotswood, NJ	01405470	2.29	1973-77

DISCONTINUED LOW-FLOW STATIONS--Continued

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
East Creek at North Centerville, NJ	01407055	1.33 (revised)	1969,1986-93
Waackaack Creek at Middle Road, near Keansburg, NJ	01407070	4.30	1987-93
Town Brook at Church Street, at New Monmouth, NJ	01407102	3.35	1987-93
Hop Brook at Holmdel, NJ	01407200	5.72	1969-74,1989
Willow Brook at Holmdel, NJ	01407250	6.88	1969-74,1989
Big Brook at Vanderburg, NJ	01407300	8.41	1969-74,1989
Yellow Brook at Colts Neck, NJ	01407400	9.71	1969-74,1989
Mine Brook at Colts Neck, NJ	01407450	5.48	1969-74,1989
Pine Brook at Tinton Falls, NJ	01407520	12.1	1969-74,1989
Poricy Brook at Red Bank, NJ	01407532	2.54	1987-93
Whale Pond Brook near Oakhurst, NJ	01407618	6.20	1989-98
Poplar Brook near Deal, NJ	01407628	2.49	1989-98
Harvey (Hog Swamp) Brook at West Allenhurst, NJ	01407636	1.99	1989-98
Shark River at Glendola, NJ	01407700	9.14	1956-63,1966
Wreck Pond Brook near Spring Lake, NJ	01407800	7.00	1956-63,1966
Debois Creek at Adelphia, NJ	01407860	7.21	1966,1969-74
Yellow Brook at West Farms, NJ	01407890	3.57	1966,1969-74
Manasquan River at West Farms, NJ	01407900	33.5	1959-66,1973
Timber Swamp Creek near Farmingdale, NJ	01407970	3.38	1964-72
Mingamahone Brook at Squankum, NJ	01408020	10.7	1966,1969-74
North Branch Metedeconk River at Lakewood, NJ	01408100	19.4	1959-63,1966
Toms River at Whitesville, NJ	01408300	45.2	1959-63,1966
Union Branch at Lakehurst, NJ	01408440	19.0	1960-64
Manapagua Brook at Lakehurst, NJ	01408460	6.32	1960-64
Ridgeway Branch near Lakehurst, NJ	01408490	28.2	1959-63
Webbs Mill Branch near Whiting, NJ	01408800	2.92	1973-77
Webbs Mill Branch tributary near Whiting, NJ	01408810	.53	1973-77
North Branch Forked River near Forked River, NJ	01409050	13.4	1961-65
South Branch Forked River near Forked River, NJ	01409080	1.28	1968-74
Oyster Creek near Waretown, NJ	01409100	9.95	1961-65
Mill Creek near Manahawkin, NJ	01409150	10.4	1961-67
Fourmile Branch near Manahawkin, NJ	01409200	5.24	1961-67
Cedar Run near Manahawkin, NJ	01409250	3.34	1961-67
Mill Branch near Tuckerton, NJ	01409300	4.89	1961-67
Mullica River at outlet Atsion Lake, at Atsion, NJ	01409387	26.7	1980-81,1985-89
Mullica River tributary near Atsion, NJ	01409395	4.10	1975-77
Wildcat Branch at Chesilhurst, NJ	01409403	1.03	1974-77
Sleeper Branch near Atsion, NJ	01409404	18.2	1975-77
Clark Branch near Atsion, NJ	01409405	7.12	1975-77
Sleeper Branch at Batsto, NJ	01409406	36.1	1975-77
Pump Branch near Blue Anchor, NJ	01409407	6.20	1974-77
Blue Anchor Brook near Blue Anchor, NJ	01409409	3.01	1974-77
Albertson Brook near Hammonton, NJ	01409410	19.3	1975-77
Nescochague Creek at Pleasant Mills, NJ	01409411	43.8	1975-77
Springers Brook near Indian Mills, NJ	01409450	12.6	1959-63,1977

DISCONTINUED LOW-FLOW STATIONS--Continued

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
Springers Brook near Atsion, NJ	01409460	21.2	1975-77
Landing Creek at Philadelphia Avenue, at Egg Harbor City, NJ	01409575	4.86	1974-77
West Branch Wading River near Chatsworth, NJ	01409730	44.8	1975-77
Tulpehocken Creek near Jenkins, NJ	01409780	21.9	1975-77
West Branch Wading River near Harrisville, NJ	01409800	83.9	1957-63
Oswego River at Oswego Lake, NJ	01409970	61.4	1975-77
West Branch Bass River near New Gretna, NJ	01410200	6.54	1969-74
Clarks Mill Stream at Port Republic, NJ	01410215	8.61	1986-93
Morses Mill Stream at Port Republic, NJ	01410225	8.25	1986-93
Great Egg Harbor River at Berlin, NJ	01410775	1.88	1964-74
Great Egg Harbor River near Sicklerville, NJ	01410784	15.1	1971-77
Fourmile Branch near Williamstown, NJ	01410800	5.34	1959-64, 1971
Fourmile Branch at Winslow Crossing, NJ	01410803	6.22	1972-80, 1989-96
Squankum Branch at Malaga Road near Williamstown, NJ	01410865	3.02	1974, 1990-96
Penny Pot Stream near Folsom, NJ	01411020	5.35	1968-72
Hospitality Branch at Blue Bell Road near Cecil, NJ	01411035	4.51	1990-96
Hospitality Branch near Cecil, NJ	01411040	8.30	1990-92
Whitehall Branch near Cecil, NJ	01411042	2.21	1990-92
Whitehall Branch below Victory Lakes near Cecil, NJ	01411047	4.60	1990-96
Hospitality Branch at Berryland, NJ	01411053	20.0	1976-86
Deep Run at Weymouth, NJ	01411140	20.0	1976-86
Babcock Creek at Mays Landing, NJ	01411200	20.0	1959-63
English Creek near Scullville, NJ	01411250	3.80	1986-93
Tarkiln Brook near Head of River, NJ	01411299	7.40	1990-92
Mill Creek near Steelmantown, NJ	01411302	3.82	1990-91
Mill Branch near Northfield, NJ	01411305	7.47	1986-93
Mill Creek at outlet Magnolia Lake, at Ocean View, NJ	01411351	2.28	1991-92
Mill Creek at Cold Spring, NJ	01411388	1.34	1991-92
Fishing Creek at Rio Grande, NJ	01411400	2.29	1965-72, 1990-92
Green Creek at Green Creek, NJ	01411404	2.49	1965-72
Dias Creek near Cape May Court House, NJ	01411408	1.27	1965-73, 1991-92
Bidwell Creek trib. No. 1 near Cape May Court House, NJ	01411410	.41	1967-73, 1990-92
Bidwell Creek trib. No. 2 near Cape May Court House, NJ	01411412	.19	1967-72
Goshen Creek at Goshen, NJ	01411418	.33	1967-72, 1990-92
Dennis Creek tributary No. 2 at Dennisville, NJ	01411428	4.00	1990-92
Sluice Creek at Clermont, NJ	01411430	.67	1967-72, 1990-91
Sluice Creek near South Dennis, NJ	01411434	8.47	1991-92
Dennis Creek tributary near Dennisville, NJ	01411438	2.74	1990-92
East Creek near Eldora, NJ	01411442	8.10	1990-92
West Creek at outlet Pickle Factory Pond, near Eldora, NJ	01411445	11.9	1990-92
Still Run at Aura, NJ	01411450	3.21	1976-90
Scotland Run near Williamstown, NJ	01411460	3.96	1966, 1990-92
Scotland Run at Fries Mill, NJ	01411461	9.25	1990-92
Scotland Run at Franklinville, NJ	01411462	14.8	1976-90
Muddy Run at Centerton, NJ	01411700	37.7	1976-84

DISCONTINUED LOW-FLOW STATIONS--Continued

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
Maurice River near Millville, NJ	01411800	191.0	1966-72
Mill Creek near Millville, NJ	01411850	15.1	1973-79, 1993, 1995-98
Buckshutem Creek near Laurel Lake, NJ	01411950	16.1	1976-84
Manumuskin River near Manumuskin, NJ	01412100	32.1	1964-71, 1994-96, 1998
Muskee River near Port Elizabeth, NJ	01412120	13.1	1969, 1976-84
Cohansey River near Beals Mill, NJ	01412405	9.44	1976-84
Barrett Run near Bridgeton, NJ	01413010	7.02	1966, 1976-84
Indian Fields Branch at Bridgeton, NJ	01413020	4.64	1976-84
Stow Creek at Jericho, NJ	01413050	8.00	1966-74
Canton Ditch near Canton, NJ	01413060	2.50	1959-63
Raccoon Ditch at Davis Mill, NJ	01413080	3.19	1976-84
Shimers Brook near Montague, NJ	01438400	7.07	1958-64, 1966
Big Flat Brook near Hainesville, NJ	01439800	22.6	1959-64, 1966
Big Flat Brook at Tuttle's Corner, NJ	01439830	28.2	1963, 1970-73
Little Flat Brook at Hainesville, NJ	01439900	7.73	1959-64
Vancampens Brook near Millbrook, NJ	01440100	7.27	1958-68
Stony Brook near Columbia, NJ	01442800	3.51	1958-68
East Branch Paulins Kill trib. 2 near Woodruffs, NJ	01443260	2.81	1992-97
East Branch Paulins Kill trib. 1 near Lafayette, NJ	01443275	1.81	1992-97
Paulins Kill at Lafayette, NJ	01443300	33.0	1959-64, 1966
Culvers Creek at Branchville, NJ	01443400	11.2	1959-64
Paulins Kill near Newton, NJ	01443450	69.0	1973-77
Paulins Kill at Paulins Kill, NJ	01443460	72.9	1973-77
Trout Brook near Middletown, NJ	01443475	24.0	1979-89
Honey Run near Ramseysburg, NJ	01445800	2.21	1982-90
Honey Run near Hope, NJ	01445900	10.3	1966-72
Pohatcong Creek at Carpentersville, NJ	01455300	57.1	1932, 1952-64
Weldon Brook near Woodport, NJ	01455350	3.27	1965-69, 1971-72
Beaver Brook near Woodport, NJ	01455360	2.79	1966-72
Weldon Brook at Hurdstown, NJ	01455370	8.10	1973-77
Musconetcong River at Stanhope, NJ	01455550	29.7	1973-76
Lubbers Run at Lockwood, NJ	01455780	16.3	1982-90, 1995
Hatchery Brook at Hackettstown, NJ	01456100	1.81	1966-72
Hakihokake Creek at Milford, NJ	01458100	17.2	1944, 1958-64
Harihokake Creek near Frenchtown, NJ	01458400	9.75	1944, 1958-65
Nishisakawick Creek at Frenchtown, NJ	01458600	11.0	1958-64
Little Nishisakawick Creek at Frenchtown, NJ	01458700	3.50	1958-65
Lockatong Creek near Raven Rock, NJ	01460900	23.2	1944, 1958-64
Alexauken Creek near Lambertville, NJ	01461900	14.9	1944, 1958-64
Moore Creek near Titusville, NJ	01462200	10.2	1958-64
Jacobs Creek at Somerset, NJ	01462800	13.3	1957-64
Shipetaukin Creek at Lawrenceville, NJ	01463650	4.47	1963-67
Shipetaukin Creek at Bakersville, NJ	01463670	8.97	1963-67
Shabakunk Creek at Ewingville, NJ	01463750	5.00	1963-67
West Branch Shabakunk Creek near Ewingville, NJ	01463790	4.56	1963-72

DISCONTINUED LOW-FLOW STATIONS--Continued

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
Miry Run at Robbinsville, NJ	01463830	4.02	1963-67
Miry Run at Mercerville, NJ	01463860	12.4	1963-67
Pond Run at Trenton, NJ	01463980	8.94	1963-69, 1971-72
Crosswicks Creek near Cookstown, NJ	01464300	24.9	1966, 1969-74
North Run at Cookstown, NJ	01464380	7.28	1966, 1969-74
Lahaway Creek near Hornerstown, NJ	01464460	21.4	1966, 1969-74
Miry Run at Holmes Mills, NJ	01464480	3.15	1966, 1969-74
Doctors Creek at Allentown, NJ	01464515	17.4	1966, 1968-72, 1991-92
Blacks Creek at Mansfield Square, NJ	01464530	19.7	1966-72
Crafts Creek at Hedding, NJ	01464540	10.6	1959-63
Assiscunk Creek at Columbus, NJ	01464580	8.28	1959-63
Assiscunk Creek near Burlington, NJ	01464590	37.4	1966-74
Southwest Branch Rancocas Creek at Medford, NJ	01465880	47.2	1961-66, 1973
Sharps Run at Medford, NJ	01465884	4.41	1982-90
Little Creek near Lumberton, NJ	01465898	19.2	1982-90
Parkers Creek near Mount Laurel, NJ	01467010	2.66	1964-72
Mill Creek at Willingboro, NJ	01467020	7.77	1959-64, 1976
Pompeston Creek at Cinnaminson, NJ	01467057	5.74	1964-72
North Branch Pennsauken Creek at Maple Shade, NJ	01467070	13.0	1959-63
South Branch Pennsauken Creek at Maple Shade, NJ	01467080	8.13	1964-67
Cooper River at Kirkwood, NJ	01467130	5.10	1964-72, 1988-98
Cooper River at Lawnside, NJ	01467140	12.7	1964-72, 1979-81, 1985-98
North Branch Cooper River near Marlton, NJ	01467160	5.34	1964-69, 1971-72, 1977-78, 1982-86, 1988-98
North Branch Cooper River at Ellisburg, NJ	01467180	10.5	1964-72, 1988-97
Newton Creek at Collingswood, NJ	01467305	1.32	1964-72
Newton Creek at West Collingswood, NJ	01467312	3.48	1964-72
South Branch Newton Creek at Glover Ave., at Haddon Heights, NJ	01467315	.52	1968-74
South Branch Newton Creek at Haddon Heights, NJ	01467317	.63	1964-67
North Branch Big Timber Creek at Laurel Springs, NJ	01467350	6.55	1959-71
Mantua Creek at Glassboro, NJ	01474950	1.20	1965-66, 1974-77
Mantua Creek at Greentree Road, at Glassboro, NJ	01474970	2.78	1965-66, 1974-77
Raccoon Creek near Mullica Hill, NJ	01477100	10.1	1959-63
South Branch Raccoon Creek near Mullica Hill, NJ	01477118	8.30	1966-72
Salem River at Sharptown, NJ	01482520	27.3	1966-72, 1974-75
Major Run at Sharptown, NJ	01482530	3.04	1966-72, 1974-75
Deep Run near Alloway, NJ	01483010	5.30	1977-84

DISCONTINUED TIDAL CREST-STAGE AND TIDAL GAGING STATIONS

Station name	Station number	Period of Record (water years)	
		Tidal Crest- Stage Gage	Tidal Gaging Station
South River below Duhernal Dam, at Old Bridge, NJ	01405700		Aug 1967-Sept 1970
Raritan River at Old Raritan Arsenal, at Metuchen, NJ	01406680		Jan 1966-Sept 1969a Oct 1969-Sept 1974
Cedar Creek at Lanoka Harbor, NJ	01409000	1932-58*, 1971*, 1979-85	
Barnegat Bay at Barnegat Light, NJ	01409125	1965-80	
Tuckerton Cove near Tuckerton, NJ	01409290	1965-80	July 1971-Sept 1973
Tuckerton Creek at Tuckerton, NJ	01409310		July 1971-Sept 1971
Head of Big Thorofare near Tuckerton, NJ	01409315		July 1971-June 1972
Big Thorofare at Mouth near Tuckerton, NJ	01409317		July 1971-Sept 1971
Marshelder Channel at Story Island, near Tuckerton, NJ	01409323		July 1971-Sept 1971
Big Sheepshead Creek at Great Bay Boulevard, near Tuckerton, NJ	01409326		July 1971-Sept 1971
East Entrance Big Sheepshead Creek near Tuckerton, NJ	01409329		July 1971-Sept 1971
Little Sheepshead Creek at Great Bay Boulevard, near Tuckerton, NJ	01409332		July 1971-Sept 1971
Shooting Thorofare at Old Coast Guard Station, near Tuckerton, NJ	01409335		July 1971-Sept 1975
Newmans Thorofare at Fish Factory, near Tuckerton, NJ	01409340		July 1971-Sept 1971
Great Bay at Cape Horn Marina, near Tuckerton, NJ	01409345		July 1971-Feb 1972
Big Creek at Radio Road, near Tuckerton, NJ	01409360		July 1971-July 1973
Great Bay at Great Bay Marina, near Tuckerton, NJ	01409370		July 1971-Sept 1974
Ballangers Creek below Polly Ditch, near Tuckerton, NJ	01410300		July 1971-Sept 1971
Ballangers Creek Entrance near Tuckerton, NJ	01410305		July 1971-Sept 1971
Crook Horn at Ocean City, NJ	01411318	1979-85	June 1974-Sept 1976
Whale Creek near Strathmere, NJ	01411340		Mar 1976-Feb 1977
Ludlam Thorofare at Sea Isle City, NJ	01411350	1978*, 1979-84	May 1975-May 1978
Townsend Channel at Townsends Inlet, NJ	01411353	1978*	Oct 1976-Apr 1978
Ingram Thorofare at Avalon, NJ	01411355	1978*, 1979-81	Oct 1977-May 1978
Grassy Sound at West Wildwood, NJ	01411380	1965-81	Oct 1977-Apr 1978
Cape May Harbor at Cape May, NJ	01411390	1965-85	
Cape May Canal at North Cape May, NJ	01411395	1965-74	
Maurice River at Bivalve, NJ	01412150	1965-74	
Delaware River at Florence, NJ	01464560		Apr 1964-Feb 1970
Rancocas Creek at Rancocas, NJ	01467009		Oct 1976-Apr 1977
Delaware River at Torresdale Intake, Philadelphia, PA	01467030		Oct 1963-Sept 1970
Delaware River at Palmyra, NJ	01467060		Dec 1962-Sept 1974
Delaware River at Delair, NJ	01467090		Dec 1962-Aug 1969
Delaware River below Christina River at Wilmington, DE	01481602		Dec 1982-Sept 1991
Delaware River at Delaware Memorial Bridge, at Wilmington, DE	01482100		July 1967-May 1983
Salem River at Winslow Farms Dock, near Pennsville, NJ	01482620		July 1971-Dec 1971
Delaware River at Oakwood Beach, NJ	01482705	1965-74	

* Operated as a continuous-record gaging station.

a Revised.

WATER RESOURCES DATA - NEW JERSEY, 1999

INTRODUCTION

The Water Resources Division of the U.S. Geological Survey (USGS), in cooperation with Federal, State, and local agencies, collects a large amount of data pertaining to the water resources of New Jersey each water year. These data, accumulated over 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 USGS, the data are published annually in this report series, titled "Water Resources Data-New Jersey." This data is also available on the world wide web at <http://nj.usgs.gov> (historical data along with provisional-real-time data).

This report series includes records of stage, discharge, and water quality in streams; stage and contents, and water quality in lakes and reservoirs; and water levels and water quality in ground-water wells. This volume contains records of water discharge at 90 gaging stations; tide summaries at 7 gaging stations; and stage and contents at 38 lakes and reservoirs. Also included are stage and discharge for 115 crest-stage partial-record stations and stage-only at 33 tidal crest-stage gages. Locations of these sites are shown in figures 6 and 7. Additional water data were collected at various sites that are not part of the systematic data-collection program. These include discharge measurements made at 72 low-flow partial-record stations and 104 miscellaneous sites. The data in this report represent that part of the National Water Information System (NWIS) data collected by the USGS and cooperating Federal, State, and local agencies in New Jersey.

This series of annual reports for New Jersey 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 in 1975, surface-water, water-quality, and ground-water data were combined in one volume. Beginning with the 1977 water year, these data were published in two volumes based on drainage basins. Beginning with the 1990 water year, the format was changed to include all surface-water discharge and surface-water quality records in Volume 1 and all ground-water level and ground-water quality records in Volume 2. Beginning with the 1998 water year, the format has changed to include surface-water discharge records in Volume 1, ground-water level records in Volume 2, and surface-water and ground-water quality records in Volume 3.

Prior to introduction of this series and for several water years concurrent with it, water-resources data for New Jersey 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, Part 1B." For water years 1961 through 1970, the data were published in two 5-year reports. Data on chemical quality, temperature, and suspended sediment for water years 1941 through 1970 were published annually under the title "Quality of Surface Waters of the United States," and water levels for water years 1935 through 1974 were published under the title "Ground-Water Levels in the United States." The above-mentioned Water-Supply Papers can be consulted in the libraries of the principal cities of the United States and can be purchased from U.S. Geological

Survey, Branch of Information Services, Box 25286, Denver, CO 80225-0286, (303) 202-4610.

Publications similar to this report are produced annually by the USGS for all States. These 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 NJ-99-1." For archiving and general distribution purposes, the reports for water years 1971 through 1974 also are identified as water-data reports. Water-data reports are available for purchase in paper copy or in microfiche from the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.

Additional information, including current prices, for ordering specific reports can be obtained from the District Chief, USGS, New Jersey District, at the address given on the back of the title page of this report or by telephone ((609) 771-3900).

The U.S. Geological Survey, New Jersey District, maintains a World Wide Web site which has water-resource related information for New Jersey and information on New Jersey District activities. Links to other USGS and Federal web sites are also available. We invite you to visit us at:

<http://nj.usgs.gov>.

COOPERATION

The U.S. Geological Survey and agencies of the State of New Jersey have had joint-funding agreements for the collection of water-resource records since 1921. Organizations that assisted in collecting the data in this report through joint-funding agreements with the USGS are--

New Jersey Department of Environmental Protection,
Robert C. Shinn, Jr., Commissioner
New Jersey Department of Transportation, James Weinstein,
Commissioner
New Jersey Water Supply Authority, Thomas G. Baxter,
Executive Director
North Jersey District Water Supply Commission, Jerry
Notte, General Manager
Passaic Valley Water Commission, Joseph A. Bella,
Executive Director
City of New Brunswick, Shawn Maloney, Director, Water
Utility Department
County of Bergen, Anthony V. Scolpino, Director of Public
Works and County Engineer
County of Essex, John A. Vitale, County Engineer
County of Gloucester, Charles E. Romick, Director of
Planning
County of Mercer, James Lambert, Executive Director,
Mercer County Improvement Authority
County of Morris, Alexander A. Slavin, Chairman, Morris
County Municipal Utilities Authority
County of Somerset, Michael J. Amorosa, County Engineer
Pinelands Commission, Terrance D. Moore, Executive
Director

Brick Township Municipal Utilities Authority, Kevin F. Donald, Executive Director
 Township of West Windsor, Helen Rancan, Chairman of Environmental Commission
 Borough of Westwood, Donald F. Rainey, Borough Administrator
 Delaware River Basin Commission, Carol R. Collier, Executive Director
 Ocean County Soil Conservation District, David B. Friedman, Director

Funding assistance was provided by the U.S. Army Corps of Engineers, for the collection of records at 4 surface-water stations, by the Fort Dix Directorate of Public Works for collection of records at 1 surface-water station, and by the U.S. Army Armament Research and Development Center for the collection of records at 3 surface-water stations. In addition, several stations were operated fully or partially with funds appropriated directly to the USGS. Funding also was supplied by the following Federal Energy Regulatory Commission licensees: GPU Generation Corporation, Passaic Valley Water Commission, and Great Falls Hydroelectric Company. Assistance was provided by the National Weather Service and the National Ocean Service.

The following organizations aided in collecting records:

New Jersey Department of Environmental Protection; Municipalities of Jersey City, Newark, New Brunswick, and Spotswood; Elizabethtown Water Company; Ewing-Lawrence Sewerage Authority; United Water New Jersey; New Jersey-American Water Company; Rockaway Valley Regional Sewerage Authority; and GPU Generation Corporation.

Organizations that supplied data are acknowledged in station descriptions.

SUMMARY OF HYDROLOGIC CONDITIONS

Precipitation and Reservoir Contents

Water year 1999 precipitation began with a record dry period and closed with heavy rainfall from Tropical Storm Floyd that ended the drought. Precipitation was below normal statewide during October, November, and December, continuing a trend that began in July 1998. July 1998 through December 1998 was the driest six-month July through December period in 105 years of record for New Jersey (David Robinson, New Jersey State Climatologist, Rutgers University, oral commun., 2000); statewide average precipitation was more than 11 inches below normal. A drought warning was declared on December 14 by the Delaware River Basin Commission as a result of the long period of dry weather. Precipitation was above normal during January, February, and March. January was the third wettest on record, and a near record snowfall of 10 inches occurred mid-March. The drought warning was cancelled on February 2 because the January rainfall replenished depleted reservoir supplies in the upper Delaware River Basin in New York.

The period April through July was the second driest early-to-middle growing season of the century (David Robinson, New Jersey State Climatologist, Rutgers University, oral commun., 2000). This, along with declining reservoir levels, led Governor Christine Whitman to declare a water emergency in New Jersey on August 5. A water emergency places mandatory restrictions on outdoor, non-essential water use statewide, such as watering lawns, washing cars, and operating display fountains.

Precipitation was above normal for August, but streamflow and reservoir levels remained low, and the drought continued. September began with some precipitation from Tropical Storm Dennis, but not enough to end the drought. Relief finally came when Tropical Storm Floyd together with a western storm system produced as much as 14 inches of rain. This rainfall raised New Jersey reservoir levels enough that Governor Christine Whitman cancelled the drought emergency in northern and central New Jersey on September 27, but a statewide drought warning remained due to below normal ground-water levels.

During water year 1999, precipitation was below normal at the Newark and Atlantic City National Weather Service (NWS) stations and above normal at the Trenton NWS station. The Newark station recorded 39.72 inches, which is 90.3 percent of the 30-year mean. The Atlantic City station recorded 39.01 inches, which is 96.8 percent of the 30-year mean. The Trenton station recorded 46.8 inches of precipitation, which is 107 percent of the 30-year reference-period (1961-90) mean. Monthly precipitation at the three NWS stations, along with the 30-year mean is shown in figure 1. The difference between precipitation for water year 1999 prior to Tropical Storm Floyd and normal precipitation for the same period is shown in table 1. A drastic increase in total precipitation and percent of normal precipitation in northern and central New Jersey (Newark and Trenton NWS stations) was the result of rainfall from Tropical Storm Floyd two weeks prior to the end of water year 1999 (table 2).

Monthly mean temperatures were above normal for October, normal for November, above normal for December through February, slightly below normal for March, and above normal for April through September when compared to New Jersey mean monthly temperatures for the period 1961 to 1990. The long stretch of higher than normal temperatures during the summer increased evapotranspiration, which stressed the already depleted water supplies; thus, drought conditions were compounded.

Combined usable contents of the 13 major water-supply reservoirs in New Jersey were 45.7 billion gallons at the end of September 1998, which is 86.6 percent of the 30-year mean (normal) contents for the end of September and 56.8 percent of capacity. Combined usable contents increased to a maximum of 77.4 billion gallons by the end of May 1999, which is 106 percent of normal contents for the end of May and 96.3 percent of capacity. Reservoir levels declined alarmingly during the summer because of low precipitation, above normal temperatures, and increased demand for water supplies. By September 30, 1999, the combined usable contents had recovered from the deficit, as a result of the heavy rainfall from Tropical Storm Floyd. At the end of water year 1999, combined usable contents totalled 64.7 billion gallons, which is 123 percent of normal contents for the end of Sep-

Table 1. Precipitation conditions for Water Year 1999 prior to Tropical Storm Floyd (October 1, 1998, to August 31, 1999)

[Normal is based on values during 1961-90. Precipitation values are in inches; %, percent; NWS, National Weather Service]

Precipitation conditions	NWS station at Newark	NWS station at Trenton	NWS station at Atlantic City
Precipitation total	30.34	35.7	34.09
Normal precipitation total	40.31	39.88	37.36
Difference from normal (minus indicates deficit)	-9.97	-4.18	-3.27
Percentage of normal	75.3%	89.5	91.2%

Table 2. Precipitation conditions for Water Year 1999 including Tropical Storm Floyd (October 1, 1998, to September 30, 1999)

[Normal is based on values during 1961-90. Precipitation values are in inches; %, percent; NWS, National Weather Service]

Precipitation conditions	NWS station at Newark	NWS station at Trenton	NWS station at Atlantic City
Precipitation total	39.72	46.8	39.01
Normal precipitation total	43.97	43.75	40.29
Difference from normal (minus indicates deficit)	-4.25	3.05	-1.28
Percent of normal	90.3%	107%	96.8%

tember and 80.5 percent of capacity (fig. 2). The term "usable contents" is used here as a measure of the total volume of water that can be removed from a reservoir without pumping, and does not account for the volume of water below the bottom of the lowest outlet or pipe (sometimes referred to as dead storage).

Streamflow

Streamflow at the index site in northern New Jersey (South Branch Raritan River near High Bridge) averaged 89.5 ft³/s for the water year, which is 72.8 percent of the 1919-99 average. Streamflow at the index station in southern New Jersey (Great Egg Harbor at Folsom) averaged 61.5 ft³/s, which is 71.8 percent of the 1926-99 average. The observed annual mean discharge of the Delaware River at Trenton was 7,750 ft³/s, which is 66.4 percent of the 1913-99 average. The Delaware River is highly regulated by reservoirs and diversions. Monthly mean discharge at each of these index gaging stations during the current water year and the long-term normal monthly discharge are shown in figure 3. Annual mean discharge at each of these index gaging stations and the mean annual discharge for the period of record are shown in figure 4.

At the beginning of water year 1999, during October, November, and December, streamflows were below normal as a result of the record dry period. The lowest monthly mean discharges on record for December were recorded at the northern and southern index stations (South Branch River near High Bridge and Great Egg Harbor River at Folsom, respectively) and at a number of other gaging stations throughout the state. Mandated releases from three major reservoirs in New York to the Delaware River were reduced because of the drought warning issued on December 14. Additional reductions in mandated water releases from the three New York reservoirs to the Delaware River were made on December 23.

The third wettest January on record (including snow melt) resulted in minor flooding throughout portions of New Jersey. Monthly mean streamflows at the three index gaging stations were above normal for January and near or above normal for February and March. Some minor flooding occurred in northern and central New Jersey on March 22.

Statewide, precipitation was below normal from April through July, and monthly streamflow averages declined steadily to below normal. Minimum monthly mean discharge reached record lows at 37 continuous gaging stations

with 20 years or more of record (table 3). All streams throughout New Jersey would have experienced near-record low flows except for the fact that some streams were maintained artificially with releases from reservoirs and sewage-treatment plant effluent. August precipitation totals were above normal, but monthly mean streamflow remained below normal.

Tropical Storm Dennis (September 6) was greatly overshadowed by Tropical Storm Floyd, which combined with a storm system from the west (rain began September 15 and ended September 17) to produce flooding of historic proportions in many areas of the state. New record highs were established for instantaneous peak discharges at 32 gaging stations with more than 20 years of record (table 4). The 100-year flood-frequency discharges were exceeded at 17 long-term gaging stations. Flood levels on the Raritan River at Bound Brook exceeded all known flood levels since the Bound Brook area was first settled around 1690. Several stream-gaging stations were destroyed or severely damaged by the high waters. One station was washed off of its foundation and could not be located. The New Jersey Department of Environmental Protection, Dam Safety Section inspected more than 50 dams and found complete failure at 3 dams (Kirbys Mill Dam, Burlington County; Bostwick Lake Dam, Cumberland County; and Spencer Detention Basin Dam, Morris County). This inspection also found notable damage to another 21 dams in 9 counties throughout New Jersey. Dam failures also were reported in nearby New York State. Because of the extremely dry conditions prior to Tropical Storm Floyd, most of the reservoirs in New Jersey had plenty of storage space available. This helped to reduce flooding downstream from the reservoirs.

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Benchmark Network is a network of 50 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 human activities.

National Stream-Quality Accounting Network (NASQAN) monitors the water quality of large rivers within four of the Nation's largest river basins--the Mississippi, Columbia, Colorado, and Rio Grande. The network consists of 39 stations. Samples are collected with sufficient frequency that the flux of a wide range of constituents can be estimated. The objective of NASQAN is to characterize the water quality of these large rivers by measuring concentration and mass transport of a wide range of dissolved and suspended constituents, including nutrients, major ions, dissolved and sediment-bound heavy metals, common pesticides, and inorganic and organic forms of carbon. This information will be used (1) to describe the long-term trends and changes in concentration and transport of these constituents; (2) to test findings of the National Water-Quality Assessment Program (NAWQA); (3) to characterize processes unique to large-river systems such as storage and re-mobilization of sediments and associated contaminants; and (4) to refine existing estimates of off-continent transport of water, sediment, and chemicals for assessing human effects on the

world's oceans and for determining global cycles of carbon, nutrients, and other chemicals.

The National Atmospheric Deposition Program/ National Trends Network (NADP/NTN) provides continuous measurement and assessment of the chemical climate of precipitation throughout the United States. As the lead federal agency, the USGS works together with over 100 organizations to accomplish the following objectives; (1) Provide a long-term, spatial and temporal record of atmospheric deposition generated from a network of 191 precipitation chemistry monitoring sites. (2) Provide the mechanism to evaluate the effectiveness of the significant reduction in SO₂ emissions that began in 1995 as implementation of the Clean Air Act Amendments (CAAA) occurred. (3) Provide the scientific basis and nationwide evaluation mechanism for implementation of the Phase II CAAA emission reductions for SO₂ and NO_x scheduled to begin in 2000.

Data from the network, as well as information about individual sites, are available through the world wide web at:

<http://nadp.nrel.colostate.edu/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, representative part of the Nation's ground- and surface-water resources; provide an improved understanding of the primary natural and human factors affecting these observed conditions and trends; and provide information that supports development and evaluation of management, regulatory, and monitoring decisions by other agencies.

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

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

http://wwwrvares.er.usgs.gov/nawqa/nawqa_home.html

EXPLANATION OF THE RECORDS

The surface-water records published in this report are for the 1998 water year that began October 1, 1997, and ended September 30, 1998. 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. The locations of the stations where the data were collected are shown in figures 6 and 7. 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.

Table 3. Continuous gaging stations with 20 years or more years of record, and record lows for minimum monthly mean discharge during the 1999 water year[ft³/s, cubic feet per second; mi², square miles]

Station number	Station name	Drainage area (mi ²)	Number of years of record	Date	Minimum monthly mean discharge, water year 1999 (ft ³ /s)	Date	Minimum monthly mean discharge prior to water year 1999 (ft ³ /s)
01379500	Passaic River near Chatham, NJ	100	72	December	27.5	December 1940	32.3
01380500	Rockaway River above Reservoir, at Boonton, NJ	116	62	November	47.8	November 1962	63.7
				December	49.5	December 1940	67.2
01384500	Ringwood Creek near Wanaque, NJ	19.1	59	December	2.71	December 1940	4.06
01387500	Ramapo River near Mahwah, NJ	120	81	November	21.6	November 1965	24.4
				December	19.8	December 1981	43.4
				June	29.6	June 1995	30.7
01389500	Passaic River at Little Falls, NJ	762	102	November	56.5	November 1932	79.2
				December	44.8	December 1981	111
				June	64.5	June 1965	84.6
01390500	Saddle River at Ridgewood, NJ	21.6	42	November	8.00	November 1982	8.41
				December	5.86	December 1981	7.49
				June	6.08	June 1965	7.46
				July	2.27	July 1966	3.23
01391500	Saddle River at Lodi, NJ	54.6	76	June	25.5	June 1965	31.8
				July	12.9	July 1966	14.1
01396500	South Branch Raritan River near High Bridge, NJ	65.3	81	December	30.2	December 1966	36.5
01396660	Mulhockaway Creek at Van Syckel, NJ	11.8	22	November	4.50	November 1985	6.34
				December	3.95	December 1981	5.61
				June	4.62	June 1995	6.03
				July	1.98	July 1993	4.83
01397000	South Branch Raritan River at Stanton, NJ	147	83	December	58.3	December 1966	65.1
01398000	Neshanic River at Reaville, NJ	25.7	69	December	1.42	December 1966	1.59
				July	.066	July 1966	.37
01398500	North Branch Raritan River near Far Hills, NJ	26.2	76	December	7.93	December 1981	8.43
01401000	Stony Brook at Princeton, NJ	44.5	46	December	1.94	December 1966	4.56
01401650	Pike Run at Belle Mead, NJ	5.36	20	November	.28	November 1985	2.09
				December	.12	December 1981	.73
				July	.000	July 1998	.34
01403060	Raritan River below Calco Dam, at Bound Brook, NJ	785	61	December	165	December 1966	178
01403150	West Branch Middle Brook near Martinsville, NJ	1.99	20	November	0.41	November 1981	0.67
				December	.13	December 1981	.18
				June	.27	June 1980	.41

Table 3. Continuous gaging stations with 20 years or more years of record, and record lows for minimum monthly mean discharge during the 1999 water year—Continued

Station number	Station name	Drainage area (mi ²)	Number of years of record	Date	Minimum monthly mean discharge, water year 1999 (ft ³ /s)	Date	Minimum monthly mean discharge prior to water year 1999 (ft ³ /s)
01403400	Green Brook at Seeley Mills, NJ	6.23	20	November 1982	1.48	November 1982	2.04
				December 1981	1.62	December 1981	2.57
				May 1986	2.44	May 1986	4.48
				June 1981	.35	June 1981	2.74
				July 1993	.32	July 1993	1.68
01403535	East Branch Stony Brook at Best Lake, at Watchung, NJ	1.57	20	November 1995	.27	November 1995	.80
				December 1981	.19	December 1981	.52
				June 1993	.40	June 1993	.56
				July 1980	.14	July 1980	.36
01403540	Stony Brook at Watchung, NJ	5.51	25	December 1981	1.21	December 1981	1.79
				June 1980	1.79	June 1980	2.27
				July 1977	.55	July 1977	1.27
01405400	Manalapan Brook at Spotswood, NJ	40.7	42	November 1966	21.3	November 1966	21.7
				December 1981	21.4	December 1981	27.4
				June 1966	14.8	June 1966	17.4
01407705	Shark River near Neptune City, NJ	9.96	33	December 1981	4.07	December 1981	4.11
01408000	Manasquan River at Squankum, NJ	44.0	68	December 1966	24.5	December 1966	26.4
01408120	North Branch Metedeconk River near Lakewood, NJ	34.9	27	October 1982	23.5	October 1982	24.4
				December 1989	22.7	December 1989	32.2
				June 1986	25.7	June 1986	26.0
				July 1988	20.4	July 1988	21.7
01408500	Toms River near Toms River, NJ	123	71	December 1966	93.6	December 1966	96.1
				July 1988	71.0	July 1988	77.3
01409400	Mullica River near Batsto, NJ	46.7	42	December 1966	21.8	December 1966	29.8
01409500	Batsto River at Batsto, NJ	67.8	72	December 1966	46.0	December 1966	48.4
01411300	Tuckahoe River at Head of River, NJ	30.8	30	July 1988	11.7	July 1988	12.7
01438500	Delaware River at Montague, NJ	3,480	60	December 1965	1,665	December 1965	1,968
01440000	Flat Brook near Flatbrookville, NJ	64.0	76	December 1947	16.7	December 1947	20.6
				July 1966	11.1	July 1966	13.1
				August 1995	8.96	August 1995	9.30
01443500	Paulins Kill at Blairstown, NJ	126	77	December 1947	35.5	December 1947	39.5
01464000	Assumpink Creek at Trenton, NJ	90.6	76	December 1944	32.0	December 1944	42.1
01464500	Crosswicks Creek at Extonville, NJ	81.5	58	December 1944	42.6	December 1944	42.6
				June 1942	35.7	June 1942	39.8
				July 1955	20.4	July 1955	25.8

Table 3. Continuous gaging stations with 20 years or more years of record, and record lows for minimum monthly mean discharge during the 1999 water year--Continued

Station number	Station name	Drainage area (mi ²)	Number of years of record	Date	Minimum monthly mean discharge, water year 1999 (ft ³ /s)	Date	Minimum monthly mean discharge prior to water year 1999 (ft ³ /s)
01466500	McDonalds Branch in Lebanon State Forrest, NJ	2.35	46	December	.98	December 1966	1.00
01467000	North Branch Rancocas Creek at Pemberton, NJ	118	78	December	48.8	December 1966	54.4
				July	36.6	July 1957	44.1
01467081	South Branch Pennsauken Creek at Cherry Hill, NJ	8.98	31	November	6.01	November 1977	6.99
				December	6.38	December 1981	7.05
				July	6.30	July 1982	6.92
01467150	Cooper River at Haddonfield, NJ	17.0	36	November	9.00	November 1992	11.0
				December	8.21	December 1966	14.3
				July	10.5	July 1993	12.9
01477120	Raccoon Creek near Swedesboro, NJ	26.9	33	November	15.3	November 1975	18.0
				December	16.3	December 1981	18.8

Table 4. Instantaneous peak discharge for water year 1999 and maximum instantaneous peak discharge for period of record prior to the 1999 water year at selected sites in New Jersey

[Maximum instantaneous peak discharges resulted from Tropical Storm Floyd; >, greater than; <, less than; ft³/s, cubic feet per second; mi², square miles; --, no data]

Station number	Station name	Drainage area (mi ²)	Maximum instantaneous peak discharge, water year 1999		Approximate recurrence interval (years)		Maximum instantaneous peak discharge prior to water year 1999		Years of record
			Date	Discharge (ft ³ /s)	Date	Discharge (ft ³ /s)	Date	Discharge (ft ³ /s)	
01377490	Musquapsink Brook at Westwood, NJ	6.59	9/16/99	465	30	460	11/08/77	460	23
01377500	Pascack Brook at Westwood, NJ	29.6	9/16/99	9,630	>100	2,440	9/12/71	2,440	65
01378500	Hackensack River at New Milford, NJ	113	9/17/99	9,760	>100	4,630	5/17/89	4,630	78
01378590	Metzler Brook at Englewood, NJ	1.54	9/16/99	534	90	470	11/08/77	470	35
01384500	Ringwood Creek near Wanaque, NJ	19.1	9/16/99	2,300	>100	1,570	3/30/51	1,570	57
01387880	Pond Brook at Oakland, NJ	6.76	9/16/99	1,680	50	1,300	5/29/68	1,300	27
01389030	Preakness Brook at Preakness, NJ	3.24	9/16/99	1,920	40	1,570	5/16/90	1,570	21
01390450	Saddle River at Upper Saddle River, NJ	10.9	9/16/99	6,290	90	4,150	11/08/77	4,150	34
01390500	Saddle River at Ridgewood, NJ	21.6	9/16/99	5,380	70	4,650	11/08/77	4,650	46
01390810	Hohokus Brook at Allendale, NJ	9.11	9/16/99	3,010	>100	1,380	11/08/77	1,380	31
01390900	Ramsey Brook at Allendale, NJ	2.55	9/16/99	987	40	980	11/08/77	980	25
01391000	Hohokus Brook at Ho-Ho-Kus, NJ	16.4	9/16/99	4,670	80	3,700	11/08/77	3,700	46
01391500	Saddle River at Lodi, NJ	54.6	9/17/99	5,330	90	4,500	11/09/77	4,500	76
01394500	Rahway River near Springfield, NJ	25.5	9/16/99	7,990	>100	5,430	8/02/73	5,430	62
01395000	Rahway River at Rahway, NJ	40.9	9/16/99	5,590	70	5,420	8/02/73	5,420	77
01396000	Robinsons Branch at Rahway, NJ	21.6	9/16/99	4,800	>100	3,110	7/15/75	3,110	58
01398000	Neshanic River at Reaville, NJ	25.7	9/16/99	23,300	>100	15,900	8/28/71	15,900	69
01398045	Back Brook tributary near Ringoes, NJ	1.98	9/16/99	1,580	20	1,290	8/03/79	1,290	21
01399830	North Branch Raritan River at North Branch, NJ	174	9/16/99	27,800	>100	27,300	7/07/84	27,300	20
01400000	North Branch Raritan River near Raritan, NJ	190	9/16/99	29,000	>100	29,100	10/19/96	29,100	76
01400300	Peters Brook near Raritan, NJ	4.19	9/16/99	3,400	>100	1,510	1/19/96	1,510	19
01400500	Raritan River at Manville, NJ	490	9/17/99	77,700	>100	36,300	8/28/71	36,300	88
01400630	Millstone River at Southfield Road, near Grovers Mill, NJ	41.0	9/17/99	1,470	20	1,400	12/11/92	1,400	21
01400930	Baldwins Creek at Pennington, NJ	1.99	9/16/99	1,430	60	1,260	8/27/71	1,260	40
01401160	Duck Pond Run near Princeton Junction, NJ	1.81	9/16/99	292	70	275	6/10/89	275	20
01401600	Beden Brook near Rocky Hill, NJ	27.0	9/16/99	15,300	>100	12,100	8/28/71	12,100	33
01401650	Pike Run at Belle Mead, NJ	5.36	9/16/99	8,200	>100	4,690	10/19/96	4,690	19
01402000	Millstone River at Blackwells Mills, NJ	258	9/17/99	26,200	>100	22,200	8/28/71	22,200	79
01402600	Royce Brook tributary near Belle Mead, NJ	1.20	9/16/99	2,850	>100	1,450	8/28/71	1,450	25
01403060	Raritan River below Calco Dam, at Bound Brook, NJ	785	9/17/99	82,900	>100	46,100	8/28/71	46,100	66
01403150	West Branch Middle Brook near Martinsville, NJ	1.99	9/16/99	1,490	>100	569	10/19/96	569	20
01403400	Green Brook at Seeley Mills, NJ	6.23	9/16/99	4,090	60	6,240	8/02/73	6,240	31

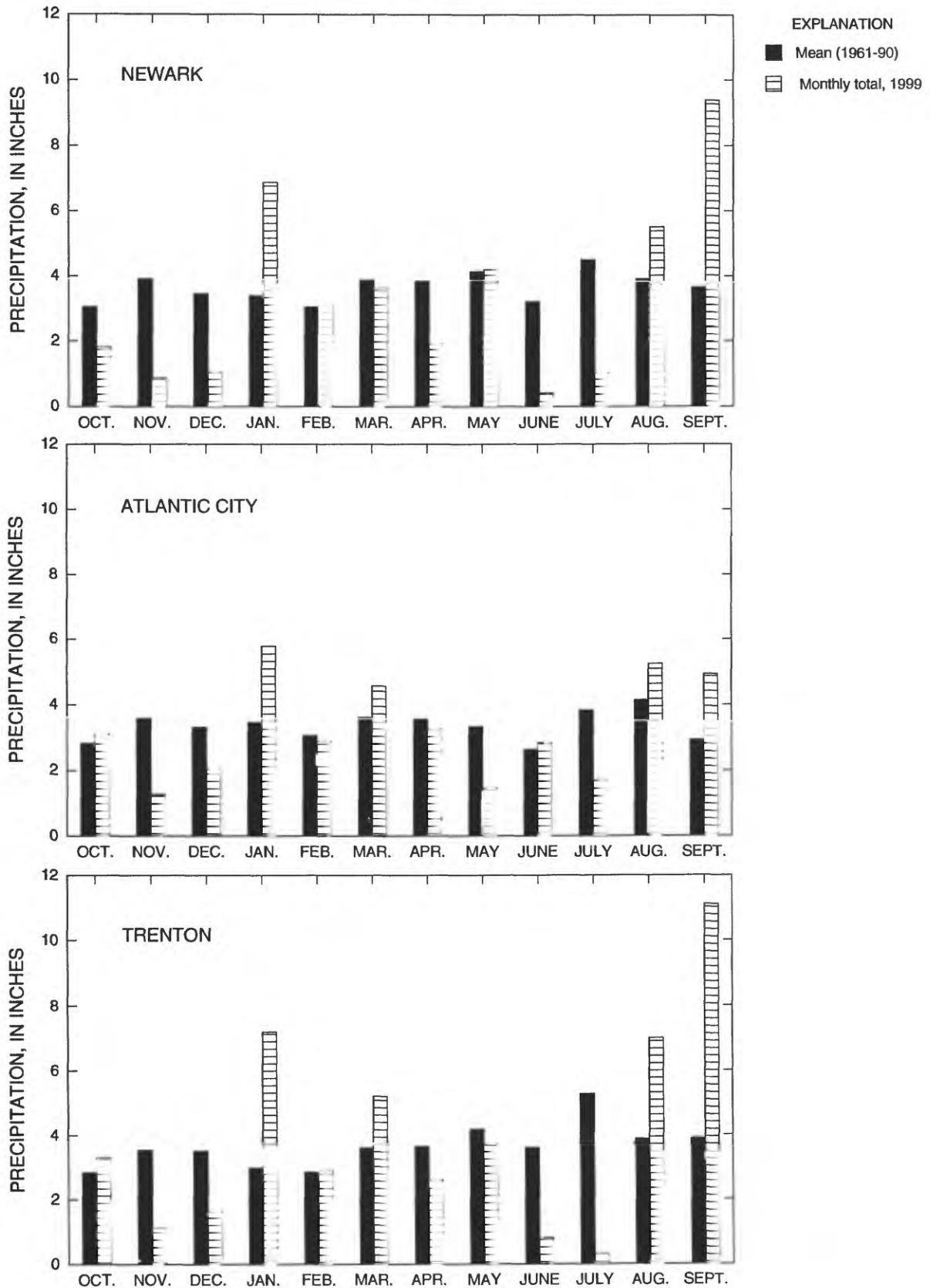
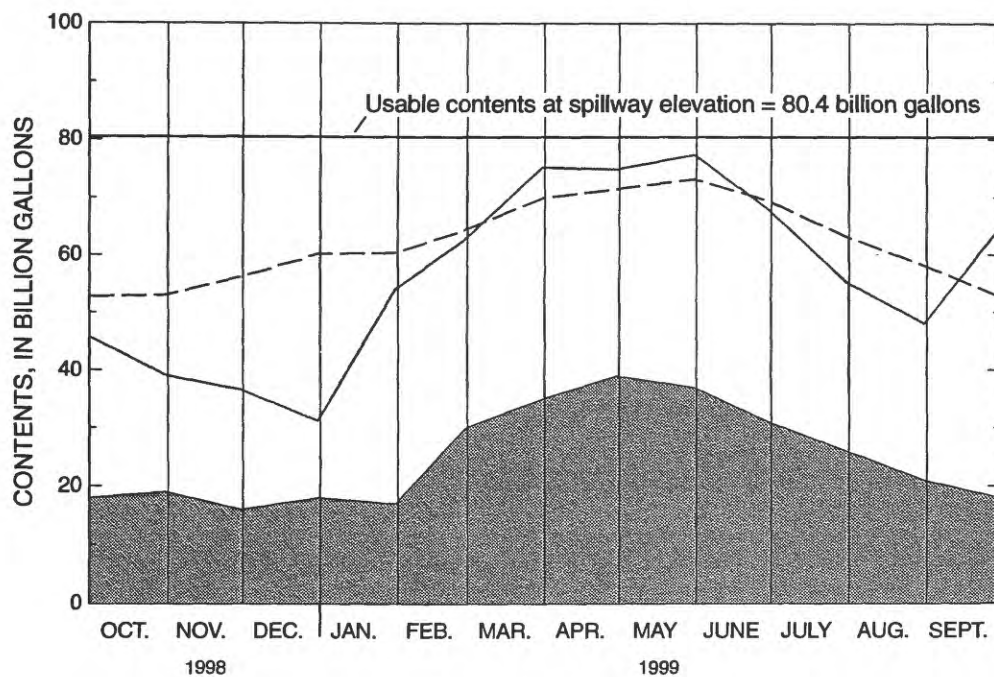





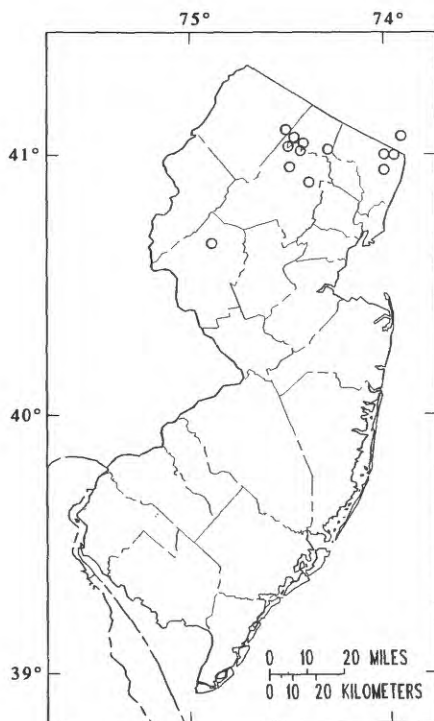
Figure 1. Monthly precipitation at three National Weather Service stations.

WATER RESOURCES DATA-NEW JERSEY, 1999



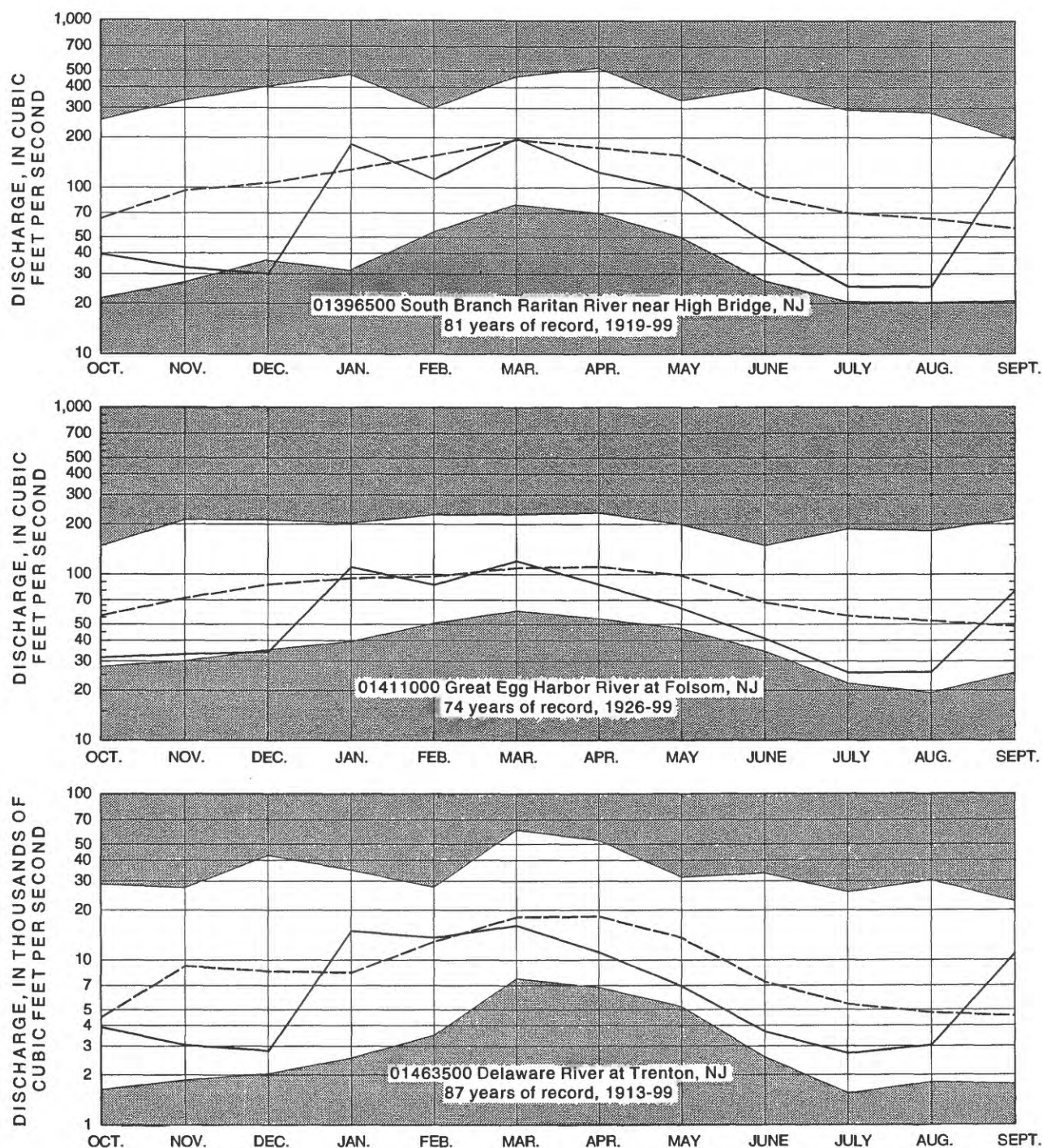
EXPLANATION

-  Shaded area indicates lowest monthly usable contents for reference period
-  Mean usable contents, 1961-90
-  Month-end usable contents, 1999 water year



Map showing locations of reservoirs

Figure 2. Combined usable contents of 13 major water-supply reservoirs.



EXPLANATION

UNSHADED AREA--Indicates range between highest and lowest mean discharge recorded for the month, prior to 1999 water year.

BROKEN LINE--Indicates normal discharge (median of the monthly means) for the standard reference period, 1961-90.

SOLID LINE--Indicates observed monthly mean discharge for the 1999 water year.

Figure 3. Monthly mean discharge at index gaging stations.

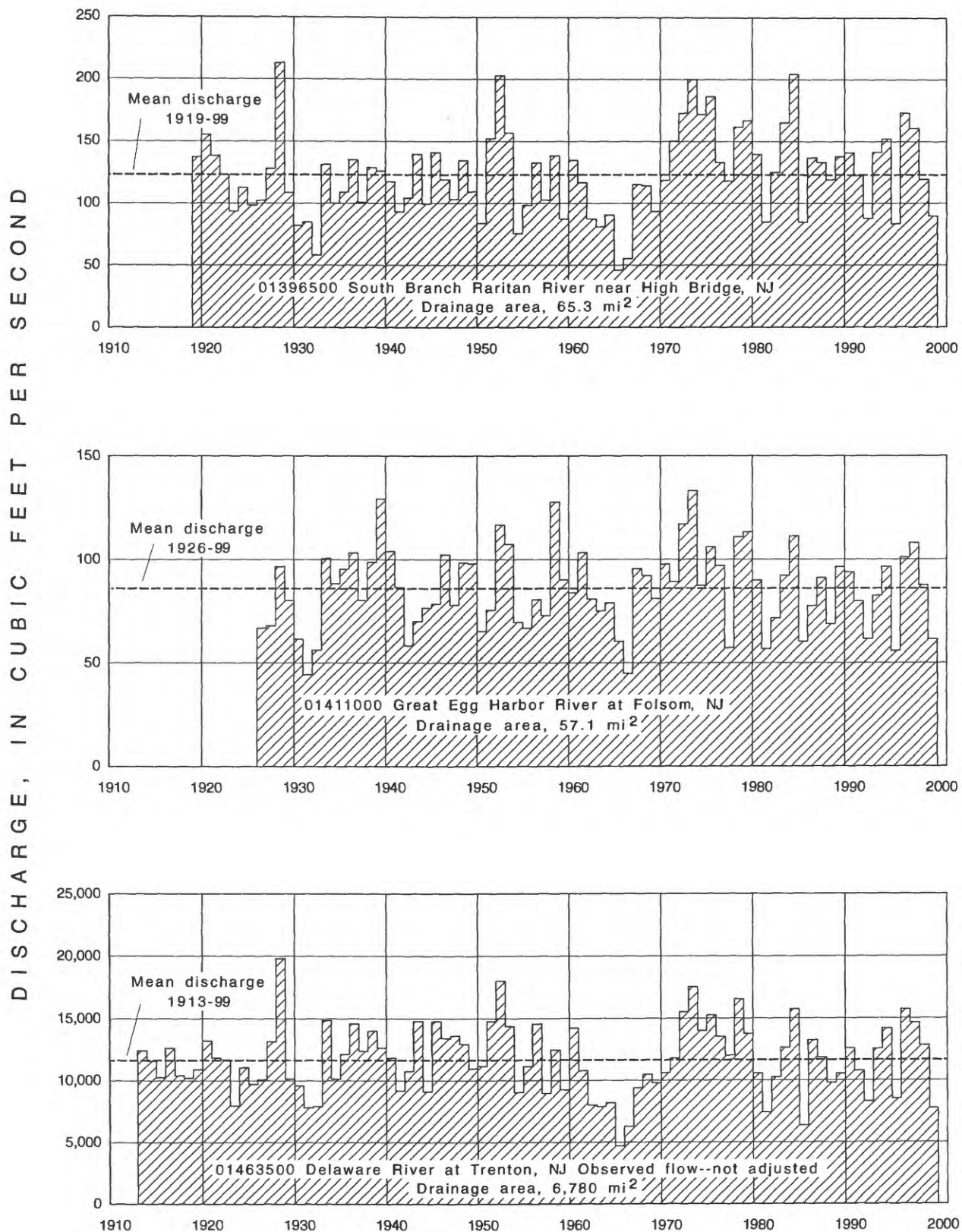


Figure 4. Annual mean discharge at index gaging stations.

Station Identification Numbers

Each data station in this report is assigned a unique identification number. This number is unique in that it applies specifically to a given station and to no other. The number usually is assigned when a station is first established and is retained for that station indefinitely. The systems used by the U.S. Geological Survey to assign identification numbers for surface-water stations and for ground-water well sites differ, but both are based on geographic location. Generally the "downstream order" system is used for regular surface-water stations and the "latitude-longitude" system is used for wells.

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 01396500, which appears just to the left of the station name, includes the two-digit Part number "01" plus the 6-digit downstream-order number "396500". The Part number designates the major drainage basin; for example, Part "01" covers the North Atlantic slope basins. In some areas where all 8-digit numbers are used up, 10-digit station numbers are assigned between the 8-digit numbers.

Latitude-Longitude System

The identification numbers for wells and 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 wells or other 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 (fig. 5).

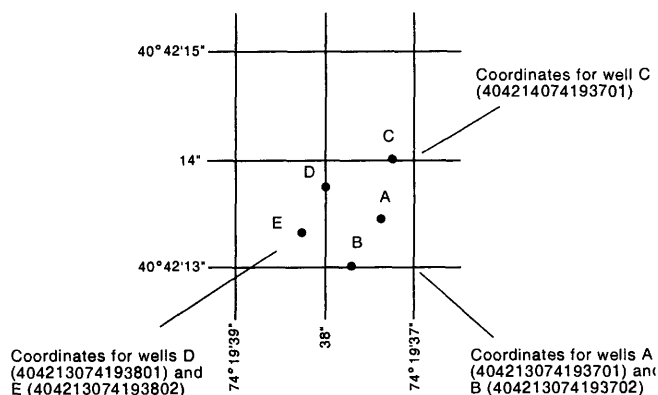


Figure 5.--System for numbering wells and miscellaneous sites (latitude and longitude)

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. Location of all gaging stations and partial-record stations for which data are given in this report are shown in figures 6 and 7.

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-capacity curves or tables to compute lake storage.

Continuous records of stage are obtained at a gaging station with one or more of the following instruments:

- analog recorders that trace continuous graphs of stage on graphic charts,
- digital recorders that punch stage values on paper tapes at selected time intervals,
- electronic data loggers that electronically record stage values at selected time intervals, and
- data collection platforms (DCP) that electronically record and then transmit the data via satellite to ground receiving stations.

At some gaging stations, acoustic velocity meter (AVM) systems are used to compute discharges. The AVM system measures the stream's velocity at one or more paths in the cross section. Coefficients are developed to relate this path velocity to the mean velocity in the cross section. Because the AVM sensors are fixed in position, the adjustment coefficients generally vary with stage. Cross-sectional area curves are developed to relate stage, recorded as noted above, to cross section area. Discharge is computed by multiplying path velocity by the appropriate stage related coefficient and area. Measurements of discharge are made with current meters using methods adopted by the U.S. Geological Survey as a result of experience accumulated since 1880. These methods are described in standard textbooks, in U.S. Geological Survey Water-Supply Paper 2175, and in U.S. Geological Survey Techniques of Water-Resources Investigations, Book 3, Chapter A1 through A19 and Book 8, Chapters A2 and B2. The methods are consistent with the American Society for Testing and Materials (ASTM) standards and generally follow the standards of the International Organization for Standards (ISO).

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

Daily mean discharges are computed by applying the unit mean stages (gage heights) to the stage-discharge curves or tables and averaging the results. 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

The records published for each continuous-record surface-water discharge station (gaging station) consist of five 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 year; 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; and a graphical representation of the daily mean values of discharge for the current water year.

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 oper-

ation 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 sea level (see Definition of Terms), 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 will either be identified by date in this paragraph of the station description for water-discharge stations or flagged in the daily discharge table. (See next section, "Identifying Estimated Daily Discharge.") If a REMARKS paragraph is used to identify estimated record, the paragraph will begin with this information presented as the first entry. The paragraph is also used to present information relative to the accuracy of the records, to special methods of computation, and to conditions that affect natural flow at the station. In addition, information may be presented pertaining to average discharge data for the period of record; to extremes data for the period of record and the current year; and, possibly, to other pertinent items. For reservoir station, 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.

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.

PEAK DISCHARGES FOR CURRENT YEAR.--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. All peaks greater than the base discharge are listed with the maximum for the year footnoted by an asterisk (*). Peak discharges are not published for canals, ditches, drains, or streams for which the peaks are subject to substantial control by man or at locations where the instantaneous peak discharge does not exceed the mean daily discharge by 10 percent. 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.

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.

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 mean 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 noncontribut-

ing 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 records 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 the 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 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 basin.

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 the year noted or for the designated period. At some stations, the yearly mean discharge 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-March 31). The date shown in the summary statistics table is the initial date for 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. Secondary instantaneous peak discharges above a selected base discharge are given in the station manuscript under the heading "PEAK DISCHARGES FOR CURRENT YEAR."

INSTANTANEOUS PEAK STAGE.--The maximum instantaneous stage occurring for the water year or for the designated period. If the dates of occurrence for the instantaneous peak flow and instantaneous peak stage differ, the REMARKS paragraph in the manuscript or a footnote may be used to provide further information.

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

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

Acre-foot (AC-FT) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to

43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

Cubic feet per second per square mile (CFSM) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming the runoff is distributed uniformly in time and area.

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

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

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

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

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

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 New Jersey District office. 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.

Water Temperature

Water temperatures are usually taken at time of discharge measurements for water-discharge stations. 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.

CURRENT WATER RESOURCES PROJECTS IN NEW JERSEY

The Geological Survey is currently involved in a number of hydrologic investigations in the State of New Jersey. The following is a list of these investigations. Results are published at the conclusion of short-term projects or periodically in the case of long-term projects. Hydrologic data from these projects are entered into the NWIS data base.

A Watershed-Based Method for Relating Water Quality to Flow Characteristics

Barneget Bay Non-Point Source

- Compositional Modeling of Organic Transport and Biodegradation of Organic Compounds in the Unsaturated Zone and Ground Water
- Distribution and Sources of Arsenic in Soils near the Imperial Oil Site, Monmouth County, New Jersey
- EPA Technical Assistance Program
- Flood Characteristics of New Jersey Streams
- Geohydrology of the Naval Air Warfare Center, West Trenton, New Jersey
- Ground-Water Contamination with Chlorinated Volatile Organic Compounds at Picatinny Arsenal, Morris County, New Jersey
- Ground-Water Data Collection Network
- Ground-Water Levels and Chloride Concentrations in Major Aquifers of the Coastal Plain
- High-Flow Water Quality Management Objectives
- Hydrologic Controls on Well-Contributing Areas in New Jersey
- Hydrology of Surficial Aquifer Systems
- Hydrogeologic Support to Fort Dix, Burlington County, New Jersey
- Hydrogeologic Support to McGuire A.F.B., Burlington County, New Jersey
- Hydrogeologic Support to Picatinny Arsenal, Morris County, New Jersey
- Investigation of Contaminant Transport in a Fractured Rock Aquifer, Rutgers University, Busch Campus
- Investigation of Water Quality in the Wanaque South Diversion Area, Morris and Passaic Counties, New Jersey
- Lake Herbicides
- Low Flow Characteristics of New Jersey Streams
- Modeling and Experimental Investigation of Hydrocarbon Transport and Biodegradation in the Unsaturated Zone
- Movement of Chromium in the Ground Water of Pennsauken Township, Camden County
- Multispecies Transport in Ground Water
- New Jersey-Long Island National Water Quality Assessment
- New Jersey Tide Telemetry System
- Pascack Brook Flood Warning System
- Passaic Flood Warning System
- Program to Maintain and Update Ground-Water Models to Evaluate Continued Water-Supply Development
- Quality of Water Data Collection Network
- Radium and Trace Metal Leaching in the Kirkwood-Cohansey Aquifer System
- Rahway Flood Warning System
- Reconstruction of Natural Streamflow Records, Passaic and Hackensack River Basins
- Relations Between Streamflow, Salinity, and Water Quality in Estuaries of the Toms and Metedeconk Rivers, New Jersey
- Removal of Volatile Ground-Water Contaminants by Inducing Air-Phase Transport
- Review of Remedial Investigation for the Vineland Chemical Superfund Site
- Small-Scale Watershed Delineation for GIS (14-Digit Hydrologic Unit Codes)
- Small Watershed Flood Data Collection
- Somerset County Flood-Information System
- Strategic Environmental Research Development Program, Biodegradation, Picatinny Arsenal
- Surface Water Data Collection Network
- Surfactant Sorption to Soil and its Effect on the Distribution of Anthropogenic Organic Compounds
- Trends in the Water Quality of Streams in New Jersey
- Vulnerability Assessment of the Kirkwood-Cohansey Aquifer System to Radium, Mercury, and Trace Metals
- Vulnerability of Community Water-Supply Wells in New Jersey to Contamination by Volatile Organic Compounds and Disinfection By-Products
- Water-Supply Availability in Salem and Gloucester Counties, New Jersey

WATER-RELATED REPORTS FOR NEW JERSEY COMPLETED BY THE U.S. GEOLOGICAL SURVEY IN RECENT YEARS

- Barringer, J.L., 1994, Interactions of metallic substances and acidic ground water in the New Jersey Coastal Plain: U.S. Geological Survey Water-Resources Investigations Report 90-4095, 68 p.
- Barringer, J.L., and Johnsson, P.A., 1996, Theoretical considerations and a simple method for measuring alkalinity and acidity in low-pH waters by gran titration: U.S. Geological Survey Water-Resources Investigations Report 89-4029, 44 p.
- Barringer, J.L., MacLeod, C.L., and Gallagher, R.A., 1997, Mercury in ground water, soils, and sediments of the Kirkwood-Cohansey aquifer system in the New Jersey Coastal Plain: U.S. Geological Survey Open-File Report 95-475, 260 p.

WATER-RELATED REPORTS FOR NEW JERSEY COMPLETED BY THE U.S. GEOLOGICAL SURVEY IN RECENT YEARS--Continued

- Barringer, T.H., 1996, Flood magnitude and frequency of Jacks Run at the culvert on U.S. Route 206, Southampton Township, Burlington County, New Jersey: U.S. Geological Survey Open-File Report 96-319, 6 p.
- Barringer, T.H., 1996, Flood magnitude and frequency of Monongahela Brook at the culvert on New Jersey Route 41, Deptford Township, Gloucester County, New Jersey: U.S. Geological Survey Open-File Report 96-320, 6 p.
- Barringer, T.H., 1996, Flood magnitude and frequency of Little Timber Creek at the culvert on Interstate Route 295, Haddon Heights Township, Camden County, New Jersey: U.S. Geological Survey Open-File Report 96-321, 6 p.
- Barringer, T.H., 1996, Flood magnitude and frequency of Black Creek tributary at the culvert on New Jersey Route 94, Vernon Township, Sussex County, New Jersey: U.S. Geological Survey Open-File Report 96-324, 6 p.
- Barringer, T.H., 1996, Flood magnitude and frequency of Main Ditch at the culvert on New Jersey Route 44, and at the Conrail culvert 0.21 miles downstream, West Deptford Township, Gloucester County, New Jersey: U.S. Geological Survey Open-File Report 96-325, 8 p.
- Barringer, T.H., 1996, Flood magnitude and frequency of Little Mantua Creek at the culvert at milepost 7.8 of New Jersey Route 44, and at the Conrail culvert 0.20 miles downstream, West Deptford Township, Gloucester County, New Jersey: U.S. Geological Survey Open-File Report 96-326, 8 p.
- Barringer, T.H., 1996, Flood magnitude and frequency of Franklin Pond tributary at the culvert on New Jersey Route 23, Franklin Borough, New Jersey: U.S. Geological Survey Open-File Report 96-327, 6 p.
- Bauersfeld, W.R., and Jones, W.D., 1996, Water-resources data for New Jersey-water year 1995, Volume 2. Ground-water data: U.S. Geological Survey Water-Data Report NJ-95-2.
- Bauersfeld, W.R., Jones, W.D., and Gurney, C.E., 1995, Water-resources data for New Jersey-water year 1994, Volume 2. Ground-water data: U.S. Geological Survey Water-Data Report NJ-94-2.
- Bauersfeld, W.R., Jones, W.D., and Gurney, C.E., 1994, Water-resources data for New Jersey-water year 1993, Volume 2. Ground-water data: U.S. Geological Survey Water-Data Report NJ-93-2, 174 p.
- Bauersfeld, W.R., Moshinsky, E.W., and Gurney, C.E., 1995, Water-resources data for New Jersey-water year 1994, Volume 1. Surface-water data: U.S. Geological Survey Water-Data Report NJ-94-1.
- Bauersfeld, W.R., Moshinsky, E.W., and Gurney, C.E., 1994, Water-resources data for New Jersey-water year 1993, Volume 1. Surface-water data: U.S. Geological Survey Water-Data Report NJ-93-1, 503 p.
- Carleton, G. B., and Vowinkel, E.F., 1996, Nitrate in ground water and surface water in a residential subdivision, West Windsor Township, Mercer County, New Jersey: U.S. Geological Survey Open-File Report 96-576, 33 p.
- Czarnik, T.S., and Kozinski, Jane, 1994, Ground-water quality in the central part of the Passaic River Basin, northeastern New Jersey, 1959-88: U.S. Geological Survey Water-Resources Investigations Report 92-4083, 66 p.
- de Paul, V.T., 1996, Reconnaissance of volatile organic compounds in the subsurface at Rutgers University, Busch Campus, Piscataway Township, New Jersey: U.S. Geological Survey Open-File Report 95-729, 26 p.
- Dunne, Paul, and Price, C.V., 1995, Geographic Information System programs for use in the water-supply-allocation permitting process: U.S. Geological Survey Open-File Report 95-157, 31 p.
- Dunne, Paul, and Tasker, Gary, 1996, Computer model of Raritan River Basin water-supply system in central New Jersey: U.S. Geological Survey Open-File Report 96-360, 62 p.
- Dunne, Paul, and Velnich, A.J., 1994, Development, installation, and operation of a flood-monitoring system in Somerset County, New Jersey: U.S. Geological Survey Open-File Report 94-65, 23 p.
- Ervin, E.M., Voronin, L.M., and Fusillo, T.V., 1994, Water quality of the Potomac-Raritan-Magothy aquifer system in the Coastal Plain, west-central New Jersey: U.S. Geological Survey Water-Resources Investigations Report 94-4113.
- Gordon, Alison D., 1995, Hydrogeology of, and simulated ground-water flow in, the valley-fill aquifers of the upper Rockaway River Basin, Morris County, New Jersey: U.S. Geological Survey Water-Resources Investigations Report 93-4145, 74 p.
- Hickman, R.E., 1995, Statistical characteristics of stream discharge in tributaries of selected estuaries in New Jersey: U.S. Geological Survey Water-Resources Investigations Report 91-4141, 53 p.
- Hickman, R.E., 1997, Streamflow, tidal-water-level, and water-quality data for the tidal embayments of the Metedeconk and Toms Rivers, New Jersey, water years 1994-94: U.S. Geological Survey Open-File Report 96-368, 277 p.

WATER-RELATED REPORTS FOR NEW JERSEY COMPLETED BY THE U.S. GEOLOGICAL SURVEY IN RECENT YEARS--Continued

- Ivahnenko, Tamara, and Buxton, D.E., 1994, Agricultural pesticides in six drainage basins used for public water supply in New Jersey, 1990: U.S. Geological Survey Water-Resources Investigations Report 93-4101, 56 p.
- Ivahnenko, Tamara, Szabo, Zoltan, and Hall, G.S., 1996, Use of an ultra-clean sampling technique with inductively coupled plasma-mass spectrometry to determine trace-element concentrations in water from the Kirkwood-Cohansey aquifer system, Coastal Plain, New Jersey: U.S. Geological Survey Open-File Report 96-142, 36 p.
- Johnson, M.L., and Charles, E.G., 1997, Hydrology of the unconfined aquifer system, Salem River area: Salem River and Raccoon, Oldmans, Alloway, and Stow Creek Basins, New Jersey, 1993-94: U.S. Geological Survey Water-Resources Investigations Report 96-4195, 5 sheets.
- Johnson, M.L., and Watt, M.K., 1996, Hydrology of the unconfined aquifer system, Mullica River Basin, New Jersey, 1991-92: U.S. Geological Survey Water-Resources Investigations Report 96-4234, 6 sheets.
- Jones, W.D., and DeLuca, M.J., 1997, Water-resources data for New Jersey-water year 1996, Volume 2. Ground-water data: U.S. Geological Survey Water-Data Report NJ-96-2.
- Joss, Craig J., and Baehr, Arthur L., 1995, Documentation of AIR3D, an adaptation of the ground-water-flow code MODFLOW to simulate three-dimensional air flow in the unsaturated zone: U.S. Geological Survey Open-File Report 94-533, 154 p.
- Kozinski, Jane, Szabo, Zoltan, Zapecza, O.S., and Barringer, T.H., 1995, Natural radioactivity in, and inorganic chemistry of ground water in the Kirkwood-Cohansey aquifer system, southern New Jersey, 1983-89: U.S. Geological Survey Water-Resources Investigations Report 92-4144, 130 p.
- Lacombe, Pierre J., and Rosman, Robert, 1995, Hydrology of the unconfined aquifer system in the upper Maurice River basin and adjacent areas in Gloucester County, New Jersey, 1986-87: U.S. Geological Survey Water-Resources Investigations Report 92-4128, 5 sheets.
- Lacombe, Pierre J., and Rosman, Robert, 1997, Water levels in, extent of freshwater in, and water withdrawal from eight major confined aquifers, New Jersey Coastal Plain: U.S. Geological Survey Water-Resources Investigations Report 96-4206, 8 sheets.
- Lahvis, M.A., and Baehr, A.L., 1997, Documentation of R-UNSAT, a computer model for the simulation of reactive, multispecies transport in the unsaturated zone: U.S. Geological Survey Open-File Report 97-630, 104 p.
- Lewis-Brown, Jean C., and Jacobsen Eric, 1995, Hydrogeology and ground-water flow, fractured Mesozoic structural-basin rocks, Stony Brook, Beden Brook, and Jacobs Creek drainage basins, West-Central New Jersey: U.S. Geological Survey Water-Resources Investigations Report 94-4147, 83 p.
- MacLeod, C.L., Barringer, T.H., Vowinkel, E.F., and Price, C.V., 1995, Relation of nitrate concentrations in ground water to well depth, well use, and land use in Franklin Township, Gloucester County, New Jersey, 1970-85: U.S. Geological Survey Water-Resources Investigations Report 94-4174, 29 p.
- Modica, Edward, 1996, Simulated effects of alternative withdrawal strategies on ground-water-flow patterns, New Jersey Pinelands: U.S. Geological Survey Water-Resources Investigations Report 95-4133, 46 p.
- Navoy, A.S., 1994, Simulated effects of projected withdrawals from the Wenonah-Mount Laurel aquifer on ground-water levels in the Camden, New Jersey, area and vicinity: U.S. Geological Survey Water-Resources Investigations Report 92-4152, 22 p.
- Navoy, A.S., and Carleton, G.B., 1995, Ground-water flow and future conditions in the Potomac-Raritan-Magothy aquifer system, Camden area, New Jersey: New Jersey Department of Environmental Protection, New Jersey Geological Survey Report GSR 38, 183 p.
- Nawyn, J.P., 1997, Water use in Camden County, New Jersey, 1991: U.S. Geological Survey Open-File Report 97-12, 39 p.
- Nicholson, R.S., McAuley, S.D., Barringer, J.L., and Gordon, A.D., 1996, Hydrogeology of, and ground-water flow in, a valley-fill and carbonate-rock aquifer system near Long Valley in the New Jersey Highlands: U.S. Geological Survey Water-Resources Investigations Report 93-4157, 159 p., 3 pls.
- Nicholson, R.S., and Watt, M.K., 1997, Simulation of ground-water flow in the unconfined aquifer system of the Toms River, Metedeconk River, and Kettle Creek Basins, New Jersey: U.S. Geological Survey Water-Resources Investigations Report 97-4066, 100 p.
- Pucci, A.A., Jr., Pope, D.A., and Gronberg, J.M., 1994, Hydrogeology, simulation of regional ground-water flow, and saltwater intrusion, Potomac-Raritan-Magothy aquifer system, northern Coastal Plain of New Jersey: New Jersey Department of Environmental Protection, New Jersey Geological Survey Report GSR 36, 209 p.

WATER-RELATED REPORTS FOR NEW JERSEY COMPLETED BY THE U.S. GEOLOGICAL SURVEY IN RECENT YEARS--Continued

- Reed, T.J., Centinaro, G.L., Dudek, J.F., Corcino, Victor, Steckroat, G.C., and McTigue, R.C., 1999, Water resources data for New Jersey - water year 1998, volume 1, Surface-water data: U.S. Geological Survey Water-Data Report NJ-98-1, 281 p.
- Reed, T.J., Centinaro, G.L., Deluca, M.J., and Oden, J.T., 1998, Water-resources data for New Jersey-water year 1997, Volume 1. Surface-water data: U.S. Geological Survey Water-Data Report NJ-97-1.
- Reed, T.J., Deluca, M.J., Centinaro, G.L., and Hutchinson, J.T., 1997, Water-resources data for New Jersey-water year 1996, Volume 1. Surface-water data: U.S. Geological Survey Water-Data Report NJ-96-1.
- Reed, T.J., Deluca, M.J., Centinaro, G.L., and Hutchinson, J.T., 1996, Water-resources data for New Jersey-water year 1995, Volume 1. Surface-water data: U.S. Geological Survey Water-Data Report NJ-95-1.
- Reed, T.J., Hunchak-Kariouk, Kathryn, 1995, Surface-water-temperature statistics for streams in New Jersey and vicinity, 1955-93: U.S. Geological Survey Open-File Report 95-196, 142 p.
- Rice, D.E., and Voronin, L.M., 1997, Analysis of ground-water flow paths near water-supply wells, Picatinny Arsenal, New Jersey: U.S. Geological Survey Water-Resources Investigations Report 96-4228, 26 p.
- Robinson, K.W., Lazaro, T.R., and Pak, Connie, 1996, Associations between water-quality trends in New Jersey streams and drainage-basin characteristics, 1975-86: U.S. Geological Survey Water-Resources Investigations Report 96-4119, 160 p.
- Robinson, K.W., Price, C.V., and Smith, R.A., 1995, Development of a computerized data base of permitted wastewater discharges in New Jersey: U.S. Geological Survey Open-File Report 95-152, 14 p.
- Rosman, Robert, Lacombe, P.J., and Storck, D.A., 1995, Water levels in major artesian aquifers of the New Jersey Coastal Plain: U.S. Geological Survey Water-Resources Investigations Report 95-4060, 74 p., 8 pls.
- Schuster, P.F., and Hill, M.C., 1995, Hydrogeology of, ground-water withdrawals from, and saltwater intrusion in the shallow aquifer system of Cape May County, New Jersey: U.S. Geological Survey Open-File Report 94-714-W, 40 p., 12 pl.
- Spitz, F.J., 1996, Hydrologic feasibility of water-supply-development alternatives in Cape May County, New Jersey: U.S. Geological Survey Water-Resources Investigations Report 96-4041, 42 p.
- Stackelberg, P.E., Hopple, J.A., and Kauffman, L.J., 1997, Occurrence of nitrate, pesticides, and volatile organic compounds in the Kirkwood-Cohansey aquifer system, southern New Jersey: U.S. Geological Survey Water-Resources Investigations Report 97-4241, 8 p.
- Storck, D.A., 1994, Hydrology of, and water quality in, the Open Burning Area and vicinity, Picatinny Arsenal, New Jersey, 1989-90: U.S. Geological Survey Water-Resources Investigations Report 92-4134, 69 p.
- Storck, D.A., Isaacs, K.N., and Vowinkel, E.F., 1997, Development of a data base of community water-supply wells in New Jersey and a method to evaluate their sensitivity to contamination: U.S. Geological Survey Water-Resources Investigations Report 96-4132, 59 p.
- Storck, D.A., and Lacombe, P.J., 1996, Streambed-material characteristics and surface-water quality, Green Pond Brook and tributaries, Picatinny Arsenal, New Jersey, 1983-90: U.S. Geological Survey Water-Resources Investigations Report 95-4246, 66 p., 2 pls.
- Szabo, Zoltan, Taylor, T.A., Payne, D.F., and Ivahnenko, Tamara, 1997, Relation of hydrogeologic characteristics to distribution of radioactivity in ground water, Newark Basin, New Jersey: U.S. Geological Survey Water-Resources Investigations Report 95-4136, 134 p., 6 pl.
- 1996, National Water Summary on Wetland Resources: U.S. Geological Survey Water-Supply Paper 2425, 431 p.
- Voronin, L.M., and Rice, D.E., 1996, Hydrogeology and simulation of ground-water flow, Picatinny Arsenal and vicinity, Morris County, New Jersey: U.S. Geological Survey Water-Resources Investigations Report 96-4061, 64 p.
- Voronin, L.M., Spitz, F.J., and McAuley, S.D., 1996, Evaluation of saltwater intrusion and travel time in the Atlantic City 800-foot sand, Cape May County, New Jersey, 1992, by use of a coupled-model approach and flow-path analysis: U.S. Geological Survey Water-Resources Investigations Report 95-4280, 38 p.
- Watt, M.K., Johnson, M.L., and Lacombe, P.J., 1994, Hydrology of the unconfined aquifer system, Toms River, Metedeconk River, and Kettle Creek Basins, New Jersey, 1987-90: U.S. Geological Survey Water-Resources Investigations Report 93-4110, 5 pl.

WATER-RELATED ARTICLES FOR NEW JERSEY COMPLETED BY THE U.S. GEOLOGICAL SURVEY IN RECENT YEARS

- Gunderson, Linda C.S., and Szabo, Zoltan, 1995, Natural radionuclides in earth, air, and water, and the effect on human health, *in* Carter, L.M.H., ed., *Energy and the environment--Application of geosciences to decision-making*: U.S. Geological Survey Circular 1108, p. 22.
- Kane, A.C., and Fischer, J.M., 1996, Microcosm study to determine optimum levels of oxygen and methane for cometabolic biodegradation of trichloroethylene in sediment and ground water from Picatinny Arsenal, Morris County, New Jersey: Proceedings of the 1996 Spring Meeting, American Geophysical Union Estuarine Research Federation, Geochemical Society, Mineralogical Society of America, Baltimore, Md., May 20-24, 1996, p. S135.
- Lacombe, P.J., 1996, Water levels in, extent of freshwater in, and water withdrawal from eight major confined aquifers, New Jersey Coastal Plain, 1993: Proceedings of the 1996 Spring Meeting, American Geophysical Union, Estuarine Research Federation, Geochemical Society, Mineralogical Society of America, Baltimore, Md., May 20-24, 1996, p. S133.
- Lacombe, P.J., 1996, Artificial recharge of ground water using well injection for storage and recovery, Cape May County, New Jersey, 1958-1992 (Abstract): Proceedings of Water in the 21st century: Conservation, demand, and supply, p. 188.
- Lahvis, M.A., and Baehr, A.L., 1996, Estimation of rates of aerobic hydrocarbon biodegradation by simulation of gas transport in the unsaturated zone: *Water Resources Research*, v. 32, no. 7, p. 2231-2249.
- Marlow, Jon, 1996, Design and operation of the New Jersey Tide Telemetry System: Proceedings of The Barnegat Bay Ecosystem Workshop, November 14, 1996, Toms River, New Jersey, p. 75-83.
- Suro, T.P., 1998, December 11-12, 1992, *in* New Jersey, *in* Perry, C.A., and Combs, L.J., eds., *Summary of floods in the United States, January 1992 through September 1993*: U.S. Geological Survey Water-Supply Paper 2499, p. 165-171.
- Szabo, Zoltan, Rice, Donald E., Plummer, L.N., Busenberg, E., Drenkard, S., and Schlosser, P., 1996, Age dating of shallow groundwater with chlorofluorocarbons, tritium/helium 3, and flow path analysis, southern New Jersey Coastal Plain: *Water Resources Research*, v. 32, no. 4, p. 1023-1038.
- Szabo, Zoltan, Rice, Donald E., Ivahnenko, Tamara, and Vowinkel, Eric F., 1994, Delineation of the distribution of pesticides and nitrates in an unconfined aquifer in the New Jersey Coastal Plain by flow-path analysis: Proceedings of the Fourth National Conference on Pesticides, November 1-3, 1993, p. 100-119.
- Vowinkel, E.F., and Szabo, Zoltan, 1996, Relation between land use and distributions of dissolved nitrogen species in shallow water in two New Jersey Coastal Plain aquifer systems, *in* Puckett, Larry J., and Triska, Frank J., eds., *U.S. Geological Survey Nitrogen-Cycling Workshop*, Denver, Colo., October 30 - November 2, 1995: U.S. Geological Survey Open-File Report 96-477, p. 14.
- Wilson, T.P., Kane, A.C., and Fischer, J.M., 1996, Partitioning of trichloroethylene (TCE) and tetrachloroethylene (PCE) in an unconfined aquifer, Picatinny Arsenal, Morris County, New Jersey: Proceedings of the 1996 Spring Meeting, American Geophysical Union, Estuarine Research Federation, Geochemical Society, Mineralogical Society of America, Baltimore, Md., May 20-24, 1996, p. S135.

WATER-RELATED FACT SHEETS FOR NEW JERSEY COMPLETED BY THE U.S. GEOLOGICAL SURVEY IN RECENT YEARS

- Ayers, M.A., 1994, National Water-Quality Assessment Program--Scope of the Long Island-New Jersey coastal drainages study-unit investigation: U.S. Geological Survey NAWQA Fact Sheet FS 94-030.
- Buxton, H.T., 1995, Surficial aquifer system of the New Jersey Coastal Plain--Significance to Resource Management: U.S. Geological Survey Fact Sheet FS 086-95.
- Jacobsen, Eric, 1997, Effects of land application of composted biosolids on ground water and native vegetation in the New Jersey Pinelands: U.S. Geological Survey Fact Sheet FS-035-97.
- Nawyn, J.P., 1997, Withdrawals of ground water and surface water in New Jersey, 1993: U.S. Geological Survey Fact Sheet FS-119-97.
- Nawyn, J.P., 1997, Withdrawals of ground water and surface water in New Jersey, 1994: U.S. Geological Survey Fact Sheet FS-120-97.
- O'Brien, A. K., 1997, Presence and distribution of trace elements in streambed sediments, New Jersey: U.S. Geological Survey Fact Sheet FS-049-97.
- Stackelberg, P.E., and Ayers, M.A., 1994, National Water-Quality Assessment Program--Long Island-New Jersey coastal drainages: U.S. Geological Survey NAWQA Fact Sheet FS 94-012.
- Stackelberg, P.E., 1996, Presence and distribution of chlorinated organic compounds in streambed sediments, New Jersey: U.S. Geological Survey Fact Sheet FS-118-96.
- Terracciano, S. A., and O'Brien, A. K., 1997, Occurrence of volatile organic compounds in streams on Long Island, New York, and New Jersey: U.S. Geological Survey Fact Sheet FS-063-97.

WATER-RELATED FACT SHEETS FOR NEW JERSEY COMPLETED BY THE U.S. GEOLOGICAL SURVEY IN RECENT YEARS--Continued

U.S. Geological Survey, 1995, United States Geological Survey Programs in New Jersey: U.S. Geological Survey Fact Sheet FS 030-95.

_____. 1997, The U.S. Geological Survey Drinking Water Initiative: U.S. Geological Survey Fact Sheet FS 047-97.

Vowinkel, E.F., Clawges, R.L., Buxton, D.E., and Stedfast, D.A., 1996, Vulnerability of drinking water supplies in New Jersey to contamination by pesticides: U.S. Geological Survey Fact Sheet FS 165-96.

ACCESS TO USGS WATER DATA

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

<http://water.usgs.gov>.

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

DEFINITION OF TERMS

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

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet, 325,851 gallons, or 1,233 cubic meters.

Annual runoff is 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:

Cubic foot per second per square mile [CFSM, (ft³/s)/mi²] is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming the runoff is distributed uniformly in time and area.

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

Base flow is flow in a channel sustained by ground-water discharge in the absence of direct runoff.

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

Continuous-record station is a site that meets either of the following conditions:

1. Stage or streamflow are recorded at some interval on a continuous basis. The recording interval is usually 15 minutes, but may be less or more frequent.
2. Water-quality, sediment, or other hydrologic measurements are recorded at least daily.

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

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

Cubic foot per second (CFS, ft³/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point in 1 second. It is equivalent to approximately 7.48 gallons per second, 448.8 gallons per minute, or 0.02832 cubic meters per second.

Cubic foot per second-day (CFS-DAY, Cfs-day, [(ft³/s)/d]) is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, 1.9835 acre-feet, 646,317 gallons, or 2,447 cubic meters.

Daily record is a summary of streamflow, sediment, or water-quality values computed from data collected with sufficient frequency to obtain reliable estimates of daily mean values.

Daily record station is a site for which daily records of streamflow, sediment, or water-quality values are computed.

Datum, as used in this report, is an elevation above mean sea level to which all gage height readings are referenced.

Discharge, or flow, is the volume of water (or more broadly, volume of fluid including solid- and dissolved-phase material), that passes a given point in a given period of time.

Annual 7-day minimum is the lowest mean discharge for 7 consecutive days in a year. Note that most low-flow frequency analyses of annual 7-day minimum flows use a climatic year (April 1-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 discharge is the discharge at a particular instant of time.

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

Drainage area of a site on a stream is that area, measured in a horizontal plane, that has a common outlet at the site for its surface runoff. 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 Earth's surface that is occupied by a drainage system with a common outlet for its surface runoff (see "Drainage area").

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

Gage datum is the elevation of the zero point of the reference gage from which gage height is determined as compared to sea level (see "Datum"). This elevation is established by a system of levels from known benchmarks, by approximation from topographic maps, or by geographical positioning system.

Gage height (G.H.) is the water-surface elevation referenced to the 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 site on a stream, canal, lake, or reservoir where systematic observations of stage, discharge, or other hydrologic data are obtained. When used in connection with a discharge record, the term is applied only to those gaging stations where a continuous record of discharge is computed.

High tide is the maximum height reached by each rising tide. The high-high and low-high tides are the higher and lower of the two high tides, respectively, of each tidal day. See NOAA web site:

<http://www.co-ops.nos.noaa.gov/tideglos.html>

Hydrologic benchmark station is one that provides hydrologic data for a basin in which the hydrologic regimen will likely be governed solely by natural conditions. Data collected at a benchmark station may be used to separate effects of natural from human-induced changes in other basins that have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped benchmark basin.

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

Low tide is the minimum height reached by each falling tide. The high-low and low-low tides are the higher and lower of the two low tides, respectively, of each tidal day. See NOAA web site:

<http://www.co-ops.nos.noaa.gov/tideglos.html>

Miscellaneous site, or miscellaneous station, is a site where streamflow, sediment, and/or water-quality data are collected once, or more often on a random or discontinuous basis.

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 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. See NOAA web site: <http://www.ngs.noaa.gov/faq.shtml#WhatVD29VD88>

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

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

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

rate below which the annual minimum 7-day-mean flow dips at intervals whose average length is 10 years (that is, once in 10 years, on average); almost two-thirds of the non-exceedances of the $7Q_{10}$ occur less than 10 years after the previous non-exceedance, half occur less than 7 years after, and about one-eighth occur more than 20 years after the previous non-exceedance. The recurrence interval for annual events is the reciprocal of the annual probability of occurrence. Thus, the 100-year flood has a 1-percent chance of being exceeded by the maximum peak flow in any year, and there is a 10-percent chance in any year that the annual minimum 7-day-mean flow will be less than the $7Q_{10}$.

River mile is the distance of a point on a river measured in miles from the river's mouth along the low-water channel.

River mileage is the linear distance along the meandering path of a stream channel determined in accordance with Bulletin No. 14 (October 1968) of the Water Resources Council.

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

Sea level refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)—a geodetic datum derived from a general adjustment of the first-order level nets of the United States and Canada, formerly called Sea Level Datum of 1929. See: http://www.co-ops.nos.noaa.gov/glossary/gloss_n.html#NGVD

Seven-day 10-year low flow ($7Q_{10}$, $7Q_{10}$) is the minimum flow averaged over 7 consecutive days that is expected to occur on average, once in any 10-year period. The $7Q_{10}$ has a 10-percent chance of occurring in any given year.

Stage: See "Gage height."

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

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

Surface area of a lake or impoundment is that area encompassed by the boundary of the lake or impoundment as shown on USGS topographic maps, or on other available maps or photographs. The computed surface areas reflect the water levels of the lakes or impoundments at the times when the information for the maps or photographs was obtained.

Synoptic Studies are short-term investigations of specific water-quality conditions during selected seasonal or

hydrologic periods to provide improved spatial resolution for critical water-quality conditions. For the period and conditions sampled, they assess the spatial distribution of selected water-quality conditions in relation to causative factors, such as land use and contaminant sources.

Water level is the water-surface elevation or stage of the free surface of a body of water above or below any datum (see "Gage height"), or the surface of water standing in a well, usually indicative of the position of the water table or other potentiometric surface.

Water year in U.S. 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, 1999, is called the "1999 water year."

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

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

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

SELECTED REFERENCES

- Anderson, P.W., and George, J.R., 1966, Water-quality characteristics of New Jersey streams: U.S. Geological Survey Water-Supply Paper 1819-G, 48 p.
- Ayers, M.A., and Pustay, E.A., 1988, New Jersey ground-water quality: in National Water Summary 1986, U.S. Geological Survey Water Supply Paper 2325, p. 369-376.
- Bauersfeld, W.R., and Schopp, R.D., 1991, New Jersey floods and droughts: in National Water Summary, 1988-89--Floods and droughts: U.S. Geological Survey Water-Supply Paper 2375, p. 401-405.
- Fusillo, T.V., Hochreiter, J.J., Jr., and Lord, D.G., 1984, Water-quality data for the Potomac-Raritan-Magothy aquifer system in southwestern New Jersey, 1923-83: U.S. Geological Survey Open-File Report 84-737, 127 p, 1 plate.

SELECTED REFERENCES--Continued

- Gillespie, B.D., and Schopp, R.D., 1982, Low-flow characteristics and flow duration of New Jersey streams: U.S. Geological Survey Open-File Report 81-1110, 164 p.
- Heath, R.C., 1983, Basic ground-water hydrology: U.S. Geological Survey Water-Supply Paper 2220, 84 p.
- Hem, J.D., 1985, Study and interpretation of the chemical characteristics of natural water, 3d ed.: U.S. Geological Survey Water-Supply Paper 2254, 263 p.
- Langbein, W.B., and Iseri, K.T., 1960, General introduction of hydrologic definitions: U.S. Geological Survey Water-Supply Paper 1541-A, 29 p.
- Lohman, S.W., and others, 1972, Definitions of selected ground-water terms-revisions and conceptual refinements: U.S. Geological Survey Water-Supply Paper 1988, 21 p.
- Luzier, J.E., 1980, Digital-simulation and projection of head changes in the Potomac-Raritan-Magothy aquifer system, Coastal Plain, New Jersey: U.S. Geological Survey Water-Resources Investigations 80-11, 72 p.
- Rantz, S.E., and others, 1982, Measurement and computation of streamflow; Volume 1. Measurement of stage and discharge, Volume 2. Computation of Discharge: U.S. Geological Survey Water-Supply Paper 2175, 631 p.
- Rooney, J.G., 1971, Ground-water resources, Cumberland County, New Jersey: New Jersey Department of Environmental Protection Special Report 34, 83 p.
- Schaefer, F.L., 1983, Distribution of chloride concentrations in the principal aquifers of the New Jersey Coastal Plain, 1977-81: U.S. Geological Survey Water-Resources Investigations Report 83-4061, 56 p.
- _____, 1987, Selected literature on the water resources of New Jersey by the U.S. Geological Survey, through 1986: U.S. Geological Survey Open-File Report 87-767, 45 p.
- Schopp, R.D., and Bauersfeld, W.R., 1986, New Jersey surface-water resources: in National Water Summary 1985 - Hydrologic events and surface-water resources, U.S. Geological Survey Water-Supply Paper 2300, p. 335-340.
- Seaber, P.R., 1963, Chloride concentrations of water from wells in the Atlantic Coastal Plain of New Jersey, 1923-61: New Jersey Division of Water Policy and Supply, Special Report 22, 250 p.
- Seaber, P.R., Kapinos, F.P., and Knapp, G.L., 1987, Hydrologic unit maps: U.S. Geological Survey Water-Supply Paper 2294, 63 p.
- U.S. Geological Survey, 1976, Surface-water supply of the United States, 1966-70, Part 1. North Atlantic Slope basins, Volume 2. Basins from New York to Delaware: U.S. Geological Survey Water-Supply Paper 2102, 985 p., (final volume).
- _____, 1977, Ground-water levels in the United States, 1973-74, Northeastern States: U.S. Geological Survey Water-Supply Paper 2164, 126 p., (final volume).
- Vickers, A.A., and McCall, J.E., 1968, Surface water supply of New Jersey, streamflow records 1961-65: New Jersey Division of Water Policy and Supply, Special Report 31, 351 p., (most recent volume).
- Vowinkel, E.F., 1984, Ground-water withdrawals from the Coastal Plain of New Jersey, 1956-80: U.S. Geological Survey Open-File Report 84-226, 32 p.
- Walker, R.L., 1983, Evaluation of water levels in major aquifers of the New Jersey Coastal Plain, 1978: U.S. Geological Survey Water-Resources Investigations 82-4077, 56 p.
- U.S. Environmental Protection Agency, 1996, Drinking water regulations and health advisories: Office of Water, Washington, D.C., EPA 822-R-96-001, 16 p.

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

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

The reports listed below are for sale by the U.S. Geological Survey, Branch of Information Services, Box 25286, Federal Center, Denver, Colorado 80225 (authorized agent of the Superintendent of Documents, Government Printing Office). Prepayment is required. Remittance should be sent by check or money order payable to the U.S. Geological Survey. Prices are not included because they are subject to change. Current prices can be obtained by writing to the above address. 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."

Book 1. Collection of Water Data by Direct Measurement

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS--Continued

Section D. Water Quality

- 1-D1. *Water temperature—influential factors, field measurement, and data presentation*, by H. H. Stevens, Jr., J.F. Ficke, and G. F. Smoot: USGS–TWRI Book 1, Chapter D1. 1975. 65 pages.
- 1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W.W. Wood: USGS–TWRI Book 1, Chapter D2. 1976. 24 pages.

Book 2. Collection of Environmental Data

Section D. Surface Geophysical Methods

- 2-D1. *Application of surface geophysics to ground-water investigations*, by A.A. R. Zohdy, G.P. Eaton, and D.R. Mabey: USGS–TWRI Book 2, Chapter D1. 1974. 116 pages.
- 2-D2. *Application of seismic-refraction techniques to hydrologic studies*, by F.P. Haeni: USGS–TWRI Book 2, Chapter D2. 1988. 86 pages.

Section E. Subsurface Geophysical Methods

- 2-E1. *Application of borehole geophysics to water-resources investigations*, by W.S. Keys and L.M. MacCary: USGS–TWRI Book 2, Chapter E1. 1971. 126 pages.
- 2-E2. *Borehole geophysics applied to ground-water investigations*, by W.S. Keys: USGS–TWRI Book 2, Chapter E2. 1990. 150 pages.

Section F. Drilling and Sampling Methods

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

Book 3. Applications of Hydraulics

Section A. Surface-Water Techniques

- 3-A1. *General field and office procedures for indirect discharge measurements*, by M.A. Benson and Tate Dalrymple: USGS–TWRI Book 3, Chapter A1. 1967. 30 pages.
- 3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M.A. Benson: USGS–TWRI Book 3, Chapter A2. 1967. 12 pages.

- 3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G.L. Bodhaine: USGS–TWRI Book 3, Chapter A3. 1968. 60 pages.
- 3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H.F. Matthai: USGS–TWRI Book 3, Chapter A4. 1967. 44 pages.
- 3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS–TWRI Book 3, Chapter A5. 1967. 29 pages.
- 3-A6. *General procedure for gaging streams*, by R.W. Carter and Jacob Davidian: USGS–TWRI Book 3, Chapter A6. 1968. 13 pages.
- 3-A7. *Stage measurement at gaging stations*, by T.J. Buchanan and W.P. Somers: USGS–TWRI Book 3, Chapter A7. 1968. 28 pages.
- 3-A8. *Discharge measurements at gaging stations*, by T.J. Buchanan and W.P. Somers: USGS–TWRI Book 3, Chapter A8. 1969. 65 pages.
- 3-A9. *Measurement of time of travel in streams by dye tracing*, by F.A. Kilpatrick and J.F. Wilson, Jr.: USGS–TWRI Book 3, Chapter A9. 1989. 27 pages.
- 3-A10. *Discharge ratings at gaging stations*, by E.J. Kennedy: USGS–TWRI Book 3, Chapter A10. 1984. 59 pages.
- 3-A11. *Measurement of discharge by the moving-boat method*, by G.F. Smoot and C.E. Novak: USGS–TWRI Book 3, Chapter A11. 1969. 22 pages.
- 3-A12. *Fluorometric procedures for dye tracing, Revised*, by J.F. Wilson, Jr., E.D. Cobb, and F.A. Kilpatrick: USGS–TWRI Book 3, Chapter A12. 1986. 41 pages.
- 3-A13. *Computation of continuous records of streamflow*, by E.J. Kennedy: USGS–TWRI Book 3, Chapter A13. 1983. 53 pages.
- 3-A14. *Use of flumes in measuring discharge*, by F.A. Kilpatrick and V.R. Schneider: USGS–TWRI Book 3, Chapter A14. 1983. 46 pages.
- 3-A15. *Computation of water-surface profiles in open channels*, by Jacob Davidian: USGS–TWRI Book 3, Chapter A15. 1984. 48 pages.
- 3-A16. *Measurement of discharge using tracers*, by F.A. Kilpatrick and E.D. Cobb: USGS–TWRI Book 3, Chapter A16. 1985. 52 pages.

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS--Continued

- 3-A17. *Acoustic velocity meter systems*, by Antonius Laenen: USGS-TWRI Book 3, Chapter A17. 1985. 38 pages.
- 3-A18. *Determination of stream reaeration coefficients by use of tracers*, by F.A. Kilpatrick, R.E. Rathbun, Nobuhiro Yotsukura, G.W. Parker, and L.L. DeLong: USGS-TWRI Book 3, Chapter A18. 1989. 52 pages.
- 3-A19. *Levels at streamflow gaging stations*, by E.J. Kennedy: USGS-TWRI Book 3, Chapter A19. 1990. 31 pages.
- 3-A20. *Simulation of soluble waste transport and buildup in surface waters using tracers*, by F.A. Kilpatrick: USGS-TWRI Book 3, Chapter A20. 1993. 38 pages.
- 3-A21. *Stream-gaging cableways*, by C. Russell Wagner: USGS-TWRI Book 3, Chapter A21. 1995. 56 pages.

Section B. Ground-Water Techniques

- 3-B1. *Aquifer-test design, observation, and data analysis*, by R.W. Stallman: USGS-TWRI Book 3, Chapter B1. 1971. 26 pages.
- 3-B2. *Introduction to ground-water hydraulics, a programed text for self-instruction*, by G.D. Bennett: USGS-TWRI Book 3, Chapter B2. 1976. 172 pages.
- 3-B3. *Type curves for selected problems of flow to wells in confined aquifers*, by J.E. Reed: USGS-TWRI Book 3, Chapter B3. 1980. 106 pages.
- 3-B4. *Regression modeling of ground-water flow*, by R.L. Cooley and R.L. Naff: USGS-TWRI Book 3, Chapter B4. 1990. 232 pages.
- 3-B4. *Supplement 1. Regression modeling of ground-water flow --Modifications to the computer code for nonlinear regression solution of steady-state ground-water flow problems*, by R.L. Cooley: USGS-TWRI Book 3, Chapter B4. 1993. 8 pages.
- 3-B5. *Definition of boundary and initial conditions in the analysis of saturated ground-water flow systems—An introduction*, by O.L. Franke, T.E. Reilly, and G.D. Bennett: USGS-TWRI Book 3, Chapter B5. 1987. 15 pages.
- 3-B6. *The principle of superposition and its application in ground-water hydraulics*, by T.E. Reilly, O.L. Franke, and G.D. Bennett: USGS-TWRI Book 3, Chapter B6. 1987. 28 pages.

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

Section C. Sedimentation and Erosion Techniques

- 3-C1. *Fluvial sediment concepts*, by H.P. Guy: USGS-TWRI Book 3, Chapter C1. 1970. 55 pages.
- 3-C2. *Field methods for measurement of fluvial sediment*, by Thomas K. Edwards and G. Douglas Glysson: USGS-TWRI Book 3, Chapter C2. 1988. 80 pages.
- 3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS-TWRI Book 3, Chapter C3. 1972. 66 pages.

Book 4. Hydrologic Analysis and Interpretation

Section A. Statistical Analysis

- 4-A1. *Some statistical tools in hydrology*, by H.C. Riggs: USGS-TWRI Book 4, Chapter A1. 1968. 39 pages.
- 4-A2. *Frequency curves*, by H.C. Riggs: USGS-TWRI Book 4, Chapter A2. 1968. 15 pages.

Section B. Surface Water

- 4-B1. *Low-flow investigations*, by H.C. Riggs: USGS-TWRI Book 4, Chapter B1. 1972. 18 pages.
- 4-B2. *Storage analyses for water supply*, by H.C. Riggs and C.H. Hardison: USGS-TWRI Book 4, Chapter B2. 1973. 20 pages.
- 4-B3. *Regional analyses of streamflow characteristics*, by H.C. Riggs: USGS-TWRI Book 4, Chapter B3. 1973. 15 pages.

Section D. Interrelated Phases of the Hydrologic Cycle

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

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS--Continued

Book 5. Laboratory Analysis**Section A. Water Analysis**

- 5-A1. *Methods for determination of inorganic substances in water and fluvial sediments*, by M.J. Fishman and L.C. Friedman, editors: USGS-TWRI Book 5, Chapter A1. 1989. 545 pages.
- 5-A2. *Determination of minor elements in water by emission spectroscopy*, by P.R. Barnett and E.C. Mallory, Jr.: USGS-TWRI Book 5, Chapter A2. 1971. 31 pages.
- 5-A3. *Methods for the determination of organic substances in water and fluvial sediments*, edited by R.L. Wershaw, M.J. Fishman, R.R. Grabbe, and L.E. Lowe: USGS-TWRI Book 5, Chapter A3. 1987. 80 pages.
- 5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples*, by L.J. Britton and P.E. Greenson, editors: USGS-TWRI Book 5, Chapter A4. 1989. 363 pages.
- 5-A5. *Methods for determination of radioactive substances in water and fluvial sediments*, by L.L. Thatcher, V.J. Janzer, and K.W. Edwards: USGS-TWRI Book 5, Chapter A5. 1977. 95 pages.
- 5-A6. *Quality assurance practices for the chemical and biological analyses of water and fluvial sediments*, by L.C. Friedman and D.E. Erdmann: USGS-TWRI Book 5, Chapter A6. 1982. 181 pages.

Section C. Sediment Analysis

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

Book 6. Modeling Techniques**Section A. Ground Water**

- 6-A1. *A modular three-dimensional finite-difference ground-water flow model*, by M.G. McDonald and A.W. Harbaugh: USGS-TWRI Book 6, Chapter A1. 1988. 586 pages.
- 6-A2. *Documentation of a computer program to simulate aquifer-system compaction using the modular finite-difference ground-water flow model*, by S.A. Leake and D.E. Prudic: USGS-TWRI Book 6, Chapter A2. 1991. 68 pages.

- 6-A3. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems*, Part 1: Model Description and User's Manual, by L.J. Torak: USGS-TWRI Book 6, Chapter A3. 1993. 136 pages.
- 6-A4. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems*, Part 2: Derivation of finite-element equations and comparisons with analytical solutions, by R.L. Cooley: USGS-TWRI Book 6, Chapter A4. 1992. 108 pages.
- 6-A5. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems*, Part 3: Design philosophy and programming details, by L.J. Torak: USGS-TWRI Book 6, Chapter A5. 1993. 243 pages.
- 6-A6. *A coupled surface-water and ground-water flow model (MODBRANCH) for simulation of stream-aquifer interaction*, by Eric D. Swain and Eliezer J. Wexler. 1996. 125 pages.

Book 7. Automated Data Processing and Computations**Section C. Computer Programs**

- 7-C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments*, by P.C. Trescott, G.F. Pinder, and S.P. Larson: USGS-TWRI Book 7, Chapter C1. 1976. 116 pages.
- 7-C2. *Computer model of two-dimensional solute transport and dispersion in ground water*, by L.F. Konikow and J.D. Bredehoeft: USGS-TWRI Book 7, Chapter C2. 1978. 90 pages.
- 7-C3. *A model for simulation of flow in singular and interconnected channels*, by R.W. Schaffranek, R.A. Baltzer, and D.E. Goldberg: USGS-TWRI Book 7, Chapter C3. 1981. 110 pages.

Book 8. Instrumentation**Section A. Instruments for Measurement of Water Level**

- 8-A1. *Methods of measuring water levels in deep wells*, by M.S. Garber and F.C. Koopman: USGS-TWRI Book 8, Chapter A1. 1968. 23 pages.
- 8-A2. *Installation and service manual for U.S. Geological Survey manometers*, by J.D. Craig: USGS-TWRI Book 8, Chapter A2. 1983. 57 pages.

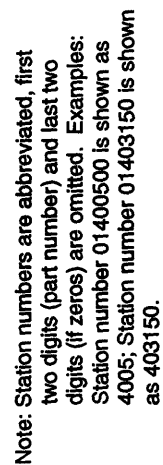
PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS--Continued

Section B. Instruments for Measurement of Discharge

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

Book 9. Handbooks for Water-Resources Investigations**Section A. National Field Manual for the Collection of Water-Quality Data**

- 9-A1. *National Field Manual for the Collection of Water-Quality Data: Preparations for Water Sampling*, by F.D. Wilde, D.B. Radtke, Jacob Gibbs, and R.T. Iwatsubo: USGS-TWRI book 9, chap. A1. 1998. 47 p.
- 9-A2. *National Field Manual for the Collection of Water-Quality Data: Selection of Equipment for Water Sampling*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibbs, and R.T. Iwatsubo: USGS-TWRI book 9, chap. A2. 1998. 94 p.
- 9-A3. *National Field Manual for the Collection of Water-Quality Data: Cleaning of Equipment for Water Sampling*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibbs, and R.T. Iwatsubo: USGS-TWRI book 9, chap. A3. 1998. 75 p.
- 9-A4. *National Field Manual for the Collection of Water-Quality Data: Collection of Water Samples*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibbs, and R.T. Iwatsubo: USGS-TWRI book 9, chap. A4. 1999. 156 p.
- 9-A5. *National Field Manual for the Collection of Water-Quality Data: Processing of Water Samples*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibbs, and R.T. Iwatsubo: USGS-TWRI book 9, chap. A5. 1999, 149 p.
- 9-A6. *National Field Manual for the Collection of Water-Quality Data: Field Measurements*, edited by F.D. Wilde and D.B. Radtke: USGS-TWRI Book 9, Chapter A6. 1998. Variously paginated.
- 9-A7. *National Field Manual for the Collection of Water-Quality Data: Biological Indicators*, by D.N. Myers and F.D. Wilde: USGS-TWRI Book 9, Chapter A7. 1997. 49 pages.
- 9-A8. *National Field Manual for the Collection of Water-Quality Data: Bottom-material samples*, by D.B. Radtke: USGS-TWRI Book 9, Chapter A8. 1998. 48 pages.
- 9-A9. *National Field Manual for the Collection of Water-Quality Data: Safety in Field Activities*, by S.L. Lane and R.G. Fay: USGS-TWRI Book 9, Chapter A9. 1998. 60 pages.



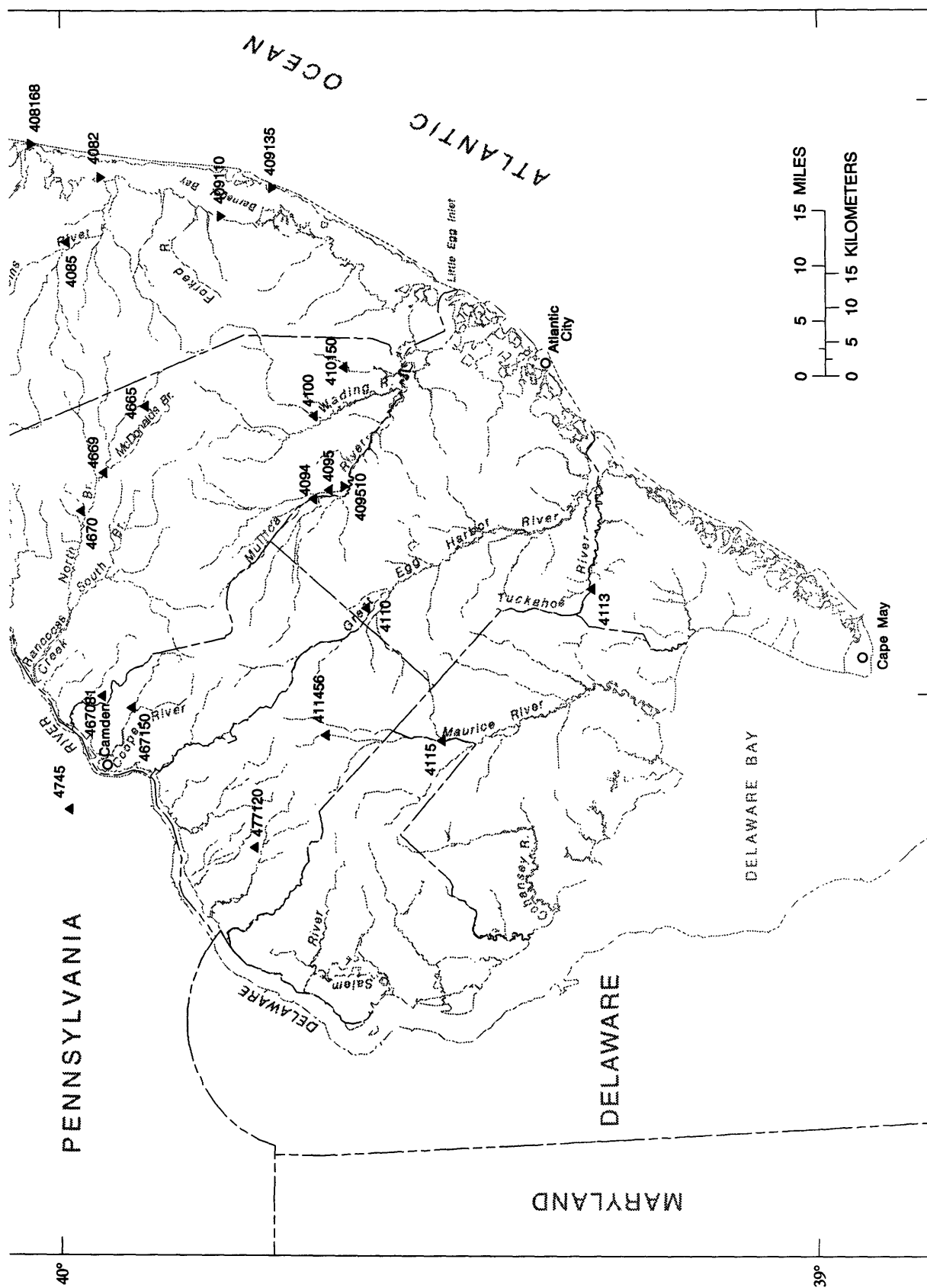
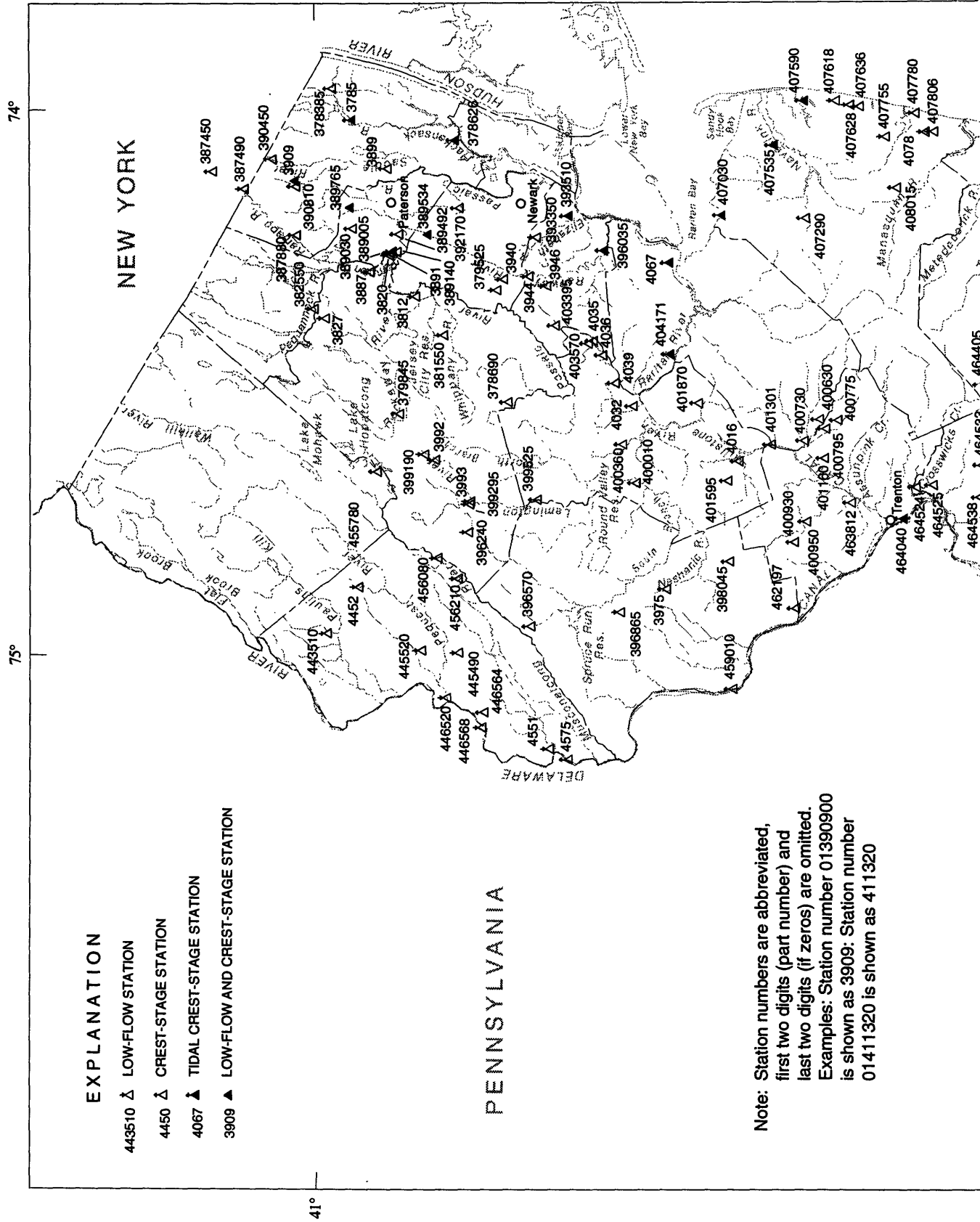


Figure 6. Map showing location of surface-water gaging stations.



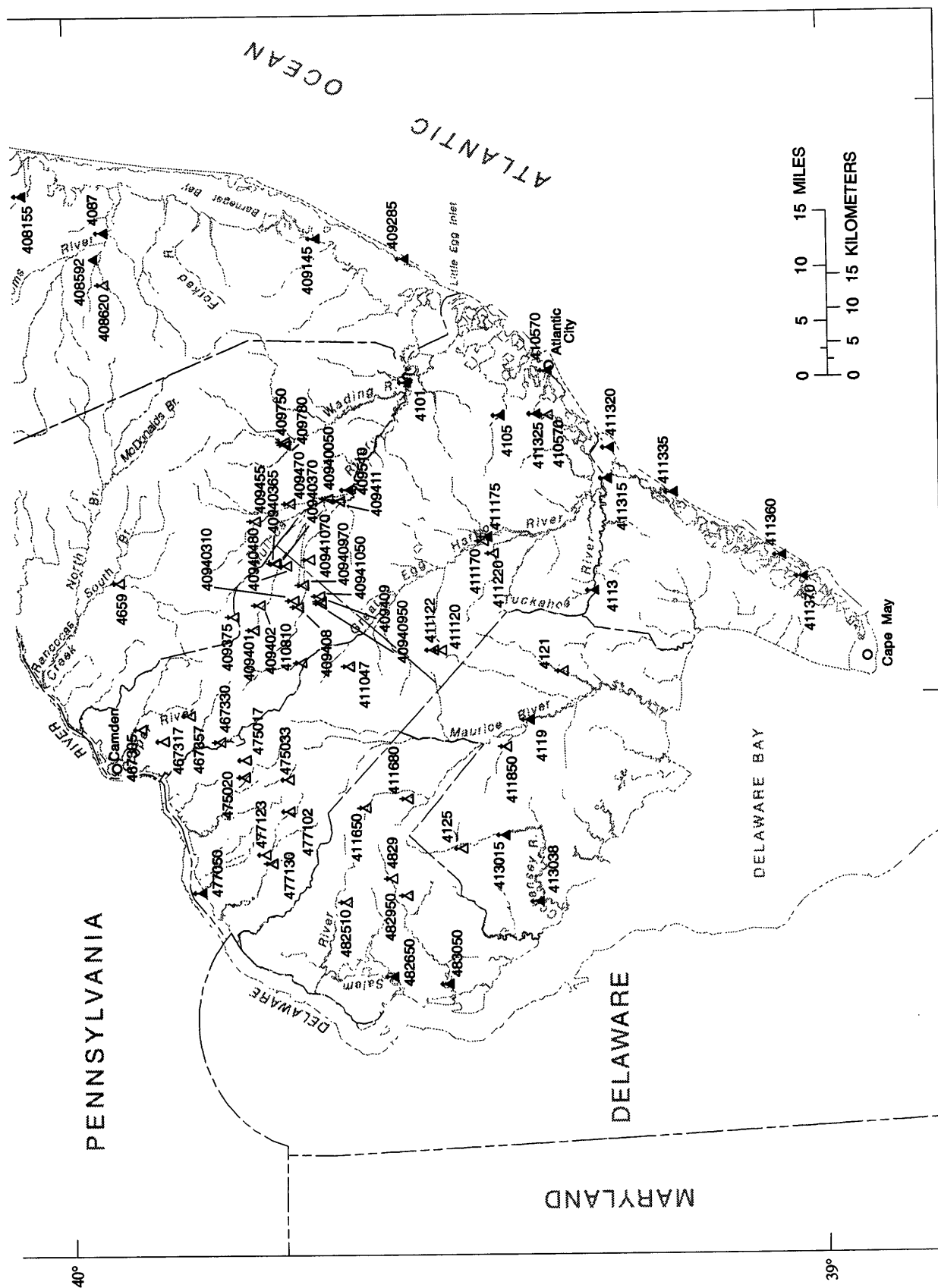


Figure 7. Map showing location of low-flow and crest-stage partial-record stations.

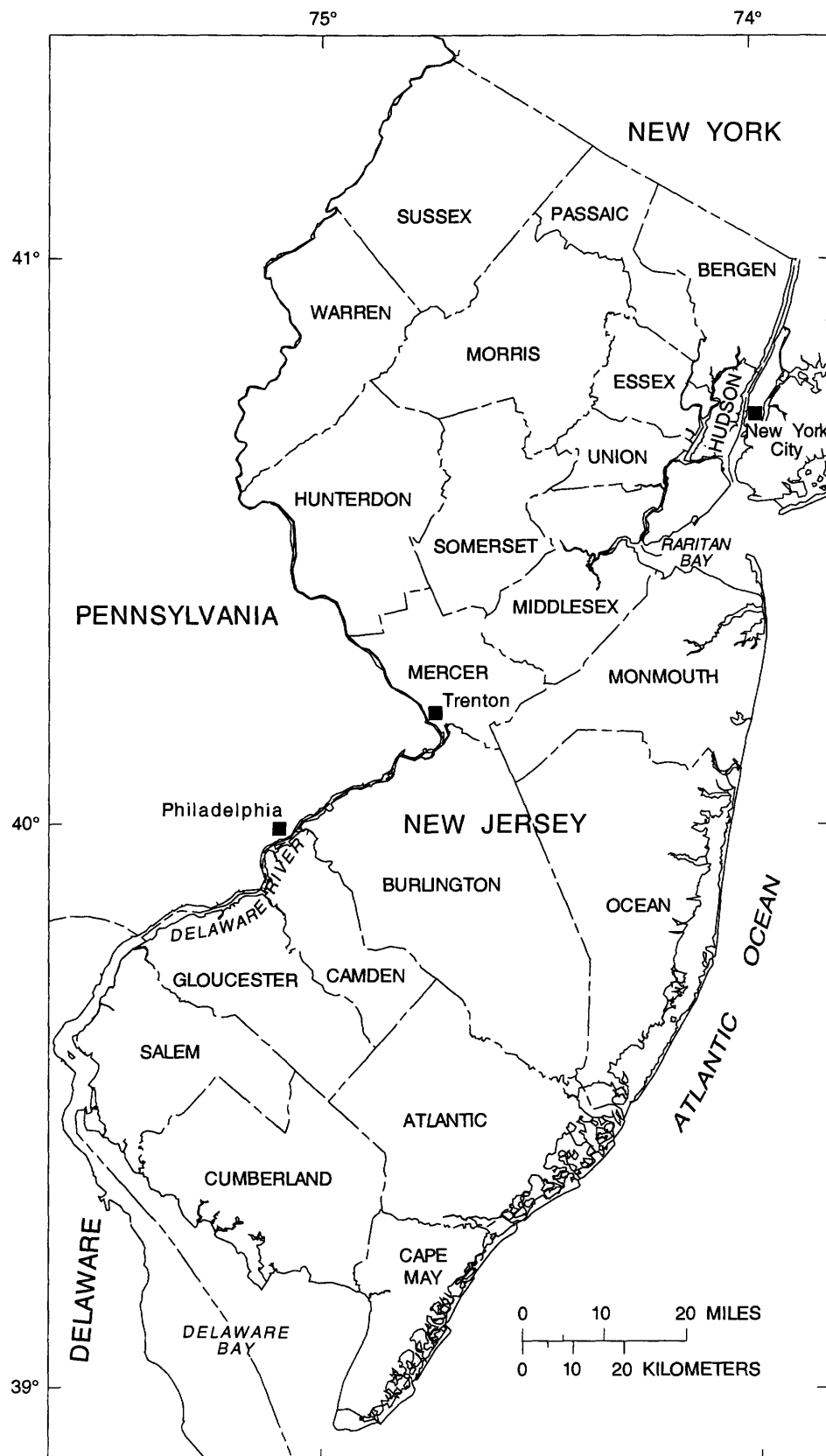


Figure 8. Map showing counties in New Jersey.

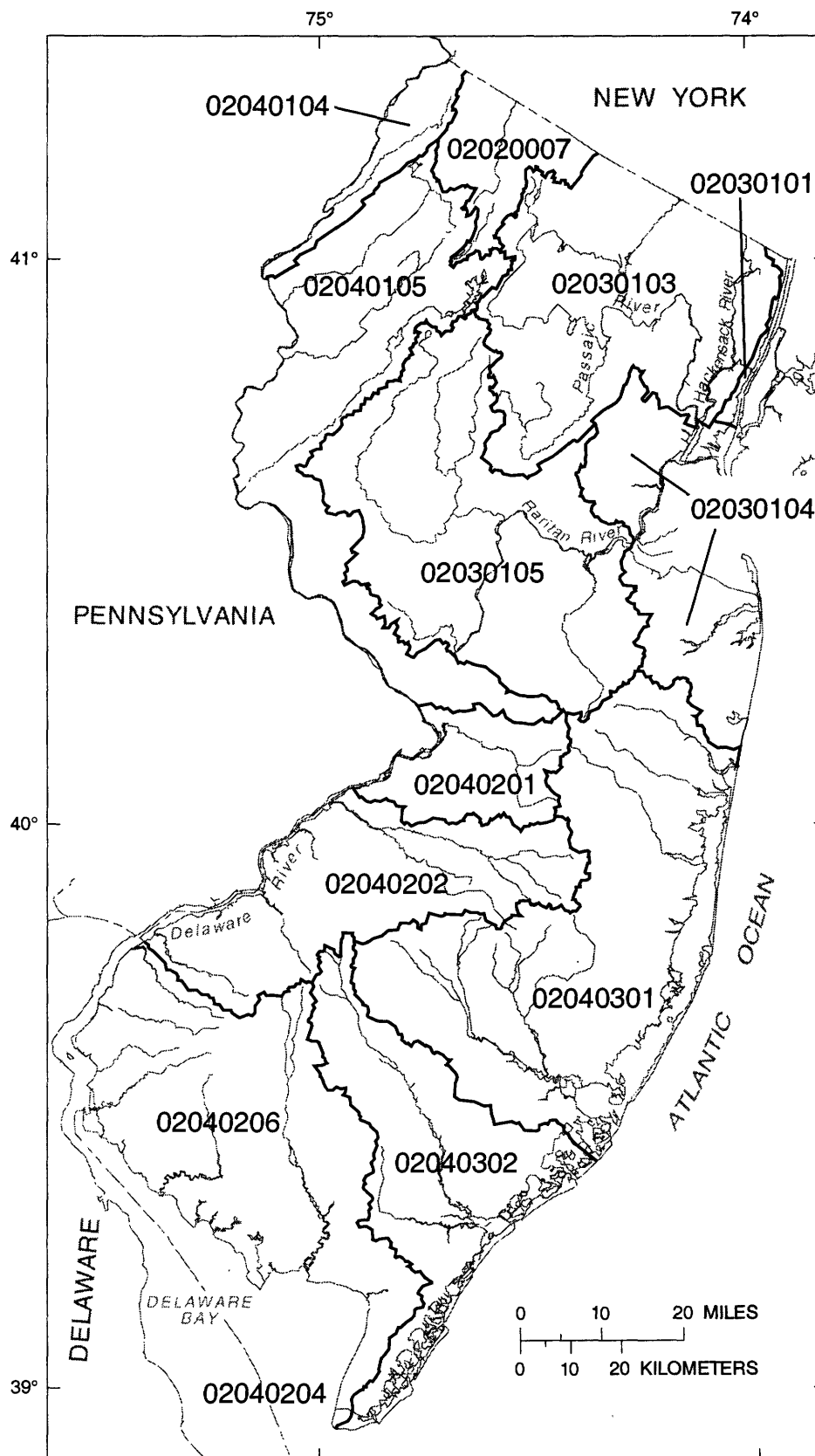


Figure 9. Map showing hydrologic cataloging units and codes in New Jersey. (Modified from Seaber and others, 1987)

HACKENSACK RIVER BASIN

01376800 HACKENSACK RIVER AT WEST NYACK, NY

LOCATION.--Lat 41°05'44", long 73°57'52", Rockland County NY, Hydrologic Unit 02030103, on right bank 20 ft downstream from Penn Central Transportation Co. railroad bridge at West Nyack, 1,000 ft upstream from State Highway 59, and 1.0 mi downstream from De Forest Lake.

DRAINAGE AREA.--30.7 mi².

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

REVISIONS.--WDR NY-90-1: Drainage area.

GAGE.--Water-stage recorder, stop-log control, and crest-stage gage. Datum of gage is 53.50 ft above sea level (levels by Hackensack Water Co.).

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Flow regulated by De Forest Lake (see Reservoirs in Hackensack River Basin). Diversion from gaging station pool for municipal supply for village of Nyack (see Diversions in Hackensack River Basin). Discharge given for this station represents the flow of Hackensack River downstream from this diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,740 ft³/s, Sept. 16, 1999, gage height, 11.21 ft, from floodmarks in gage house, from rating curve extended above 840 ft³/s; minimum discharge not determined.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,740 ft³/s, Sept. 16, gage height, 11.21 ft, from floodmarks in gage house, from rating curve extended above 840 ft³/s; minimum discharge, 2.5 ft³/s, Aug. 16, gage height, 2.34 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	11	9.8	8.8	9.8	22	13	13	14	14	7.0	9.6
2	33	12	10	9.0	37	13	13	13	13	12	7.1	9.2
3	31	12	10	70	16	17	13	14	13	11	7.5	9.4
4	32	13	10	12	11	26	13	12	13	12	8.0	9.4
5	31	13	10	9.4	12	12	13	12	13	11	16	9.7
6	31	15	10	8.5	12	15	14	14	13	11	27	13
7	30	15	9.8	9.8	13	13	14	13	13	12	31	10
8	47	22	10	9.9	14	12	13	14	13	13	34	16
9	16	25	10	19	14	12	14	12	13	12	33	12
10	17	18	10	9.5	15	13	13	14	13	11	29	14
11	16	22	9.9	9.4	13	14	13	14	13	10	27	11
12	18	21	9.6	10	12	13	14	13	13	12	32	9.9
13	23	21	9.5	11	13	13	12	13	13	12	35	10
14	23	20	9.7	11	12	13	14	13	12	12	50	9.8
15	17	20	10	19	13	14	14	13	13	12	30	11
16	15	20	10	9.4	13	14	14	13	13	10	9.9	350
17	15	22	10	10	13	13	13	13	15	11	10	e1200
18	16	22	9.9	47	24	13	14	14	12	10	10	e500
19	17	18	9.9	23	14	13	14	25	13	9.3	11	e200
20	15	12	10	10	12	12	14	21	12	7.8	10	e150
21	14	12	10	11	13	16	13	14	13	7.9	13	e110
22	15	12	10	10	13	54	13	13	14	8.5	11	87
23	13	12	9.9	10	13	14	14	16	13	8.2	10	58
24	12	12	9.8	28	13	13	13	21	12	7.9	9.9	50
25	13	12	10	11	14	13	13	14	12	8.2	9.9	45
26	14	17	9.9	11	13	13	13	13	11	8.1	62	37
27	15	10	9.6	10	13	13	13	13	12	8.1	16	30
28	14	9.7	9.7	8.9	21	17	13	13	12	7.9	11	26
29	12	10	11	9.3	---	13	13	14	14	7.7	10	22
30	12	10	11	9.1	---	12	13	14	14	7.6	10	118
31	11	---	8.5	9.4	---	13	---	13	---	7.3	9.8	---
TOTAL	624	470.7	307.5	453.4	405.8	478	400	441	387	312.5	597.1	3147.0
MEAN	20.1	15.7	9.92	14.6	14.5	15.4	13.3	14.2	12.9	10.1	19.3	105
MAX	47	25	11	70	37	54	14	25	15	14	62	1200
MIN	11	9.7	8.5	8.5	9.8	12	12	12	11	7.3	7.0	9.2

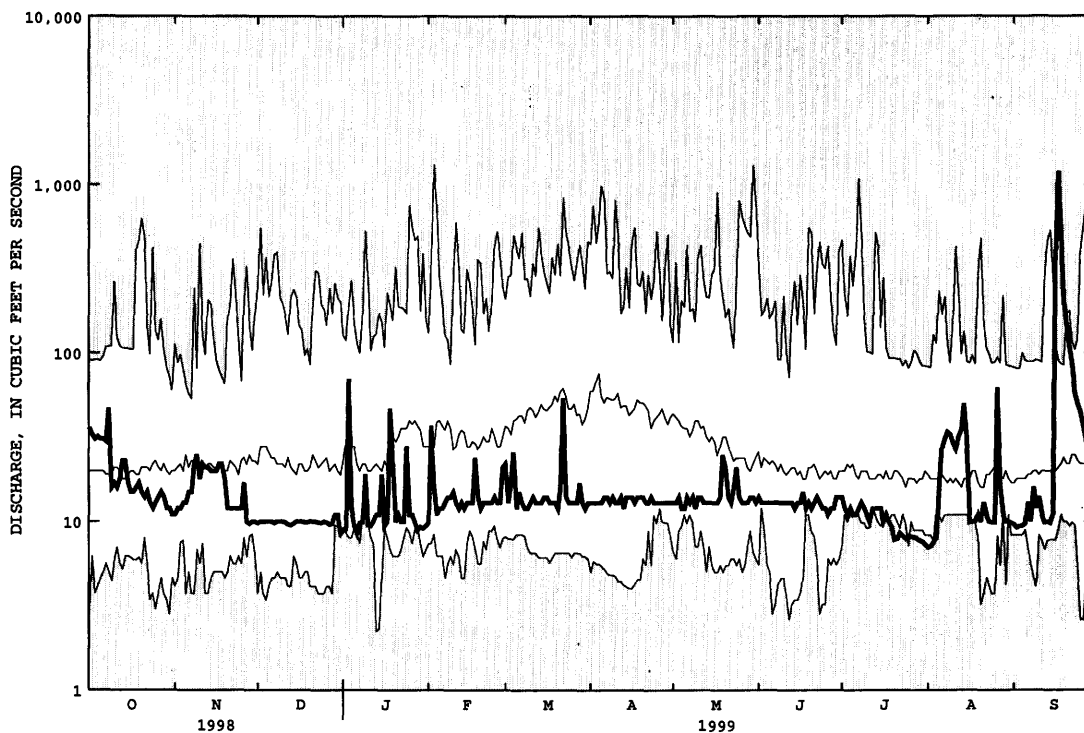
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1999, BY WATER YEAR (WY)

	MEAN	30.9	30.7	37.8	42.7	48.6	68.6	72.0	51.7	34.3	33.0	27.7	35.1
MAX	84.2	88.6	135	125	152	151	204	162	162	162	127	83.3	105
(WY)	1990	1976	1997	1978	1973	1961	1983	1989	1972	1984	1966	1999	
MIN	7.27	7.59	5.63	8.95	10.3	6.95	9.61	7.04	12.7	10.1	12.3	9.34	
(WY)	1967	1967	1967	1967	1967	1981	1966	1965	1981	1999	1981	1962	

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1959 - 1999	
ANNUAL TOTAL	13030.2		8024.0			
ANNUAL MEAN	35.7		22.0		42.9	
HIGHEST ANNUAL MEAN					74.1	
LOWEST ANNUAL MEAN					13.4	
HIGHEST DAILY MEAN	435	May 11	1200	Sep 17	1320	Feb 3 1973
LOWEST DAILY MEAN	8.5	Dec 31	7.0	Aug 1	2.2	Jan 13 1996
ANNUAL SEVEN-DAY MINIMUM	9.8	Dec 8	7.4	Jul 28	3.1	Sep 25 1966
10 PERCENT EXCEEDS	61		27		85	
50 PERCENT EXCEEDS	21		13		23	
90 PERCENT EXCEEDS	11		9.7		12	

e Estimated

01376800 HACKENSACK RIVER AT WEST NYACK, NY--Continued



CURRENT WATER YEAR DAILY DISCHARGE (BOLD) WITH DAILY MEDIAN FOR PERIOD OF RECORD.
SHADED AREAS SHOW DAILY MAXIMUM AND MINIMUM FOR PERIOD OF RECORD THROUGH PREVIOUS WATER YEAR.

HACKENSACK RIVER BASIN

01377000 HACKENSACK RIVER AT RIVERVALE, NJ

LOCATION.--Lat 40°59'57", long 73°59'23" (revised), Bergen County, Hydrologic Unit 02030103, on upstream right bank at bridge on Westwood Avenue in Rivervale, 1.5 mi upstream from Pascack Brook, 4.1 mi downstream of Lake Tappan, and 4.6 mi upstream from Oradell Dam.

DRAINAGE AREA.--58.0 mi².

PERIOD OF RECORD.--October 1941 to current year.

REVISED RECORDS.--WDR-NJ-80-1: 1968-79(M).

GAGE.--Water-stage recorder, crest-stage gages, and concrete control. Datum of gage is 22.51 ft above sea level.

REMARKS.--Records good. Flow regulated by De Forest Lake (since 1956) and Lake Tappan (since 1965), see Hackensack River basin, reservoirs in. Diversions from De Forest Lake and West Nyack, NY, for municipal water supply (see Hackensack River basin, diversions). Several measurements of water temperature were made during the year. United Water New Jersey (formerly Hackensack Water Co.) gage-height telemeter at station.

COOPERATION.--Gage-height record collected in cooperation with United Water New Jersey (formerly Hackensack Water Co.).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	63	29	21	9.7	14	68	39	28	29	70	79	12
2	51	32	21	9.1	60	34	38	28	29	68	78	12
3	50	63	21	109	30	32	36	28	28	65	78	12
4	50	63	21	23	19	64	37	33	27	64	78	12
5	50	63	21	12	17	59	36	29	27	63	78	12
6	50	63	21	11	17	58	31	27	27	63	78	16
7	50	62	21	11	17	80	34	30	27	63	77	13
8	68	61	21	11	17	61	32	37	27	62	76	14
9	46	61	22	29	16	49	39	39	34	61	71	13
10	34	55	21	20	16	46	48	34	53	60	55	18
11	32	43	21	12	16	40	39	31	67	59	56	14
12	31	39	21	11	16	39	53	29	68	59	54	13
13	29	34	17	11	18	36	46	28	68	59	51	12
14	38	23	15	11	16	33	38	34	69	58	58	12
15	27	23	15	43	14	61	34	40	71	58	79	14
16	25	23	14	23	14	63	35	40	69	58	41	559
17	25	23	12	14	14	63	41	40	70	67	39	1450
18	25	24	12	81	39	60	37	41	70	81	39	1270
19	25	48	11	48	21	55	34	60	69	83	39	277
20	26	65	11	18	17	46	37	74	66	96	32	139
21	26	58	11	16	16	46	38	51	71	94	22	130
22	26	58	11	22	15	280	36	42	68	91	18	142
23	26	50	11	17	14	177	43	46	68	85	17	111
24	26	33	12	46	14	98	53	88	68	83	17	88
25	26	32	11	26	18	73	42	111	67	82	15	77
26	26	43	11	17	49	57	37	72	66	82	91	67
27	26	37	11	15	55	49	35	54	66	82	19	57
28	27	28	12	15	74	70	31	42	65	82	14	51
29	28	21	13	14	---	62	31	37	71	82	13	45
30	28	21	16	14	---	53	29	33	67	82	13	109
31	29	---	10	14	---	43	---	31	---	80	13	---
TOTAL	1089	1278	489	732.8	663	2055	1139	1337	1672	2242	1488	4771
MEAN	35.1	42.6	15.8	23.6	23.7	66.3	38.0	43.1	55.7	72.3	48.0	159
MAX	68	65	22	109	74	280	53	111	71	96	91	1450
MIN	25	21	10	9.1	14	32	29	27	27	58	13	12

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 1999, BY WATER YEAR (WY)

	MEAN	58.7	69.2	79.3	88.0	91.1	135	139	102	74.3	78.1	70.0	65.3
MAX	312	240	248	251	221	379	438	310	319	339	197	177	
(WY)	1956	1956	1997	1949	1951	1953	1983	1989	1972	1945	1955	1975	
MIN	12.1	16.6	12.6	22.6	23.0	11.2	14.5	20.4	13.4	11.6	11.4	7.87	
(WY)	1942	1996	1981	1982	1967	1981	1981	1981	1957	1954	1944	1953	

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

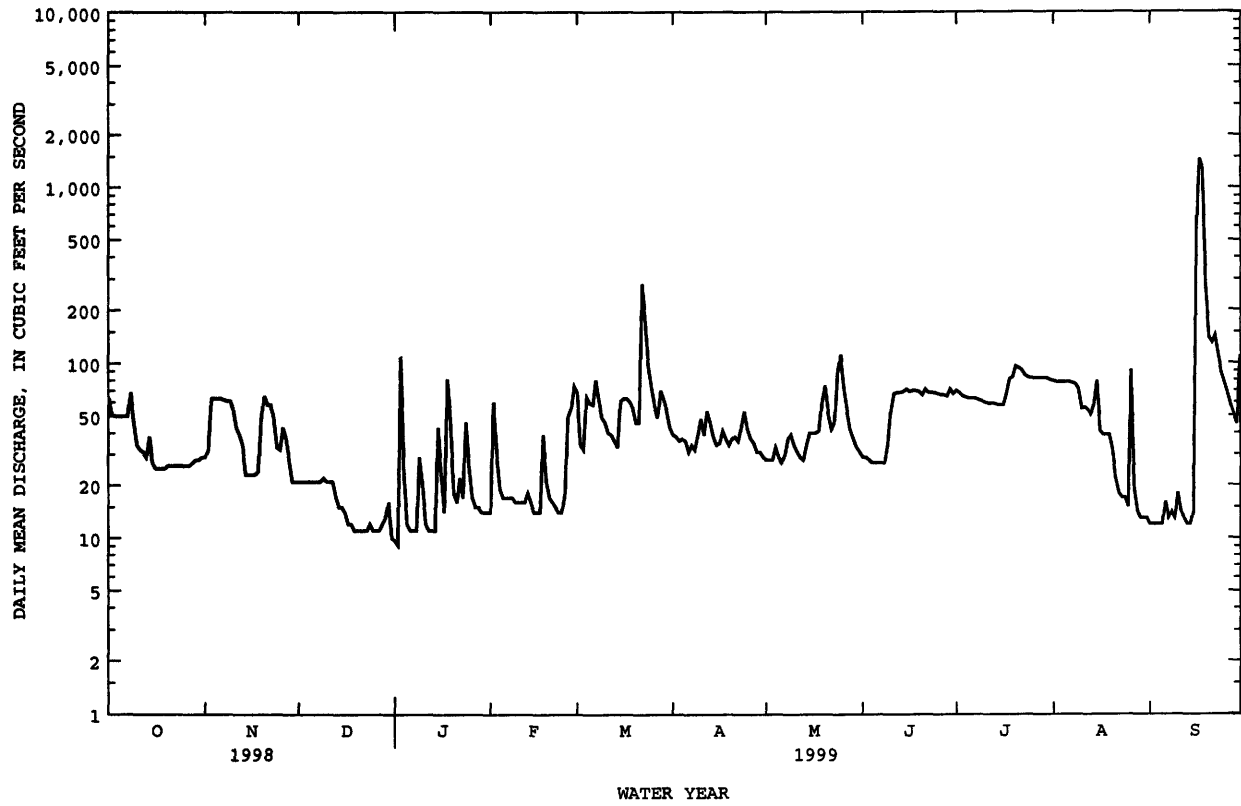
FOR 1999 WATER YEAR

WATER YEARS 1942 - 1999

ANNUAL TOTAL	29163	18955.8		
ANNUAL MEAN	79.9	51.9		
HIGHEST ANNUAL MEAN			156	1952
LOWEST ANNUAL MEAN			30.9	1981
HIGHEST DAILY MEAN	934	May 11	1450	Sep 17
LOWEST DAILY MEAN	10	Dec 31	9.1	Jan 2
ANNUAL SEVEN-DAY MINIMUM	11	Dec 19	11	Dec 19
INSTANTANEOUS PEAK FLOW			2070	Sep 17
INSTANTANEOUS PEAK STAGE			6.92a	Sep 17
INSTANTANEOUS LOW FLOW			8.1	Jan 2
10 PERCENT EXCEEDS	136		78	168
50 PERCENT EXCEEDS	61		37	59
90 PERCENT EXCEEDS	23		13	21

a Gage height recorded in gage well, outside gage reading was 7.32 ft.

01377000 HACKENSACK RIVER AT RIVERVALE, NJ--Continued



01377500 PASCACK BROOK AT WESTWOOD, NJ

LOCATION.--Lat 40°59'34", long 74°01'17" (revised), Bergen County, Hydrologic Unit 02030103, on right bank 75 ft upstream from Harrington Avenue in Westwood, 500 ft downstream from Musquapsink Brook, and 2.3 mi upstream from mouth.

DRAINAGE AREA.--29.6 mi².

PERIOD OF RECORD.--October 1934 to current year.

REVISED RECORDS.--WDR NJ-87-1: 1984 (P).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 28.62 ft above sea level.

REMARKS.--Records fair except for estimated daily discharges which are poor. Flow regulated by Woodcliff Lake 3.0 mi above station (see Hackensack River basin, reservoirs in). Water diverted for municipal supply by United Water New York (formerly Spring Valley Water Company), by pumpage from well fields in headwater area of Pascack Brook in vicinity of Spring Valley, NY, and by Park Ridge Water Department by pumping from wells above Woodcliff Lake probably reduces flow past this station. Water is diverted from Saddle River to Musquapsink Brook which then enters Pascack Brook 500 feet upstream of gage (see Diversions Into and From Hackensack River Basin). Several measurements of water temperature were made during the year. United Water New Jersey gage-height telemeter at station. Satellite gage-height telemeter at station.

COOPERATION.--Gage-height record collected in cooperation with United Water New Jersey.

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)
Jan 3	1115	410	3.30	Sep 16	2200	*9,630	*12.22
Aug 26	0930	471	3.46				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	18	18	27	29	105	58	18	23	35	22	32
2	17	17	17	22	97	111	27	18	33	34	21	30
3	18	14	16	178	110	112	24	22	31	26	23	27
4	17	15	17	58	80	126	24	52	28	25	18	26
5	16	16	18	41	30	93	23	41	32	24	23	25
6	17	15	19	38	29	82	23	32	33	23	24	38
7	17	14	19	35	28	42	55	33	32	22	22	44
8	59	13	21	35	28	33	24	63	24	21	19	38
9	70	14	25	67	28	31	36	51	37	22	23	39
10	33	14	24	36	27	29	53	39	33	22	24	46
11	30	23	21	31	26	29	41	36	33	21	43	38
12	29	25	28	38	26	28	40	40	33	21	42	34
13	36	19	24	34	29	27	55	37	32	21	34	56
14	75	16	27	35	27	28	23	33	34	21	74	e33
15	55	15	27	90	26	37	23	31	42	22	57	e61
16	33	15	26	66	25	36	29	31	36	23	30	e1200
17	24	22	28	56	58	70	30	31	35	21	26	e1460
18	25	23	30	145	115	63	22	31	35	20	22	e1040
19	25	19	32	149	68	39	49	86	26	19	20	e356
20	25	18	31	110	34	38	29	138	24	21	20	e238
21	24	16	32	161	32	62	26	82	34	20	22	e231
22	24	15	32	165	32	177	24	37	32	19	18	e122
23	20	15	27	93	37	106	34	34	31	20	17	e82
24	18	17	19	105	37	101	48	108	29	20	12	e60
25	17	19	19	91	38	98	26	109	21	20	13	e65
26	17	39	19	61	46	94	22	50	22	18	184	e77
27	19	23	19	64	46	58	19	51	21	19	63	e84
28	21	19	19	61	73	69	19	43	20	19	45	e72
29	18	18	29	31	---	29	18	39	29	19	34	e67
30	19	18	46	29	---	27	18	37	34	23	32	e170
31	18	---	31	29	---	27	---	23	---	22	32	---
TOTAL	853	544	760	2181	1261	2007	942	1476	909	683	1059	5891
MEAN	27.5	18.1	24.5	70.4	45.0	64.7	31.4	47.6	30.3	22.0	34.2	196
MAX	75	39	46	178	115	177	58	138	42	35	184	1460
MIN	16	13	16	22	25	27	18	18	20	18	12	25

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1935 - 1999, BY WATER YEAR (WY)

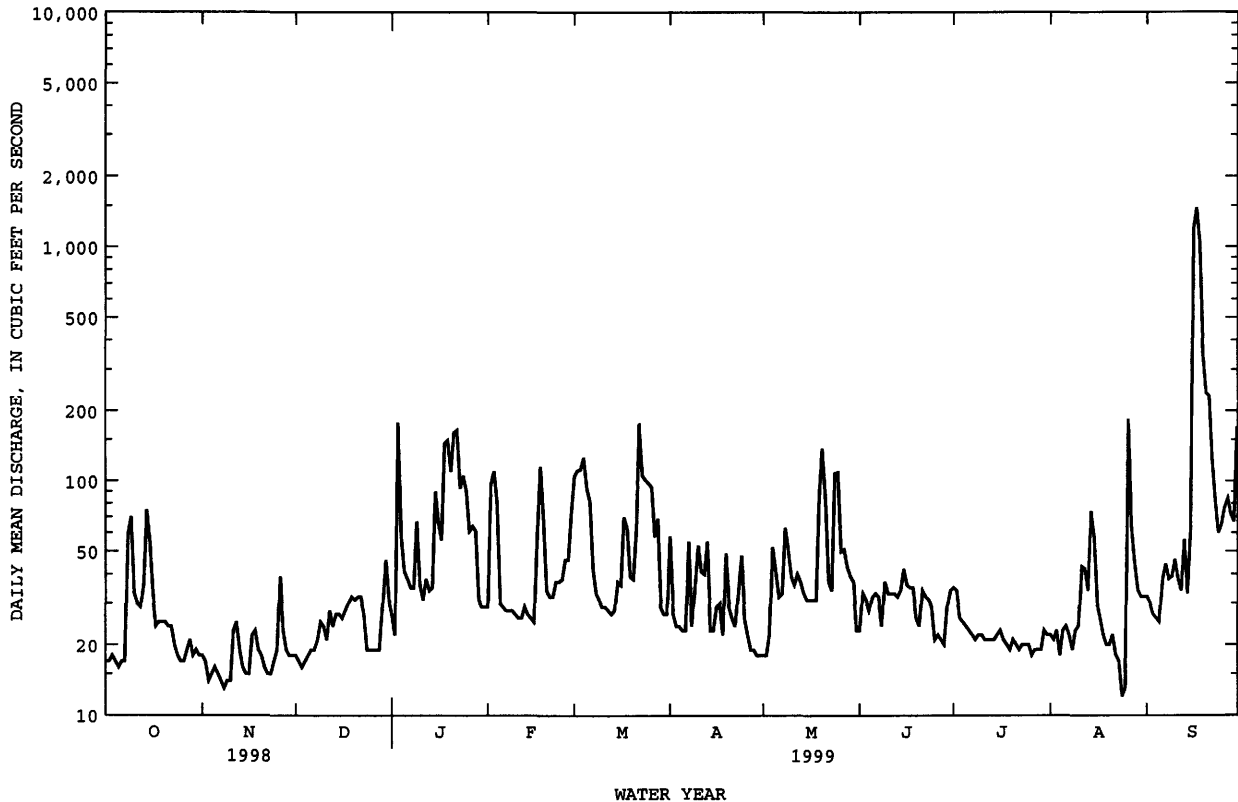
MEAN	38.9	48.5	51.9	54.8	58.5	78.9	78.6	62.4	49.5	45.2	42.1	41.9
MAX	143	131	129	151	135	197	198	155	175	180	127	196
(WY)	1956	1978	1984	1979	1973	1953	1983	1989	1972	1945	1971	1999
MIN	10.2	9.83	15.8	10.8	15.7	34.8	28.9	21.2	18.2	14.2	10.0	9.45
(WY)	1942	1950	1940	1954	1954	1965	1991	1992	1939	1944	1935	1939

01377500 PASCACK BROOK AT WESTWOOD, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1935 - 1999	
ANNUAL TOTAL	17515		18566		54.2	
ANNUAL MEAN	48.0		50.9		88.6	
HIGHEST ANNUAL MEAN					27.6	
LOWEST ANNUAL MEAN					1952	
HIGHEST DAILY MEAN	430	Apr 10	1460	Sep 17	1770	Aug 28 1971
LOWEST DAILY MEAN	13	Nov 8	12	Aug 24	.45	Apr 26 1991
ANNUAL SEVEN-DAY MINIMUM	14	Nov 3	14	Nov 3	6.3	Oct 19 1949
INSTANTANEOUS PEAK FLOW			9630	Sep 16	9630	Sep 16 1999
INSTANTANEOUS PEAK STAGE			12.22	Sep 16	12.22	Sep 16 1999
INSTANTANEOUS LOW FLOW			11	Aug 24	.05a	Apr 23 1991
10 PERCENT EXCEEDS	96		85		96	
50 PERCENT EXCEEDS	32		29		39	
90 PERCENT EXCEEDS	18		18		18	

a Also occurred Sept. 28, 1993.

e Estimated



HACKENSACK RIVER BASIN

01378500 HACKENSACK RIVER AT NEW MILFORD, NJ

LOCATION.--Lat 40°56'52", long 74°01'34", Bergen County, Hydrologic Unit 02030103, on right bank upstream from two masonry dams and two lift gates at former pumping plant of United Water New Jersey (formerly known as Hackensack Water Co.), in New Milford, 300 feet upstream of the Elm Street bridge, 0.6 mi downstream from Oradell Reservoir Dam, and 4.0 mi downstream from the mouth of Pascack Brook.

DRAINAGE AREA.--113 mi².

PERIOD OF RECORD.--October 1921 to current year. Monthly discharge only for October 1921, published in WSP 1302.

REVISED RECORDS: WSP 601: Drainage area. WSP 711: 1927-28(M). WRD-NJ 1970: 1969. WDR-NJ 1977: 1975(M). WDR-NJ 1984: 1983. WDR-NJ 1991: 1990.

GAGE.--Water-stage recorder, crest-stage gage above south dam, and tidal crest-stage gage downstream from south dam. Datum of gage is 6.25 ft above sea level. October 1921 to November 23, 1923, nonrecording gage and Nov. 23, 1923, to Sept. 25, 1934, water-stage recorder at same site at datum 0.05 ft lower.

REMARKS.--Records good except those below 20 ft³/s which are fair, and estimated discharges which are poor. Flow regulated by DeForest Lake, Lake Tappan, Woodcliff Lake 9.0 mi upstream from station, and Oradell Reservoir 0.6 mi upstream from station (see Hackensack River basin, reservoirs in). Water pumped into basin above gage from Sparkill Creek (Hudson River basin), Saddle River and Ramapo River (Passaic River basin) by United Water New Jersey for municipal supply (see Hackensack River basin, diversions). Water diverted from Oradell Reservoir at Haworth Plant, De Forest Lake, and West Nyack, NY, for municipal supply (see Hackensack River basin, diversions). Diversion at gage was discontinued on May 30, 1990. National Weather Service telemeter at station.

COOPERATION.--Gage-height record collected in cooperation with United Water New Jersey.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,180 ft³/s, Sep 17, gage height, 11.51 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.68	3.9	.54	.00	16	11	12	8.5	.57	.00	.00	.00
2	.57	4.1	.91	.00	19	16	9.1	8.8	.57	8.8	.00	.00
3	.48	3.7	1.0	5.9	16	20	15	6.7	.55	.00	.00	.00
4	.66	4.3	1.2	.09	15	20	18	8.0	.48	.00	.00	.00
5	.55	4.5	1.6	.00	13	21	16	6.0	.46	.00	.00	.00
6	.64	4.0	1.5	.00	14	22	17	9.4	.54	.00	.00	.00
7	.66	3.3	1.4	.00	15	22	15	8.6	.56	.00	.00	.00
8	2.9	3.1	1.9	.00	15	22	14	14	.55	.00	.00	.00
9	1.6	3.1	2.2	1.3	9.5	22	15	20	.59	.00	.00	.00
10	1.7	3.1	1.8	.72	11	22	10	15	.28	.00	.00	.06
11	1.5	5.1	.99	.28	15	21	9.2	6.4	.00	.00	.00	.00
12	1.4	4.4	.01	.00	22	21	10	.99	.00	.00	.00	.00
13	1.9	3.8	.00	.00	20	21	11	.78	.00	.00	.00	.00
14	3.3	4.0	.45	.00	19	21	10	.75	.00	.00	.00	.00
15	2.0	4.0	.04	3.0	19	22	11	.77	.00	.00	.00	.44
16	1.4	2.2	.00	.09	19	21	10	.77	.00	.00	.00	1390
17	1.4	.52	.00	.00	18	18	9.2	.75	.00	.00	.00	5580
18	1.6	.22	.00	4.6	20	15	8.8	.69	.00	.00	.00	1360
19	5.6	.10	.00	31	17	20	8.5	3.1	.00	.00	.00	221
20	2.2	.21	.00	10	17	22	8.6	.92	.00	.00	.00	879
21	2.5	.53	.00	185	18	24	7.9	2.7	.00	.00	.00	354
22	2.4	.66	.00	140	18	26	7.7	13	.00	.00	.00	1.3
23	2.6	.72	.00	7.9	18	24	8.2	13	.00	.00	.00	.80
24	2.8	.80	.00	8.9	18	23	7.7	13	.00	.00	.00	.91
25	3.1	.82	.00	8.8	15	24	7.5	12	.00	.00	.00	1.1
26	3.1	4.6	.00	10	11	24	7.6	13	.00	.00	.00	1.1
27	3.2	3.9	.00	17	10	24	7.5	16	.00	.00	.00	1.1
28	3.2	3.1	.00	15	14	24	7.8	6.9	.00	.00	.00	1.2
29	4.0	3.1	.00	17	---	21	7.5	.53	.00	.00	.00	1.4
30	3.7	1.7	.00	16	---	24	7.7	.57	.00	.00	.00	3.7
31	3.6	---	.00	15	---	21	---	.57	---	.00	.00	---
TOTAL	66.94	81.58	15.54	497.58	451.5	659	314.5	212.19	5.15	8.80	0.00	9797.11
MEAN	2.16	2.72	.50	16.1	16.1	21.3	10.5	6.84	.17	.28	.000	327
MAX	5.6	5.1	2.2	185	22	26	18	20	.59	8.8	.00	5580
MIN	.48	.10	.00	.00	9.5	11	7.5	.53	.00	.00	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1999, BY WATER YEAR (WY)

	MEAN	34.1	62.4	86.0	101	123	206	196	122	59.5	44.7	38.0	44.6
MAX	480	356	339	359	396	651	774	528	612	543	373	385	
(WY)	1956	1928	1997	1937	1939	1936	1983	1989	1972	1945	1927	1927	
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.39	.000	.000	.000	
(WY)	1922	1924	1932	1971	1977	1981	1981	1985	1977	1954	1924	1923	

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

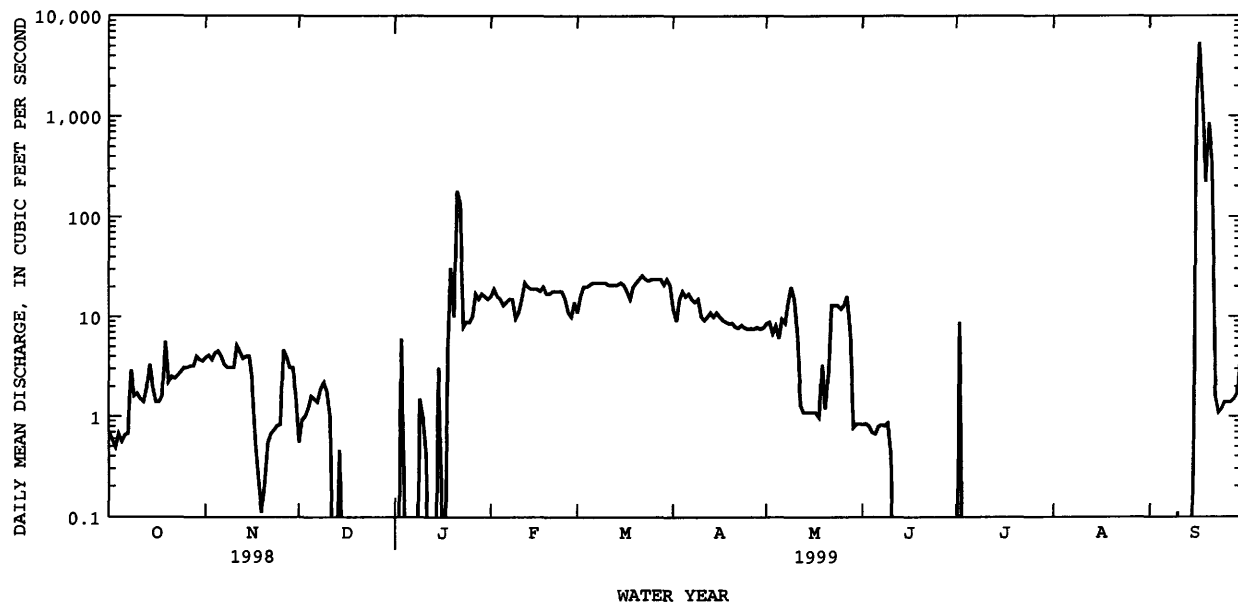
FOR 1999 WATER YEAR

WATER YEARS 1922 - 1999

ANNUAL TOTAL	23265.80	12109.89	
ANNUAL MEAN	63.7	33.2	93.0
HIGHEST ANNUAL MEAN			263
LOWEST ANNUAL MEAN			.40
HIGHEST DAILY MEAN	1680	May 11	5580
LOWEST DAILY MEAN	.00	Dec 13	.00
ANNUAL SEVEN-DAY MINIMUM	.00	Dec 16	.00
INSTANTANEOUS PEAK FLOW			9760
INSTANTANEOUS PEAK STAGE			11.45a
INSTANTANEOUS LOW FLOW			.00
10 PERCENT EXCEEDS	182	20	270
50 PERCENT EXCEEDS	12	1.4	16
90 PERCENT EXCEEDS	.32	.00	.00

a From high-water mark in gage house.

01378500 HACKENSACK RIVER AT NEW MILFORD, NJ--Continued



RESERVOIRS IN HACKENSACK RIVER BASIN

01376700 DE FOREST LAKE.--Lat 41°06'23", long 73°58'01", Rockland County, NY, Hydrologic Unit 02030103, at dam on Hackensack River, 0.8 mi north of West Nyack, NY. DRAINAGE AREA, 27.5 mi². PERIOD OF RECORD, February 1956 to current year. REVISED RECORDS.--WDR NJ-84-1: Drainage area, WDR NJ-99-1: 1998 (elevation, contents). GAGE, water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir is formed by earthfill dam with sheet piling cutoff and concrete spillway; dam completed and storage began in February 1956. Crest of dam topped by two 50 ft Bascule Gates, 5 ft high. Capacity 5,670,000,000 gal, elevation, 85.00 ft, top of Bascule gates. Flow regulated by 12-inch Howell-Bunger valve at elevation, 59.25 ft and 24-inch Howell-Bunger valve at elevation, 61.25 ft. Reservoir used for storage and water released by United Water New Jersey, for municipal water supply.

COOPERATION.--Records provided by United Water New Jersey (formerly Hackensack Water Company).

01376950 LAKE TAPPAN.--Lat 41°01'05", long 74°00'05", Bergen County, Hydrologic Unit 02030103, at dam on Hackensack River, 0.5 mi north of Old Tappan. DRAINAGE AREA, about 49.0 mi². PERIOD OF RECORD, October 1966 to current year. REVISED RECORDS, WDR NJ-89-1: Capacity, WDR NJ-99-1: 1998 (elevation, contents). GAGE, water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir is formed by earthfill dam, completed in 1966. Capacity, 3,853,000,000 gal, elevation, 55.00 ft at top of Bascule gates. Flow regulated by four Bascule gates and one sluice gate. Water is released for diversion at New Milford (diversion discontinued May 1990) and Haworth by United Water New Jersey, for municipal water supply.

COOPERATION.--Records provided by United Water New Jersey (formerly Hackensack Water Company).

01377450 WOODCLIFF LAKE.--Lat 41°00'46", long 74°02'58", Bergen County, Hydrologic Unit 02030103, at dam on Pascack Brook, 0.7 mi north of Hillsdale. DRAINAGE AREA, 19.4 mi². PERIOD OF RECORD, December 1929 to current year. Monthend contents only, prior to September 1953, published in WSP 1302, 1722. REVISED RECORDS, WDR NJ-89-1: Capacity, WDR NJ-99-1: 1998 (elevation, contents). GAGE, water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir is formed by earthfill dam, completed about 1905. The dam was modified in 1984, which increased capacity, 871,000,000 gal, elevation, 95.00 ft at top of Bascule gates. Flow is regulated by two Bascule gates 85 ft long and 6 ft high each and one 24-inch Ball valve. Water is released for diversion at New Milford (diversion discontinued May 1990) and Haworth by United Water New Jersey, for municipal supply.

COOPERATION.--Records provided by United Water New Jersey (formerly Hackensack Water Company).

01378480 ORADELL RESERVOIR.--Lat 40°57'22", long 74°01'46", Bergen County, Hydrologic Unit 02030103, at dam on Hackensack River at Oradell. DRAINAGE AREA, 113 mi². PERIOD OF RECORD, December 1922 to current year. Monthend contents only, prior to September 1953, published in WSP 1302, 1722. REVISED RECORDS.--WDR NJ-84-1: Spillway elevation, WDR NJ-89-1: Capacity, WDR NJ-99-1: 1998 (elevation, contents). GAGE, water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir is formed by hollow concrete dam, completed in 1922. Capacity at spillway level, 3,507,000,000 gal, elevation, 23.16 ft. Flow regulated by seven sluice gates (7 by 9 ft). Prior to May 1990, water was released for diversion by United Water New Jersey, 1 mi downstream from dam for municipal supply. Water is diverted from reservoir at Haworth by United Water New Jersey, for municipal supply.

COOPERATION.--Records provided by United Water New Jersey (formerly Hackensack Water Company).

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

Date	Elevation (feet)†	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)	Elevation (feet)†	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)
01376700 DE FOREST LAKE (WY1998)				01376700 DE FOREST LAKE (WY1999)		
Sept.30.....	81.01a	4,420a	--	77.74	3,453	--
Oct. 31.....	78.07a	3,550a	-43.4a	76.41	3,057	-18.9
Nov. 30.....	79.71a	4,032a	+24.9a	75.08	2,700	-19.3
Dec. 31.....	80.89a	4,384a	+17.6a	73.92	2,382	-15.9
CAL YR 1998			-5.7a			-8.5
Jan. 31.....	83.12a	5,069a	+34.2a	77.91	3,504	+56.0
Feb. 28.....	85.08a	5,697a	+34.7a	79.65	4,014	+28.2
Mar. 31.....	85.15a	5,739a	+2.1a	82.99	5,027	+50.6
Apr. 30.....	85.12a	5,711a	-1.4a	83.66	5,237	+10.8
May 31.....	85.08a	5,695a	-.8a	83.91	5,317	+4.0
June 30.....	84.82a	5,612a	-4.3a	82.02	4,728	-30.4
July 31.....	83.11a	5,064a	-27.3a	79.66	4,016	-35.5
Aug. 31.....	80.52a	4,272a	-39.5a	78.69	3,732	-14.2
Sept.30.....	77.74a	3,453a	-42.2a	85.18	5,730	+103.0
WTR YR 1999			-4.1a			+9.6
Date	Elevation (feet)†	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)	Elevation (feet)†	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)
01376950 LAKE TAPPAN (WY1998)				01376950 LAKE TAPPAN (WY1999)		
Sept.30.....	49.93a	2,185a	--	49.51	2,064	--
Oct. 31.....	51.39a	2,630a	+22.2a	49.23	1,985	-3.9
Nov. 30.....	53.72a	3,399a	+39.7a	48.08	1,671	-16.2
Dec. 31.....	54.10a	3,533a	+6.7a	48.34	1,740	+3.4
CAL YR 1998			-1.8a			-7.7
Jan. 31.....	55.16a	3,906a	+18.6a	53.16	3,208	+73.3
Feb. 28.....	55.25a	3,944a	+2.1a	54.66	3,729	+28.8
Mar. 31.....	55.23a	3,936a	-.4a	55.21	3,929	+10.0
Apr. 30.....	55.21a	3,929a	-.3a	55.08	3,882	-2.4
May 31.....	55.16a	3,911a	-.9a	55.08	3,879	-.2
June 30.....	55.21a	3,927a	+.8a	52.82	3,094	-40.5
July 31.....	53.43a	3,301a	-31.2a	47.78	1,591	-75.0
Aug. 31.....	51.11a	2,541a	-37.9a	47.80	1,598	+.3
Sept.30.....	49.51a	2,064a	-24.6a	55.27	3,951	+124.1
WTR YR 1999			-.5a			+8.0

RESERVOIRS IN HACKENSACK RIVER BASIN--Continued

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999--Continued

Date	Elevation (feet)†	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)	Elevation (feet)†	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)
01377450 WOODCLIFF LAKE (WY1998)				01377450 WOODCLIFF LAKE (WY1999)		
Sept.30.....	90.42a	622a	--	85.88	404	--
Oct. 31.....	89.48a	574a	-2.4a	85.90	405	0
Nov. 30.....	90.70a	637a	+3.2a	85.92	406	+1
Dec. 31.....	91.12a	659a	+1.1a	85.92	406	0
CAL YR 1998			0a			-1.1
Jan. 31.....	90.23a	612a	-2.3a	90.46	624	+10.9
Feb. 28.....	89.11a	556a	-3.1a	90.93	649	+1.4
Mar. 31.....	89.68a	585a	+1.4a	91.31	669	+1.0
Apr. 30.....	91.08a	657a	+3.7a	90.91	648	-1.1
May 31.....	93.16a	769a	+5.6a	90.74	639	-4
June 30.....	90.17a	610a	-8.2a	89.31	566	-3.8
July 31.....	88.88a	544a	-3.3a	86.45	430	-6.8
Aug. 31.....	87.77a	491a	-2.6a	91.86	698	+13.4
Sept.30.....	85.88a	404a	-4.5a	88.58	530	-8.7
WTR YR 1999			-9a			+5
Date	Elevation (feet)†	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)	Elevation (feet)†	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)
01378480 ORADELL RESERVOIR (WY1998)				01378480 ORADELL RESERVOIR (WY1999)		
Sept.30.....	19.87a	2,670a	--	18.10	2,260	--
Oct. 31.....	18.70a	2,397a	-13.6a	18.06	2,251	-5
Nov. 30.....	19.67a	2,623a	+11.7a	18.61	2,375	+6.4
Dec. 31.....	20.70a	2,871a	+12.4a	18.33	2,311	-3.2
CAL YR 1998			-1.2a			-2.4
Jan. 31.....	20.95a	2,932a	+3.0a	21.07	2,962	+32.5
Feb. 28.....	21.13a	2,977a	+2.5a	18.96	2,346	-34.0
Mar. 31.....	22.14a	3,234a	+12.8a	22.66	3,372	+51.2
Apr. 30.....	23.19a	3,514a	+14.4a	19.98	2,600	-39.8
May 31.....	22.38a	3,298a	-10.8a	20.66	2,861	+13.0
June 30.....	22.14a	3,234a	-3.3a	19.18	2,509	-18.2
July 31.....	18.64a	2,384a	-42.4a	18.20	2,282	-11.3
Aug. 31.....	18.09a	2,257a	-6.3a	20.71	2,874	+29.5
Sept.30.....	18.10a	2,260a	+2a	22.65	3,369	+25.5
WTR YR 1999			-1.7a			+4.7

† Elevation at 2400 of the last day of each month.

a Corrected figures for water year 1998.

HACKENSACK RIVER BASIN

DIVERSIONS INTO AND FROM HACKENSACK RIVER BASIN

- 01376272 United Water New Jersey, diverts water from Sparkill Creek (Hudson River basin) at foot of Danny Lane in Northvale, 300 ft south of New York-New Jersey state line and 0.6 mi upstream from Sparkill Brook. Water is diverted into Oradell Reservoir on the Hackensack River, for municipal supply. Records provided by United Water New Jersey (formerly Hackensack Water Company).
- 01376699 United Water New York (formerly Spring Valley Water Company), diverts water from De Forest Lake for municipal supply in Rockland County, NY. Records provided by United Water New York (formerly Spring Valley Water Company).
- 01376810 Village of Nyack, NY, diverts water from Hackensack River 100 ft downstream from gaging station on Hackensack River at West Nyack, NY (station 01376800, measured flow includes diversions) for municipal supply. Records provided by Board of Water Commissioners of Nyack, NY.
- 01378490 United Water New Jersey, diverts water for municipal supply from Oradell Reservoir at Haworth pumping station (station 01378478) 2.0 mi upstream from gaging station on Hackensack River at New Milford and prior to May 1990 from Hackensack River, at New Milford pumping station just upstream from gaging station on Hackensack River at New Milford, NJ (station 01378500). Diversion from the New Milford pumping station was discontinued in May 1990. Records provided by United Water New Jersey (formerly Hackensack Water Company).
- 01378520 United Water New Jersey, diverts water from Hirshfeld Brook, a tributary of the Hackensack River, below the gaging station on Hackensack River at New Milford, NJ, for municipal supply. Records provided by United Water New Jersey (formerly Hackensack Water Company).
- 01390520 (revised) United Water New Jersey, diverts water from Saddle River (Passaic River basin) 0.3 mi downstream from Grove Street in Paramus, and 0.3 mi upstream from Hohokus Brook. Water is diverted into Oradell Reservoir on the Hackensack River via Musquapsink and Pascack Brooks for municipal supply. Records provided by United Water New Jersey (formerly Hackensack Water Company).

DIVERSIONS, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

MONTH	01376699 UNITED WATER NEW YORK.	01376810 WEST NYACK, NY	01378490 UNITED WATER NEW JERSEY
October	15.9	2.83	141
November	13.4	2.87	133
December	11.6	2.83	121
CAL YR 1998	14.9	2.86	29.0
January	12.4	2.99	146
February	9.07	2.62	138
March	14.5	2.67	136
April	9.09	2.91	136
May	13.7	3.08	152
June	23.3	3.46	189
July	21.5	3.52	191
August	15.1	3.32	148
September	14.6	2.73	134
WTR YR 1999	14.5	2.99	147

The following are diversions by pumpage from sources other than the Hackensack River into Oradell Reservoir. These figures are included in diversions from Hackensack River as noted above (station 01378490).

MONTH	01376272 SPARKILL CREEK (HUDSON RIVER BASIN)	01378520 HIRSHFELD BROOK (HACKENSACK RIVER BASIN)	01388981 POMPTON RIVER (PASSAIC RIVER BASIN)	01390520 SADDLE RIVER (PASSAIC RIVER BASIN)	WELLS TO SURFACE SUPPLY
October	0	1.43	61.0	3.87	.37
November	0	1.02	59.4	1.89	.44
December .....	.44	1.50	56.4	12.0	3.23
CAL YR 1998 .....	.04	.83	29.0	2.84	.73
January .....	.45	.49	13.6	12.0	.61
February	0	0	0	3.04	.25
March	0	0	0	3.61	.19
April	0	0	0	0	.23
May .....	.14	.53	27.1	16.3	.37
June .....	.79	1.55	65.8	13.8	.57
July	1.05	1.10	67.7	11.9	2.44
August	1.39	1.59	58.6	15.0	3.34
September .....	.68	.89	14.9	7.82	.49
WTR YR 1999 .....	.42	.85	35.7	8.50	1.06

01379000 PASSAIC RIVER NEAR MILLINGTON, NJ

LOCATION.--Lat 40°40'48", long 74°31'45", Somerset County, Hydrologic Unit 02030103, on right bank 200 ft downstream from Davis Bridge on Maple Avenue, 0.7 mi northwest of Millington, and 1.8 mi downstream from Black Brook.

DRAINAGE AREA.--55.4 mi².

PERIOD OF RECORD.--November 1903 to June 1906 (published as "at Millington"), October 1921 to current year. Monthly discharges only for some periods published in WSP 1302.

REVISED RECORDS.--WSP 781: Drainage area. WSP 1552: 1905 (M). WDR NJ-96-1: 1936 (M), 1949 (M), 1971 (M), 1975 (M), 1979 (M), 1984 (M).

GAGE.--Water-stage recorder, crest-stage gage, and concrete-block control. Datum of gage is 215.60 ft above sea level (levels from New Jersey Geological Survey bench mark). Nov. 25, 1903 to July 15, 1906, nonrecording gage at bridge 0.8 mi downstream at different datum. Nov. 10, 1921 to Sept. 1, 1923, nonrecording gage at site 200 ft downstream at present datum. Oct. 31, 1923 to July 3, 1925, nonrecording gage and concrete control at present site and datum.

REMARKS.--Records good. Diversion from Osborn Pond by Commonwealth Water Co., Bernards Division, was discontinued in April 1979 and the installation dismantled. Several measurements of water temperature were made during the year. Satellite telemeter at 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)
Jan 19	1445	510	6.79	Sep 17	0500	*1,590	*8.91
Mar 22	1815	754	7.39				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.1	6.9	16	16	71	131	84	40	28	10	1.5	13
2	3.5	6.5	13	9.3	103	147	80	37	23	12	1.2	10
3	3.5	6.4	13	116	231	125	72	34	20	11	.81	7.6
4	5.0	6.2	13	268	201	168	66	36	18	7.8	.60	6.3
5	6.2	6.0	13	204	174	163	63	39	16	6.0	.55	6.4
6	5.9	6.3	13	147	138	130	59	36	14	4.6	.62	15
7	4.8	6.4	12	108	110	146	54	34	13	3.8	.77	14
8	14	6.6	13	63	97	121	49	45	12	3.2	1.2	12
9	41	6.8	20	60	88	99	50	61	11	2.9	1.6	11
10	24	7.0	18	103	83	83	77	55	10	3.4	1.2	10
11	17	11	15	104	75	74	74	44	9.4	3.6	1.1	13
12	12	17	13	85	70	65	97	38	9.5	3.1	.91	6.6
13	8.8	13	13	74	86	59	94	34	10	2.9	.84	4.9
14	12	10	12	65	83	57	75	31	12	3.1	10	4.8
15	14	9.2	12	73	65	68	68	28	18	2.6	11	9.3
16	11	8.4	11	97	60	88	65	26	14	2.1	5.2	386
17	9.0	8.4	11	112	56	113	78	25	11	2.6	3.9	1510
18	8.4	8.4	11	188	96	124	74	27	12	1.7	3.5	1420
19	8.1	8.1	11	467	175	112	65	45	12	1.5	3.1	1070
20	8.9	8.4	11	452	148	100	66	86	10	1.7	3.0	703
21	8.5	9.4	11	378	128	98	89	71	12	2.2	6.1	464
22	8.5	8.9	13	326	95	588	82	49	14	2.6	5.3	318
23	8.0	8.5	18	285	69	648	77	39	10	3.1	4.2	209
24	7.7	9.0	15	346	60	527	96	64	8.5	2.3	3.5	122
25	7.5	8.5	13	466	55	398	85	143	6.9	2.1	3.2	72
26	7.3	23	11	387	53	267	69	118	6.9	1.6	19	54
27	6.7	49	10	299	50	186	59	93	6.6	1.2	29	42
28	7.3	28	11	228	56	162	53	67	5.9	.73	16	31
29	9.2	21	15	168	---	147	49	53	8.7	1.4	13	25
30	8.4	17	38	124	---	119	44	40	13	1.9	7.4	42
31	7.2	---	26	91	---	99	---	32	---	1.5	12	---
TOTAL	307.5	349.3	445	5909.3	2776	5412	2113	1570	375.4	110.23	171.30	6611.9
MEAN	9.92	11.6	14.4	191	99.1	175	70.4	50.6	12.5	3.56	5.53	220
MAX	41	49	38	467	231	648	97	143	28	12	29	1510
MIN	3.5	6.0	10	9.3	50	57	44	25	5.9	.73	.55	4.8
CFSM	.18	.21	.26	3.44	1.79	3.15	1.27	.91	.23	.06	.10	3.98
IN.	.21	.23	.30	3.97	1.86	3.63	1.42	1.05	.25	.07	.12	4.44

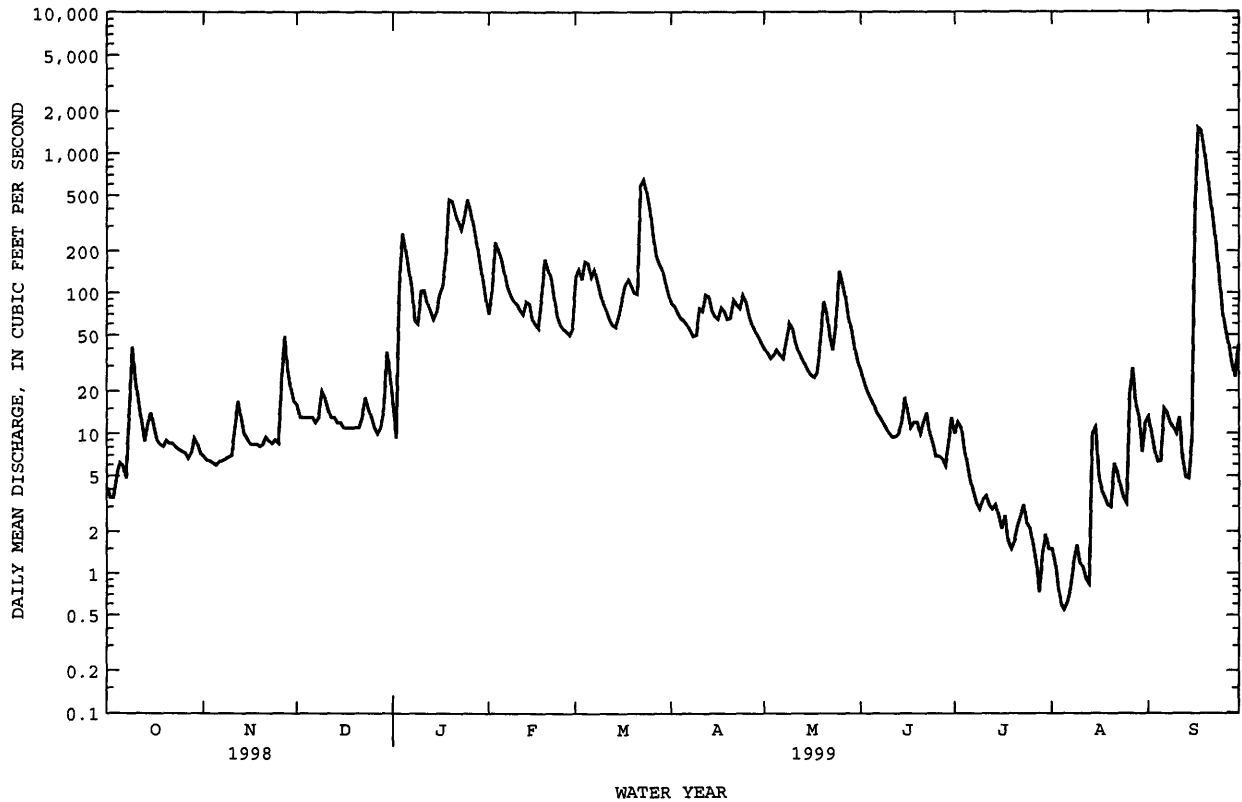
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1904 - 1999, BY WATER YEAR (WY)

	MEAN	48.6	85.9	105	115	129	187	144	93.7	57.3	44.8	48.6	52.5
MAX	345	340	335	463	380	439	420	365	292	307	398	380	
(WY)	1997	1933	1984	1905	1904	1994	1983	1989	1972	1975	1942	1971	
MIN	3.56	7.47	8.18	6.78	26.1	64.2	25.9	20.3	3.95	1.25	1.37	.73	
(WY)	1964	1966	1966	1981	1934	1981	1985	1965	1965	1965	1966	1964	

PASSAIC RIVER BASIN

01379000 PASSAIC RIVER NEAR MILLINGTON, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1904 - 1999	
ANNUAL TOTAL	35862.3		26150.93		91.7	
ANNUAL MEAN	98.3		71.6		163	
HIGHEST ANNUAL MEAN					32.3	
LOWEST ANNUAL MEAN					2230	
HIGHEST DAILY MEAN	810	May 12	1510	Sep 17	2230	Oct 20 1996
LOWEST DAILY MEAN	3.5	Oct 2	.55	Aug 5	.30	Sep 13 1966
ANNUAL SEVEN-DAY MINIMUM	4.2	Sep 28	.82	Aug 2	.47	Sep 11 1964
INSTANTANEOUS PEAK FLOW			1590	Sep 17	2290	Oct 20 1996
INSTANTANEOUS PEAK STAGE			8.91	Sep 17	9.89	Oct 20 1996
INSTANTANEOUS LOW FLOW			.52	Aug 4	.20	Sep 12 1966
ANNUAL RUNOFF (CFSM)	1.77		1.29		1.65	
ANNUAL RUNOFF (INCHES)	24.08		17.56		22.48	
10 PERCENT EXCEEDS	288		147		226	
50 PERCENT EXCEEDS	32		17		48	
90 PERCENT EXCEEDS	6.5		3.2		8.9	



LOCATION.--Lat 40°43'31", long 74°23'23", Morris County, Hydrologic Unit 02030103, on left bank 150 ft downstream from bridge on Stanley Avenue in Chatham, and 3.0 mi upstream from Canoe Brook.

PERIOD OF RECORD.--February 1903 to December 1911, October 1937 to current year. Monthly discharge only for some periods, published in WSP 1302.

GAGE.--Water-stage recorder. Concrete control since Sept. 19, 1938. Datum of gage is 193.51 ft above sea level. Prior to Dec 31, 1911, nonrecording gage at bridge 150 ft upstream at different datum.

REMARKS.--Records good except for estimated discharges, which are fair. Diversion from Osborn Pond by Commonwealth Water Co., Bernards Division, during water years 1903-79. Several measurements of water temperature were made during the year. Satellite telemeter at station.

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar 23	1630	992	5.67	Sep 17	1845	*2,210	*7.60

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	22	29	40	122	300	146	73	51	28	12	24
2	18	21	28	27	275	304	131	64	47	29	11	24
3	17	21	27	282	410	233	120	61	42	29	11	23
4	22	22	26	508	384	317	112	67	39	25	11	21
5	21	22	26	e440	304	313	104	69	35	21	14	22
6	21	21	26	e280	236	252	98	66	32	20	15	45
7	20	21	26	e185	189	284	89	61	32	17	13	44
8	71	20	27	e116	169	243	83	87	32	16	12	34
9	131	20	30	184	160	190	87	166	30	15	12	30
10	100	21	31	293	149	160	146	121	27	16	13	42
11	65	32	28	267	138	143	148	91	26	15	13	43
12	46	34	26	174	128	125	158	75	25	15	14	32
13	49	34	26	125	169	112	164	64	24	16	15	23
14	68	27	25	96	160	104	136	58	33	15	97	21
15	56	24	25	209	128	121	113	52	57	15	74	25
16	43	22	25	344	110	169	113	47	38	15	32	577
17	34	22	25	246	102	234	149	45	30	17	22	2080
18	30	23	25	454	241	280	136	45	29	19	19	2100
19	26	22	25	663	378	227	114	96	29	13	17	1830
20	25	21	25	729	316	181	123	183	26	14	18	1550
21	24	22	24	639	235	199	153	142	26	14	23	1270
22	23	22	27	571	183	713	149	103	29	13	21	991
23	23	22	26	502	136	949	151	79	30	13	19	724
24	23	23	27	591	112	953	179	145	26	14	18	497
25	22	23	25	660	98	821	162	289	24	12	16	289
26	22	50	23	674	93	660	131	247	22	12	157	137
27	22	64	23	576	91	484	112	171	21	11	131	90
28	22	59	23	461	114	372	98	130	21	11	78	67
29	28	40	30	338	---	279	88	101	22	12	38	51
30	24	31	49	228	---	214	81	79	24	12	27	103
31	24	---	46	164	---	171	---	62	---	13	22	---
TOTAL	1149	828	854	11066	5330	10107	3774	3139	929	507	995	12809
MEAN	37.1	27.6	27.5	357	190	326	126	101	31.0	16.4	32.1	427
MAX	131	64	49	729	410	953	179	289	57	29	157	2100
MIN	17	20	23	27	91	104	81	45	21	11	11	21
CFSM	.37	.28	.28	3.57	1.90	3.26	1.26	1.01	.31	.16	.32	4.27
IN.	.43	.31	.32	4.12	1.98	3.76	1.40	1.17	.35	.19	.37	4.76

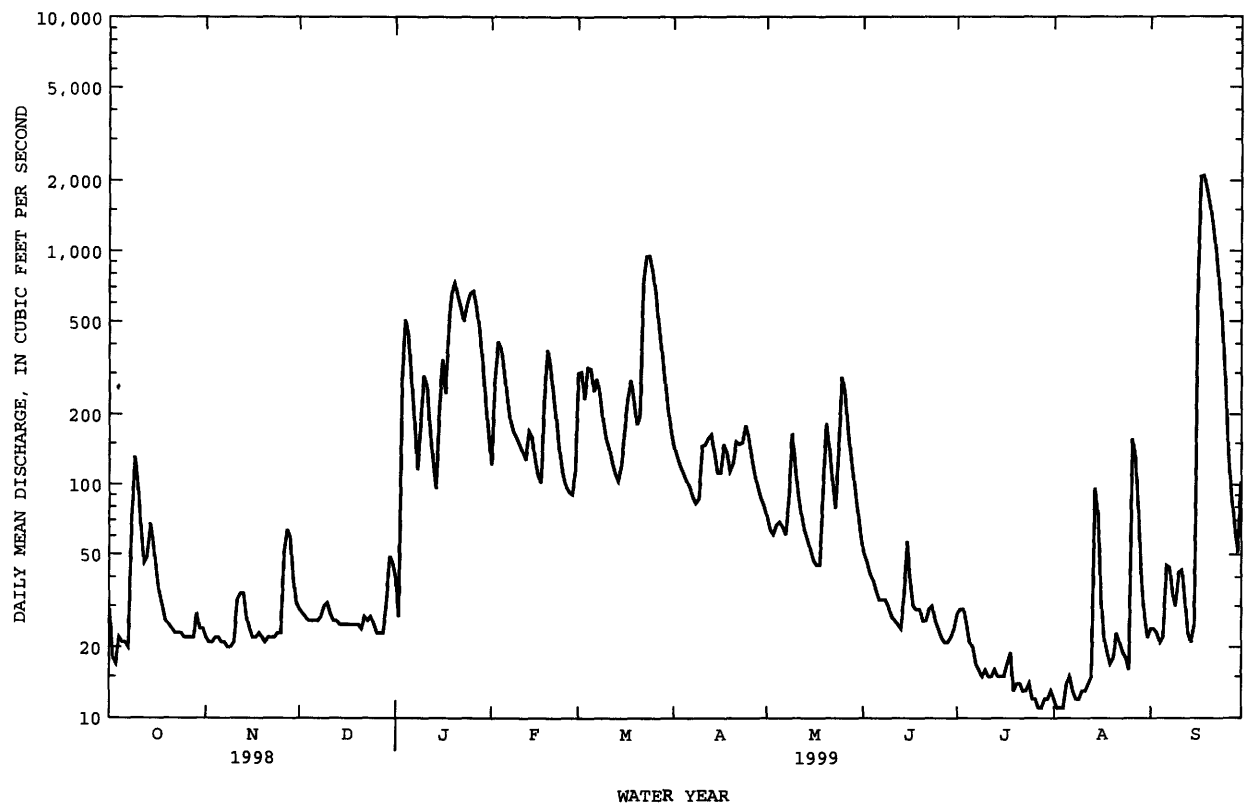
MEAN	93.6	157	203	230	239	341	264	175	114	84.0	92.8	97.1
MAX	576	590	655	735	493	719	711	637	533	539	664	713
(WY)	1904	1973	1984	1979	1908	1994	1983	1989	1972	1975	1942	1971
MIN	8.05	13.7	27.5	21.5	63.2	94.5	54.3	7.52	13.6	7.74	7.35	4.70
(WY)	1965	1950	1999	1981	1980	1911	1985	1903	1965	1966	1957	1906

PASSAIC RIVER BASIN

01379500 PASSAIC RIVER NEAR CHATHAM, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1903 - 1999	
ANNUAL TOTAL	62209		51487		173	
ANNUAL MEAN	170		141		305	1984
HIGHEST ANNUAL MEAN					67.7	1965
LOWEST ANNUAL MEAN					2990	Jan 9 1905
HIGHEST DAILY MEAN	1220	May 12	2100	Sep 18	2.0	May 15 1903
LOWEST DAILY MEAN	17	Aug 31	11	Jul 27	2.0	May 15 1903
ANNUAL SEVEN-DAY MINIMUM	21	Aug 20	12	Jul 27	3380	Aug 2 1973
INSTANTANEOUS PEAK FLOW			2210	Sep 17	9.36a	Aug 2 1973
INSTANTANEOUS PEAK STAGE			7.60	Sep 17		
INSTANTANEOUS LOW FLOW			11	Jul 28		
ANNUAL RUNOFF (CFSM)	1.70		1.41		1.73	
ANNUAL RUNOFF (INCHES)	23.14		19.15		23.48	
10 PERCENT EXCEEDS	512		314		462	
50 PERCENT EXCEEDS	58		46		84	
90 PERCENT EXCEEDS	22		17		17	

a From floodmark.
e Estimated.



01379773 GREEN POND BROOK AT PICATINNY ARSENAL, NJ

LOCATION.--Lat 40°57'34", long 74°32'24", Morris County, Hydrologic Unit 02030103, on left bank at Picatinny Arsenal, 500 ft upstream from Picatinny Lake, and 0.55 mi downstream from Burnt Meadow Brook.

DRAINAGE AREA.--7.65 mi².

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

GAGE.--Water-stage recorder and concrete control. Datum of gage is 712.54 ft above sea level (U.S. Army, Picatinny Arsenal, bench mark).

REMARKS.--Records good except estimated discharge, which is poor. Discharges given herein includes flow through sluice gates when open. Some regulation by Lake Denmark and Green Pond. Satellite telemeter at station.

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)
Mar 22	1600	83	2.47	Sep 16	1830	*192	*3.01

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.57	.46	.76	.40	22	24	25	5.5	3.7	2.3	1.4	1.5
2	.49	.49	.68	.30	28	23	20	6.0	3.7	2.3	1.3	1.5
3	.48	.43	.66	6.5	32	23	16	5.9	3.7	2.2	1.3	1.5
4	.56	.40	.59	5.4	30	34	14	5.0	3.5	2.1	1.3	1.4
5	.50	.36	.68	e5.2	27	34	12	5.3	3.4	2.0	1.3	1.5
6	.47	.34	.66	e3.8	24	33	11	4.9	3.2	2.0	1.3	1.6
7	.43	.33	.66	e2.8	21	31	10	4.4	3.1	2.0	1.2	1.7
8	2.7	.28	.74	2.0	20	31	10	4.8	3.1	1.8	1.3	1.6
9	3.0	.24	.79	3.4	18	31	11	4.7	3.0	1.7	1.3	1.7
10	2.4	.28	.77	3.3	17	28	11	4.4	2.9	1.8	1.2	2.1
11	1.7	.81	.69	3.0	16	25	10	4.1	2.7	1.8	1.2	1.8
12	1.4	.66	.61	2.6	16	22	11	4.0	2.5	1.7	1.2	1.7
13	1.2	.59	.56	2.7	17	20	10	3.8	2.5	1.6	1.2	1.5
14	1.5	.41	.56	2.4	16	18	9.3	3.5	2.6	1.6	2.0	1.5
15	1.3	.40	.52	3.7	17	18	8.2	3.3	2.4	1.6	1.8	1.6
16	1.3	.35	.47	3.6	19	17	8.4	3.2	2.2	1.5	1.5	49
17	1.1	.33	.49	3.6	16	17	8.9	2.9	2.1	1.5	1.5	46
18	.83	.33	.47	13	19	15	8.0	2.8	2.2	1.5	1.4	28
19	.75	.28	.47	27	19	14	7.5	4.5	2.1	1.5	1.4	23
20	.77	.26	.40	29	18	13	7.6	5.0	2.0	1.5	1.5	19
21	.68	.30	.40	27	16	15	7.7	4.2	2.1	1.8	1.5	17
22	.66	.24	.46	27	15	77	7.1	3.8	2.0	1.6	1.4	16
23	.61	.22	.46	28	13	75	7.0	3.6	2.0	1.6	1.3	14
24	.56	.24	.40	45	13	63	7.6	5.3	2.0	1.5	1.3	13
25	.56	.24	.40	54	12	53	7.3	6.5	1.9	1.5	1.3	11
26	.56	1.6	.40	49	11	44	7.1	5.7	1.9	1.5	2.7	10
27	.56	1.8	.34	42	11	38	7.0	5.2	1.9	1.5	2.4	9.3
28	.57	1.4	.35	38	16	36	6.5	4.6	1.8	1.5	2.0	8.7
29	.59	1.0	.48	34	---	39	6.6	4.4	2.1	1.5	1.7	8.1
30	.56	.83	.65	29	---	36	5.8	4.1	2.2	1.5	1.6	11
31	.56	---	.53	25	---	31	---	3.9	---	1.5	1.5	---
TOTAL	29.92	15.90	17.10	521.70	519	978	298.6	139.3	76.5	53.0	46.3	307.3
MEAN	.97	.53	.55	16.8	18.5	31.5	9.95	4.49	2.55	1.71	1.49	10.2
MAX	3.0	1.8	.79	54	32	77	25	6.5	3.7	2.3	2.7	49
MIN	.43	.22	.34	.30	11	13	5.8	2.8	1.8	1.5	1.2	1.4
CFSM	.13	.07	.07	2.20	2.42	4.12	1.30	.59	.33	.22	.20	1.34
IN.	.15	.08	.08	2.54	2.52	4.76	1.45	.68	.37	.26	.23	1.49

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1999, BY WATER YEAR (WY)

	7.15	10.7	17.4	16.1	16.7	23.8	25.6	17.9	10.6	7.39	5.52	5.86
MEAN	7.15	10.7	17.4	16.1	16.7	23.8	25.6	17.9	10.6	7.39	5.52	5.86
MAX	26.1	22.4	49.5	45.5	32.0	49.5	64.1	50.6	29.1	32.6	20.9	24.7
(WY)	1990	1996	1997	1996	1996	1983	1983	1989	1998	1984	1990	1987
MIN	.68	.53	.55	5.85	5.92	10.5	3.84	4.49	2.55	1.71	1.49	1.36
(WY)	1998	1999	1999	1992	1992	1985	1985	1999	1999	1999	1999	1998

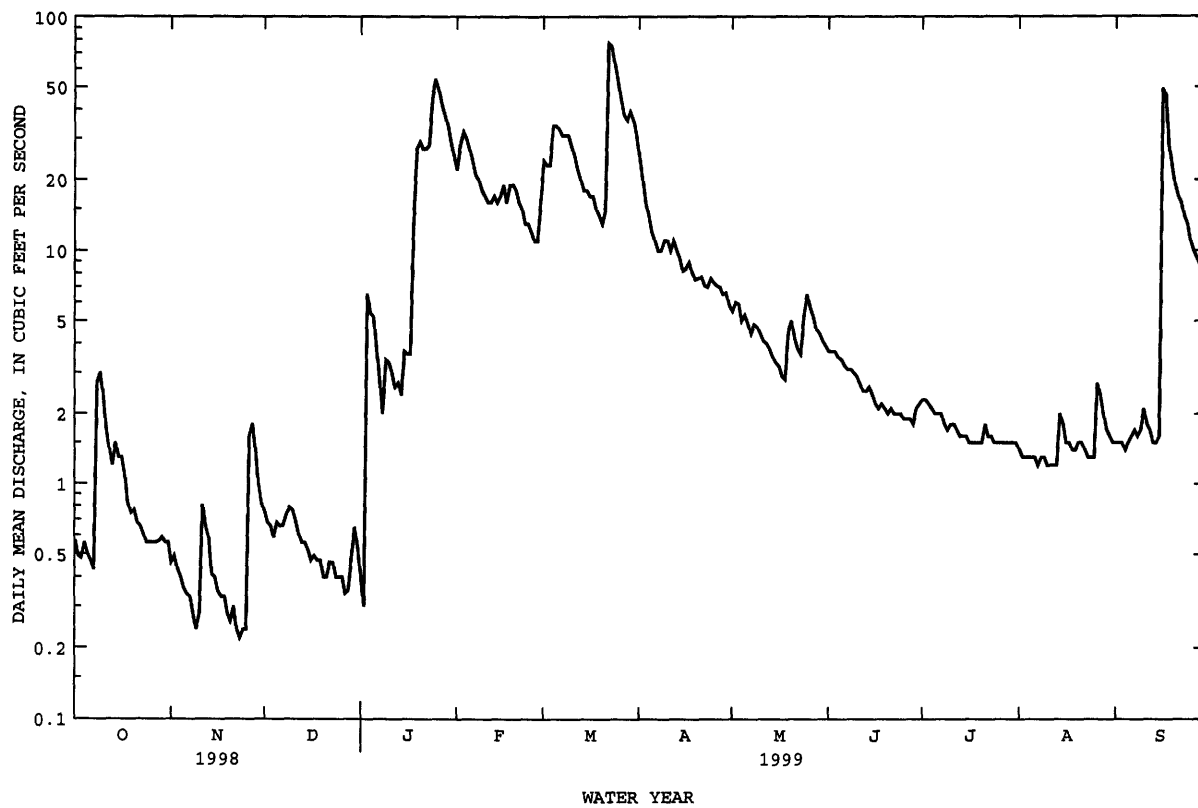
SUMMARY STATISTICS FOR 1998 CALENDAR YEAR FOR 1999 WATER YEAR WATER YEARS 1983 - 1999

ANNUAL TOTAL	5255.61	3002.62	
ANNUAL MEAN	14.4	8.23	13.7
HIGHEST ANNUAL MEAN			21.4
LOWEST ANNUAL MEAN			6.63
HIGHEST DAILY MEAN	113	77	248
LOWEST DAILY MEAN	.22	.22	.22
ANNUAL SEVEN-DAY MINIMUM	.25	.25	.25
INSTANTANEOUS PEAK FLOW		192	333
INSTANTANEOUS PEAK STAGE		3.01	3.51
INSTANTANEOUS LOW FLOW		.19	.19
ANNUAL RUNOFF (CFSM)	1.88	1.08	1.79
ANNUAL RUNOFF (INCHES)	25.56	14.60	24.35
10 PERCENT EXCEEDS	33	26	31
50 PERCENT EXCEEDS	5.5	2.4	8.5
90 PERCENT EXCEEDS	.48	.47	2.4

e Estimated

PASSAIC RIVER BASIN

01379773 GREEN POND BROOK AT PICATINNY ARSENAL, NJ--Continued



01379780 GREEN POND BROOK BELOW PICATINNY LAKE, AT PICATINNY ARSENAL, NJ

LOCATION.--Lat 40°56'56", long 74°33'29", Morris County, Hydrologic Unit 02030103, on left bank 100 ft upstream from bridge on Whitmore Avenue at Picatinny Arsenal, and 200 ft downstream from dam on Picatinny Lake.

DRAINAGE AREA.--9.16 mi².

PERIOD OF RECORD.--October 1984 to current year.

REVISED RECORDS.--WDR NJ-90-1: 1987 (M).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 694.91 ft above sea level (U.S. Army, Picatinny Arsenal, benchmark).

REMARKS.--Records good. Occasional regulation at Picatinny Lake. Several measurements of water temperature were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of April 5, 1984 reached an elevation of 699.0 ft above sea level, 200 ft upstream from bridge on Whitmore Avenue.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 70 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 25	1445	71	3.03	Sep 17	0230	*111	*3.23
Mar 22	1215	105	3.20				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	.99	1.2	.79	28	29	32	5.7	3.3	2.7	.77	.35
2	1.4	.99	1.2	.72	35	30	27	5.5	3.1	2.8	.68	.42
3	1.4	.99	1.2	1.3	40	29	22	5.6	3.1	2.8	.58	.48
4	1.4	1.0	1.2	2.1	37	43	19	5.5	2.8	2.7	.49	.46
5	1.3	.99	1.2	2.1	34	43	16	5.8	2.4	2.6	.49	.42
6	1.2	.99	1.2	2.3	30	42	14	5.8	2.3	2.6	.43	.42
7	1.2	.99	1.2	2.5	28	40	13	5.4	2.3	2.6	.49	.43
8	1.4	.99	1.1	2.6	26	37	12	5.8	2.5	2.5	.49	.49
9	1.3	.98	1.1	2.7	23	37	14	5.7	2.5	2.3	.47	.53
10	1.2	1.1	1.1	2.8	22	35	14	5.1	2.3	2.0	.42	.61
11	1.2	1.0	1.1	2.8	20	31	13	4.4	1.9	1.8	.45	.69
12	1.1	.99	1.1	2.9	19	28	14	3.7	2.0	1.6	.42	.72
13	1.2	.99	1.1	3.1	22	25	13	3.5	1.9	1.2	.48	.72
14	1.2	.99	1.0	3.1	20	24	13	3.1	2.1	.89	.42	.71
15	1.2	1.0	.99	3.1	19	25	11	2.7	2.3	1.0	.42	.72
16	1.2	.99	.99	3.2	21	21	11	2.6	2.4	1.1	.42	18
17	1.2	.99	.99	3.3	21	21	12	2.5	2.3	1.1	.42	86
18	1.2	1.0	.99	7.1	24	20	11	2.4	2.3	1.1	.42	45
19	1.3	1.5	.99	37	25	19	9.8	4.1	2.3	1.1	.41	32
20	1.4	1.4	.99	38	23	17	10	6.3	2.3	.98	.37	26
21	1.1	1.4	.99	36	21	19	10	5.1	2.3	.89	.30	23
22	1.2	1.4	.99	35	20	94	9.9	4.2	2.5	.89	.30	21
23	1.2	1.4	.99	35	18	97	9.7	3.9	2.6	.89	.31	18
24	1.1	1.4	.99	54	17	86	10	5.9	2.7	.92	.36	16
25	1.1	1.2	.99	69	15	67	9.6	7.8	2.8	1.1	.42	14
26	1.1	1.2	.99	61	15	56	9.1	6.7	2.8	1.0	.46	12
27	1.1	1.2	.90	53	14	47	8.7	5.7	2.8	.89	.45	11
28	1.1	1.2	.89	47	17	46	6.8	5.1	2.8	.88	.54	10
29	1.1	1.2	.89	41	---	45	6.2	4.6	2.8	.84	.60	17
30	.99	1.2	.89	36	---	44	5.8	4.1	2.8	.86	.45	24
31	.99	---	.86	31	---	38	---	3.5	---	.80	.37	---
TOTAL	37.48	33.66	32.31	621.51	654	1235	386.6	147.8	75.3	47.43	14.10	381.17
MEAN	1.21	1.12	1.04	20.0	23.4	39.8	12.9	4.77	2.51	1.53	.45	12.7
MAX	1.4	1.5	1.2	69	40	97	32	7.8	3.3	2.8	.77	86
MIN	.99	.98	.86	.72	14	17	5.8	2.4	1.9	.80	.30	.35
CFSM	.13	.12	.11	2.19	2.55	4.35	1.41	.52	.27	.17	.05	1.39
IN.	.15	.14	.13	2.52	2.66	5.02	1.57	.60	.31	.19	.06	1.55

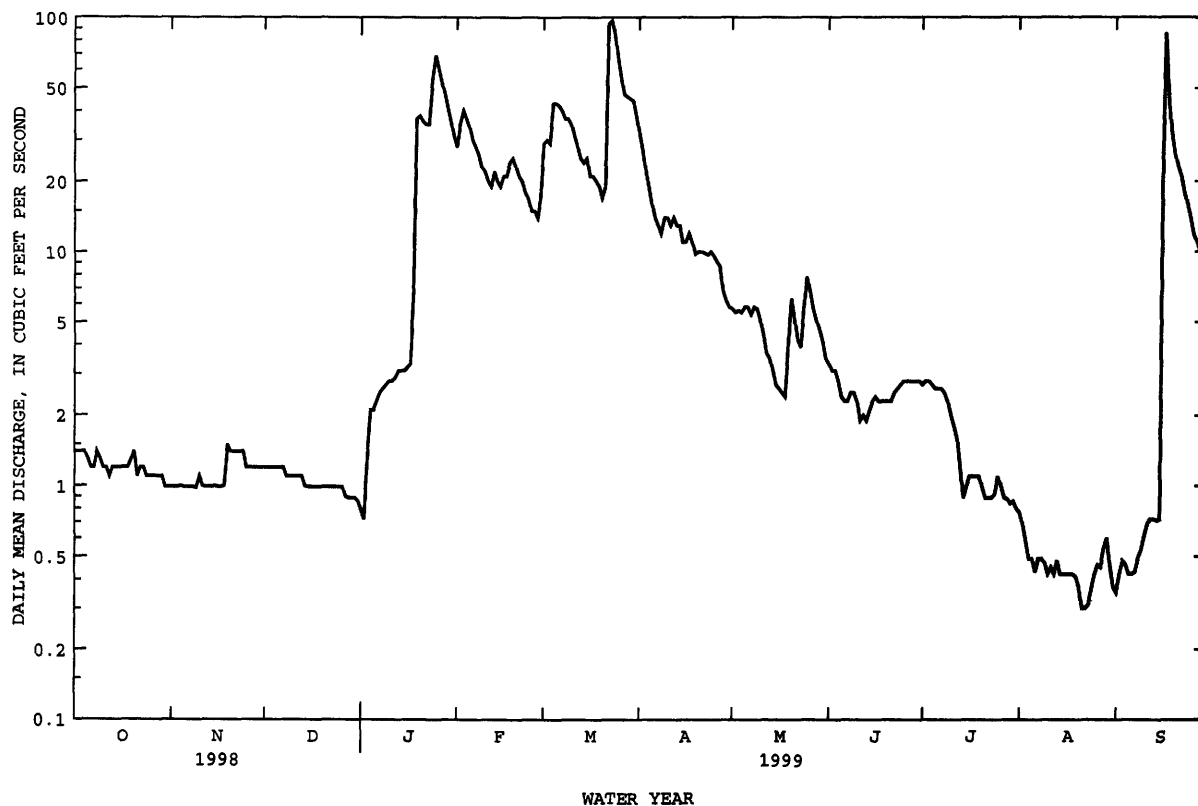
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1985 - 1999, BY WATER YEAR (WY)

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
MEAN	8.26	13.4	20.6	19.1	18.1	24.8	24.9	20.3	11.3	6.20	6.02	7.38			
MAX	33.3	29.5	60.7	51.2	31.8	39.8	51.1	66.7	32.4	18.4	28.6	36.7			
(WY)	1990	1996	1997	1996	1998	1999	1993	1989	1998	1990	1990	1987			
MIN	.71	.28	1.04	6.98	7.08	10.6	2.48	4.77	2.23	1.48	.45	1.73			
(WY)	1985	1985	1999	1985	1992	1985	1985	1999	1987	1993	1999	1998			

PASSAIC RIVER BASIN

01379780 GREEN POND BROOK BELOW PICATINNY LAKE, AT PICATINNY ARSENAL, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1985 - 1999	
ANNUAL TOTAL	6103.35		3666.36		15.0	
ANNUAL MEAN	16.7		10.0		22.1	1990
HIGHEST ANNUAL MEAN					6.35	1985
LOWEST ANNUAL MEAN					206	May 17 1990
HIGHEST DAILY MEAN	141	May 11	97	Mar 23	.20	Nov 20 1984
LOWEST DAILY MEAN	.86	Dec 31	.30	Aug 21	.20	Nov 17 1984
ANNUAL SEVEN-DAY MINIMUM	.92	Dec 25	.35	Aug 18	243	Sep 13 1987
INSTANTANEOUS PEAK FLOW			111	Sep 17	3.70	Sep 13 1987
INSTANTANEOUS PEAK FLOW			3.23	Sep 17	.30	Aug 20 1999
INSTANTANEOUS LOW FLOW			.30	Aug 20	1.64	
ANNUAL RUNOFF (CFSM)	1.83		1.10		22.27	
ANNUAL RUNOFF (INCHES)	24.79		14.89		34	
10 PERCENT EXCEEDS	40		32		9.1	
50 PERCENT EXCEEDS	2.6		2.4		1.5	
90 PERCENT EXCEEDS	1.0		.56			



01379790 GREEN POND BROOK AT WHARTON, NJ

LOCATION.--Lat 40°55'04", long 74°35'02", Morris County, Hydrologic Unit 02030103, on left bank 600 ft upstream from bridge on northbound lane of State Route 15, 0.2 mi northwest of Wharton, and 1.7 mi upstream from mouth.

DRAINAGE AREA.--12.6 mi².

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

GAGE.--Water-stage recorder and concrete control. Datum of gage is 680.26 ft above sea level (U.S. Army, Picatinny Arsenal, bench mark).

REMARKS.--Records good. Some regulation from Lake Picatinny, Picatinny Arsenal sewage treatment plant, and flood gates located about 800 ft upstream from gage. Several measurements of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 130 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar 22	1100	168	3.68	Sep 17	0215	*206	*3.82

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	1.3	2.6	2.2	37	48	43	11	6.8	4.4	2.4	.60
2	1.3	1.3	2.6	2.0	52	41	38	10	6.3	4.5	2.1	.57
3	1.6	1.2	2.2	26	55	40	31	10	6.1	4.3	1.7	.75
4	1.9	1.2	2.5	13	47	68	27	12	5.9	4.3	1.3	.55
5	1.6	1.4	2.9	7.0	43	55	24	12	5.4	4.1	1.3	.54
6	1.5	1.8	2.5	6.2	40	54	21	11	4.9	3.7	1.4	2.2
7	1.7	1.2	2.5	5.6	36	53	19	10	5.2	3.5	1.3	2.2
8	12	1.1	2.4	5.6	34	47	18	12	5.5	3.5	1.9	1.2
9	6.2	.97	2.8	11	31	46	20	11	5.2	3.4	2.4	2.1
10	3.1	.98	2.6	9.4	28	44	23	10	4.8	3.6	2.4	4.0
11	2.6	3.3	2.3	7.2	27	40	20	8.8	4.6	3.4	2.4	2.0
12	1.8	2.6	2.5	6.3	26	36	22	8.3	4.5	2.9	2.3	1.3
13	1.3	2.6	2.5	6.1	33	33	19	7.6	4.9	2.8	1.9	1.1
14	2.9	2.4	1.9	6.4	27	31	17	7.4	4.7	2.5	5.4	.98
15	1.9	2.3	2.0	10	25	34	16	7.1	4.7	2.7	3.3	1.3
16	1.7	2.3	1.8	10	26	30	16	6.3	4.6	2.2	2.1	69
17	1.6	1.8	1.9	8.4	26	33	18	6.3	4.5	2.2	1.9	178
18	1.6	1.8	1.9	34	39	32	16	6.1	4.7	2.0	1.5	88
19	1.6	2.1	1.8	59	37	27	15	10	4.2	2.3	1.2	51
20	1.5	2.2	1.9	48	32	24	17	12	4.1	2.3	2.0	37
21	1.5	2.4	2.0	44	29	30	18	9.3	5.0	3.8	2.0	31
22	1.8	2.4	2.2	45	26	150	16	8.5	4.5	2.4	1.4	29
23	1.8	2.6	2.3	45	23	138	17	8.1	4.3	2.5	1.3	24
24	1.5	2.0	2.3	72	21	114	18	12	4.3	2.1	1.0	20
25	1.4	2.3	2.1	81	20	92	15	13	4.4	2.1	1.3	17
26	1.4	7.6	2.0	72	19	74	14	11	4.2	2.2	6.5	15
27	1.4	5.1	1.9	64	18	63	13	9.8	4.2	2.2	2.4	13
28	1.6	3.8	2.1	57	26	63	13	8.9	4.1	2.3	1.2	12
29	1.7	3.1	2.4	51	---	56	12	8.2	5.6	2.9	1.1	13
30	1.6	2.8	3.2	45	---	55	11	7.6	4.7	2.5	.96	36
31	1.3	---	2.4	39	---	49	---	7.4	---	2.6	.94	---
TOTAL	67.7	69.95	71.0	898.4	883	1700	587	292.7	146.9	92.2	62.30	654.39
MEAN	2.18	2.33	2.29	29.0	31.5	54.8	19.6	9.44	4.90	2.97	2.01	21.8
MAX	12	7.6	3.2	81	55	150	43	13	6.8	4.5	6.5	178
MIN	1.3	.97	1.8	2.0	18	24	11	6.1	4.1	2.0	.94	.54
CFSM	.17	.19	.18	2.30	2.50	4.35	1.55	.75	.39	.24	.16	1.73
IN.	.20	.21	.21	2.65	2.61	5.02	1.73	.86	.43	.27	.18	1.93

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1999, BY WATER YEAR (WY)

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
MEAN	12.9	20.3	31.3	29.1	29.7	42.3	46.3	32.2	19.0	13.7	9.66	11.9					
MAX	46.7	46.3	79.4	80.2	49.7	89.2	112	87.0	40.9	61.4	36.4	54.0					
(WY)	1990	1996	1997	1996	1996	1983	1983	1989	1998	1984	1990	1987					
MIN	2.18	2.33	2.29	11.3	13.2	17.8	8.96	9.44	4.90	2.97	2.01	2.70					
(WY)	1999	1999	1999	1985	1992	1985	1985	1999	1999	1999	1999	1998					

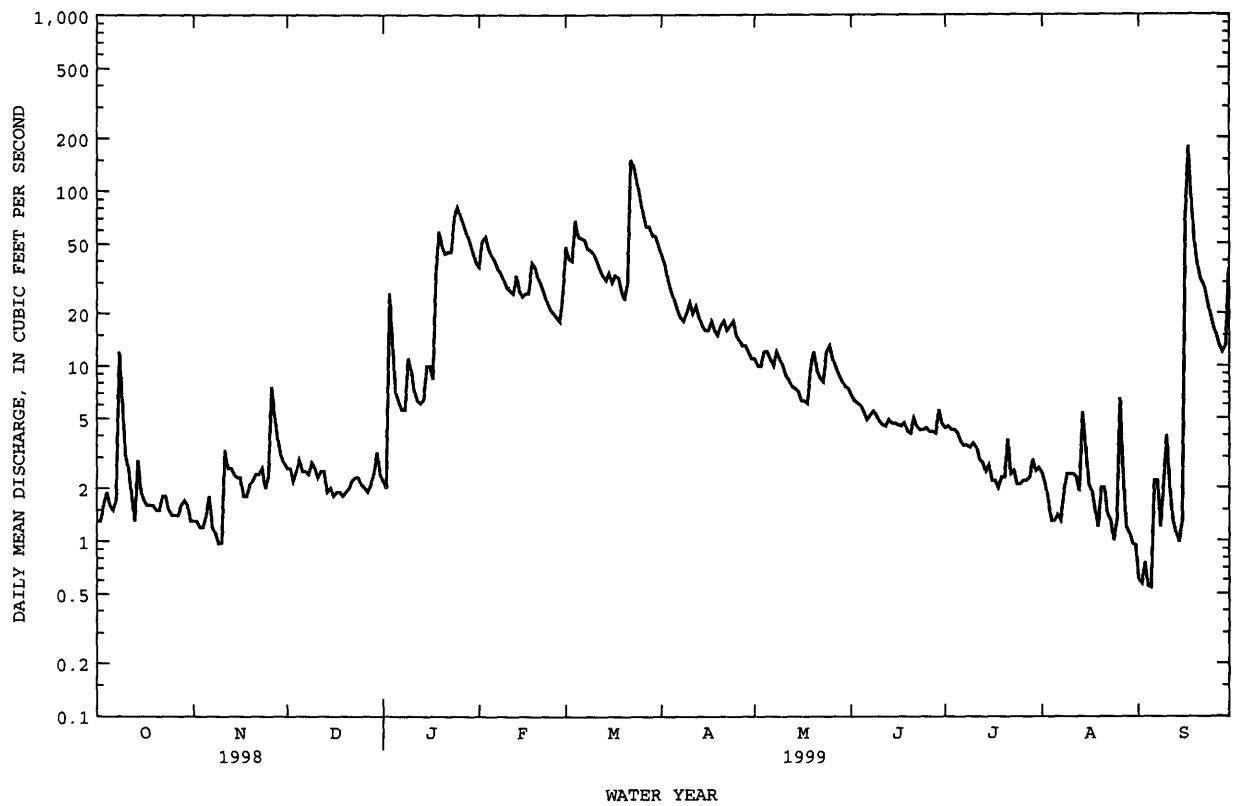
SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1983 - 1999

ANNUAL TOTAL	8783.45	5525.54	
ANNUAL MEAN	24.1	15.1	24.8
HIGHEST ANNUAL MEAN			40.6
LOWEST ANNUAL MEAN			12.5
HIGHEST DAILY MEAN	189	May 12	512
LOWEST DAILY MEAN	.97	Nov 9	.54
ANNUAL SEVEN-DAY MINIMUM	1.2	Nov 4	.70
INSTANTANEOUS PEAK FLOW			206
INSTANTANEOUS PEAK STAGE			3.82
INSTANTANEOUS LOW FLOW			.53
ANNUAL RUNOFF (CFSM)	1.91		1.20
ANNUAL RUNOFF (INCHES)	25.93		16.31
10 PERCENT EXCEEDS	55		44
50 PERCENT EXCEEDS	6.9		4.8
90 PERCENT EXCEEDS	1.7		1.4



01380500 ROCKAWAY RIVER ABOVE RESERVOIR, AT BOONTON, NJ

LOCATION.--Lat 40°54'10", long 74°24'36", Morris County, Hydrologic Unit 02030103, on right bank, under New Jersey Transit railroad bridge, just downstream from bridge on Morris Avenue in Boonton, 1.8 mi upstream from dam at Boonton Reservoir.

DRAINAGE AREA.--116 mi².

PERIOD OF RECORD.--October 1937 to current year. Monthly discharge only for October 1937, published in WSP 1302.

REVISED RECORDS.--WRD-NJ 1974: 1938(M). WDR NJ-78-1: 1949(M), 1952(M), 1968(M), 1971(M), 1973(P), 1974(M), 1977(M).

GAGE.--Water-stage recorder, crest-stage gage, and concrete control. Datum of gage is 364.47 ft above sea level (levels from New Jersey Geological Survey bench mark).

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 950 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 3	2245	1,110	3.90	Mar 22	1215	2,310	5.04
Jan 19	0415	1,640	4.46	Sep 17	0100	*4,270	*6.26
Jan 24	2230	1,090	3.88				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	35	49	62	207	469	319	134	71	42	9.5	16
2	32	38	44	67	420	382	298	126	65	50	7.3	15
3	17	36	35	422	637	321	265	126	65	39	6.6	12
4	22	35	31	578	429	588	246	209	62	37	5.8	14
5	26	34	39	218	323	491	233	186	55	32	6.6	13
6	26	33	44	136	270	404	221	152	50	27	8.9	52
7	28	33	32	119	245	441	223	151	45	22	7.4	39
8	145	44	39	82	240	331	204	158	45	18	6.3	45
9	278	35	48	180	226	284	208	146	42	16	5.8	37
10	151	38	45	248	218	266	278	128	38	16	5.7	62
11	107	75	44	149	205	249	237	121	37	16	5.7	51
12	73	70	39	111	198	228	291	121	38	17	5.9	31
13	69	45	33	100	260	211	234	99	39	21	5.7	23
14	109	39	31	80	218	205	208	89	46	20	65	22
15	75	36	30	144	192	240	182	89	48	18	42	20
16	51	31	38	235	186	238	188	91	44	15	26	789
17	39	34	51	170	179	254	260	83	41	14	19	3190
18	35	32	56	351	321	295	235	80	51	12	14	1280
19	29	29	61	1240	378	247	195	176	43	11	10	567
20	34	29	64	591	272	221	208	284	39	10	8.7	315
21	33	32	61	396	224	229	229	178	63	23	22	231
22	32	29	67	385	194	1610	197	135	57	21	19	222
23	27	37	62	391	173	1370	206	111	45	15	16	180
24	29	36	60	709	167	989	251	199	38	13	13	139
25	26	30	58	871	160	739	210	262	34	10	11	119
26	25	141	55	583	159	590	190	176	33	8.6	142	102
27	41	142	60	462	155	513	169	145	31	7.7	111	93
28	43	94	60	383	216	541	156	116	28	7.0	62	81
29	47	61	66	325	---	502	148	100	41	30	36	77
30	40	51	84	275	---	418	139	87	46	14	23	226
31	33	---	48	235	---	365	---	78	---	14	17	---
TOTAL	1768	1434	1534	10298	7072	14231	6628	4336	1380	616.3	743.9	8063
MEAN	57.0	47.8	49.5	332	253	459	221	140	46.0	19.9	24.0	269
MAX	278	142	84	1240	637	1610	319	284	71	50	142	3190
MIN	17	29	30	62	155	205	139	78	28	7.0	5.7	12

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1999, BY WATER YEAR (WY)

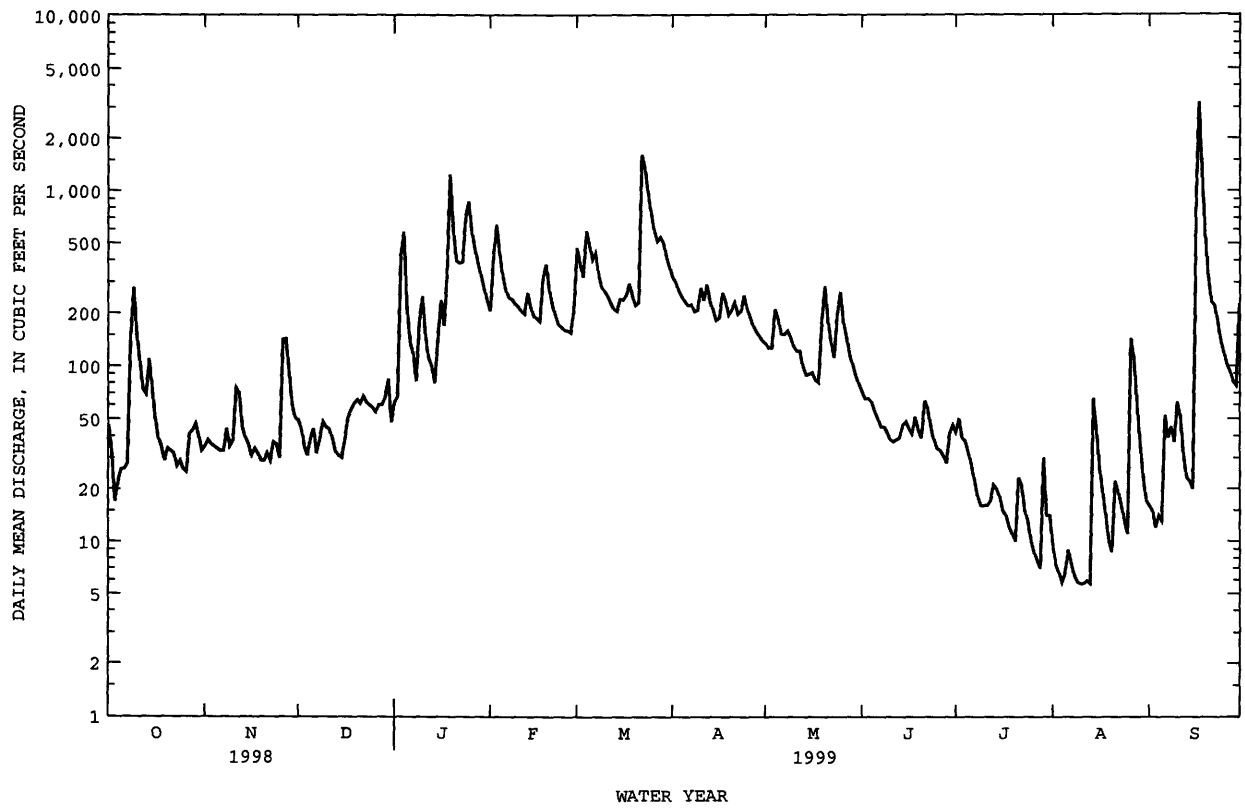
	MEAN	125	221	275	267	277	394	392	278	181	126	114	122
MAX	523	694	718	855	590	798	979	836	847	553	447	484	
(WY)	1956	1973	1997	1979	1973	1977	1983	1989	1972	1975	1955	1971	
MIN	23.7	47.8	49.5	74.8	107	152	87.0	90.5	35.3	18.1	16.6	16.8	
(WY)	1965	1999	1999	1981	1940	1985	1985	1965	1965	1966	1957	1964	

SUMMARY STATISTICS FOR 1998 CALENDAR YEAR FOR 1999 WATER YEAR WATER YEARS 1938 - 1999

ANNUAL TOTAL	87993	58104.2	
ANNUAL MEAN	241	159	231
HIGHEST ANNUAL MEAN			396
LOWEST ANNUAL MEAN			88.3
HIGHEST DAILY MEAN	2060	May 12	3190
LOWEST DAILY MEAN	17	Oct 3	5.7
ANNUAL SEVEN-DAY MINIMUM	24	Sep 17	6.1
INSTANTANEOUS PEAK FLOW			4270
INSTANTANEOUS PEAK STAGE			6.26
INSTANTANEOUS LOW FLOW			5.7
10 PERCENT EXCEEDS	519		357
50 PERCENT EXCEEDS	137		67
90 PERCENT EXCEEDS	31		16
			42

PASSAIC RIVER BASIN

01380500 ROCKAWAY RIVER ABOVE RESERVOIR, AT BOONTON, NJ--Continued



01381000 ROCKAWAY RIVER BELOW RESERVOIR, AT BOONTON, NJ

LOCATION.--Lat 40°53'49", long 74°23'42", Morris County, Hydrologic Unit 02030103, on right bank 2,000 ft downstream from Boonton Reservoir Dam at Boonton, and 0.4 mi upstream at bridge on Greenback Road.

DRAINAGE AREA.--119 mi².

PERIOD OF RECORD.--March to December 1903; January, February 1904 (gage height only); January 1906 to September 1950 (monthly discharge only, published in WSP 1302) October 1950 to current year (figures of daily discharge for October 1950 to September 1954 published in Special Report 16 of New Jersey Department of Environmental Protection). Published as "near Boonton" 1903-4, and as "at Boonton" 1906-37.

REVISED RECORDS.--WSP 1902: 1951-54. WDR NJ-79-1: 1949(M), 1952(M), 1968(M), 1970-74(M), 1977(M).

GAGE.--Water-stage recorder. Concrete control since Nov. 5, 1936. Datum of gage is 195.68 ft above sea level (levels from New Jersey Geological Survey bench mark). Mar. 15, 1903 to Feb. 2, 1904, nonrecording gage at site 1.9 mi downstream at different datum. Jan. 1, 1906 to Mar. 3, 1918, nonrecording gage on Boonton Reservoir Dam 2,000 ft upstream at datum 305.25 ft sea level (levels from New Jersey Geological Survey bench mark).

REMARKS.--Records good. Records represent flow in river only. Sewage effluent enters river about 600 ft below station (records given herein). Flow regulated by Boonton Reservoir (see Passaic River basin, reservoirs in) 2,000 ft upstream from station, and by Splitrock Reservoir (see Passaic River basin, reservoirs in) 16.5 mi above station. Water diverted from Boonton Reservoir for municipal supply of Jersey City (see Passaic River basin, diversions). Several measurements of water temperature were made during the year. Satellite telemeter at station.

COOPERATION.--Gage-height record collected in cooperation with and record of sewage effluent furnished by Jersey City, Bureau of Water.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,310 ft³/s, Mar 22, gage height, 6.24 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	11	21	9.8	131	331	236	57	13	9.8	9.4	11
2	11	11	15	9.5	243	332	216	48	11	9.8	9.5	11
3	11	11	13	18	555	251	192	40	11	10	9.5	11
4	11	11	11	9.3	406	449	168	84	10	10	11	11
5	11	13	11	13	285	447	155	123	10	10	13	11
6	10	15	11	13	220	341	150	84	10	10	11	11
7	10	16	12	13	186	360	150	73	10	10	10	11
8	13	16	12	13	182	291	132	83	10	11	10	10
9	11	15	11	15	169	235	117	81	10	11	10	12
10	11	13	11	13	94	209	176	55	10	12	10	11
11	11	14	11	13	13	191	164	43	10	12	10	10
12	11	12	11	12	13	167	195	36	10	12	10	10
13	11	11	11	12	13	147	162	29	11	11	10	10
14	11	11	11	12	12	142	130	17	10	11	11	10
15	11	11	11	13	23	183	107	12	10	11	10	10
16	11	11	11	12	82	183	101	11	10	11	10	50
17	11	11	11	12	106	182	158	11	10	11	10	14
18	10	11	11	21	191	228	154	11	10	10	10	13
19	10	11	10	13	320	198	124	28	10	10	10	10
20	10	11	10	12	242	166	117	169	10	10	10	10
21	9.8	11	10	12	178	165	153	126	10	11	10	11
22	9.6	11	10	12	138	1450	126	77	10	11	10	11
23	9.6	11	10	12	111	1680	122	46	9.8	10	9.9	10
24	9.5	11	10	17	100	1000	164	77	9.9	10	9.9	10
25	9.5	11	10	12	91	700	139	189	9.9	10	9.8	10
26	9.5	12	10	12	91	516	119	122	9.7	10	13	11
27	12	13	10	12	83	412	92	77	9.7	10	11	11
28	9.8	24	10	12	110	418	83	48	9.8	11	10	12
29	9.5	26	10	12	---	405	72	27	10	9.7	9.9	12
30	10	25	9.9	12	---	323	64	13	9.8	9.1	10	13
31	11	---	9.7	78	---	281	---	11	---	9.4	10	---
TOTAL	326.8	401	345.6	461.6	4388	12383	4238	1908	304.6	323.8	317.9	368
MEAN	10.5	13.4	11.1	14.9	157	399	141	61.5	10.2	10.4	10.3	12.3
MAX	13	26	21	78	555	1680	236	189	13	12	13	50
MIN	9.5	11	9.7	9.3	12	142	64	11	9.7	9.1	9.4	10
(t)	12.6	13.0	12.6	14.6	14.7	16.8	15.5	14.6	14.2	12.7	12.6	14.5

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 1999, BY WATER YEAR (WY)

	MEAN	49.5	101	173	168	178	285	301	194	100	51.5	41.3	44.4
MAX	408	483	802	692	499	739	978	873	671	445	269	346	
(WY)	1956	1973	1997	1979	1973	1994	1983	1989	1972	1984	1990	1960	
MIN	.23	.43	.35	.39	1.49	13.9	11.4	18.6	.40	.25	.29	.28	
(WY)	1964	1966	1966	1966	1966	1981	1985	1955	1957	1966	1966	1957	

PASSAIC RIVER BASIN

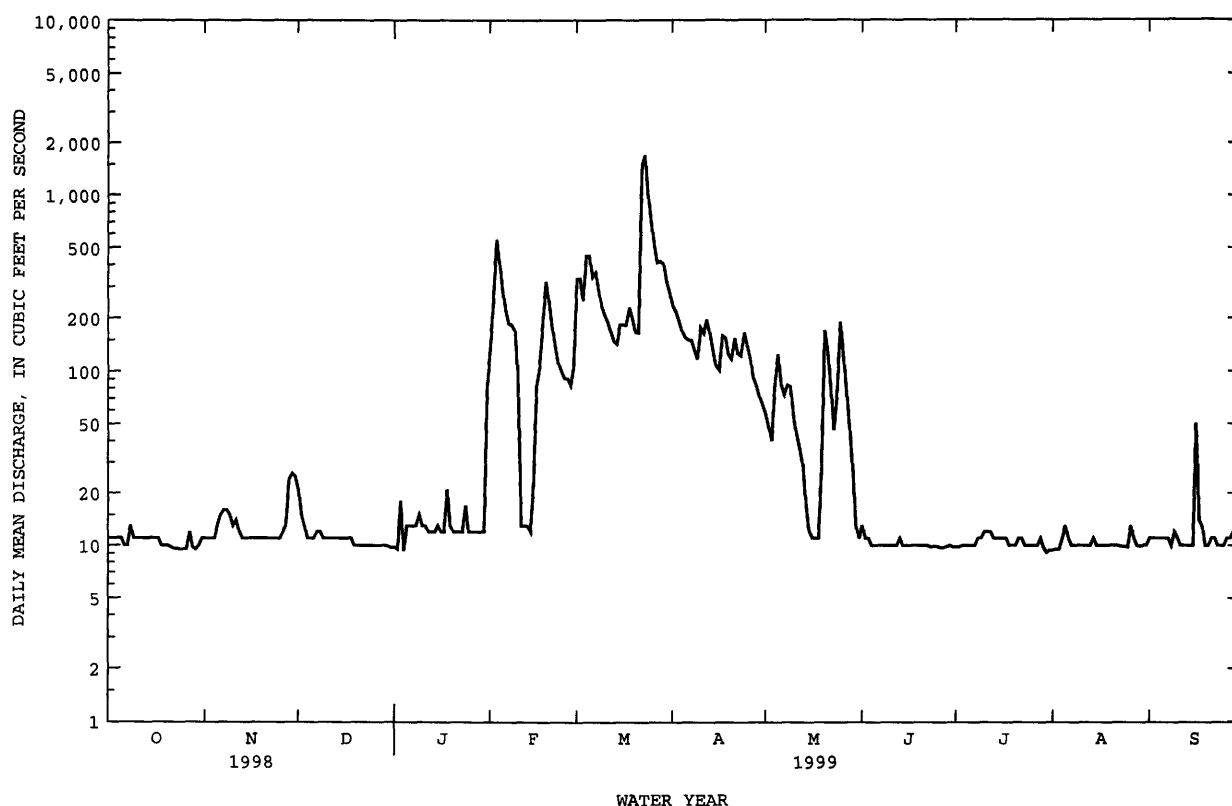
01381000 ROCKAWAY RIVER BELOW RESERVOIR, AT BOONTON, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1950 - 1999	
ANNUAL TOTAL	64905.8		25766.3		140	
ANNUAL MEAN	178		70.6			
(†)	15.1		14.0			
HIGHEST ANNUAL MEAN					296	1952
LOWEST ANNUAL MEAN					7.19	1965
HIGHEST DAILY MEAN	2070	May 12	1680	Mar 23	3850	Apr 6 1984
LOWEST DAILY MEAN	9.5	Oct 24	9.1	Jul 30	.00	Jan 19 1959
ANNUAL SEVEN-DAY MINIMUM	9.6	Jul 10	9.6	Oct 20	.00	Dec 18 1963
INSTANTANEOUS PEAK FLOW			2310	Mar 22	7560	Oct 10 1903
INSTANTANEOUS PEAK STAGE			6.24	Mar 22	.00a	Oct 10 1903
INSTANTANEOUS LOW FLOW			3.2	Nov 27	3.2	Nov 27 1998
10 PERCENT EXCEEDS	417		187		369	
50 PERCENT EXCEEDS	24		11		38	
90 PERCENT EXCEEDS	10		10		.90	

a Since 1903; see period of record section

b Maximum daily

† Sewage effluent, in cubic feet per second, from plant at Rockaway Valley Regional Sewerage Authority



01381400 WHIPPANY RIVER NEAR MORRISTOWN, NJ

LOCATION.--Lat 40°48'44", long 74°30'44", Morris County, Hydrologic Unit 02030103, on left downstream side of bridge on Sussex Avenue, 1.9 mi northwest of Morristown, and 2.7 mi upstream from Lake Pocahontas Dam.

DRAINAGE AREA.--14.0 mi².

PERIOD OF RECORD.--Low-flow partial-record site 1964-72. August 1995 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 310 ft above sea level (from topographic map).

REMARKS.--Records good except for estimated discharges which were poor. Water diverted at Clyde Potts Reservoir for municipal supply by the Southeast Morris County Municipal Utilities Authority. 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)
Jan 3	1930	407	5.71	Feb 2	1945	162	4.90
Jan 18	2300	474	5.85	Mar 22	0715	724	6.33
Jan 24	1715	210	5.14	Sep 16	2015	*2,570	*9.31

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.7	5.1	6.3	4.2	16	72	34	16	12	6.3	2.7	7.2
2	3.3	5.1	5.6	3.9	75	30	33	16	8.5	7.4	2.2	6.7
3	3.3	5.1	6.0	172	66	26	30	16	8.1	5.6	1.9	3.3
4	4.5	5.3	6.3	e72	24	87	29	20	7.5	5.2	2.1	3.0
5	4.1	5.3	6.4	e16	18	33	27	18	7.3	4.8	2.2	4.6
6	4.3	5.3	6.4	e6.6	15	36	26	16	7.1	4.4	2.1	10
7	4.6	5.3	6.0	e5.0	14	41	26	16	7.0	4.0	1.9	7.1
8	41	5.4	6.2	e4.6	15	27	24	21	6.7	3.8	2.5	6.8
9	26	5.4	6.8	e42	13	23	31	18	6.5	3.9	2.7	8.5
10	9.2	5.5	5.9	e48	13	22	40	16	6.4	4.2	2.2	14
11	6.3	13	6.1	e12	12	21	31	14	6.4	3.8	3.6	5.6
12	5.7	7.7	6.0	e9.2	13	19	42	13	6.3	3.7	3.6	4.0
13	6.1	6.0	6.0	9.2	25	18	28	12	6.9	3.8	3.4	3.6
14	10	5.9	5.9	8.6	13	19	24	12	7.3	3.7	21	3.5
15	6.8	5.6	5.7	41	12	30	22	12	8.2	3.7	5.3	4.4
16	6.9	5.2	5.8	e39	10	32	26	11	6.2	3.5	4.0	728
17	6.6	5.5	5.9	17	10	40	32	11	6.6	3.3	3.1	498
18	6.3	5.5	5.8	124	59	37	24	11	7.5	3.1	2.9	42
19	5.8	5.4	5.6	163	39	25	21	32	6.2	3.3	2.6	22
20	5.4	5.4	5.6	26	22	21	32	30	5.9	3.4	4.0	18
21	5.4	5.6	5.6	18	18	34	30	16	8.6	3.4	6.6	17
22	5.4	5.2	6.4	33	16	405	25	11	6.7	3.6	3.8	17
23	5.3	5.4	5.6	35	18	113	31	11	5.8	3.3	3.4	13
24	5.6	5.5	5.6	130	13	69	32	49	5.4	2.8	2.9	12
25	5.3	5.0	5.2	79	13	58	23	39	5.3	2.7	2.8	11
26	5.0	32	6.0	30	13	50	21	21	5.3	2.6	35	10
27	5.1	13	5.0	22	13	46	19	17	5.1	2.3	12	9.8
28	5.1	7.6	5.2	18	34	59	18	16	5.0	2.5	5.0	9.6
29	6.5	6.8	6.7	15	---	46	18	14	15	2.7	3.9	9.3
30	5.4	6.7	10	12	---	39	17	13	8.2	2.8	4.0	34
31	5.0	---	5.3	11	---	36	---	13	---	2.9	7.2	---
TOTAL	229.0	210.8	186.9	1226.3	622	1614	816	551	215.0	116.5	162.6	1543.0
MEAN	7.39	7.03	6.03	39.6	22.2	52.1	27.2	17.8	7.17	3.76	5.25	51.4
MAX	41	32	10	172	75	405	42	49	15	7.4	35	728
MIN	3.3	5.0	5.0	3.9	10	18	17	11	5.0	2.3	1.9	3.0
CFSM	.53	.50	.43	2.83	1.59	3.72	1.94	1.27	.51	.27	.37	3.67
IN.	.61	.56	.50	3.26	1.65	4.29	2.17	1.46	.57	.31	.43	4.10

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 1999, BY WATER YEAR (WY)

	1995	1996	1997	1998	1999
MEAN	47.2	25.3	50.0	49.6	41.0
MAX	145	40.4	154	73.8	52.3
(WY)	1997	1996	1997	1996	1999
MIN	7.39	7.03	6.03	36.1	22.2
(WY)	1999	1999	1999	1998	1999

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

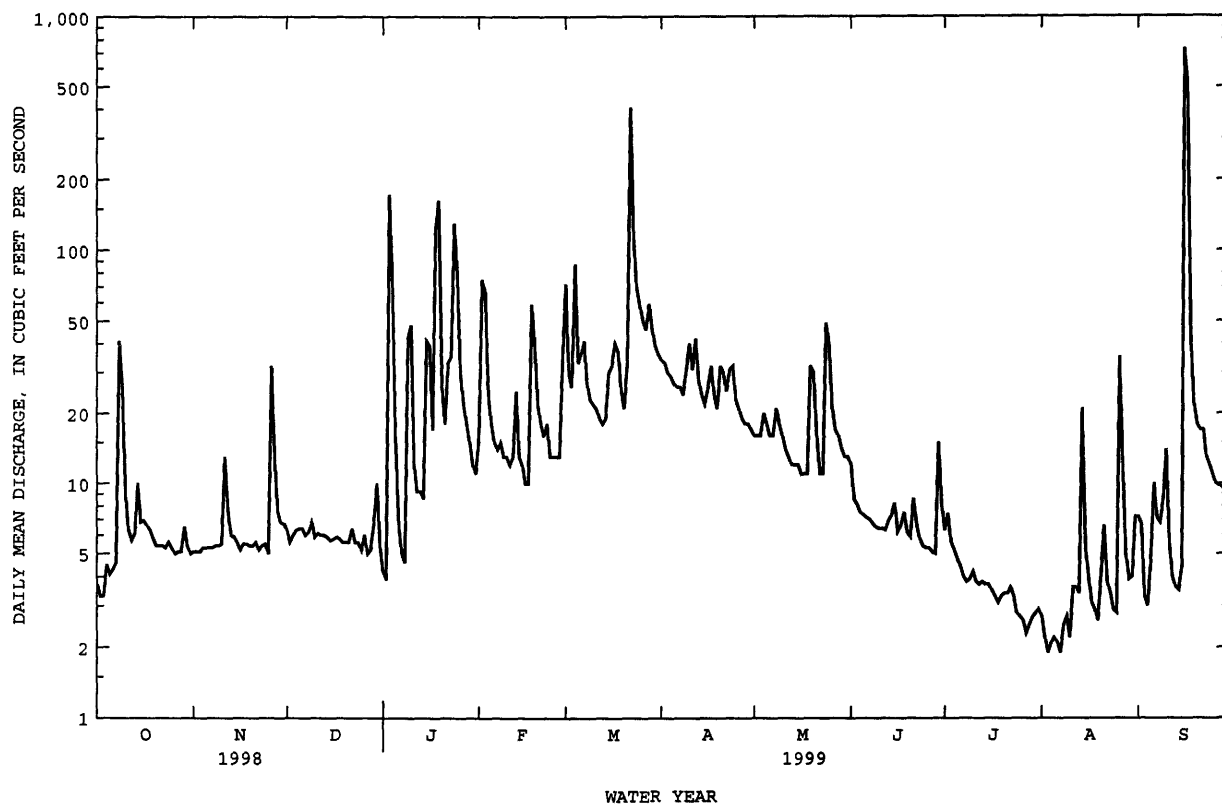
FOR 1999 WATER YEAR

WATER YEARS 1995 - 1999

ANNUAL TOTAL	9947.2	7493.1	
ANNUAL MEAN	27.3	20.5	34.5
HIGHEST ANNUAL MEAN			50.9
LOWEST ANNUAL MEAN			20.5
HIGHEST DAILY MEAN	284	728	2000
LOWEST DAILY MEAN	3.3	1.9	1.9
ANNUAL SEVEN-DAY MINIMUM	3.5	2.1	2.1
INSTANTANEOUS PEAK FLOW		2570	2570
INSTANTANEOUS PEAK STAGE		9.31	9.31
INSTANTANEOUS LOW FLOW		1.7	1.7
ANNUAL RUNOFF (CFSM)	1.95	1.47	2.46
ANNUAL RUNOFF (INCHES)	26.43	19.91	33.47
10 PERCENT EXCEEDS	55	36	65
50 PERCENT EXCEEDS	14	7.7	18
90 PERCENT EXCEEDS	4.4	3.5	5.0

01381400 WHIPPANY RIVER NEAR MORRISTOWN, NJ--Continued

e Estimated



01381500 WHIPPANY RIVER AT MORRISTOWN, NJ

LOCATION.--Lat 40°48'26", long 74°27'22", Morris County, Hydrologic Unit 02030103, on left bank at Morristown sewage-disposal plant, 0.8 mi northeast of Morristown, and 9.0 mi upstream from mouth.

DRAINAGE AREA.--29.4 mi².

PERIOD OF RECORD.--August 1921 to current year.

REVISED RECORDS.--WSP 781: Drainage area. WSP 1552: 1922-23 (M), 1924, 1925-27 (M) 1928-29, 1930-32 (M), 1933-34. WRD-NJ 1974: 1965. WDR NJ-84-1: 1971 (M).

GAGE.--Water-stage recorder and crest-stage gage. Concrete control since July 1, 1936. Datum of gage is 260.01 ft above sea level (levels from New Jersey Geological Survey bench mark). Prior to July 16, 1930, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated discharges which are fair. Flow occasionally regulated by operation of gates in Pocahontas Dam, 2.5 mi above station. Diurnal fluctuations from unknown source at low flow. Several measurements of water temperature, other than those published, were made during the year. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 3	0945	709	4.71	Aug 26	0630	847	5.04
Jan 18	1800	754	4.82	Sep 16	2145	*2,630	*8.33
Mar 22	0915	1,090	5.58				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	16	23	18	31	134	65	40	30	26	14	20
2	16	21	20	e17	133	79	53	38	27	27	12	20
3	15	24	18	335	151	60	52	39	26	22	11	15
4	18	17	18	192	64	127	57	53	25	20	11	14
5	18	16	20	e30	54	85	55	48	24	19	12	18
6	18	16	20	28	48	71	53	41	24	18	12	41
7	18	16	20	24	40	80	54	41	24	17	11	27
8	112	16	20	21	44	63	53	58	24	16	12	25
9	83	17	19	106	40	51	64	47	23	16	13	19
10	33	18	18	103	39	49	83	40	22	17	11	50
11	24	35	18	32	37	46	66	37	22	16	13	25
12	21	26	18	26	39	43	84	36	22	16	14	17
13	22	20	19	28	57	41	59	34	24	16	14	15
14	33	19	19	27	40	44	51	33	29	17	91	15
15	24	19	19	89	35	61	47	31	29	17	23	21
16	22	18	19	86	34	61	54	31	23	16	19	1120
17	21	19	19	41	33	72	67	31	25	15	15	894
18	21	18	19	262	104	71	52	31	26	14	14	91
19	21	19	19	287	97	52	47	87	23	15	12	44
20	20	24	19	81	52	45	63	76	22	16	19	32
21	19	18	32	49	42	86	64	41	31	15	25	32
22	22	18	20	70	37	764	53	32	27	16	16	38
23	22	21	23	72	33	205	63	32	23	16	15	25
24	22	19	19	223	34	123	70	99	20	14	13	21
25	20	17	18	167	34	105	56	90	19	13	13	19
26	21	64	18	79	34	90	52	47	19	13	153	18
27	20	44	18	56	33	84	47	38	20	13	51	17
28	20	25	19	48	67	110	45	36	19	12	22	17
29	19	21	27	41	---	88	42	33	55	17	17	17
30	19	20	32	37	---	73	41	32	35	15	15	92
31	17	---	21	33	---	67	---	31	---	16	19	---
TOTAL	799	661	631	2708	1486	3130	1712	1383	762	516	712	2819
MEAN	25.8	22.0	20.4	87.4	53.1	101	57.1	44.6	25.4	16.6	23.0	94.0
MAX	112	64	32	335	151	764	84	99	55	27	153	1120
MIN	15	16	18	17	31	41	41	31	19	12	11	14
CFSM	.88	.75	.69	2.97	1.81	3.43	1.94	1.52	.86	.57	.78	3.20
IN.	1.01	.84	.80	3.43	1.88	3.96	2.17	1.75	.96	.65	.90	3.57

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1999, BY WATER YEAR (WY)

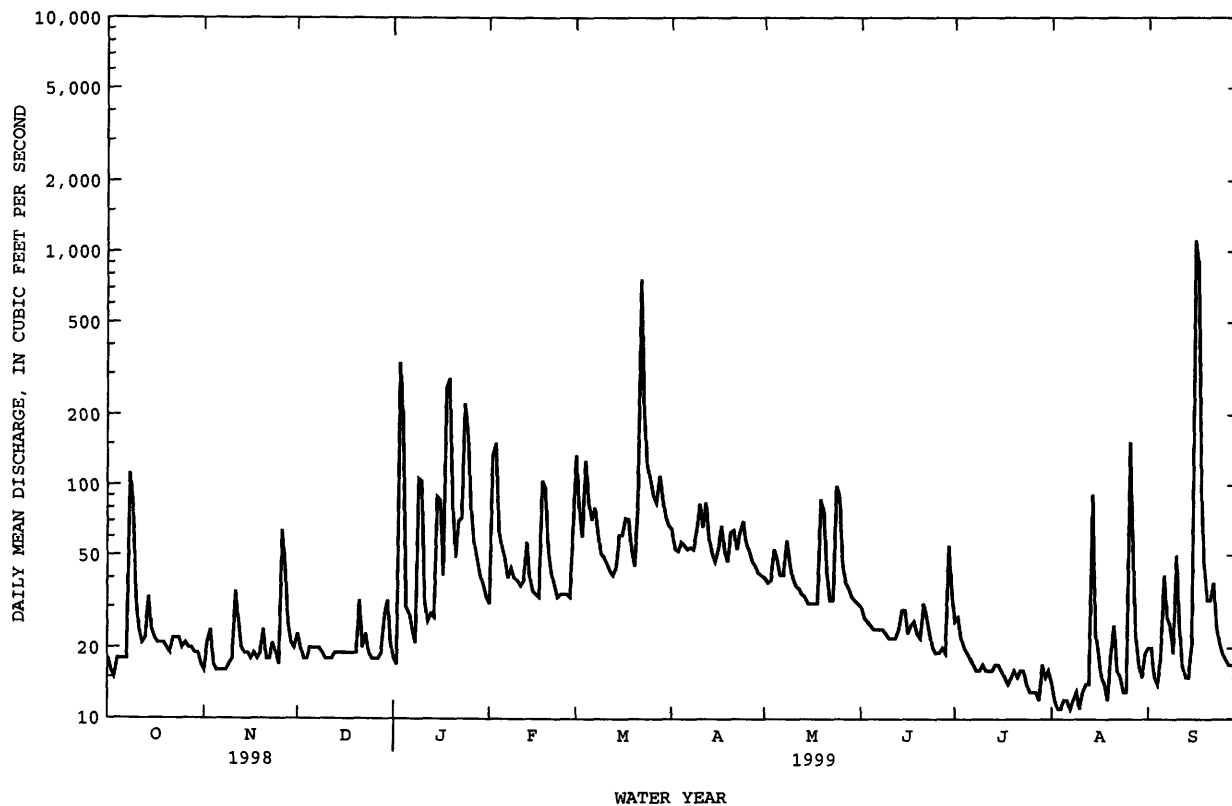
	MEAN	32.8	45.6	54.7	59.7	64.8	87.6	87.8	67.1	47.2	38.4	35.1	35.0
MAX	133	132	185	211	147	215	231	237	214	186	158	123	
(WY)	1997	1933	1997	1979	1973	1936	1983	1989	1972	1975	1942	1971	
MIN	8.72	13.4	14.2	16.9	23.5	28.1	30.2	24.4	14.6	10.3	8.02	7.25	
(WY)	1931	1937	1940	1922	1940	1981	1985	1941	1965	1965	1932	1932	

PASSAIC RIVER BASIN

01381500 WHIPPANY RIVER AT MORRISTOWN, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1922 - 1999	
ANNUAL TOTAL	22864		17319			
ANNUAL MEAN	62.6		47.4		54.6	
HIGHEST ANNUAL MEAN					98.5	
LOWEST ANNUAL MEAN					23.3	
HIGHEST DAILY MEAN	759	Jun 14	1120	Sep 16	1510	Aug 28 1971
LOWEST DAILY MEAN	15	Oct 3	11	Aug 3	4.2	Sep 10 1932
ANNUAL SEVEN-DAY MINIMUM	17	Nov 4	12	Aug 2	4.7	Sep 9 1932
INSTANTANEOUS PEAK FLOW			2630	Sep 16	2800	Aug 28 1971
INSTANTANEOUS PEAK STAGE			8.33	Sep 16	8.60	Aug 28 1971
INSTANTANEOUS LOW FLOW			9.6	Aug 7	2.8	Aug 27 1932
ANNUAL RUNOFF (CFSM)	2.13		1.61		1.86	
ANNUAL RUNOFF (INCHES)	28.93		21.91		25.23	
10 PERCENT EXCEEDS	120		84		105	
50 PERCENT EXCEEDS	41		26		36	
90 PERCENT EXCEEDS	18		16		15	

e Estimated



01381800 WHIPPANY RIVER NEAR PINE BROOK, NJ

LOCATION.--Lat 40°50'42", long 74°20'51", Morris County, Hydrologic Unit 02030103, on left upstream abutment of former bridge on Edwards Road, 200 ft downstream from bridges of Interstate 280, 0.4 mi upstream from Rockaway River, and 1.2 mi southwest of Pine Brook. Water-quality samples collected 450 ft upstream at bridge on Ridgedale Avenue.

DRAINAGE AREA.--68.5 mi²

PERIOD OF RECORD.--Low-flow partial record station water years 1963-69, 1973, 1979-96. November 1992 to September 1996 (gage height and discharge measurements only), October 1996 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 162 ft above sea level (from topographic map).

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	27	40	38	95	250	265	51	45	45	e18	28
2	26	28	36	49	177	289	217	47	42	47	e17	27
3	24	34	34	215	363	250	158	46	38	36	e17	25
4	31	34	31	410	382	298	122	67	36	29	17	22
5	30	28	32	408	323	346	99	81	34	27	17	22
6	30	28	34	341	263	310	90	64	32	26	17	61
7	29	28	33	242	215	297	92	57	32	25	17	45
8	96	28	32	143	180	271	84	93	33	e23	17	46
9	196	28	40	160	150	228	83	116	32	e22	18	35
10	114	30	32	267	119	189	144	82	31	e23	17	66
11	68	53	30	178	71	156	117	65	30	e22	18	57
12	50	56	30	97	66	123	179	57	30	e22	18	32
13	47	38	29	83	95	100	142	53	32	e23	19	27
14	78	33	30	76	76	92	97	49	38	e23	105	25
15	64	31	30	136	64	137	78	46	65	e23	51	26
16	45	30	30	233	68	167	73	44	35	e21	31	286
17	38	31	30	180	73	189	111	45	33	e20	25	806
18	35	31	31	249	159	203	99	45	42	e19	23	866
19	34	30	28	470	274	187	83	111	33	e20	22	826
20	33	33	28	471	258	153	86	256	30	e21	22	757
21	31	35	37	407	206	131	113	176	44	e22	51	688
22	31	29	40	343	149	439	92	91	44	e22	31	623
23	36	29	32	293	100	586	93	64	34	e20	24	556
24	34	32	32	310	79	585	142	141	29	e18	23	489
25	32	30	28	387	70	553	102	303	27	e19	22	414
26	29	78	26	364	68	511	83	240	27	e19	163	330
27	33	108	27	304	65	465	69	138	26	e18	185	241
28	31	58	27	255	92	430	62	83	27	e18	75	142
29	38	46	34	215	---	403	58	61	78	e22	42	61
30	31	40	77	169	---	361	54	52	71	e20	30	123
31	29	---	42	119	---	313	---	47	---	e19	27	---
TOTAL	1450	1144	1042	7612	4300	9012	3287	2871	1130	734	1179	7752
MEAN	46.8	38.1	33.6	246	154	291	110	92.6	37.7	23.7	38.0	258
MAX	196	108	77	471	382	586	265	303	78	47	185	866
MIN	24	27	26	38	64	92	54	44	26	18	17	22

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 1999, BY WATER YEAR (WY)

	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997
MEAN	138	107	280	234	209	251	232	191	103	59.7	46.6	123
MAX	323	161	696	260	274	291	331	274	181	104	65.1	258
(WY)	1997	1997	1997	1997	1997	1999	1997	1998	1998	1997	1997	1999
MIN	45.5	38.1	33.6	197	154	229	110	92.6	37.7	23.7	36.7	35.2
(WY)	1998	1999	1999	1998	1999	1998	1999	1999	1999	1999	1998	1998

SUMMARY STATISTICS

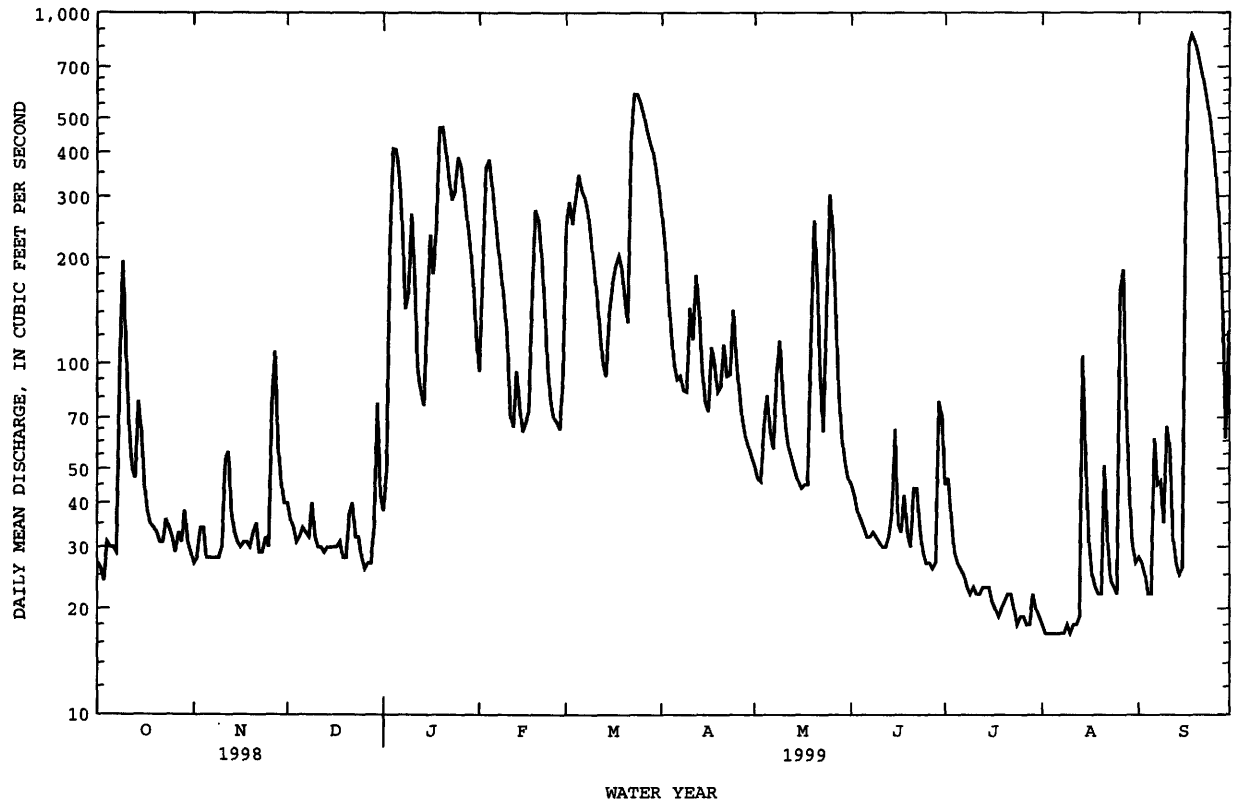
FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1997 - 1999

ANNUAL TOTAL	47783	41513	
ANNUAL MEAN	131	114	165
HIGHEST ANNUAL MEAN			236
LOWEST ANNUAL MEAN			114
HIGHEST DAILY MEAN	667	May 13	866
LOWEST DAILY MEAN	24	Aug 31	17
ANNUAL SEVEN-DAY MINIMUM	26	Sep 19	17
INSTANTANEOUS PEAK FLOW			871
INSTANTANEOUS PEAK STAGE			9.12
INSTANTANEOUS LOW FLOW			17
10 PERCENT EXCEEDS	324		303
50 PERCENT EXCEEDS	69		49
90 PERCENT EXCEEDS	28		22

a Stage on Oct.20,1996 was higher (unknown).
e Estimated



01381900 PASSAIC RIVER AT PINE BROOK, NJ

LOCATION.--Lat 40°51'45", long 74°19'18", Morris County, Hydrologic Unit 02030103, on left bank 20 ft downstream from bridge on U.S. Route 46, 0.5 mi east of Pine Brook, and 1.3 mi downstream from Rockaway River.

DRAINAGE AREA.--349 mi².

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1963-69, 1973, and annual maximum, water years 1966-75, 1978-79. October 1979 to current year. Feb. 19 to Aug. 24, 1939 in files of U.S. Army Corps of Engineers, New York District.

REVISED RECORDS.--WDR NJ-77-1: 1967(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 149.26 ft above sea level. December 1965 to September 1979, crest-stage gage at same site at datum 10.00 ft higher. Feb. 19 to Aug. 24, 1939, water-stage recorder at present State Route 506 bridge, 1,600 ft upstream from gage, operated by U.S. Army Corps of Engineers, New York District at datum 13.05 ft higher.

REMARKS.--Records good except those above 1,000 ft³/s, which are fair. Flow regulated by Boonton and Splitrock Reservoir (see Passaic River basin, reservoirs in) and many small lakes. Water diverted from Boonton Reservoir for municipal supply of Jersey City (see Passaic River basin, diversions). Several measurements of water temperature were made during the year. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1810, according to State Geologist's report for 1904, 23.2 ft, Oct. 10, 1903, present datum, from King Survey of highwater marks at present State Route 506 bridge, 1,600 ft upstream from gage. Floods of Mar. 13, 1936 and Sept. 24, 1938 reached stages of 20.8 ft and 19.4 ft respectively, at present State Route 506 bridge and present datum. Flood of July 23, 1945 reached a stage of 22.3 ft at present site and datum according to U.S. Army Corps of Engineers; minimum observed, 41.1 ft³/s, Sept. 22, 1964.

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)
Mar 24	0515	2,830	19.03	Sep 18	1030	*4,400	*20.82

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	104	125	163	142	559	748	1170	274	197	144	86	107
2	110	124	148	123	615	952	959	251	182	150	81	105
3	102	128	136	487	1070	974	791	232	168	137	79	103
4	107	128	131	1070	1400	1040	646	291	155	122	77	96
5	112	124	129	1300	1420	1230	543	381	143	112	80	93
6	109	126	132	e1000	1250	1280	484	336	134	106	81	172
7	108	127	129	e844	1010	1230	465	283	133	102	79	176
8	197	126	128	e645	828	1150	442	316	133	96	76	170
9	504	127	146	588	694	999	423	429	130	92	78	136
10	423	126	136	761	597	862	538	386	126	93	77	211
11	298	160	130	668	437	724	576	298	121	92	78	201
12	212	194	126	472	360	604	649	255	118	90	80	145
13	178	160	123	346	418	511	645	228	120	91	79	118
14	255	147	122	281	390	457	557	201	143	93	237	103
15	272	137	120	362	320	520	469	180	258	94	292	101
16	198	128	120	688	305	625	415	167	194	92	182	892
17	162	126	120	678	328	705	514	164	146	90	118	3850
18	142	126	121	788	522	775	536	161	151	93	97	4350
19	133	124	118	1440	875	800	485	295	134	95	88	4080
20	128	126	117	1720	962	729	441	657	123	93	86	3620
21	125	130	120	1700	918	654	533	628	143	91	150	3190
22	124	123	135	1580	771	1410	514	461	155	90	126	2830
23	127	122	124	1450	605	2520	483	325	135	92	99	2510
24	124	125	123	1450	475	2820	583	391	123	89	94	2200
25	123	124	116	1640	390	2700	556	743	115	86	86	1890
26	121	194	110	1660	358	2490	482	775	111	84	374	1570
27	121	315	109	1560	341	2240	422	643	107	84	591	1220
28	122	235	113	1400	359	2020	366	484	107	82	397	861
29	137	199	121	1210	---	1830	328	347	180	86	231	542
30	136	177	227	971	---	1630	299	264	208	85	144	482
31	127	---	178	750	---	1400	---	218	---	94	115	---
TOTAL	5241	4433	4071	29774	18577	38629	16314	11064	4393	3040	4538	36124
MEAN	169	148	131	960	663	1246	544	357	146	98.1	146	1204
MAX	504	315	227	1720	1420	2820	1170	775	258	150	591	4350
MIN	102	122	109	123	305	457	299	161	107	82	76	93

PASSAIC RIVER BASIN

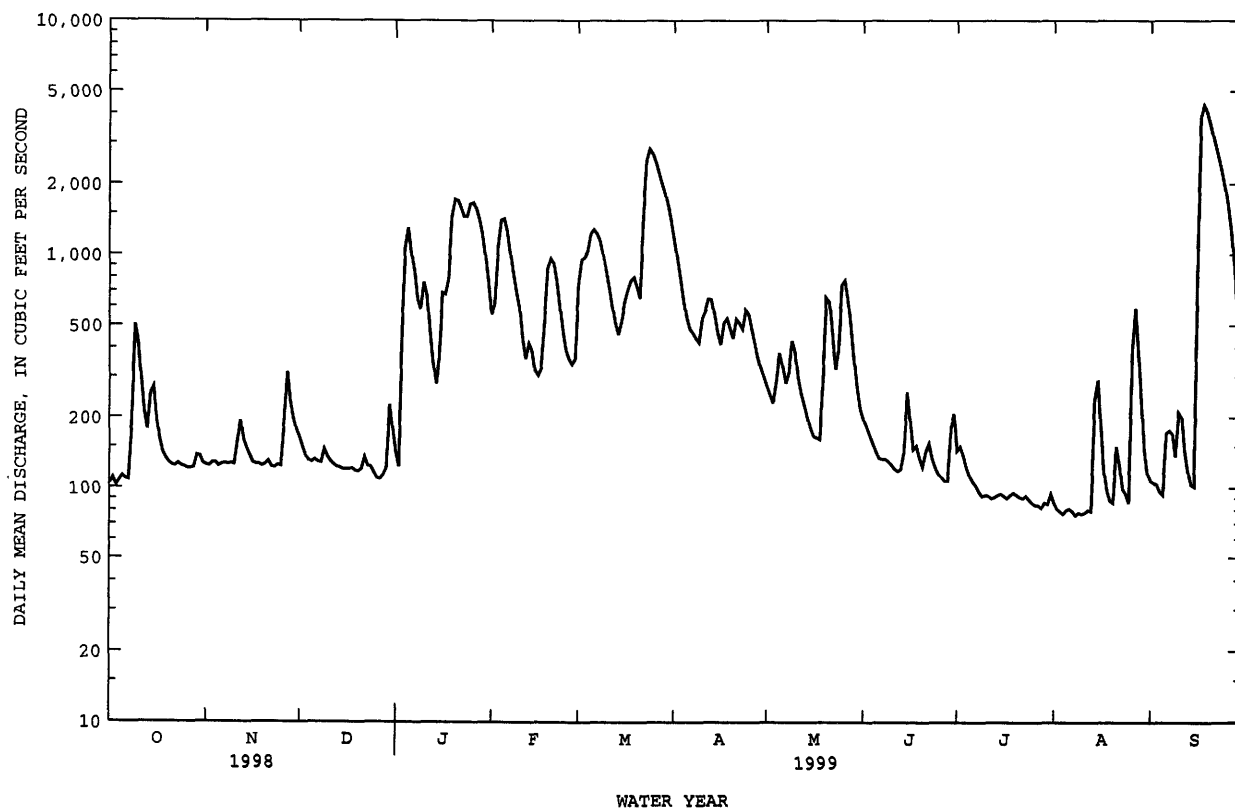
01381900 PASSAIC RIVER AT PINE BROOK, NJ--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	397	553	768	695	791	1028	1169	803	516	353	252	299
MAX	1566	1355	2286	1516	1268	2204	2842	2537	1482	1485	1024	1204
(WY)	1997	1996	1984	1996	1996	1994	1983	1989	1984	1984	1990	1999
MIN	133	148	107	105	211	272	161	289	146	98.1	117	91.0
(WY)	1995	1999	1981	1981	1980	1981	1985	1995	1999	1999	1981	1980

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1980 - 1999	
ANNUAL TOTAL	235926		176198			
ANNUAL MEAN	646		483		634	
HIGHEST ANNUAL MEAN					1125	
LOWEST ANNUAL MEAN					276	
HIGHEST DAILY MEAN	3990		4350		7910	
LOWEST DAILY MEAN	102		76		72	
ANNUAL SEVEN-DAY MINIMUM	107		78		78	
INSTANTANEOUS PEAK FLOW			4400		8000	
INSTANTANEOUS PEAK STAGE			20.82a		22.90a	
INSTANTANEOUS LOW FLOW			74		70	
10 PERCENT EXCEEDS	1640		1230		1520	
50 PERCENT EXCEEDS	284		197		360	
90 PERCENT EXCEEDS	118		93		123	

a Affected by backwater
e Estimated



LOCATION.--Lat 41°01'05", long 74°24'07", Morris County, Hydrologic Unit 02030103, on left bank 15 ft downstream from culvert at crossover between northbound and southbound lanes on State Route 23, 1,000 ft downstream from Macopin Intake Dam, 0.6 mi downstream from Macopin River, and 2.8 mi northwest of Butler.

PERIOD OF RECORD.--January 1898 to March 1990, September 1992 to current year. Monthly discharge only for some periods, published in WSP 1302. Records for January 1892 to December 1897, published in WSP 541, have been found to be unreliable and should not be used.

GAGE.--Water-stage recorder. Datum of gage is 549.17 ft above sea level. Prior to May 22, 1970, at site just upstream from Macopin Intake Dam, at datum 36.35 ft higher. May 22, 1970 to March 5, 1990, at site just upstream from Macopin Intake Dam, at datum 20.83 ft higher.

REMARKS.--Records good. Flow regulated by Canistear, Oak Ridge, Clinton, Charlotteburg Reservoirs, and Echo Lake (see Passaic River basin, reservoirs in). Water diverted at Charlotteburg Reservoir for municipal supply of city of Newark (see Passaic River basin, diversions). During peak flows, frequent variations in flow due to automatic gate operations upstream. Several measurements of water temperature were made during the year. Satellite telemeter at station.

COOPERATION.--Gage-height record collected in cooperation with and record of gate openings provided by the Department of Public Affairs, Division of Water Supply, city of Newark. Prior to May 22, 1970, discharge figures provided by city of Newark.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.4	2.5	4.3	2.1	14	12	75	11	4.1	1.6	.85	.90
2	3.2	3.0	2.5	2.0	15	14	73	7.5	4.4	1.6	.83	.91
3	2.5	2.7	2.1	13	22	14	64	7.9	4.1	1.4	.83	.88
4	2.1	2.1	4.2	27	21	22	57	10	5.1	1.7	.83	.85
5	2.0	2.2	2.1	19	20	19	49	9.8	2.9	1.7	.83	.98
6	1.9	1.7	2.1	12	19	19	35	8.2	2.5	1.3	.83	1.1
7	1.9	2.0	2.5	4.2	17	20	31	7.6	2.4	1.2	.82	1.7
8	9.5	1.7	2.7	4.0	13	18	28	9.8	2.6	1.1	.83	2.3
9	14	1.6	3.5	8.5	10	17	24	9.0	2.5	1.1	.85	1.8
10	11	1.9	2.2	16	9.9	16	68	8.0	2.2	.94	.84	2.6
11	10	4.6	2.1	6.7	9.5	16	53	6.1	2.1	1.1	.72	2.1
12	5.3	4.2	2.1	4.8	9.3	14	58	5.5	2.0	1.2	.77	1.4
13	4.1	2.5	1.9	4.7	13	13	62	5.0	2.3	1.1	.76	1.1
14	8.6	1.9	2.0	4.8	9.3	12	41	4.0	2.5	1.1	1.1	1.0
15	8.2	2.1	1.9	15	9.3	11	25	3.7	2.4	1.1	1.1	1.4
16	4.8	2.1	1.9	29	7.2	10	21	3.4	2.2	1.1	1.0	130
17	3.4	1.5	2.0	10	7.1	11	20	3.3	2.0	1.1	.94	93
18	3.0	1.6	2.0	13	9.1	14	20	3.2	2.0	1.1	.85	55
19	3.6	1.5	1.9	51	12	14	21	8.7	1.9	.92	.92	37
20	3.7	1.5	2.0	24	12	13	20	19	1.7	.92	1.0	26
21	2.8	1.8	2.0	23	12	12	21	18	2.2	.90	1.1	21
22	3.5	2.4	2.1	23	11	118	22	18	1.9	.91	1.1	21
23	3.4	1.7	2.2	23	9.8	73	29	16	1.6	.91	1.1	14
24	2.1	1.8	2.0	56	8.5	55	61	15	1.4	.83	1.0	9.1
25	1.8	2.7	2.1	38	7.3	176	45	17	1.3	.74	1.0	7.7
26	1.9	9.5	2.3	25	6.8	148	26	18	1.2	.69	1.1	6.0
27	1.8	12	2.1	24	6.7	137	21	18	1.1	.68	1.1	5.1
28	1.8	3.8	2.2	23	7.3	192	20	18	1.1	.69	1.1	4.7
29	5.6	2.7	2.8	21	---	167	18	17	1.6	.77	1.1	4.3
30	4.7	2.2	4.3	20	---	130	16	12	2.8	.82	.98	19
31	5.0	---	2.9	17	---	92	---	5.3	---	.85	.95	---
TOTAL	141.6	85.5	75.0	563.8	328.1	1599	1124	323.0	70.1	33.17	29.13	473.92
MEAN	4.57	2.85	2.42	18.2	11.7	51.6	37.5	10.4	2.34	1.07	.94	15.8
MAX	14	112	4.3	56	22	192	75	19	5.1	1.7	1.1	130
MIN	1.8	1.5	1.9	2.0	6.7	10	16	3.2	1.1	.68	.72	.8

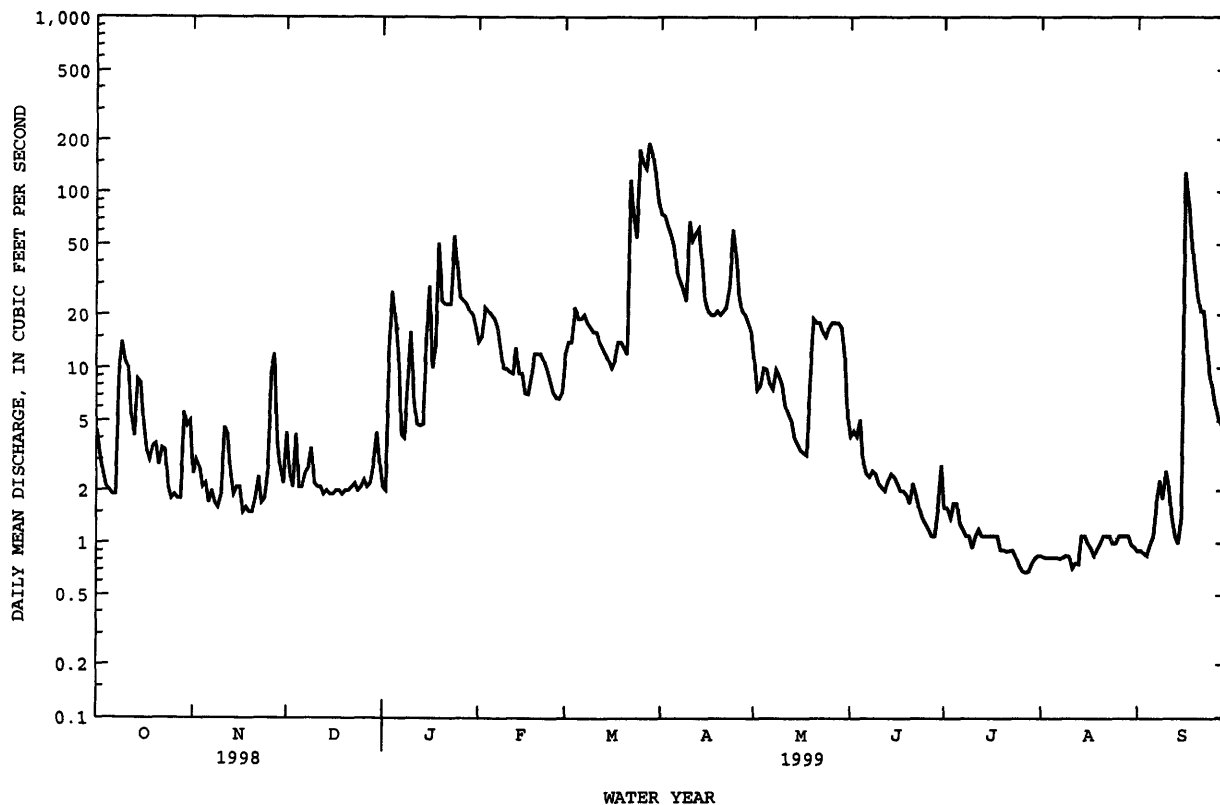
MEAN	16.5	32.9	41.1	42.1	51.6	99.7	132	67.7	31.8	18.7	14.4	18.7
MAX	288	309	357	308	270	572	506	263	360	238	228	211
(WY)	1956	1928	1997	1996	1939	1936	1983	1989	1972	1938	1955	1960
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1929	1929	1929	1931	1930	1965	1950	1954	1944	1923	1923	1929

PASSAIC RIVER BASIN

01382500 PEQUANNOCK RIVER AT MACOPIN INTAKE DAM, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1923 - 1999	
ANNUAL TOTAL	28197.1		4846.32		47.1	
ANNUAL MEAN	77.3		13.3		109a	
HIGHEST ANNUAL MEAN					.12	
LOWEST ANNUAL MEAN					1952	
HIGHEST DAILY MEAN	1320	May 11	192	Mar 28	3170a	Apr 6 1984
LOWEST DAILY MEAN	1.1	Aug 6	.68	Jul 27	.00	Oct 1 1922
ANNUAL SEVEN-DAY MINIMUM	1.2	Aug 3	.75	Jul 24	.00	Oct 18 1922
INSTANTANEOUS PEAK FLOW			530	Sep 16	6100a	Oct 10 1903
INSTANTANEOUS PEAK STAGE			4.81	Sep 16	17.40a	Oct 10 1903
INSTANTANEOUS LOW FLOW			.60	Jul 26	.00	Many days
10 PERCENT EXCEEDS	239		26		141	
50 PERCENT EXCEEDS	9.5		4.0		5.2	
90 PERCENT EXCEEDS	1.6		.98		.00	

a Since 1898, site and datum then in use.



01383500 WANAQUE RIVER AT AWOSTING, NJ

LOCATION.--Lat 41°09'31", long 74°20'00", Passaic County, Hydrologic Unit 02030103, on right bank 700 ft downstream from dam at outlet of Greenwood Lake at Awosting.

DRAINAGE AREA.--27.1 mi².

PERIOD OF RECORD.--May 1919 to current year. Prior to October 1940, published as "at Greenwood Lake".

REVISED RECORDS.--WSP 781: Drainage area. WSP 1552: 1922(M), 1928(M), 1936. WDR NJ-79-1: 1933(M), 1936(M), 1945(M), 1948(P), 1951(P), 1952(P), 1953(M), 1955(P), 1956(M), 1957(M), 1958(M), 1960(P), 1961(M), 1968(P), 1969(P). WDR NJ-80-1: 1960(P).

GAGE.--Water-stage recorder. Concrete control since Oct. 31, 1938. Datum of gage is 601.32 ft above sea level (levels from New Jersey Geological Survey bench mark). Prior to Apr. 1, 1926, nonrecording gage and Apr. 1, 1926, to Oct. 31, 1938, water-stage recorder at site 100 ft upstream at same datum.

REMARKS.--Records good. Flow completely regulated by Greenwood Lake (see Passaic River basin, reservoirs in). Water diverted into basin above gage from Upper Greenwood Lake (Hudson River basin) by North Jersey District Water Supply Commission since 1968. Several measurements of water temperature were made during the year.

COOPERATION.--Gage-height record collected in cooperation with North Jersey District Water Supply Commission.

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)
Jan 19	1945	204	3.08	Mar 23	0015	572	3.89
Jan 25	0115	307	3.36	Sep 17	1330	*1,480	*5.19
Mar 4	2245	201	3.07				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.2	5.5	6.4	7.3	76	72	79	21	10	6.1	5.6	4.1
2	6.1	5.5	6.4	7.3	85	80	72	20	10	6.1	4.8	4.4
3	6.1	5.5	6.4	7.4	110	80	64	21	9.6	6.1	5.5	4.5
4	6.1	5.5	6.4	7.7	106	165	61	23	9.0	6.1	5.5	4.6
5	6.1	5.5	6.4	9.1	99	180	53	22	8.5	6.1	5.5	4.8
6	6.1	5.3	6.4	9.9	84	167	44	21	8.1	6.1	5.5	5.1
7	6.7	5.2	6.4	13	75	170	42	21	8.3	6.1	5.5	5.0
8	7.7	5.0	6.7	21	74	130	39	23	9.3	6.1	5.5	5.2
9	7.2	5.0	5.5	38	65	106	42	24	6.6	6.1	6.1	5.5
10	6.7	5.0	6.6	46	60	91	50	23	4.4	6.1	6.1	7.0
11	6.5	4.9	7.7	45	54	79	44	19	5.0	6.2	6.1	6.5
12	6.1	4.3	5.0	40	52	70	49	18	6.1	6.2	6.1	6.1
13	6.1	4.9	5.0	38	60	56	46	16	6.5	6.1	6.1	6.1
14	6.1	6.3	5.0	41	57	51	40	14	7.4	6.1	6.4	6.1
15	6.1	6.3	4.9	52	51	65	33	12	7.7	6.1	6.2	6.1
16	6.2	6.1	4.8	54	47	57	33	11	6.7	6.1	6.4	148
17	6.1	6.1	4.8	50	44	52	36	11	6.7	6.1	6.2	1340
18	6.1	6.2	4.8	72	59	56	35	10	6.5	6.1	6.1	878
19	6.1	6.4	4.8	190	77	58	31	23	6.4	6.1	5.7	488
20	6.1	6.4	4.8	197	76	52	32	47	6.4	6.1	5.5	293
21	6.0	6.4	6.1	171	71	53	31	39	6.4	6.1	5.5	201
22	6.0	6.4	7.4	156	63	399	31	34	6.4	6.1	5.5	148
23	6.1	6.4	7.3	148	53	531	35	33	6.4	6.1	5.5	109
24	5.9	6.4	7.3	217	48	414	41	38	6.4	6.1	5.5	86
25	5.8	6.4	7.3	298	44	313	35	45	6.4	6.1	5.5	73
26	5.8	6.4	7.3	262	42	226	32	41	6.4	6.1	5.5	58
27	5.8	6.5	7.3	208	37	171	30	39	6.3	6.1	5.3	46
28	5.8	6.4	7.3	166	41	161	26	33	6.1	6.1	5.3	38
29	5.7	6.4	7.3	136	---	137	26	23	6.1	6.1	5.2	32
30	5.5	6.4	7.3	111	---	111	23	11	6.1	6.1	4.5	46
31	5.6	---	7.3	92	---	88	---	11	---	6.1	4.1	---
TOTAL	190.5	175.0	194.4	2910.7	1810	4441	1235	747	212.2	189.3	173.8	4065.1
MEAN	6.15	5.83	6.27	93.9	64.6	143	41.2	24.1	7.07	6.11	5.61	136
MAX	7.7	6.5	7.7	298	110	531	79	47	10	6.2	6.4	1340
MIN	5.5	4.3	4.8	7.3	37	51	23	10	4.4	6.1	4.1	4.1

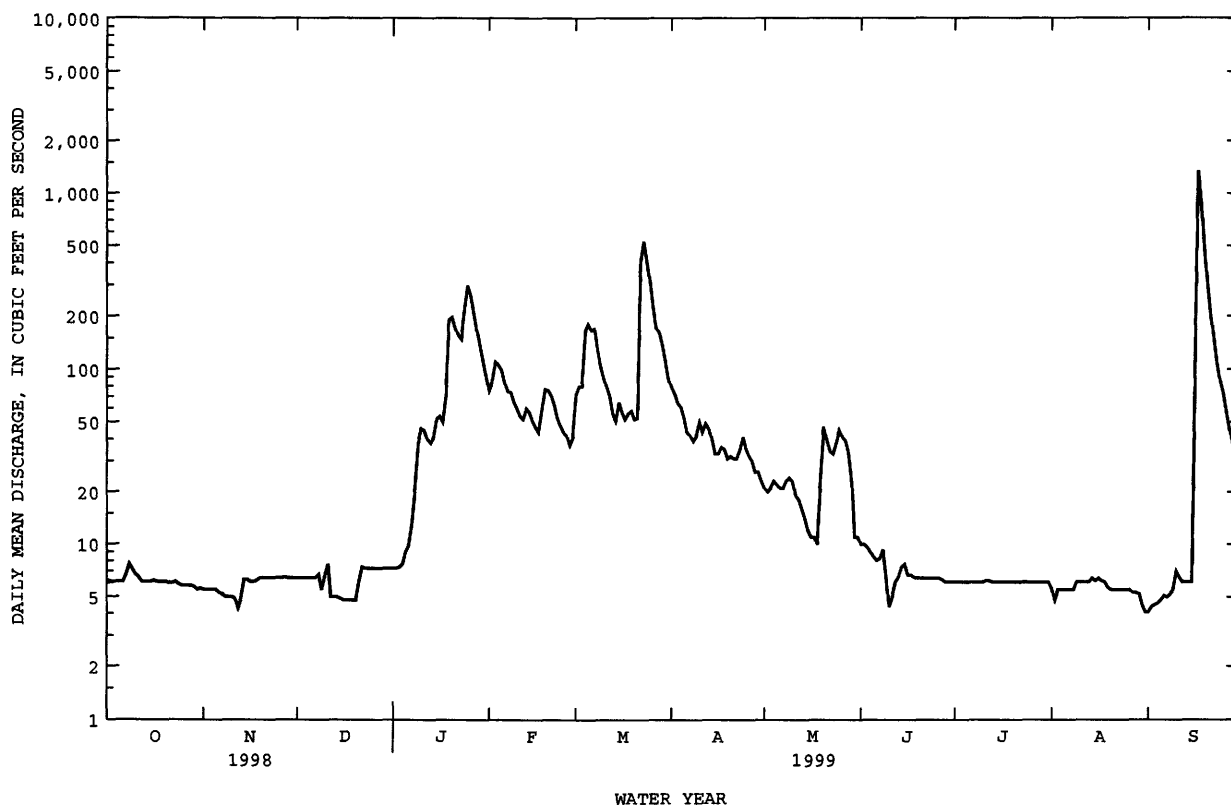
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1919 - 1999, BY WATER YEAR (WY)

	MEAN	28.9	56.0	65.6	64.5	63.3	103	95.5	61.1	36.4	26.0	25.6	29.6
MAX	210	210	197	221	168	271	333	233	178	132	208	231	
(WY)	1956	1984	1974	1979	1981	1980	1984	1989	1972	1938	1955	1927	
MIN	.20	.18	1.88	3.00	3.04	41.2	24.7	13.4	4.37	2.76	.006	.057	
(WY)	1932	1932	1985	1922	1922	1998	1985	1941	1957	1981	1929	1929	

PASSAIC RIVER BASIN

01383500 WANAQUE RIVER AT ANOSTING, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1919 - 1999	
ANNUAL TOTAL	16184.8		16344.0		54.4	
ANNUAL MEAN	44.3		44.8		105	1984
HIGHEST ANNUAL MEAN					19.9	1965
LOWEST ANNUAL MEAN					2350	Apr 6 1984
HIGHEST DAILY MEAN	589	May 12	1340	Sep 17	.00	Oct 15 1928
LOWEST DAILY MEAN	1.8	Mar 11	4.1	Aug 31	.00	Jul 27 1929
ANNUAL SEVEN-DAY MINIMUM	4.8	Dec 14	4.4	Aug 30	2800	Apr 5 1984
INSTANTANEOUS PEAK FLOW			1480	Sep 17	6.65	Apr 5 1984
INSTANTANEOUS PEAK STAGE			5.19	Sep 17		
INSTANTANEOUS LOW FLOW			2.3	Jun 9		
10 PERCENT EXCEEDS	123		106		126	
50 PERCENT EXCEEDS	8.7		7.3		32	
90 PERCENT EXCEEDS	5.8		5.5		4.8	



LOCATION.--Lat 41°07'36", long 74°15'52", Passaic County, Hydrologic Unit 02030103, on right bank 500 ft upstream from Wanaque Reservoir, 0.7 mi downstream from Ringwood Mill Pond dam, and 6.5 mi north of Wanaque.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 230 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 18	2100	307	11.73	Mar 22	1745	434	12.01
Jan 24	1630	270	11.64	Sep 16	2015	*2,300	*13.92

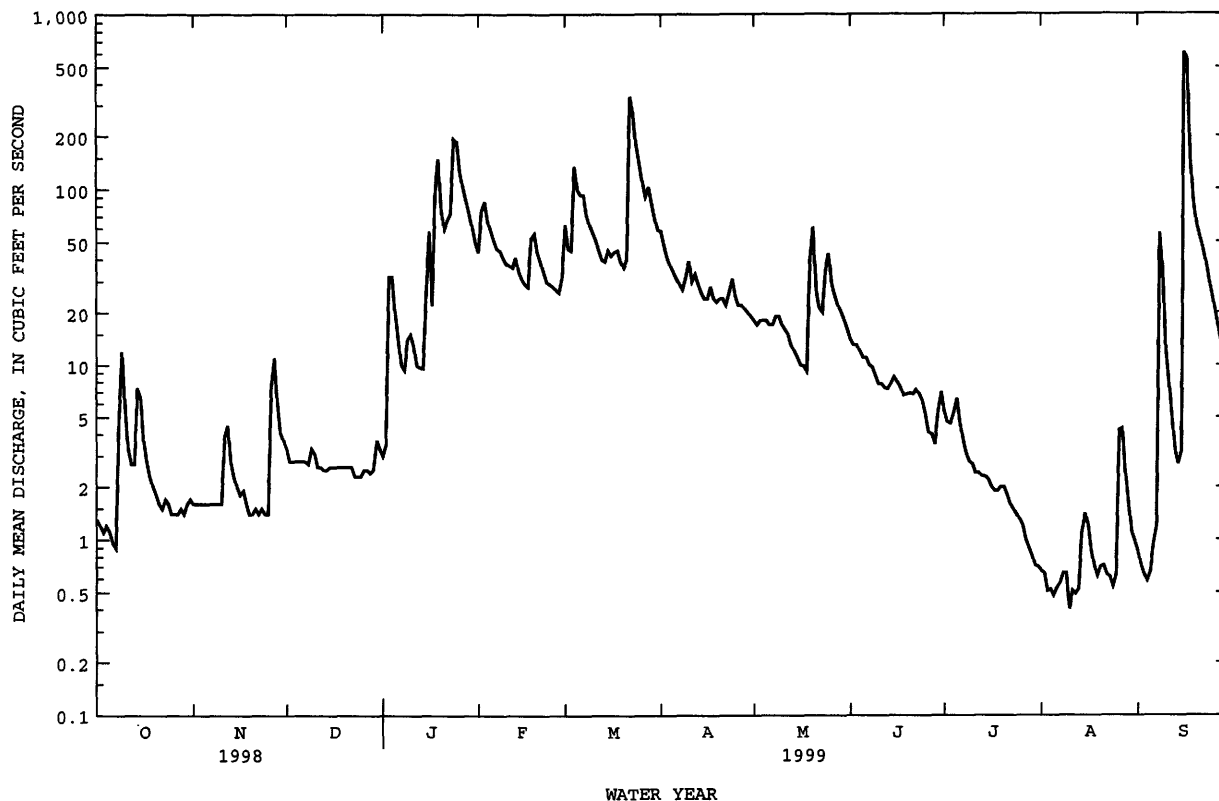
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	1.6	3.3	3.0	44	63	58	18	14	5.4	.66	.86
2	1.2	1.6	2.8	3.5	75	46	48	17	13	4.7	.64	.71
3	1.1	1.6	2.8	32	85	45	41	18	13	4.6	.51	.63
4	1.2	1.6	2.8	32	66	135	37	18	12	5.3	.52	.58
5	1.1	1.6	2.8	20	58	99	34	18	11	6.4	.48	.65
6	.96	1.6	2.8	14	51	93	31	17	11	4.7	.53	.95
7	.90	1.6	2.8	10	46	93	29	17	10	3.7	.56	1.2
8	4.7	1.6	2.7	9.4	45	72	27	19	9.7	3.1	.64	56
9	12	1.6	3.3	14	41	63	32	19	8.7	2.8	.64	34
10	5.8	1.6	3.1	15	38	57	39	17	7.8	2.7	.40	12
11	3.3	3.8	2.6	13	37	51	30	16	7.8	2.4	.51	8.0
12	2.7	4.5	2.6	10	36	45	33	15	7.4	2.4	.49	5.1
13	2.7	2.8	2.5	9.7	41	40	29	13	7.3	2.3	.52	3.2
14	7.4	2.3	2.5	9.6	34	39	26	12	7.8	2.3	1.1	2.7
15	6.6	2.0	2.6	25	31	45	24	11	8.5	2.2	1.4	3.2
16	3.7	1.8	2.6	58	29	42	24	10	8.0	2.0	1.2	605
17	2.8	1.9	2.6	22	28	44	28	9.9	7.5	1.9	.87	555
18	2.3	1.6	2.6	94	53	45	24	9.2	6.7	1.9	.70	152
19	2.0	1.4	2.6	149	56	39	23	38	6.8	2.0	.62	85
20	1.8	1.4	2.6	76	44	36	24	61	6.9	2.0	.70	62
21	1.6	1.5	2.6	60	39	40	24	27	6.8	1.8	.71	53
22	1.5	1.4	2.6	67	34	339	22	21	7.2	1.6	.63	46
23	1.7	1.5	2.3	73	30	271	26	20	6.8	1.5	.61	38
24	1.6	1.4	2.3	194	29	181	31	35	6.2	1.4	.54	30
25	1.4	1.4	2.3	187	28	141	25	43	5.2	1.3	.63	25
26	1.4	7.3	2.5	128	27	111	22	29	4.1	1.2	4.2	20
27	1.4	11	2.5	102	26	91	22	25	4.0	1.0	4.3	16
28	1.5	6.1	2.4	86	32	103	21	22	3.5	.90	2.4	13
29	1.4	4.1	2.5	73	---	84	20	20	5.4	.81	1.6	13
30	1.6	3.7	3.7	61	---	69	19	18	7.0	.71	1.1	28
31	1.7	---	3.3	50	---	59	---	16	---	.70	.98	---
TOTAL	82.36	78.9	84.0	1700.2	1183	2681	873	649.1	241.1	77.72	31.39	1870.78
MEAN	2.66	2.63	2.71	54.8	42.2	86.5	29.1	20.9	8.04	2.51	1.01	62.4
MAX	12	11	3.7	194	85	339	58	61	14	6.4	4.3	605
MIN	.90	1.4	2.3	3.0	26	36	19	9.2	3.5	.70	.40	.58
CFSM	.14	.14	.14	2.87	2.21	4.53	1.52	1.10	.42	.13	.05	3.26
IN.	.16	.15	.16	3.31	2.30	5.22	1.70	1.26	.47	.15	.06	3.64

MEAN	16.0	32.2	42.7	42.2	41.5	66.3	58.8	39.5	22.1	14.1	12.6	12.4
MAX	131	88.8	124	149	109	157	123	131	121	86.1	107	62.4
(WY)	1956	1973	1997	1979	1970	1936	1940	1989	1972	1945	1955	1999
MIN	1.07	2.27	2.71	12.5	14.0	28.5	18.3	10.9	3.78	1.31	.70	.28
(WY)	1945	1950	1999	1940	1940	1938	1966	1941	1957	1966	1966	1964

PASSAIC RIVER BASIN

01384500 RINGWOOD CREEK NEAR WANAQUE, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1935 - 1999
ANNUAL TOTAL	10617.86	9552.55	
ANNUAL MEAN	29.1	26.2	33.3
HIGHEST ANNUAL MEAN			54.4
LOWEST ANNUAL MEAN			13.2
HIGHEST DAILY MEAN	332 May 11	605 Sep 16	756 Aug 19 1955
LOWEST DAILY MEAN	.90 Oct 7	.40 Aug 10	.00 Sep 11 1963
ANNUAL SEVEN-DAY MINIMUM	1.1 Sep 19	.54 Aug 5	.16 Sep 5 1944
INSTANTANEOUS PEAK FLOW		2300 Sep 16	2300 Sep 16 1999
INSTANTANEOUS PEAK STAGE		13.92 Sep 16	13.92 Sep 16 1999
INSTANTANEOUS LOW FLOW		.22 Aug 10	.00 many days
ANNUAL RUNOFF (CFSM)	1.52	1.37	1.74
ANNUAL RUNOFF (INCHES)	20.68	18.60	23.69
10 PERCENT EXCEEDS	70	61	76
50 PERCENT EXCEEDS	12	7.8	20
90 PERCENT EXCEEDS	1.4	1.1	2.1



01387000 WANAQUE RIVER AT WANAQUE, NJ

LOCATION.--Lat 41°02'39", long 74°17'36", Passaic County, Hydrologic Unit 02030103, on left bank 750 ft downstream from Raymond Dam in Wanaque, and 50 ft upstream from bridge on State Highway 511.

DRAINAGE AREA.--90.4 mi², considered as 94 mi² Oct. 1, 1928 to Sept. 30, 1934.

PERIOD OF RECORD.--December 1903 to December 1905 (gage heights only), September 1912 to April 1915, May 1919 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 210.00 ft above sea level (levels from New Jersey Geological Survey bench mark). Dec. 16, 1903, to Dec. 31, 1905, nonrecording gage on highway bridge at site 50 ft downstream at different datum. Sept. 15, 1912, to Apr. 1, 1922, nonrecording gage at site 200 ft downstream from present concrete control at different datum. Apr. 1, 1922 to Mar. 14, 1931, water-stage recorder at site 400 ft downstream from present concrete control at present datum.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 604 ft³/s, Sep 16, gage height, 4.08 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	19	18	17	17	18	17	17	17	17	17	6.5
2	17	18	18	16	19	18	17	17	17	17	17	6.5
3	17	18	18	19	17	18	17	17	18	17	17	6.5
4	17	18	17	17	17	18	17	18	18	17	19	6.5
5	17	17	17	17	17	18	17	17	17	18	18	6.5
6	17	17	17	17	17	18	17	17	17	18	17	7.4
7	17	17	17	17	17	18	17	17	17	17	17	6.5
8	18	17	17	17	17	18	18	18	17	17	17	6.3
9	18	20	16	18	17	18	18	18	17	17	17	6.3
10	17	17	17	17	17	18	18	17	17	17	17	12
11	17	17	17	17	17	18	18	17	17	17	17	18
12	17	18	17	17	17	18	18	17	17	17	17	10
13	17	18	17	17	17	18	18	17	18	17	17	15
14	17	18	17	17	17	18	18	17	17	17	18	12
15	17	18	17	18	17	18	18	17	17	17	17	13
16	17	18	17	17	17	18	18	17	17	18	17	156
17	17	18	17	17	17	18	18	17	17	18	17	75
18	17	18	17	22	18	18	17	17	17	17	17	8.2
19	17	17	17	19	18	18	17	19	17	17	17	6.7
20	17	17	17	18	17	18	18	18	17	17	17	13
21	17	17	17	18	17	19	17	17	17	17	17	9.9
22	16	17	17	18	17	22	17	17	17	17	17	6.5
23	16	17	17	18	17	19	18	17	17	17	13	6.4
24	16	17	17	20	17	18	18	18	17	17	6.4	6.5
25	16	17	17	18	17	17	17	18	17	17	6.5	7.1
26	17	18	17	17	17	17	17	18	17	17	8.4	6.6
27	19	18	17	16	17	17	17	24	17	17	6.6	6.5
28	19	18	17	17	18	18	17	19	18	17	6.5	6.5
29	19	18	17	17	---	17	17	18	17	17	6.4	6.5
30	19	18	17	17	---	17	17	18	17	17	6.5	7.0
31	19	---	17	17	---	17	---	17	---	17	6.5	---
TOTAL	535	530	529	544	481	558	523	547	514	531	444.8	467.4
MEAN	17.3	17.7	17.1	17.5	17.2	18.0	17.4	17.6	17.1	17.1	14.3	15.6
MAX	19	20	18	22	19	22	18	24	18	18	19	156
MIN	16	17	16	16	17	17	17	17	17	17	6.4	6.3

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 1999, BY WATER YEAR (WY)

	MEAN	35.9	46.7	63.6	68.6	76.0	158	180	100	57.7	39.3	28.2	34.5
MAX	258	435	434	453	471	758	806	545	416	247	258	477	
(WY)	1956	1928	1921	1915	1915	1920	1984	1989	1972	1938	1927	1927	
MIN	1.82	1.70	1.48	.76	2.05	1.91	1.54	1.72	2.17	1.73	1.53	1.51	
(WY)	1966	1966	1950	1950	1966	1966	1966	1966	1966	1965	1965	1965	

SUMMARY STATISTICS

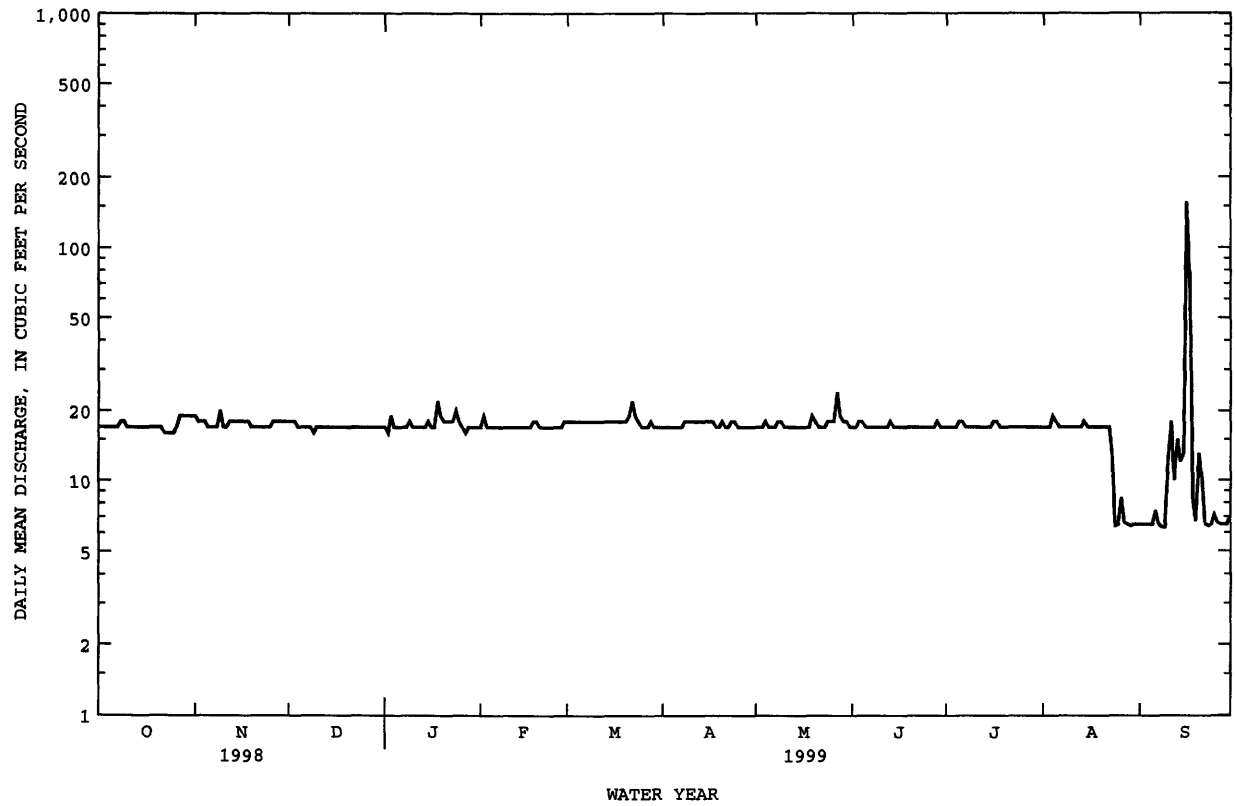
FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1912 - 1999

ANNUAL TOTAL	14670	6204.2	
ANNUAL MEAN	40.2	17.0	72.6
HIGHEST ANNUAL MEAN			231
LOWEST ANNUAL MEAN			1.93
HIGHEST DAILY MEAN	1470	May 11	5470
LOWEST DAILY MEAN	16	Sep 21	.06
ANNUAL SEVEN-DAY MINIMUM	16	Oct 19	.50
INSTANTANEOUS PEAK FLOW			604
INSTANTANEOUS PEAK STAGE			4.08
INSTANTANEOUS LOW FLOW			4.2
10 PERCENT EXCEEDS	32	18	198
50 PERCENT EXCEEDS	17	17	19
90 PERCENT EXCEEDS	17	16	16

PASSAIC RIVER BASIN
01387000 WANAQUE RIVER AT WANAQUE, NJ--Continued



01387420 RAMAPO RIVER AT SUFFERN, NY

LOCATION.--Lat 41°07'06", long 74°09'38", Rockland County, Hydrologic Unit 02030103, on left bank, 145 ft downstream from highway bridge on New York State Thruway at Suffern, and 1.1 mi upstream from Mahwah River.

DRAINAGE AREA.--93.0 mi².

PERIOD OF RECORD.--June 1979 to current year.

GAGE.--Water-stage recorder, crest-stage gage, and concrete control. Datum of gage is 264.44 ft above sea level.

REMARKS.--Records fair. Flow affected by diversion from United Water New York well field upstream from station and by occasional regulation by Lake Sebago.

COOPERATION.--Figures of pumpage from well field provided by United Water New York.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,300 ft³/s, Apr. 5, 1984, gage height, 15.38 ft, from rating curve extended above 5,400 ft³/s; minimum discharge, 1.7 ft³/s, Sept. 7, 1995, gage height, 1.04 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 6,600 ft³/s, Mar. 12, 1936, by computation of flow over dam at site 0.65 mi upstream, drainage area, 90.6 mi².

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft³/s and maximum(*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 19	0900	1,480	6.45	Mar. 22	1800	2,960	9.10
Jan. 25	0345	1,310	6.09	Sept. 16	2115	a*12,000	*15.23

a From rating curve extended as explained above.

Minimum discharge, 3.1 ft³/s, July 29, 30; minimum gage height, 1.17 ft, Jan. 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.0	8.7	19	12	162	315	259	82	51	10	6.9	8.5
2	13	8.1	17	16	306	290	229	75	45	11	5.5	8.6
3	12	8.3	16	193	475	233	199	73	40	10	5.3	8.5
4	7.3	7.6	15	297	356	799	181	84	32	10	5.5	8.1
5	7.5	8.1	15	184	292	732	161	89	27	10	5.3	8.1
6	7.9	7.6	14	130	242	504	138	81	23	10	4.9	23
7	8.4	8.4	14	e80	210	487	129	75	20	10	5.0	48
8	24	8.7	14	e75	204	368	118	e80	18	10	4.7	222
9	69	11	16	e130	176	308	131	e82	17	10	4.6	112
10	33	13	17	e180	161	275	208	e75	21	10	4.8	65
11	27	14	16	e130	152	240	150	e65	19	10	4.6	47
12	21	17	15	e90	e150	209	162	e55	15	10	4.4	31
13	17	13	15	69	e200	178	154	e50	14	10	4.5	23
14	36	12	15	67	e170	171	128	42	14	10	7.8	19
15	47	13	14	e150	e150	222	110	37	15	10	9.3	18
16	27	13	14	e190	e130	203	107	34	13	10	9.3	3380
17	20	12	15	e140	120	215	136	33	12	10	7.6	6860
18	16	12	15	476	231	256	125	31	12	10	6.6	1900
19	14	13	13	1310	347	234	110	108	11	10	5.8	715
20	13	13	14	644	267	195	109	294	10	10	5.7	446
21	13	13	14	382	212	196	113	170	11	10	6.8	366
22	13	12	14	359	174	2330	105	109	13	10	7.4	333
23	13	12	14	367	139	1890	112	98	12	9.5	8.7	278
24	13	10	13	814	125	898	171	144	13	7.2	8.5	211
25	13	7.6	13	1120	116	621	138	204	12	7.2	8.4	170
26	13	27	14	633	115	471	117	141	12	6.0	48	138
27	13	57	13	436	110	384	106	111	12	6.0	33	114
28	13	34	13	351	130	457	97	92	12	5.9	16	99
29	12	24	13	297	---	425	89	80	17	4.8	12	88
30	12	21	16	245	---	339	87	69	13	7.0	9.5	247
31	13	---	18	193	---	291	---	60	---	10	8.7	---
TOTAL	570.1	439.1	458	9760	5622	14736	4179	2823	556	284.6	285.1	15994.8
MEAN	18.4	14.6	14.8	315	201	475	139	91.1	18.5	9.18	9.20	533
MAX	69	57	19	1310	475	2330	259	294	51	11	48	6860
MIN	7.3	7.6	13	12	110	171	87	31	10	4.8	4.4	8.1
‡	6.4	5.1	7.6	11	15	1.4	10	9.1	9.4	8.6	6.7	7.5

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1979 - 1999, BY WATER YEAR (WY)

MEAN	99.5	178	213	206	217	324	344	220	102	57.7	47.2	78.6
MAX	389	496	693	654	475	816	862	777	269	308	305	533
(WY)	1990	1996	1984	1996	1981	1983	1984	1989	1982	1996	1990	1999
MIN	11.0	14.6	14.8	6.84	49.7	128	77.1	79.4	18.5	8.03	7.40	8.17
(WY)	1985	1999	1999	1981	1980	1981	1985	1995	1999	1993	1993	1995

e Estimated

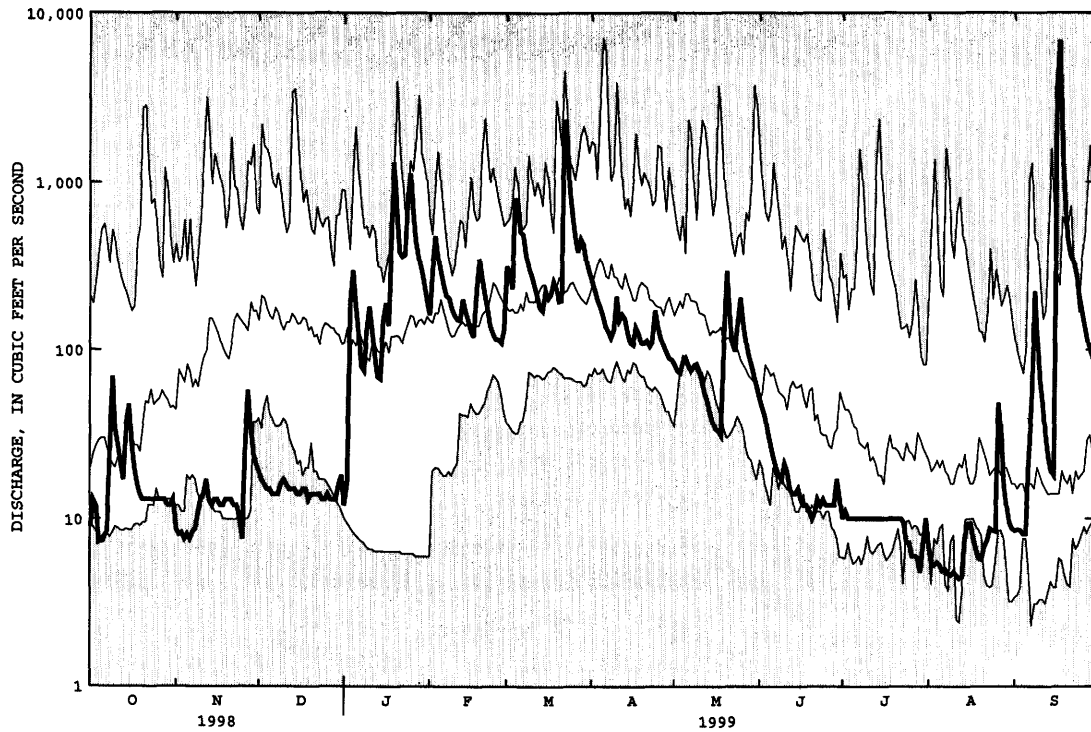
‡ Diversion, in cubic feet per second, by pumpage from well field upstream of station.

PASSAIC RIVER BASIN

01387420 RAMAPO RIVER AT SUFFERN, NY--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1979 - 1999	
ANNUAL TOTAL	60873.0		55707.7		173	
ANNUAL MEAN	167		153			
ANNUAL MEAN (+)	9.9		8.1			
HIGHEST ANNUAL MEAN					295	1984
LOWEST ANNUAL MEAN					78.2	1985
HIGHEST DAILY MEAN	2310	May 11	6860	Sep 17	7110	Apr 5 1984
LOWEST DAILY MEAN	7.3	Oct 4	4.4	Aug 12	2.3	Sep 7 1995
ANNUAL SEVEN-DAY MINIMUM	8.1	Nov 1	4.7	Aug 7	3.1	Sep 7 1995
10 PERCENT EXCEEDS	412		311		374	
50 PERCENT EXCEEDS	57		27		88	
90 PERCENT EXCEEDS	13		8.1		13	

‡ Diversion, in cubic feet per second, by pumpage from well field upstream of station.



CURRENT WATER YEAR DAILY DISCHARGE (BOLD) WITH DAILY MEDIAN FOR PERIOD OF RECORD.
SHADED AREAS SHOW DAILY MAXIMUM AND MINIMUM FOR PERIOD OF RECORD THROUGH PREVIOUS WATER YEAR.

LOCATION.--Lat 41°05'51", long 74°09'48", Bergen County, Hydrologic Unit 02030103, on left bank 350 ft downstream from State Highway 17, 0.6 mi downstream from Mahwah River, and 1.0 mi west of Mahwah.

PERIOD OF RECORD.--October 1902 to December 1906, September 1922 to current year. October 1902 to February 1905 monthly discharge only, published in WSP 1302. Figures of daily discharge Feb. 10, 1903, to Dec. 31, 1904, published in WSP 97, 125, are unreliable and should not be used. Gage-height records for 1903-14 are contained in reports of the National Weather Service.

GAGE.--Water-stage recorder. Datum of gage is 253.10 ft above sea level. Prior to Dec. 31, 1906, nonrecording gage on former bridge at site 250 ft downstream at different datum. Sept. 1, 1922 to Dec. 23, 1936, water-stage recorder just below former bridge at present datum.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,400 ft³/s and maximum (*):

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	15	24	17	206	314	289	96	63	21	12	13
2	19	13	22	13	354	347	265	90	58	21	11	13
3	18	16	21	311	561	269	240	87	52	20	10	13
4	14	14	20	330	406	809	223	107	44	20	10	12
5	13	15	21	182	332	829	202	121	39	19	10	13
6	13	14	20	97	295	519	179	104	35	19	9.9	37
7	14	15	20	78	249	521	170	93	32	18	9.7	49
8	95	16	22	55	237	390	154	109	29	18	10	201
9	100	19	22	150	233	321	182	109	28	18	9.8	140
10	45	21	22	181	214	285	255	93	31	17	10	75
11	34	30	21	115	200	256	196	79	29	17	12	48
12	29	23	20	88	191	232	217	70	25	17	11	38
13	25	19	20	77	215	208	199	63	25	17	10	27
14	68	17	20	66	212	197	167	55	25	17	31	22
15	58	17	19	145	184	242	145	50	27	17	23	24
16	34	18	19	178	166	235	145	46	23	16	13	3650
17	26	17	19	140	156	235	183	45	23	16	12	8330
18	22	17	20	663	250	263	165	43	22	16	11	2630
19	19	17	19	1700	381	246	144	171	21	16	9.7	965
20	18	17	18	724	308	215	146	341	20	16	10	528
21	18	17	18	407	259	227	151	207	25	16	12	416
22	18	16	19	384	226	2960	136	134	23	16	12	369
23	18	16	19	383	194	2390	156	132	21	16	12	299
24	18	15	18	907	174	1060	217	203	21	13	12	237
25	18	12	17	1290	161	699	176	260	20	13	12	199
26	18	56	18	678	154	526	152	185	20	12	148	170
27	17	66	17	456	149	429	135	143	20	12	44	147
28	19	41	17	369	157	526	122	115	19	11	21	130
29	18	31	21	315	---	483	112	97	41	13	17	117
30	19	27	23	269	---	380	104	82	27	12	14	327
31	20	---	19	232	---	321	---	72	---	15	13	---
TOTAL	890	647	615	11000	6824	16934	5327	3602	888	505	562.1	19239
MEAN	28.7	21.6	19.8	355	244	546	178	116	29.6	16.3	18.1	641
MAX	100	66	24	1700	561	2960	289	341	63	21	148	8330
MIN	13	12	17	13	149	197	104	43	19	11	9.7	12
CFSM	.24	.18	.17	2.96	2.03	4.55	1.48	.97	.25	.14	.15	5.34
IN.	.28	.20	.19	3.41	2.12	5.25	1.65	1.12	.28	.16	.17	5.96

MEAN	143	224	273	269	281	443	402	259	151	98.0	98.5	113
MAX	954	736	873	877	701	1151	1055	994	735	602	755	641
(WY)	1904	1978	1984	1979	1970	1936	1984	1989	1972	1945	1955	1999
MIN	13.8	21.6	19.8	16.5	70.8	144	88.4	79.5	29.6	15.8	11.3	11.1
(WY)	1942	1999	1999	1981	1980	1985	1985	1905	1999	1993	1993	1964

PASSAIC RIVER BASIN

01387500 RAMAPO RIVER NEAR MAHWAH, NJ--Continued

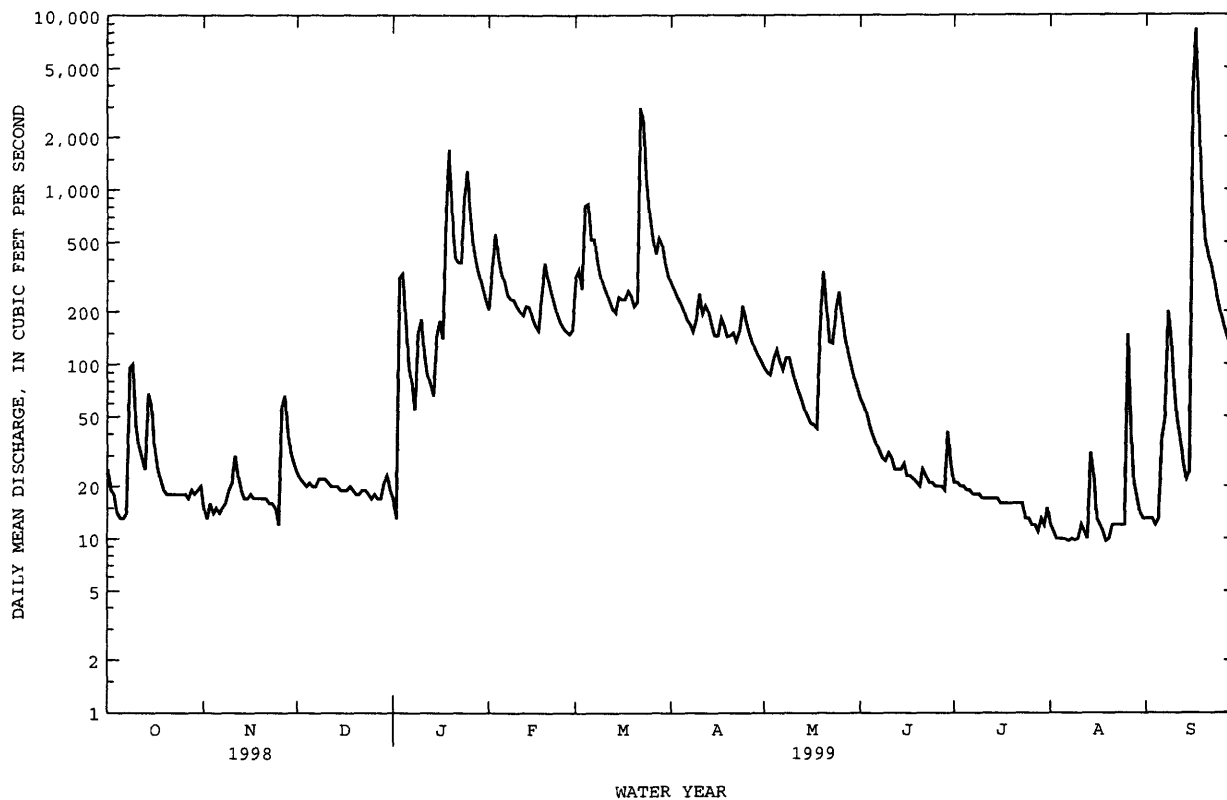
SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1903 - 1999

ANNUAL TOTAL	79429		67033.1		
ANNUAL MEAN	218		184		229
HIGHEST ANNUAL MEAN					461
LOWEST ANNUAL MEAN					99.5
HIGHEST DAILY MEAN	3190	May 11	8330	Sep 17	8920
LOWEST DAILY MEAN	12	Nov 25	9.7	Aug 7	1.2
ANNUAL SEVEN-DAY MINIMUM	15	Nov 1	9.9	Aug 3	3.7
INSTANTANEOUS PEAK FLOW			13800a	Sep 16	15500a
INSTANTANEOUS PEAK STAGE			12.52	Sep 16	13.35
INSTANTANEOUS LOW FLOW			8.2	Jan 2	.20
ANNUAL RUNOFF (CFSM)	1.81		1.53		1.91
ANNUAL RUNOFF (INCHES)	24.62		20.78		25.95
10 PERCENT EXCEEDS	529		350		507
50 PERCENT EXCEEDS	76		41		137
90 PERCENT EXCEEDS	18		13		27

a From rating curve extended above 6,500 ft³/s.

LOCATION.--Lat 40°59'33", long 74°16'44", Passaic County, Hydrologic Unit 02030103, on right end of dam at pumping station in Pompton Lakes, 700 ft upstream from bridge on Paterson-Hamburg Turnpike, and 2.0 mi upstream from mouth. Water samples collected upstream from dam at water-supply intake. on right bank. Water-quality monitor is 450 ft downstream from dam.

REVISED RECORDS.--WSP 1552: 1922(M), 1924-25, 1929-31(M), 1934-35(M). WRD-NJ 1970: 1968-69. WRD-NJ 1988: 1984(M).

GAGE.--Water-stage recorder and concrete dam. Datum of gage is 190.96 ft above sea level. Prior to October 1, 1981, at datum 10.00 ft higher.

REMARKS.--Records good except for estimated discharges which are poor. Diversion by North Jersey District Water Supply Commission to Wanaque Reservoir since December 1953 (see Passaic River basin, diversions) and to Oradell Reservoir by United Water New Jersey since February 1985 (see Hackensack River basin, diversions) for municipal supply. Slight regulation by Pompton Lake, capacity, 300,000,000 gal. Several measurements of water temperature, other than those published, were made during the year. National Weather Service telephone telemeter at station. Satellite telemeter at auxiliary station 700 ft below station.

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)
Jan 19	0345	1,900	11.43	Mar 22	2245	3,760	12.18
Jan 25	0945	1,610	11.29	Sep 17	0345	*14,000	*14.9

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	18	27	16	74	587	413	144	109	37	6.6	18
2	19	19	23	11	226	567	380	130	97	33	5.2	16
3	16	16	23	316	636	443	343	123	88	31	5.2	16
4	18	15	22	334	438	925	311	143	73	29	4.8	16
5	16	10	22	82	290	1190	296	160	65	28	5.1	17
6	15	10	21	58	208	836	268	154	58	23	4.8	39
7	14	10	20	65	157	834	256	139	52	20	3.9	56
8	50	10	21	60	136	640	235	153	45	18	5.2	71
9	165	10	23	95	108	520	234	170	40	16	4.6	248
10	99	12	21	86	77	457	344	154	38	17	3.4	129
11	56	22	21	69	66	413	289	133	38	15	13	88
12	43	31	20	62	84	376	295	120	37	16	17	64
13	37	23	20	57	77	330	290	110	34	16	9.9	51
14	61	21	17	53	67	304	251	97	37	16	29	42
15	84	19	16	70	67	369	218	87	37	16	36	39
16	60	16	17	81	72	381	208	79	32	16	27	e3000
17	42	20	17	58	73	376	243	74	31	15	18	e10700
18	35	18	15	354	138	409	239	72	29	13	14	e4200
19	30	16	14	1840	367	400	211	179	27	14	9.2	e1320
20	25	19	13	1080	484	352	208	509	25	14	8.8	786
21	22	19	13	478	397	331	222	362	31	13	9.8	596
22	20	16	15	391	332	2460	205	242	34	14	7.2	525
23	20	16	13	360	278	3040	210	200	31	13	6.8	432
24	20	16	13	776	248	1570	292	276	26	12	6.4	339
25	20	14	13	1510	231	1040	265	420	24	11	6.5	289
26	20	32	13	945	224	792	226	316	23	9.5	188	252
27	20	69	13	539	214	668	200	244	22	9.1	129	224
28	19	54	13	373	259	688	187	201	21	7.8	54	199
29	20	38	15	269	---	705	171	169	29	6.8	32	182
30	17	31	25	188	---	561	155	143	50	6.2	21	370
31	16	---	19	122	---	465	---	123	---	6.1	19	---
TOTAL	1115	640	558	10798	6028	23029	7665	5626	1283	511.5	710.4	24324
MEAN	36.0	21.3	18.0	348	215	743	256	181	42.8	16.5	22.9	811
MAX	165	69	27	1840	636	3040	413	509	109	37	188	10700
MIN	14	10	13	11	66	304	155	72	21	6.1	3.4	1

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1999, BY WATER YEAR (WY)

MEAN	149	267	321	326	352	551	515	348	203	135	131	148
MAX	1154	954	1181	1035	838	1670	1465	1195	973	895	889	811
(WY)	1956	1933	1997	1979	1970	1936	1983	1989	1972	1945	1955	1999
MIN	13.6	21.3	12.8	27.5	83.0	67.8	24.9	72.0	39.9	5.89	6.17	10.8
(WY)	1981	1999	1981	1981	1969	1985	1985	1965	1965	1985	1985	1964

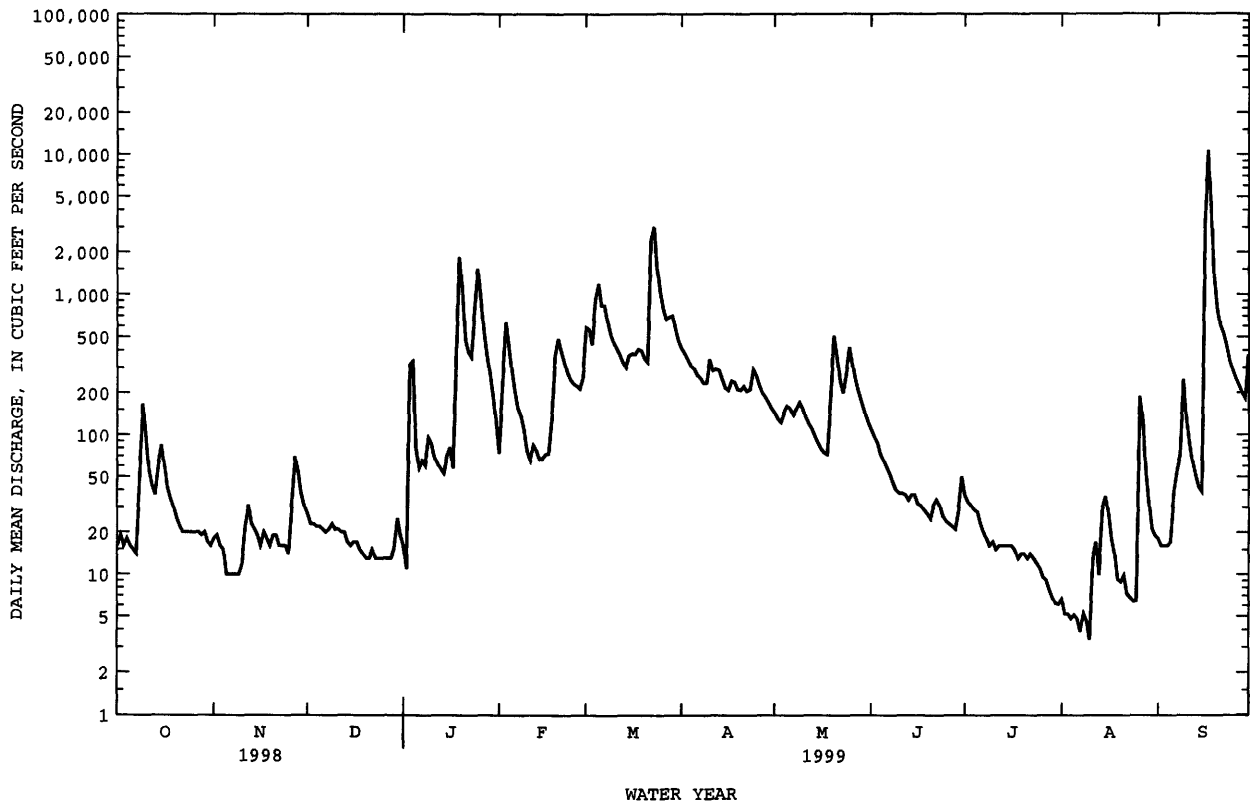
PASSAIC RIVER BASIN

01388000 RAMAPO RIVER AT POMPTON LAKES, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1922 - 1999	
ANNUAL TOTAL	104027		82287.9		287	
ANNUAL MEAN	285		225		512	
HIGHEST ANNUAL MEAN					73.1	
LOWEST ANNUAL MEAN					10700	
HIGHEST DAILY MEAN	3050	May 11	10700	Sep 17	10700	Sep 17 1999
LOWEST DAILY MEAN	10	Nov 5	3.4	Aug 10	.00	Oct 1 1922
ANNUAL SEVEN-DAY MINIMUM	11	Nov 4	4.5	Aug 4	.00	Dec 1 1980
INSTANTANEOUS PEAK FLOW			14000	Sep 17	15400	Apr 5 1984
INSTANTANEOUS PEAK STAGE			14.90	Sep 17	15.21a	Apr 5 1984
INSTANTANEOUS LOW FLOW			2.4	many days	.00	many days
10 PERCENT EXCEEDS	703		449		643	
50 PERCENT EXCEEDS	111		56		162	
90 PERCENT EXCEEDS	16		13		35	

a From gage well, outside high-water marks at 15.33 ft.

e Estimated



LOCATION.--Lat 40°58'09", long 74°16'56", Passaic County, Hydrologic Unit 02030103, on left bank in Passaic Valley Water Commission pumping station, 800 ft below confluence of Pequannock and Ramapo Rivers, 100 ft upstream from bridge on Jackson Avenue (Pompton Plains Cross Road), and 0.7 mi east of Pompton Plains.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,200 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar 22	2230	5,220	13.51	Sep 17	0415	*16,400	*21.01

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	56	68	61	201	949	819	229	157	71	33	35
2	50	53	66	52	553	891	747	202	147	66	31	33
3	47	49	63	594	1100	703	665	193	140	61	30	32
4	51	47	62	541	812	1380	586	234	127	66	30	32
5	47	45	65	176	534	1630	500	245	115	62	31	36
6	44	46	62	132	372	1230	412	229	104	53	30	85
7	44	46	60	133	308	1230	379	209	96	48	29	84
8	155	49	60	118	283	991	353	244	86	45	31	97
9	254	49	66	224	238	835	358	258	78	43	31	276
10	163	50	63	197	196	721	602	224	74	44	28	164
11	110	70	60	144	177	646	503	196	75	42	43	130
12	86	78	58	131	192	558	519	177	72	40	48	92
13	77	65	59	123	199	458	508	164	77	41	34	76
14	128	61	57	111	175	420	397	149	82	40	80	65
15	140	57	55	174	165	561	331	137	78	40	92	62
16	108	54	56	191	165	568	318	129	68	39	57	3870
17	89	55	56	145	162	562	360	120	66	40	44	e13600
18	84	54	55	727	309	638	347	116	66	39	40	e4900
19	72	53	56	2450	608	601	313	366	61	40	36	e2000
20	62	54	56	1570	736	492	318	808	59	41	38	1250
21	57	56	54	866	591	491	333	489	76	38	43	993
22	56	53	57	751	467	3740	315	319	73	38	37	889
23	55	53	55	695	376	4350	328	274	65	39	36	707
24	54	52	55	1400	345	2320	507	418	59	37	30	497
25	53	49	55	2180	324	1740	428	624	56	37	27	387
26	52	108	54	1450	310	1420	343	412	55	35	390	324
27	54	148	53	955	294	1250	302	328	52	34	202	278
28	54	114	53	711	421	1360	283	280	49	33	92	250
29	58	88	59	497	---	1350	264	241	68	32	59	223
30	56	74	83	356	---	1100	246	203	90	32	43	551
31	54	---	65	272	---	923	---	175	---	32	37	---
TOTAL	2464	1886	1846	18127	10613	36108	12684	8392	2471	1348	1812	32018
MEAN	79.5	62.9	59.5	585	379	1165	423	271	82.4	43.5	58.5	1067
MAX	254	148	83	2450	1100	4350	819	808	157	71	390	13600
MIN	44	45	53	52	162	420	246	116	49	32	27	32

MEAN	289	417	530	522	570	935	963	626	372	234	211	231
MAX	2369	1417	2245	1777	1654	2477	2995	2778	2177	1530	1520	1067
(WY)	1904	1956	1997	1996	1973	1983	1983	1989	1972	1945	1955	1999
MIN	40.2	52.3	34.8	39.2	149	118	62.7	110	62.9	34.2	34.2	46.7
(WY)	1981	1981	1981	1981	1969	1981	1985	1965	1965	1965	1966	1980

PASSAIC RIVER BASIN

01388500 POMPTON RIVER AT POMPTON PLAINS, NJ--Continued

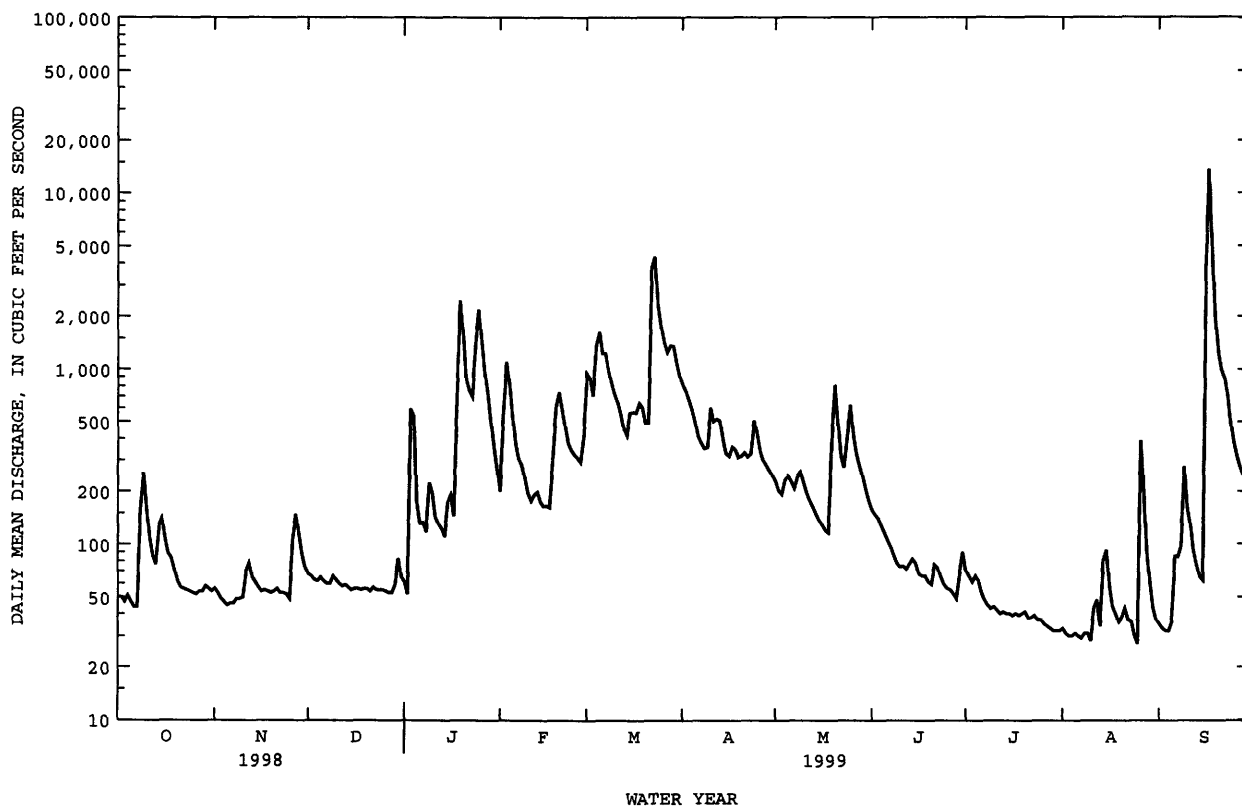
SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1903 - 1999	
ANNUAL TOTAL	208185		129769		489	
ANNUAL MEAN	570		356		906	
HIGHEST ANNUAL MEAN					117	
LOWEST ANNUAL MEAN					1952	
HIGHEST DAILY MEAN	7950	May 11	13600	Sep 17	28300	Oct 10 1903
LOWEST DAILY MEAN	43	Sep 29	27	Aug 25	.00	Aug 18 1904
ANNUAL SEVEN-DAY MINIMUM	47	Nov 3	30	Aug 4	1.7	Aug 14 1904
INSTANTANEOUS PEAK FLOW			16400	Sep 17	28300a	Oct 10 1903
INSTANTANEOUS PEAK STAGE			21.01	Sep 17	14.30bc	Oct 10 1903
INSTANTANEOUS LOW FLOW			26	Aug 25	.00	Aug 18 1904
10 PERCENT EXCEEDS	1440		774		1150	
50 PERCENT EXCEEDS	178		108		245	
90 PERCENT EXCEEDS	53		40		72	

a By computation of peak flow over dam, maximum observed.

b Site and datum then in use.

c Maximum stage at present site and datum was 24.47 ft., Apr. 6, 1984.

e Estimated



01389500 PASSAIC RIVER AT LITTLE FALLS, NJ

LOCATION.--Lat 40°53'05", long 74°13'35", Passaic County, Hydrologic Unit 02030103, on left bank 0.6 mi downstream from Beatties Dam in Little Falls, and 1.0 mi upstream from Peckman River.

DRAINAGE AREA.--762 mi². Area at site used prior to Oct. 1, 1955, 799 mi².

PERIOD OF RECORD.--September 1897 to current year. Monthly discharge only for September 1897, published in WSP 1302. Published as "at Paterson", September 1897 to September 1955.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 120.00 ft above sea level (levels by Passaic Valley Water Commission). Prior to Jan. 8, 1933, nonrecording gage and Jan. 8, 1933, to Sept. 30, 1955, water-stage recorder, at site 3.7 mi downstream at sea level (levels from New Jersey Geological Survey bench mark).

REMARKS.--Records good. Diurnal fluctuation at medium and low flow caused by hydroelectric plant at Beatties Dam. Flow regulated by reservoirs in Rockaway, Pequannock, Wanaque, and Ramapo River subbasins (see Passaic River basin, reservoirs in). Large diversions for municipal supply from Passaic River above Beatties Dam, and from Rockaway, Pequannock, Pompton, Ramapo, and Wanaque Rivers (see Passaic River basin, diversions and Hackensack River basin, diversions). In addition, the New Jersey-American Water Company (formerly Commonwealth Water Co.) diverts from Canoe Brook near Summit and from Passaic River (see Passaic River basin, diversions); that company, the city of East Orange, and others also divert water for municipal supply by pumping wells in the basin. Several measurements of water temperature, other than those published, were made during the year. National Weather Service rain- gage and gage-height telemetry and USGS satellite telemeters at station.

COOPERATION.--Gage-height record collected in cooperation with the Passaic Valley Water Commission.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar 24	0130	4,870	6.14	Sep 18	0900	*11,600	*9.84

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	95	65	42	48	482	1390	1850	485	181	135	82	82
2	92	78	40	32	643	1560	1610	437	97	135	69	80
3	93	60	52	865	1370	1500	1380	409	63	127	58	75
4	96	48	41	1240	1410	1850	1170	497	69	110	49	68
5	102	47	45	862	1310	2230	1000	546	58	106	45	76
6	100	47	41	647	1180	2140	864	386	50	81	44	168
7	96	55	42	784	1010	2100	887	285	49	68	40	254
8	325	52	43	619	842	1890	794	336	51	57	37	211
9	748	54	45	572	652	1670	795	446	51	49	40	347
10	668	52	46	618	491	1480	946	393	47	49	45	411
11	439	65	41	460	440	1290	1050	202	53	48	72	293
12	291	69	54	250	554	1100	1100	134	55	45	110	191
13	243	46	44	103	613	948	1100	89	70	44	68	152
14	370	50	38	204	599	857	968	93	146	53	248	116
15	410	45	43	271	521	964	824	82	124	55	348	110
16	285	51	44	498	481	1100	751	65	50	45	234	3360
17	118	45	44	474	490	1160	839	53	50	45	138	9130
18	77	48	46	976	813	1220	869	56	47	42	95	11300
19	114	49	46	2440	1220	1240	800	305	50	37	76	9180
20	129	34	42	2360	1420	1160	756	941	45	93	70	6720
21	150	38	40	1810	1400	1150	818	831	56	71	114	5160
22	124	36	46	1610	1250	3230	820	556	44	61	129	4140
23	158	41	46	1500	1030	4530	817	319	52	72	91	3380
24	134	46	44	1880	853	4800	955	519	46	65	75	2780
25	141	46	44	2530	735	4400	984	910	45	57	64	2310
26	158	102	43	2380	674	3950	845	892	43	55	646	1900
27	89	165	39	1910	636	3470	743	774	49	64	876	1540
28	109	80	40	1570	738	3200	650	669	48	56	566	1220
29	109	41	51	1300	---	2950	573	461	73	48	353	874
30	105	39	63	1050	---	2570	530	333	74	55	192	940
31	65	---	53	767	---	2180	---	234	---	66	133	---
TOTAL	6233	1694	1388	32630	23857	65279	28088	12738	1936	2094	5207	66568
MEAN	201	56.5	44.8	1053	852	2106	936	411	64.5	67.5	168	2219
MAX	748	165	63	2530	1420	4800	1850	941	181	135	876	11300
MIN	65	34	38	32	440	857	530	53	43	37	37	68

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1898 - 1999, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)
1898	620	935	1261	1347	1437
1899	5613	4757	4497	4039	3787
1900	1904	1908	1903	1979	1973
1901	44.5	56.5	44.8	104	178
1902	1931	1999	1999	1981	1901
1903					
1904					
1905					
1906					
1907					
1908					
1909					
1910					
1911					
1912					
1913					
1914					
1915					
1916					
1917					
1918					
1919					
1920					
1921					
1922					
1923					
1924					
1925					
1926					
1927					
1928					
1929					
1930					
1931					
1932					
1933					
1934					
1935					
1936					
1937					
1938					
1939					
1940					
1941					
1942					
1943					
1944					
1945					
1946					
1947					
1948					
1949					
1950					
1951					
1952					
1953					
1954					
1955					
1956					
1957					
1958					
1959					
1960					
1961					
1962					
1963					
1964					
1965					
1966					
1967					
1968					
1969					
1970					
1971					
1972					
1973					
1974					
1975					
1976					
1977					
1978					
1979					
1980					
1981					
1982					
1983					
1984					
1985					
1986					
1987					
1988					
1989					
1990					
1991					
1992					
1993					
1994					
1995					
1996					
1997					
1998					
1999					

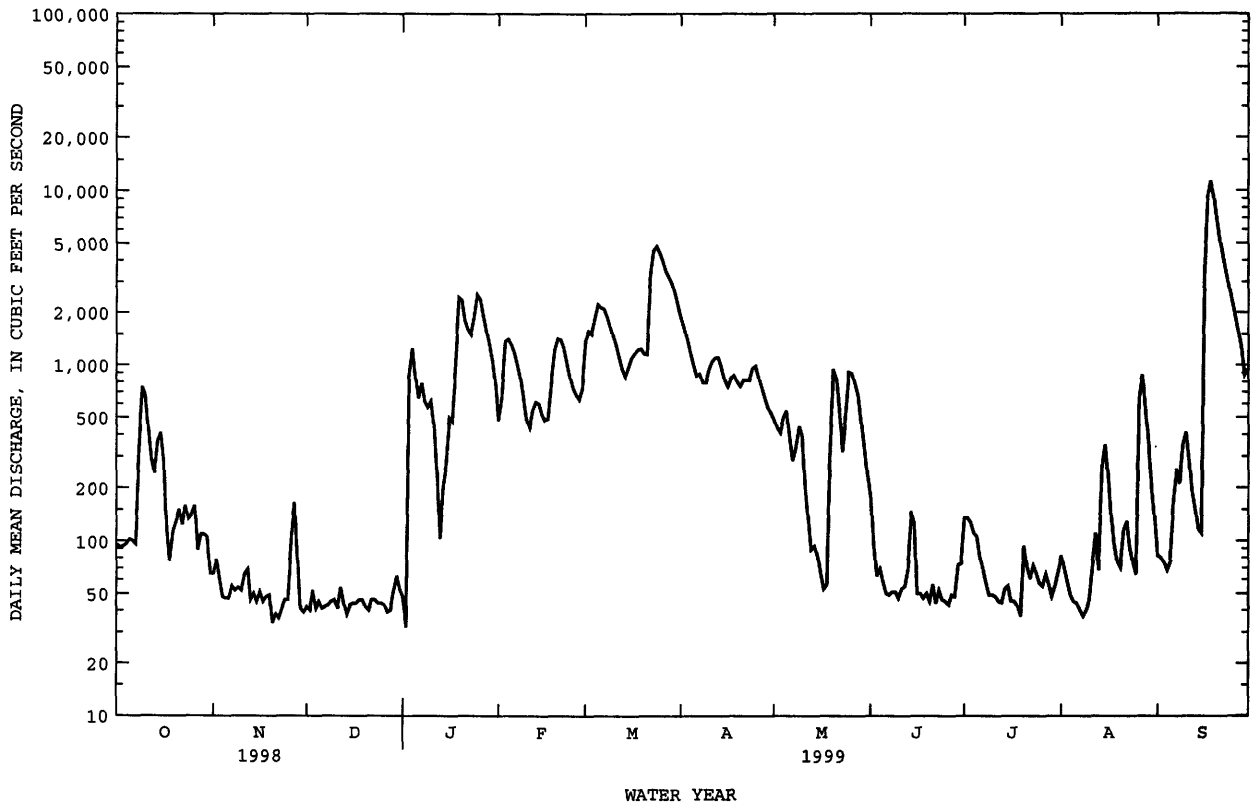
PASSAIC RIVER BASIN

01389500 PASSAIC RIVER AT LITTLE FALLS, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1898 - 1999	
ANNUAL TOTAL	403994		247712		1142	
ANNUAL MEAN	1107		679		2394	
HIGHEST ANNUAL MEAN					269	
LOWEST ANNUAL MEAN					1903	
HIGHEST DAILY MEAN	8840	May 13	11300	Sep 18	28000	Oct 10 1903
LOWEST DAILY MEAN	34	Nov 20	32	Jan 2	.00	Jul 3 1904
ANNUAL SEVEN-DAY MINIMUM	41	Nov 19	41	Nov 19	13	Sep 19 1932
INSTANTANEOUS PEAK FLOW			11600	Sep 18	31700a	Oct 10 1903
INSTANTANEOUS PEAK STAGE			9.84b	Sep 18	----	
INSTANTANEOUS LOW FLOW			28	Jan 2	.00	Jul 3 1904
10 PERCENT EXCEEDS	2660		1610		2760	
50 PERCENT EXCEEDS	411		158		630	
90 PERCENT EXCEEDS	46		45		121	

a Present site.

b Gage height recorded in gage well, outside gage reading was 10.30 ft.



01390500 SADDLE RIVER AT RIDGEWOOD, NJ

LOCATION.--Lat 40°59'06", long 74°05'27", Bergen County, Hydrologic Unit 02030103, on left bank 15 ft upstream from bridge on State Highway 17 in Ridgewood and 2.8 mi upstream from Hohokus Brook.

DRAINAGE AREA.--21.6 mi².

PERIOD OF RECORD.--October 1954 to September 1974, October 1977 to current year. Operated as a maximum-stage gage water years 1975- 77.

REVISED RECORDS.--WRD-NJ 1974: 1971.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 71.74 ft above sea level (levels from New Jersey Geological Survey bench mark).

REMARKS.--Records poor. The flow past this station is affected by pumpage from wells by United Water New Jersey and others. Several measurements of water temperature were made during the year. Satellite telemeter at station.

EXTREMES OUTSIDE OF PERIOD OF RECORD.--Flood of July 23, 1945, reached a discharge of 6,400 ft³/s, at site 1.6 mi upstream, drainage area, 19.1 mi², by slope-area measurement.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 380 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 3	1630	723	4.91	Jun 11	1000	526	4.30
Jan 18	2145	848	5.26	Aug 26	1145	564	4.42
Mar 22	0700	660	4.72	Sep 16	2045	*5,380	*13.40

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e2.5	5.1	7.7	4.6	27	82	37	24	e14	5.4	e2.2	6.1
2	3.0	5.3	6.9	4.1	107	40	37	24	e10	5.2	e2.3	6.0
3	2.1	5.0	6.7	264	60	40	34	23	e11	4.5	e1.6	6.0
4	2.4	6.1	6.5	34	39	99	34	34	e7.0	3.7	e3.0	6.0
5	2.6	6.9	6.8	13	34	47	32	28	e7.7	3.2	e1.6	6.6
6	2.5	7.2	7.0	12	32	54	31	25	e7.5	2.6	e1.9	21
7	2.4	7.4	6.7	4.2	30	63	33	24	e7.9	2.1	e2.0	15
8	63	8.1	7.8	6.4	31	43	29	43	e8.9	1.8	e3.5	24
9	35	8.0	7.9	63	29	39	40	37	e4.7	1.6	e2.4	22
10	16	8.2	6.6	20	28	39	40	28	e5.1	1.6	e1.5	16
11	11	8.1	6.2	9.1	27	38	33	25	e4.9	1.4	e7.7	12
12	e6.5	8.4	6.1	8.3	29	37	45	e15	e5.3	1.2	1.8	9.1
13	e6.8	15	5.7	4.9	35	35	34	e15	e5.5	1.7	1.3	8.5
14	e31	9.0	5.3	8.1	28	36	31	e16	e9.9	1.2	24	8.9
15	9.6	4.9	4.9	86	27	48	30	e14	e4.5	1.0	27	13
16	2.1	4.2	4.8	29	26	47	31	e14	e4.5	e1.5	4.4	1610
17	e7.9	4.1	4.9	9.1	26	49	39	e14	e4.6	e1.5	3.6	458
18	e7.1	4.0	4.7	268	78	46	30	e15	3.9	e1.6	3.1	61
19	e6.7	3.8	4.7	105	44	39	27	e110	3.5	e3.1	3.0	31
20	e6.3	3.9	4.8	45	34	36	32	e75	3.3	e2.6	3.2	23
21	e6.0	4.3	4.6	38	30	51	32	e22	5.4	e2.3	3.9	26
22	e5.9	4.1	3.9	50	29	317	29	e22	5.4	e.89	4.5	23
23	e6.0	4.2	4.0	40	28	70	38	e38	4.4	e2.1	3.9	21
24	e6.7	4.1	4.2	131	26	53	41	e79	3.8	e1.9	3.7	19
25	3.4	4.1	3.8	66	26	46	29	e48	3.5	e1.8	3.6	17
26	4.1	34	4.7	42	26	42	28	e23	3.5	e2.3	147	16
27	5.8	22	3.7	36	25	40	27	e18	3.1	e2.1	25	e34
28	6.3	12	3.3	33	57	67	26	e16	2.9	e2.1	10	15
29	7.4	9.8	5.5	30	---	46	26	e14	8.5	e2.0	7.2	14
30	9.2	8.7	14	29	---	40	25	e13	8.3	e2.1	6.0	73
31	4.6	---	7.4	27	---	38	---	e15	---	e2.4	5.9	---
TOTAL	291.9	240.0	181.8	1519.8	1018	1767	980	911	182.5	70.49	321.8	2621.2
MEAN	9.42	8.00	5.86	49.0	36.4	57.0	32.7	29.4	6.08	2.27	10.4	87.4
MAX	63	34	14	268	107	317	45	110	14	5.4	147	1610
MIN	2.1	3.8	3.3	4.1	25	35	25	13	2.9	.89	1.3	6.0
CFSM	.44	.37	.27	2.27	1.68	2.64	1.51	1.36	.28	.11	.48	4.05
IN.	.50	.41	.31	2.62	1.75	3.04	1.69	1.57	.31	.12	.55	4.51

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 1999, BY WATER YEAR (WY)

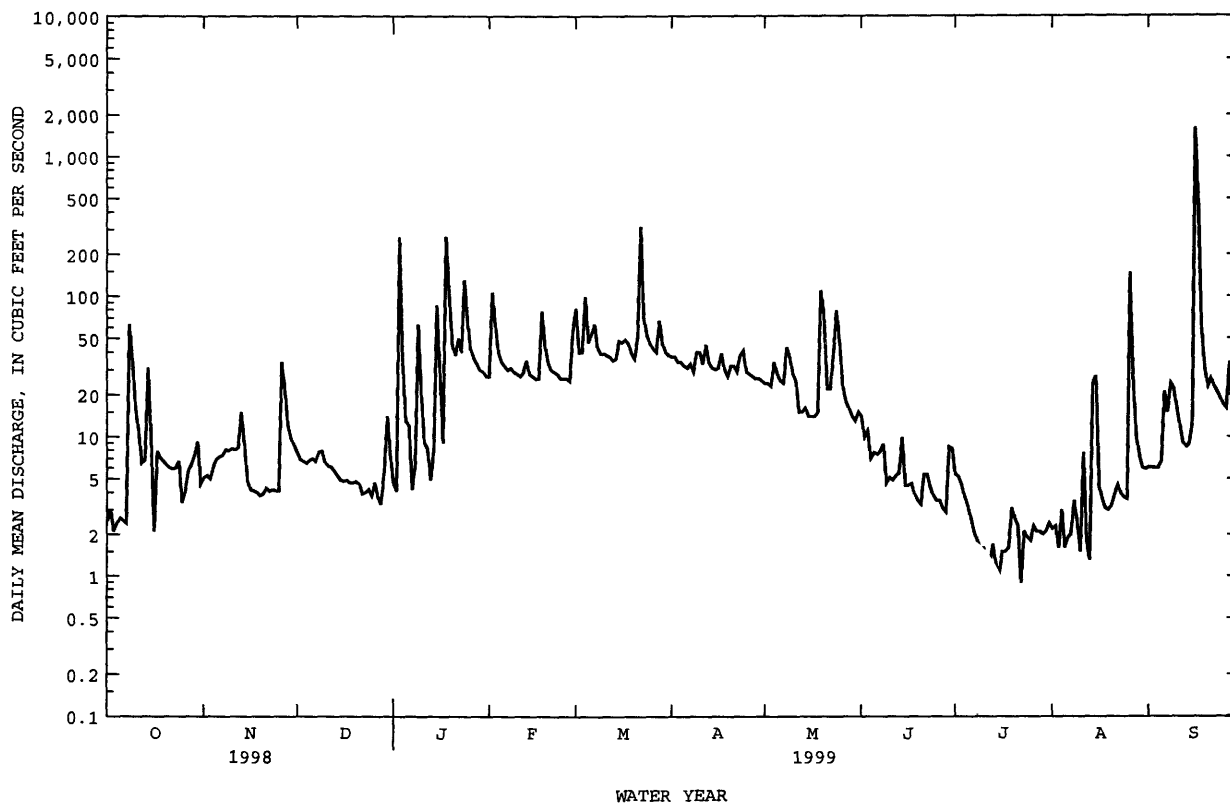
	MEAN	21.7	33.7	35.8	36.9	40.4	55.0	58.4	42.5	27.0	19.9	18.9	19.1
MAX	104	109	109	115	86.9	104	152	118	121	87.6	77.1	87.4	
(WY)	1956	1978	1973	1979	1961	1983	1983	1989	1972	1984	1955	1999	
MIN	5.79	8.00	5.86	6.43	11.8	15.6	11.0	12.4	6.08	2.27	2.69	2.34	
(WY)	1983	1999	1999	1981	1980	1985	1985	1995	1999	1999	1995	1980	

PASSAIC RIVER BASIN

01390500 SADDLE RIVER AT RIDGEWOOD, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1955 - 1999	
ANNUAL TOTAL	9281.2		10105.49			
ANNUAL MEAN	25.4		27.7		34.1	
HIGHEST ANNUAL MEAN					58.7	
LOWEST ANNUAL MEAN					14.7	
HIGHEST DAILY MEAN	282	Apr 10	1610	Sep 16	1610	Sep 16 1999
LOWEST DAILY MEAN	1.8	Sep 29	.89	Jul 22	.20	Sep 17 1966
ANNUAL SEVEN-DAY MINIMUM	2.3	Sep 28	1.4	Jul 11	.75	Sep 10 1995
INSTANTANEOUS PEAK FLOW			5380	Sep 16	5380	Sep 16 1999
INSTANTANEOUS PEAK STAGE			13.40	Sep 16	13.40	Sep 16 1999
INSTANTANEOUS LOW FLOW			.00	Jul 27	.00	Jul 27 1999
ANNUAL RUNOFF (CFSM)	1.18		1.28		1.58	
ANNUAL RUNOFF (INCHES)	15.98		17.40		21.43	
10 PERCENT EXCEEDS	54		46		67	
50 PERCENT EXCEEDS	16		9.9		22	
90 PERCENT EXCEEDS	3.0		2.4		6.5	

e Estimated



01391500 SADDLE RIVER AT LODI, NJ

LOCATION.--Lat 40°53'25", long 74°04'51", Bergen County, Hydrologic Unit 02030103, on left bank 560 ft upstream from bridge on Outwater Lane in Lodi and 3.2 mi upstream from mouth.

DRAINAGE AREA.--54.6 mi².

PERIOD OF RECORD.--September 1923 to current year.

REVISED RECORDS.--WSP 781: Drainage area. WSP 1031: 1940(M). WSP 1552: 1929(M), 1936(M), 1938. WRD-NJ 1969: 1967. WRD-NJ 1970: 1968, 1969.

GAGE.--Water-stage recorder. Concrete control since Nov. 2, 1938. Datum of gage is 25.00 ft above sea level. Prior to Nov. 2, 1938, at site 560 ft downstream at datum 2.54 ft lower.

REMARKS.--Records good except for estimated discharges, which are poor. Occasional regulation at low flow. Diversion upstream from station at Paramus by United Water New Jersey, for municipal supply (see Hackensack River Basin, diversions). The flow past this station is affected by pumpage from wells by United Water New Jersey and others. Several measurements of water temperature were made during the year. Satellite telemeter at station.

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)
Jan 18	2330	1,710	5.58	Aug 26	1030	1,490	5.15
Mar 22	0915	1,440	5.06	Sep 17	0100	*5,330	*13.94

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	27	24	8.4	60	233	87	57	39	45	8.6	11
2	22	27	26	6.5	287	89	87	56	29	25	9.1	13
3	24	29	27	149	179	70	82	51	31	24	5.9	13
4	27	26	25	202	100	223	81	85	29	19	12	14
5	26	25	28	53	83	109	75	48	24	18	5.3	17
6	23	25	27	32	75	113	72	46	23	15	6.3	62
7	26	29	26	28	70	160	84	46	25	12	5.9	52
8	161	29	22	24	77	96	69	102	30	11	11	42
9	132	28	24	177	68	82	97	80	15	11	8.6	53
10	58	27	18	128	66	78	114	50	18	11	5.2	65
11	44	55	19	50	63	75	87	36	17	11	42	37
12	34	38	13	28	65	71	122	30	19	10	40	24
13	31	32	17	30	86	70	85	29	19	10	24	26
14	137	32	14	31	65	75	71	32	36	9.9	107	21
15	62	31	12	247	60	118	67	31	47	9.5	87	50
16	39	27	12	134	59	108	85	32	17	8.7	13	e1800
17	39	21	10	64	58	101	102	30	18	8.0	10	e1820
18	35	22	7.5	534	208	89	74	29	19	8.0	9.2	e340
19	33	25	6.2	505	128	73	66	183	23	16	9.3	201
20	31	28	8.1	131	82	65	85	161	21	13	11	146
21	30	30	6.2	93	72	91	83	55	33	11	25	149
22	29	29	8.6	125	63	840	68	45	26	12	16	134
23	27	29	9.2	98	53	225	93	82	20	9.8	17	112
24	32	25	19	297	52	145	114	170	18	8.6	18	99
25	32	24	19	205	48	125	69	110	23	7.8	15	91
26	29	107	19	109	40	110	65	57	22	10	660	83
27	26	72	19	87	38	104	61	43	20	9.3	117	78
28	23	40	19	79	152	171	58	38	21	8.8	33	74
29	29	31	36	71	---	118	58	36	47	7.9	22	71
30	27	30	45	67	---	98	57	33	36	8.7	17	262
31	28	---	13	63	---	90	---	42	---	9.8	13	---
TOTAL	1319	1000	578.8	3855.9	2457	4215	2418	1925	765	398.8	1383.4	5960
MEAN	42.5	33.3	18.7	124	87.8	136	80.6	62.1	25.5	12.9	44.6	199
MAX	161	107	45	534	287	840	122	183	47	45	660	1820
MIN	22	21	6.2	6.5	38	65	57	29	15	7.8	5.2	11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	65.1	88.9	100	106	119	155	156	118	84.2	71.3	67.5	68.9
MAX	257	284	301	331	258	333	457	315	336	371	225	256
(WY)	1956	1978	1984	1979	1973	1953	1983	1984	1972	1945	1955	1971
MIN	16.5	25.5	17.0	12.1	38.1	40.1	32.9	44.9	25.5	12.9	15.1	11.4
(WY)	1936	1982	1981	1981	1980	1981	1985	1941	1999	1999	1966	1932

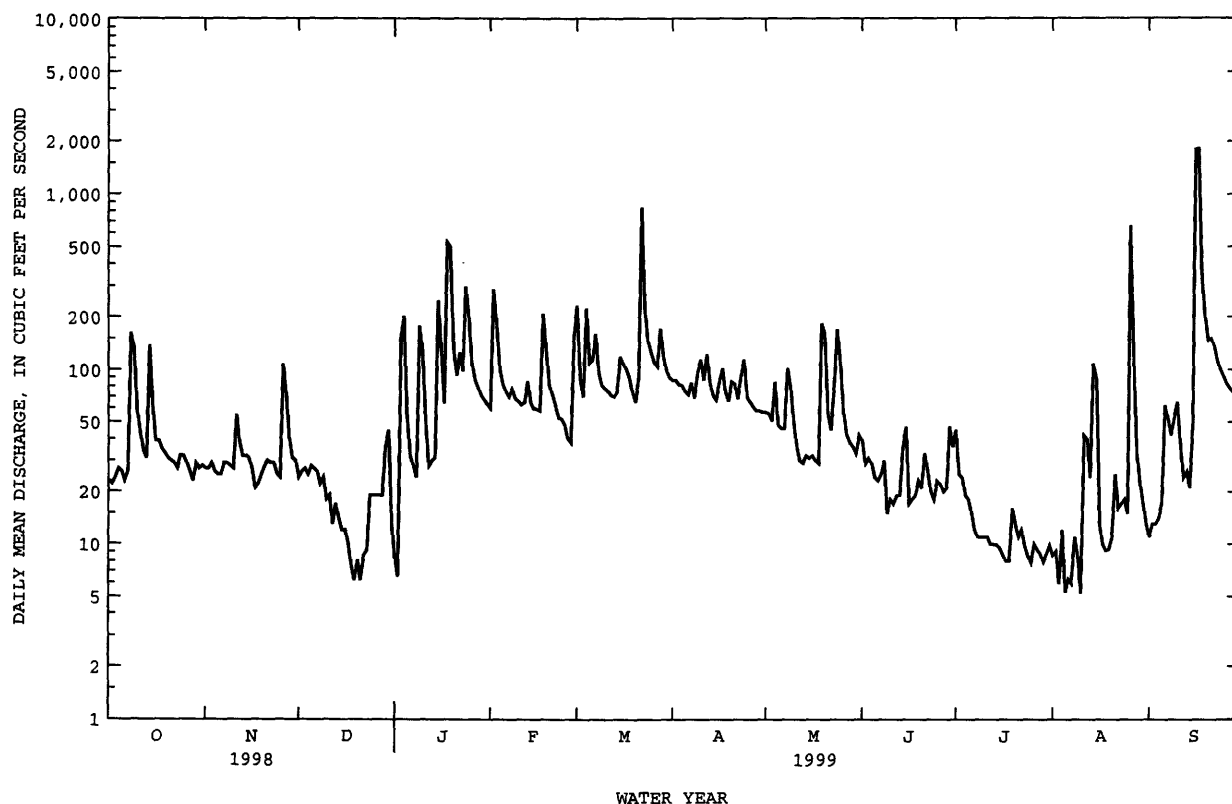
PASSAIC RIVER BASIN

01391500 SADDLE RIVER AT LODI, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1924 - 1999	
ANNUAL TOTAL	35671.8		26275.9		99.9	
ANNUAL MEAN	97.7		72.0		187	
HIGHEST ANNUAL MEAN					45.2	
LOWEST ANNUAL MEAN					187	
HIGHEST DAILY MEAN	851	Apr 10	1820	Sep 17	2970	Apr 5 1984
LOWEST DAILY MEAN	6.2	Dec 19	5.2	Aug 10	4.9	Sep 15 1995
ANNUAL SEVEN-DAY MINIMUM	8.0	Dec 17	7.6	Aug 1	7.1	Sep 10 1995
INSTANTANEOUS PEAK FLOW			5330	Sep 17	5330	Sep 17 1999
INSTANTANEOUS PEAK STAGE			13.94	Sep 17	13.94a	Sep 17 1999
INSTANTANEOUS LOW FLOW			3.1	Jan 1	1.0	May 25 1935
10 PERCENT EXCEEDS	200		129		190	
50 PERCENT EXCEEDS	72		36		69	
90 PERCENT EXCEEDS	25		11		26	

e Estimated

a From high-water mark in gage house.



01392590 PASSAIC RIVER AT NEWARK, NJ

LOCATION.--Lat 40°44'00", long 74°09'30", Essex County, Hydrologic Unit 02030103, on right bank at Newark Fire Training Academy in Newark, 800 ft upstream from bridge on South Fourth Street, 0.3 mi downstream from railroad bridges on AMTRAK mainline, and 4.2 mi upstream from Newark Bay.

DRAINAGE AREA.--923 mi².

PERIOD OF RECORD.--June 1993 to current year.

GAGE.--Water-stage recorder. Datum of gage is 10.00 ft below sea level. Gage-height record converted to elevation above or below (-) sea level for publication.

REMARKS.--Summaries for months with short periods of no gage-height record have been estimated with little or no loss of accuracy unless otherwise noted. Some periods cannot be estimated and are noted by dash (---) lines. Satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation recorded, 7.54 ft, Oct. 19, 1996; minimum recorded, -4.77 ft, Nov. 5, 1994.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum elevation known, 10.9 ft, Dec. 11, 1992, from high-water mark.

EXTREMES FOR CURRENT YEAR.--Maximum elevation recorded, 6.76 ft, Jan. 3; minimum recorded, -4.20 ft, Jan. 1.

Summaries of tide elevations during the year are as follows:

		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
Maximum	Elevation	5.27	5.35	5.36	6.76	e5.2	6.12	5.76	5.44	5.72	5.60	5.30	5.60
high tide	Date	8	4	4	3	18	15	16	15	14	13	31	16
Minimum	Elevation	-3.10	-2.93	-3.74	-4.20	-2.85	-3.53	-2.98	-2.75	-2.57	-2.58	-2.32	e-2.6
low tide	Date	5	3,4	31	1	27	5	18	17	16	11,12	29	27
Mean high tide		3.85	3.73	3.69	---	---	3.79	4.09	4.02	3.99	4.12	4.28	---
Mean water level		1.20	1.04	.96	---	---	1.13	1.36	1.40	1.34	1.40	1.57	---
Mean low tide		-1.58	-1.83	-1.96	---	---	-1.77	-1.47	-1.41	-1.49	-1.44	-1.29	---

e Estimated.

RESERVOIRS IN PASSAIC RIVER BASIN

- 01379990 SPLITROCK RESERVOIR.--Lat 40°57'40", long 74°27'45", Morris County, Hydrologic Unit 02030103, at dam on Beaver Brook, 2 mi northeast of Hibernia. DRAINAGE AREA, 5.50 mi². PERIOD OF RECORD, September 1925 to September 1931, December 1948 to September 1950, October 1953 to current year. Monthend contents only 1925-31, 1948-50, published in WSP 1302. October 1950 to September 1953 in Special Report 16, New Jersey Department of Environmental Protection. GAGE, water-stage recorder. Datum of gage is sea level.
REVISED RECORDS.--WDR NJ-94-1: 1993.
REMARKS.--Reservoir is formed by a concrete gravity dam with earth embankment; present dam constructed 1946-48 and sluice gate first closed Dec. 22, 1948. Prior to 1946, reservoir was formed by earthfill dam with crest about 20 ft lower. Capacity of spillway level, 3,310,000,000 gal, elevation, 835 ft. Flow is regulated by two 30-inch sluice gates. Flow is released for diversion for municipal supply of United Water New Jersey.
COOPERATION.--Records provided by United Water New Jersey, Bureau of Water.
EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 3,652,500,000 gal, Apr. 5, 1973, elevation, 836.75 ft; minimum, 1,522,800,000 gal, Jan. 4, 1954, elevation, 824.20 ft.
EXTREMES FOR CURRENT YEAR.--Maximum contents, 3,434,000,000 gal, Mar. 23, elevation, 835.65 ft; minimum, 2,631,000,000 gal, Jan. 2, elevation, 831.45 ft.
- 01380900 BOONTON RESERVOIR.--Lat 40°53'45", long 74°23'55", Morris County, Hydrologic Unit 02030103, at dam on Rockaway River at Boonton. DRAINAGE AREA, 119 mi². PERIOD OF RECORD, April 1904 to September 1950, October 1953 to current year. Monthend contents only 1904-50, published in WSP 1302. October 1950 to September 1953 in Special Report 16, New Jersey Department of Environmental Protection. REVISED RECORDS.--WDR NJ-85-1: 1984. GAGE, hook gage. Datum of gage is sea level.
REVISED RECORDS.--WDR NJ-94-1: 1993.
REMARKS.--Reservoir is formed by a cyclopean masonry dam with earth wings; dam completed and storage began in 1904. Total capacity at spillway level, 7,620,000,000 gal elevation, 305.25 ft of which 7,366,000,000 gal is usable contents above elevation 259.75 ft, sill of lowest outlet gate. Spillway is topped with two Bascule gates, 2 ft high; prior to 1952, flashboards were used. Flow regulated by Bascule gates, three outlets in gatehouse at head of conduit and by two 48-inch pipes (bottom of sluice pipes at elevation 205 ft). Water is diverted from reservoir for municipal supply of United Water New Jersey.
COOPERATION.--Records provided by United Water New Jersey, Bureau of Water.
EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 8,580,000,000 gal, May 12, 1998, elevation, 309.50 ft; minimum, 1,445,000,000 gal, Jan. 31, 1981, elevation 274.71 ft.
EXTREMES FOR CURRENT YEAR.--Maximum contents, 8,299,000,000 gal, Mar. 23, elevation, 308.46 ft; minimum, 2,542,000,000 gal, Jan. 2, elevation, 282.67 ft.
- 01382100 CANISTEAR RESERVOIR.--Lat 41°06'30", long 74°29'30", Sussex County, Hydrologic Unit 02030103, at dam on Pacock Brook, 1.8 mi northeast of Stockholm. DRAINAGE AREA, 6.08 mi². PERIOD OF RECORD, October 1923 to September 1950, October 1953 to current year. Monthend contents 1923-50, published in WSP 1302. October 1950 to September 1953 in Special Report 16, New Jersey Department of Environmental Protection. GAGE, staff gage. Datum of gage is sea level.
REVISED RECORDS.--WDR NJ-94-1: 1993, WDR NJ-99-1: 1998 (elevation, contents).
REMARKS.--Reservoir is formed by earth-embankment type dam, completed about 1896. Capacity at spillway level, 2,407,000,000 gal, elevation, 1,086.0 ft. Reservoir used for storage and water released for diversion at Macopin intake dam on Pequannock River prior to May 21, 1961, and for diversion at Charlotteburg Reservoir on Pequannock River since May 21, 1961, for municipal supply for City of Newark. Outflow is controlled mostly by operation of gates in pipes through dam.
COOPERATION.--Records provided by City of Newark, Division of Water Supply.
- 01382200 OAK RIDGE RESERVOIR.--Lat 41°02'30", long 74°30'10", Passaic County, Hydrologic Unit 02030103, at dam on Pequannock River, 0.9 mi southwest of Oak Ridge. DRAINAGE AREA, 27.3 mi². PERIOD OF RECORD, October 1923 to September 1950, October 1953 to current year. Monthend contents only 1924-50, published in WSP 1302. October 1950 to September 1953 in Special Report 16, New Jersey Department of Environmental Protection. GAGE, staff gage. Datum of gage is sea level.
REVISED RECORDS.--WDR NJ-99-1: 1998 (elevation, contents).
REMARKS.--Reservoir is formed by earthfill dam with concrete-core wall and ogee overflow section; dam constructed between 1880-92; dam raised 10 ft during 1917-19. Capacity at spillway level, 3,895,000,000 gal, elevation, 846.0 ft. Reservoir used for storage and water released for diversion at Macopin intake dam on Pequannock River prior to May 21, 1961, and diversion at Charlotteburg Reservoir on Pequannock River since May 21, 1961, for municipal supply of City of Newark. Outflow is controlled mostly by operation of gates in pipes through dam.
COOPERATION.--Records provided by City of Newark, Division of Water Supply.
- 01382300 CLINTON RESERVOIR.--Lat 41°04'30", long 74°27'00", Passaic County, Hydrologic Unit 02030103, at dam on Clinton Brook, 2.0 mi north of Newfoundland. DRAINAGE AREA, 10.5 mi². PERIOD OF RECORD, October 1923 to September 1950, October 1953 to current year. Monthend contents only 1923-50, published in WSP 1302. October 1950 to September 1953 in Special Report 16, New Jersey Department of Environmental Protection. GAGE, staff gage. Datum of gage is sea level.
REVISED RECORDS.--WDR NJ-99-1: 1998 (elevation, contents).
REMARKS.--Reservoir is formed by earthfill dam constructed between 1889-92. Capacity at spillway level, 3,518,000,000 gal, elevation, 992.0 ft. Reservoir used for storage and water released for diversion at Macopin intake dam on Pequannock River prior to May 21, 1961, and for diversion at Charlotteburg Reservoir since May 21, 1961, for municipal supply of City of Newark. Outflow is controlled mostly by operation of gates in pipes through dam.
COOPERATION.--Records provided by City of Newark, Division of Water Supply.
- 01382380 CHARLOTTEBURG RESERVOIR.--Lat 41°01'34", long 74°25'30", Passaic County, Hydrologic Unit 02030103, at dam on Pequannock River, 1.1 mi upstream from Macopin River, and 1.5 mi southeast of Newfoundland, NJ. DRAINAGE AREA, 56.2 mi². PERIOD OF RECORD, May 1961 to current year. GAGE, water-stage recorder. Datum of gage is sea level.
REVISED RECORDS.--WDR NJ-74: Station number, WDR NJ-99-1: 1998 (elevation, contents).
REMARKS.--Reservoir is formed by concrete-masonry dam and earth embankment, with concrete spillway at elevation 738.00 ft; storage began May 19, 1961. Spillway equipped with automatic Bascule gate 5 ft high. Capacity, 2,964,000,000 gal, elevation, 743.00 ft, top of Bascule gate. No dead storage. Outflow is controlled by sluice and automatic Bascule gates. Water diverted from reservoir since May 21, 1961, for municipal supply of City of Newark.
COOPERATION.--Records provided by City of Newark, Division of Water Supply.
- 01382400 ECHO LAKE.--Lat 41°03'00", long 74°24'30", Passaic County, Hydrologic Unit 02030103, at Echo Lake Dam on Macopin River, 1.6 mi north of Charlotteburg, and 1.9 mi upstream from mouth. DRAINAGE AREA, 4.35 mi². PERIOD OF RECORD, October 1927 to September 1950, October 1953 to current year. Monthend contents only 1928-50, published in WSP 1302. October 1950 to September 1953 in Special Report 16, New Jersey Department of Environmental Protection. GAGE, staff gage. Datum of gage is sea level.
REVISED RECORDS.--WDR NJ-99-1: 1998 (elevation, contents).
REMARKS.--Lake is formed by earth-embankment type dam completed about 1925. Capacity at spillway level, 1,583,000,000 gal, elevation, 893.0 ft, with provision for additional storage of 180,000,000 gal at elevation 894.9 ft with flashboards. Usable contents, 1,045,000,000 gal above elevation 880.0 ft. Lake used for storage and water released for diversion at Macopin intake dam on Pequannock River prior to May 21, 1961, and water diverted to Charlotteburg Reservoir on Pequannock River since May 21, 1961, for municipal supply of City of Newark. Outflow to Macopin River controlled by operation of gates in gatehouse at dam and water released through pipe and canal to Charlotteburg Reservoir.
COOPERATION.--Records provided by City of Newark, Division of Water Supply.

RESERVOIRS IN PASSAIC RIVER BASIN--Continued

01383000 GREENWOOD LAKE.--Lat 41°09'36", long 74°20'03", Passaic County, Hydrologic Unit 02030103, in gatehouse near right end of Greenwood Lake Dam on Wanaque River at Awosting. DRAINAGE AREA, 27.1 mi². PERIOD OF RECORD, June 1898 to November 1903, June 1907 to current year (gage heights only prior to October 1953). GAGE, water-stage recorder. Datum of gage is 608.86 ft above sea level (levels from New Jersey Geological Survey bench mark). Prior to Oct. 1, 1931, staff gage on former railroad bridge at site 100 ft upstream at datum 89.75 ft lower.

REMARKS.--Reservoir is formed by earthfill dam with concrete spillway; dam completed about 1837 and reconstruction completed in 1928 with crest of spillway 0.25 ft lower. Usable capacity, 6,860,000,000 gal between gage heights -4.00 ft, sill of gate, and 10.00 ft, crest of spillway. Dead storage, 7,140,000,000 gal. Outflow mostly regulated by two gates, 3.5 by 5.0 ft. Records given herein represent usable capacity. Lake used for recreation. Diversions by NJDWC from Upper Greenwood Lake enter via Green Brook.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 9,528,000,000 gal, Oct. 9-14, 1903, gage height, 14.25 ft, present datum; minimum, 3,160,000,000 gal, several days in November 1900, gage height, 3.50 ft, present datum.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 8,003,000,000 gal, Sept. 17, gage height, 11.83 ft; minimum, 6,184,000,000 gal, Sept. 4, 5, gage height, 8.39 ft.

REVISED RECORDS.--WDR NJ-94-1: 1993, WDR NJ-97-1: 1995-96.

01384002 MONKSVILLE RESERVOIR.--Lat 41°07'20", long 74°17'49", Passaic County, Hydrologic Unit 02030103, at dam on Wanaque River at Monks. DRAINAGE AREA, 40.4 mi². PERIOD OF RECORD, September 1988 to current year. GAGE, measurement from reference point. Datum of gage is sea level.

REMARKS.--Reservoir is formed by a roller compacted concrete dam constructed in 1988. Total capacity at spillway level, 7,000,000,000 gal, elevation 400.0 ft. Reservoir used for storage and water released to Wanaque Reservoir. Outflow is controlled by a 60-inch fixed-cone valve in a 72-inch pipe and 10-inch cone valve which can discharge directly into Wanaque Reservoir or into the 72-inch pipe.

COOPERATION.--Records provided by North Jersey District Water Supply Commission.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 7,150,000,000 gal, Oct. 20, 1989, elevation 401.1 ft (corrected); minimum, 860,000,000 gal, Sept. 28, 1988 (first filling), elevation 339.0 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 7,400,000,000 gal, Sept. 17-19, elevation 403.3 ft; minimum, 4,880,000,000 gal, Dec. 1, elevation 386.9 ft.

01386990 WANAQUE RESERVOIR.--Lat 41°02'42", long 74°17'44", Passaic County, Hydrologic Unit 02030103, at Raymond Dam on Wanaque River at Wanaque. DRAINAGE AREA, 90.4 mi². PERIOD OF RECORD, February 1928 to September 1950, October 1953 to current year. Monthend contents only 1928-50, published in WSP 1302. October 1950 to September 1953 in Special Report 16, New Jersey Department of Environmental Protection. GAGE, water-stage recorder. Datum of gage is sea level (levels by North Jersey District Water Supply Commission).

REMARKS.--Reservoir is formed by earthfill with concrete-core wall main dam and seven secondary dams; dams completed in 1927 and storage began in March 1928. Total capacity at spillway level, 29,630,000,000 gal, revised, elevation, 302.4 ft, prior to 1986, 300.3 ft. Capacity available by gravity at spillway level, 27,850,000,000 gal. Outflow mostly controlled by sluice gates in intake conduits in gage house. Water is diverted from reservoir for municipal supply. Diversion to reservoir from Posts Brook, Pompton River, and Ramapo River (see Passaic River basin, diversions). Records given herein represent total capacity.

REVISED RECORDS.--WDR NJ-85-1: 1984 (M).

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 31,280,000,000 gal, Apr. 5, 1984, elevation, 304.52 ft; minimum, 5,110,000,000 gal, Dec. 26, 1964, elevation, 256.06 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 29,500,000,000 gal, May 28, elevation, 302.25 ft; minimum, 7,442,000,000 gal, Jan. 3, elevation, 262.89 ft.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

Date	Elevation (feet)*	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)	Elevation (feet)*	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)
				01379990	SPLITROCK RESERVOIR	
				01380900	BOONTON RESERVOIR	
Sept. 30.....	834.05	3,117	--	294.79	4,965	--
Oct. 31.....	833.90	3,088	-1.4	291.91	4,350	-30.7
Nov. 30.....	833.70	3,084	-2	287.92	3,517	-43.0
Dec. 31.....	831.80	2,694	-19.5	283.00	2,597	-45.9
CAL YR 1998			-2.9			-21.3
Jan. 31.....	833.05	3,019	+16.2	305.33	7,497	+244.5
Feb. 28.....	833.95	3,200	+10.0	307.35	8,014	+28.6
Mar. 31.....	835.25	3,355	+7.7	307.48	8,048	+1.7
Apr. 30.....	835.15	3,335	-1.0	307.31	8,004	-2.3
May 31.....	835.05	3,315	-1.0	307.15	7,963	-2.0
June 30.....	834.65	3,236	-4.1	302.62	6,817	-59.1
July 31.....	834.00	3,100	-6.8	289.45	4,920	-94.7
Aug. 31.....	834.15	3,137	+1.8	287.79	3,491	-71.3
Sept. 30.....	834.95	3,296	+8.2	304.46	7,278	+195.3
WTR YR 1999			+8			+9.8

PASSAIC RIVER BASIN

RESERVOIRS IN PASSAIC RIVER BASIN--Continued

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

Date	Elevation (feet)**	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)	Elevation (feet)**	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)
01382100 CANISTEAR RESERVOIR (WY 1998)				01382100 CANISTEAR RESERVOIR (WY 1999)		
Sept.30.....	1,085.80a	2,386a	--	1,085.70	2,376	--
Oct. 31.....	1,085.80a	2,386a	0a	1,085.70	2,376	0
Nov. 30.....	1,085.80a	2,386a	0a	1,085.00	2,302	-3.8
Dec. 31.....	1,085.90a	2,396a	+5a	1,083.60	2,161	-7.0
CAL YR 1998			0a			
Jan. 31.....	1,085.90a	2,396a	0a	1,083.50	2,151	-.5
Feb. 28.....	1,086.00a	2,407a	+6a	1,090.00	2,407	+14.1
Mar. 31.....	1,085.90a	2,396a	-.5a	1,086.00	2,407	0
Apr. 30.....	1,085.90a	2,396a	0a	1,085.90	2,396	-.6
May 31.....	1,086.00a	2,407a	+5a	1,086.00	2,407	+5
June 30.....	1,086.10a	2,417a	+5a	1,085.80	2,386	-1.1
July 31.....	1,085.70a	2,376a	-2.0a	1,085.70	2,375	-.5
Aug. 31.....	1,085.90a	2,396a	+1.0a	1,085.40	2,344	-1.5
Sept.30.....	1,085.70a	2,376a	-1.0a	1,085.90	2,396	+2.7
WTR YR 1999			0a			
Date	Elevation (feet)**	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)	Elevation (feet)**	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)
01382200 OAK RIDGE RESERVOIR (WY 1998)				01382200 OAK RIDGE RESERVOIR (WY 1999)		
Sept.30.....	838.2a	2,836a	--	830.1	1,857	--
Oct. 31.....	837.2a	2,708a	-6.4a	827.8	1,613	-12.2
Nov. 30.....	838.8a	2,914a	+10.6a	820.5	946	-34.4
Dec. 31.....	840.3a	3,111a	+9.8a	818.3	804	-7.1
CAL YR 1998			-3.4a			
Jan. 31.....	846.2a	3,924a	+40.6a	832.5	2,130	+66.2
Feb. 28.....	846.3a	3,938a	+8a	840.0	3,006	+48.4
Mar. 31.....	846.2a	3,924a	-.7a	846.1	3,909	+45.1
Apr. 30.....	846.1a	3,909a	-.8a	846.1	3,909	0
May 31.....	846.1a	3,909a	0a	846.0	3,895	-.7
June 30.....	846.0a	3,895a	-.7a	843.2	3,503	-20.2
July 31.....	845.7a	3,852a	-2.1a	833.4	2,234	-63.3
Aug. 31.....	838.0a	2,810a	-52.0a	823.0	1,205	-51.3
Sept.30.....	830.1a	1,857a	-49.1a	830.5	1,902	+35.9
WTR YR 1999			-4.1a			
Date	Elevation (feet)**	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)	Elevation (feet)**	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)
01382300 CLINTON RESERVOIR (WY 1998)				01382300 CLINTON RESERVOIR (WY 1999)		
Sept.30.....	990.3a	3,300a	--	990.2	3,288	--
Oct. 31.....	985.8a	2,704a	-29.7a	983.2	2,399	-44.4
Nov. 30.....	985.0a	2,680a	-1.2a	979.2	1,975	-21.9
Dec. 31.....	986.6a	2,808a	+6.4a	974.3	1,482	-24.6
CAL YR 1998			-3.0a			
Jan. 31.....	992.1a	3,531a	+36.1a	981.2	2,187	+35.2
Feb. 28.....	992.2a	3,544a	+7a	985.0	2,644	+25.2
Mar. 31.....	992.2a	3,544a	0a	992.1	3,531	+44.3
Apr. 30.....	992.1a	3,531a	-.7a	992.0	3,518	-.7
May 31.....	992.1a	3,531a	0a	992.1	3,531	+6
June 30.....	992.2a	3,544a	+7a	992.1	3,531	0
July 31.....	992.0a	3,518a	-1.3a	990.9	3,377	-7.7
Aug. 31.....	991.6a	3,467a	-2.5a	988.2	3,044	-16.6
Sept.30.....	990.2a	3,288a	-9.2a	991.8	3,492	+23.1
WTR YR 1999			0a			

RESERVOIRS IN PASSAIC RIVER BASIN--Continued

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

Date	Elevation (feet)**	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)	Elevation (feet)**	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)
01382380 CHARLOTTEBURG RESERVOIR (WY 1998)				01382380 CHARLOTTEBURG RESERVOIR (WY 1999)		
Sept. 30.....	735.00a	2,110a	--	733.45	1,966	--
Oct. 31.....	733.15a	1,939a	-8.5a	734.60	2,072	+5.3
Nov. 30.....	735.15a	2,124a	+9.5a	735.90	2,196	+6.4
Dec. 31.....	733.40a	1,961a	-8.1a	734.50	2,063	-6.6
CAL YR 1998			-4.2a			+4
Jan. 31.....	742.80a	2,941a	+48.9a	738.70	2,482	+20.9
Feb. 28.....	743.40a	3,014a	+4.0a	733.00	1,966	-28.5
Mar. 31.....	743.15a	2,983a	-1.5a	743.15	2,983	+50.8
Apr. 30.....	743.10a	2,977a	-0.3a	742.65	2,923	-3.1
May 31.....	743.10a	2,977a	0	742.30	2,883	-2.0
June 30.....	742.75a	2,935a	-2.2a	733.81	1,998	-45.6
July 31.....	734.85a	2,096a	-41.9a	734.40	2,054	+2.8
Aug. 31.....	735.85a	2,191a	+4.7a	734.30	2,049	-2
Sept. 30.....	733.45a	1,966a	-11.6a	735.75	2,181	+6.8

WTR YR 1999 -0.6a +.9

Date	Elevation (feet)**	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)	Elevation (feet)**	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)
01382400 ECHO LAKE (WY 1998)				01382400 ECHO LAKE (WY 1999)		
Sept. 30.....	893.7a	1,648a	--	893.3	1,611	--
Oct. 31.....	893.1a	1,592a	-2.8a	893.4	1,621	+5
Nov. 30.....	892.4a	1,528a	-3.3a	893.4	1,621	0
Dec. 31.....	892.5a	1,537a	+4a	889.9	1,312	-15.4
CAL YR 1998			-4a			-9
Jan. 31.....	892.5a	1,537a	0	890.5	1,360	+2.4
Feb. 28.....	892.6a	1,546a	+5a	892.0	1,493	+7.3
Mar. 31.....	893.4a	1,621a	+3.7a	893.7	1,648	+7.7
Apr. 30.....	893.5a	1,630a	+5a	893.5	1,630	-9
May 31.....	893.4a	1,621a	-4a	893.5	1,630	0
June 30.....	893.5a	1,630a	+5a	893.4	1,621	-5
July 31.....	893.3a	1,611a	-9a	893.3	1,611	-5
Aug. 31.....	893.5a	1,630a	+9a	893.3	1,611	0
Sept. 30.....	893.3a	1,611a	-1.0a	893.4	1,621	+5

WTR YR 1999 -2a 0

Date	Elevation (feet)†	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)	Elevation (feet)**	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)	Elevation (feet)‡	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)
01383000 GREENWOOD LAKE				01384002 MONKSVILLE RESERVOIR			01386990 WANAQUE RESERVOIR		
Sept. 30.....	9.39	6,488	--	400.0	7,000	--	280.61	15,350	--
Oct. 31.....	9.58	6,604	+5.8	400.0	7,000	0	269.62	10,060	-266.5
Nov. 30.....	9.65	6,646	+2.2	386.9	4,880	-109.3	269.15	9,870	-7.2
Dec. 31.....	9.55	6,586	-3.0	388.4e	5,100	+11.0	263.29	7,588	-113.8
CAL YR 1998			+6.0						
Jan. 31.....	10.26	7,021	+21.7	400.0	7,000	+94.8	285.05	17,790	+509.1
Feb. 28.....	10.18	6,972	-2.7	400.0	7,000	0	293.28	22,990	+287.3
Mar. 31.....	10.30	7,046	+3.7	400.0	7,000	0	300.27	27,990	+249.5
Apr. 30.....	10.05	6,891	-8.0	400.0	7,000	0	299.52	27,420	-29.4
May 31.....	10.11	6,928	+1.8	400.0	7,000	0	301.68	29,070	+82.3
June 30.....	9.84	6,762	-8.6	400.0	7,000	0	297.49	25,930	-161.9
July 31.....	9.35	6,464	-14.9	400.0	7,000	0	288.67	19,970	-297.4
Aug. 31.....	8.97	6,232	-11.6	400.0	7,000	0	281.20	15,630	-216.6
Sept. 30.....	10.15	6,953	+37.2	400.0	7,000	0	290.12	20,900	+271.8
WTR YR 1999			+2.0				0		
							+23.5		

e Estimated.

* Elevation at 0900 on the first day of the following month.

** Elevation at 0800 on the first day of the following month.

† Elevation at 2400 on the last day of each month.

a Corrected figures for water year 1998.

b Previously reported data recorded at 0800 on first day of following month, beginning in 1999 water year data recorded at 2400 of the last day of each month.

DIVERSIONS WITHIN PASSAIC RIVER BASIN

- 01368720 North Jersey District Water Supply Commission diverts water from Upper Greenwood Lake (Hudson River basin) near Moe, NJ to the Green Brook, a tributary of Greenwood Lake, for municipal supply. Consult North Jersey District Water Supply Commission for data available.
- 01379510 New Jersey-American Water Company diverts water from Passaic River, 1.2 mi upstream from Canoe Brook for municipal supply. Records provided by New Jersey-American Water Company.
- 01379530 New Jersey-American Water Company diverts water from Canoe Brook near Summit, 0.5 mi from mouth, for municipal supply. Records provided by New Jersey-American Water Company.
- 01380280 The Town of Boonton diverts water from a tributary of Stony Brook at Taylortown Reservoir for Municipal Water Supply. Records furnished by Town of Boonton.
- 01380800 Jersey City diverts water from Boonton Reservoir on Rockaway River at Boonton for municipal supply. Records provided by United Water New Jersey. REVISED RECORDS.--WDR NJ-97-1: 1996.
- 01382370 City of Newark diverts water from Charlotteburg Reservoir on Pequannock River since May 21, 1961 for municipal supply. Prior to May 21, 1961 water was diverted from reservoir formed by Macopin intake dam on Pequannock River (former diversion 01382490). Records provided by City of Newark, Division of Water Supply. REVISED RECORDS.--WDR NJ-82-1: Station number.
- 01386980 North Jersey District Water Supply Commission diverts water for municipal supply from Wanaque Reservoir on Wanaque River. Records provided by North Jersey District Water Supply Commission.
- 01387020 North Jersey District Water Supply Commission diverts water from Posts Brook near Wanaque into Wanaque Reservoir for municipal supply. Records not available.
- 01387990 North Jersey District Water Supply Commission diverts water from Ramapo River by pumping from Pompton Lakes into Wanaque Reservoir. Records provided by North Jersey District Water Supply Commission.
- 01388490 Passaic Valley Water Commission supplements the dependable yield of its supply at Little Falls by diverting water at high flows at the Jackson Avenue Pumping Station into Point View Reservoir on Haycock Brook for release as required to sustain minimum flow requirements. Also water may be released into Haycock Brook for maintenance of flow in that stream. These diversions and releases occur upstream from Pompton Plains gaging station. Records provided by Passaic Valley Water Commission. No diversion or release during the year. REVISED RECORDS.--WDR NJ-82-1: Station number.
- 01388980 North Jersey District Water Supply Commission diverts water from the Wanaque South pumping station on the Pompton River at Two Bridges, 750 ft upstream from the Passaic River, to Wanaque Reservoir since January 1987. Record provided by the North Jersey District Water Supply Commission.
- 01388981 United Water New Jersey diverts water from the Wanaque South pumping station on the Pompton River at Two Bridges, 750 ft upstream from the Passaic River, to Oradell Reservoir. Water can also be diverted from Wanaque Reservoir to Oradell Reservoir in the Hackensack River basin. Figures given herein include diversion from both sources. Prior to water year 1989, diversion was from Ramapo River at Pompton Lakes. Records provided by the United Water New Jersey.
- 01389490 The Passaic Valley Water Commission diverts water from Passaic River above Beatties Dam at Little Falls and at the Wanaque South Pumping Station on the Pompton River for municipal supply. Records provided by Passaic Valley Water Commission.

DIVERSIONS, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

MONTH	<u>01379510</u> New Jersey - American Water Company from Passaic River	<u>01379530</u> New Jersey - American Water Company from Canoe Brook	<u>01380280</u> Stony Brook tributary diversion at Taylortown	<u>01380800</u> Jersey City	<u>01382370</u> Newark
October.....	1.56	2.38	.78	79.5	67.9
November.....	.81	1.73	.71	77.1	74.4
December.....	.76	.83	.73	84.3	81.0
CAL YR 1998	5.79	4.05	.81	78.6	71.4
January.....	33.7	9.50	.75	72.0	77.6
February.....	17.5	6.64	.74	71.0	76.4
March.....	7.32	4.12	.77	70.3	79.6
April.....	3.58	.51	.80	74.8	78.3
May.....	5.23	2.49	.74	82.1	62.7
June.....	0	.82	.74	96.5	75.5
July.....	0	0	.78	105	72.6
August.....	2.04	5.02	.40	87.7	77.6
September.....	1.51	5.46	.41	79.4	79.3
WTR YR 1999	6.13	3.28	.70	81.7	75.2

DIVERSIONS WITHIN PASSAIC RIVER BASIN--Continued

DIVERSIONS, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999, Continued

MONTH	<u>01386980</u> Wanaque Reservoir	<u>01387990</u> Ramapo River to Wanaque Reservoir	<u>01388980</u> Pompton River to Wanaque Reservoir	<u>01388981*</u> To Oradell Reservoir	<u>01389490</u> Passaic Valley Water Commission
October	169	0	19.5	61.0	64.9
November	151	0	97.2	59.4	82.6
December	127	0	70.6	56.4	108
CAL YR 1997	167	0	23.3	29.0	82.8
January	128	146	326	13.6	116
February	158	126	144	0	69.0
March	128	0	0	0	66.0
April	151	0	0	0	71.2
May	163	0	220	27.1	77.9
June	192	0	114	65.8	111
July	208	0	0	67.7	129
August	162	0	0	58.6	101
September	141	0	0	14.9	104
WTR YR 1998	156	22.1	82.4	35.7	91.9

* Diversion is to the Hackensack River Basin from Pompton River or Wanaque Reservoir.

ELIZABETH RIVER BASIN

01393450 ELIZABETH RIVER AT URSINO LAKE, AT ELIZABETH, NJ

LOCATION.--Lat 40°40'30", long 74°13'20", Union County, Hydrologic Unit 02030104, on left bank at Ursino Lake Dam in Elizabeth, 75 ft upstream from bridge on Trotters Lane and 3.8 mi upstream from mouth.

DRAINAGE AREA.--16.9 mi².

PERIOD OF RECORD.--October 1921 to current year.

REVISED RECORDS.--WSP 1552: Drainage area, 1922-23, 1927-29(M), 1932, 1933-34(M), 1938(P), 1942(M) 1944(P), 1945(M), 1948(P), 1952-53(M). WDR NJ-84-1: 1974.

GAGE.--Water-stage recorder, two crest-stage gages, and two concrete weirs. The right concrete weir was lowered 5 ft on Dec. 18, 1985. Datum of gage is sea level (levels by Corps of Engineers). Prior to Oct. 1, 1922, nonrecording gage at site 2,800 ft downstream at datum 4.14 ft higher and Oct. 1, 1922 to May 18, 1923, at same site at datum 5.23 ft higher. May 19, 1923 to Dec. 27, 1972, at site 2,800 ft downstream at datum 5.23 ft higher and published as "Elizabeth River at Elizabeth" (station 01393500), drainage area 18.0 mi².

REMARKS.--Records good. Diversion by pumpage from Hammock Well Field in Union for municipal supply by Elizabethtown Water Co., probably reduces the flow past the station. Several measurements of water temperature, other than those published, were made during the year.

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)
Jan 3	1130	2,140	19.65	Sep 16	1345	2,490	20.01
Aug 26	0845	2,490	20.01	Sep 16	2030	*4,510	*21.61

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

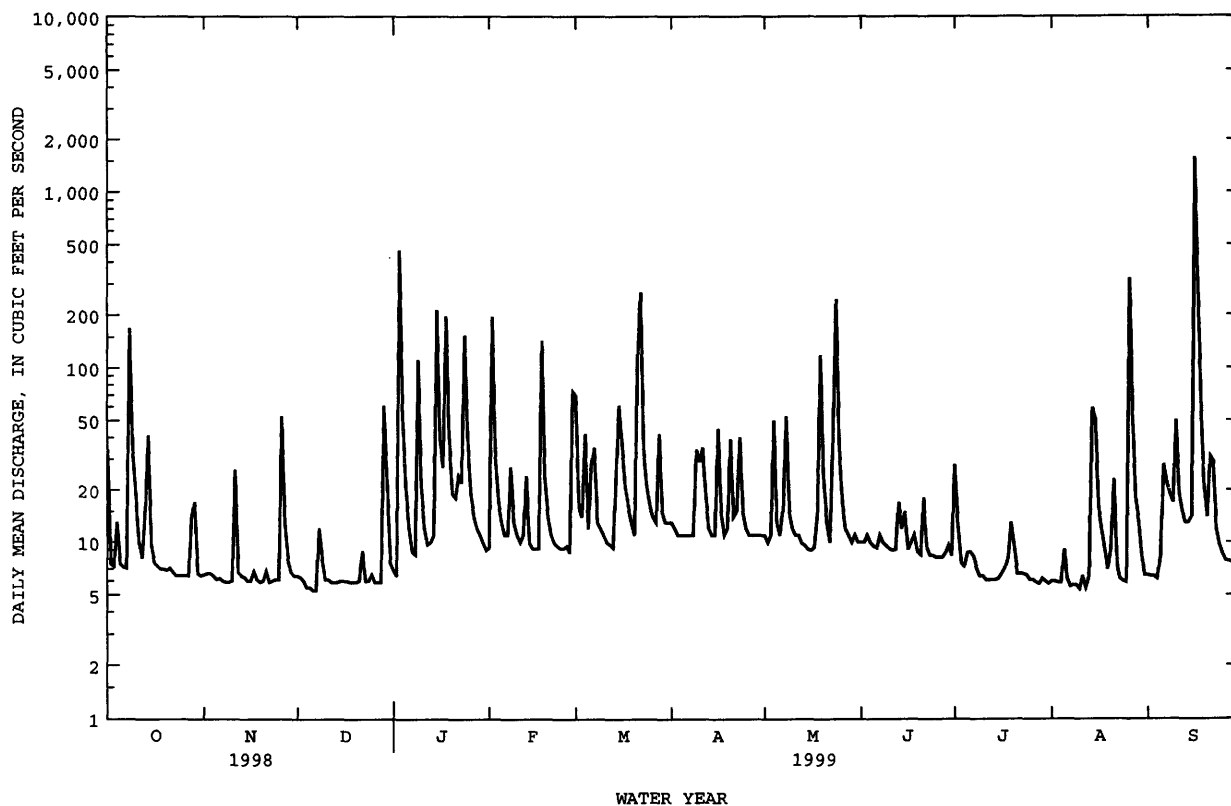
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	6.5	6.4	6.9	9.3	69	13	11	10	28	6.0	6.5
2	7.5	6.6	6.3	6.4	195	16	12	10	10	13	6.0	6.4
3	7.3	6.6	6.0	467	31	14	11	11	11	7.6	5.9	6.4
4	13	6.4	5.5	53	17	42	11	50	10	7.3	5.9	6.2
5	7.5	6.1	5.5	21	13	12	11	13	9.5	8.7	9.1	8.3
6	7.2	6.2	5.3	12	11	28	11	11	9.3	8.8	6.2	28
7	7.1	6.0	5.3	8.8	11	35	11	16	11	8.3	5.6	22
8	168	5.9	12	8.5	27	13	11	53	10	7.1	5.7	19
9	35	5.9	7.9	111	13	12	34	15	9.6	6.4	5.7	17
10	19	6.0	6.1	21	11	11	29	12	9.2	6.4	5.4	50
11	10	26	6.1	12	10	10	35	11	9.0	6.1	6.4	19
12	8.1	6.7	5.9	9.7	11	9.7	19	11	9.1	6.1	5.5	15
13	15	6.4	5.9	10	24	9.3	12	9.9	17	6.1	6.3	13
14	41	6.3	5.9	11	9.9	23	11	9.6	12	6.1	5.9	13
15	9.5	6.0	6.0	213	9.2	61	11	9.1	15	6.2	5.1	14
16	7.6	6.0	6.0	39	9.2	36	45	9.0	9.1	6.6	16	1570
17	7.3	6.8	6.0	27	9.2	21	15	9.4	10	7.1	12	284
18	7.0	6.1	5.9	196	143	16	11	14	11	8.2	9.2	61
19	7.0	5.9	5.9	41	23	13	12	118	8.8	13	7.0	22
20	6.9	6.0	5.9	19	14	11	39	24	8.5	9.4	9.2	14
21	7.1	6.8	6.0	18	11	114	14	13	18	6.6	23	31
22	6.7	5.9	8.9	24	9.9	269	15	10	9.4	6.6	7.4	29
23	6.4	6.0	6.0	22	9.5	34	40	41	8.4	6.6	6.2	12
24	6.4	6.1	6.0	153	9.2	21	15	244	8.4	6.5	6.0	9.7
25	6.4	6.1	6.5	40	9.2	16	12	36	8.2	6.1	5.9	8.6
26	6.4	53	5.9	19	9.5	14	11	17	8.2	6.1	322	7.9
27	6.4	13	5.9	14	8.7	13	11	12	8.2	5.9	52	7.8
28	14	7.9	5.9	12	73	42	11	11	8.7	5.8	18	7.7
29	17	6.7	61	11	---	15	11	10	9.6	6.2	13	8.1
30	6.6	6.4	21	9.9	---	13	11	11	8.4	6.0	8.1	108
31	6.4	---	7.6	9.0	---	13	---	10	---	5.8	6.5	---
TOTAL	514.8	262.3	266.5	1625.2	740.8	1026.0	515	842.0	304.6	244.7	711.2	2424.6
MEAN	16.6	8.74	8.60	52.4	26.5	33.1	17.2	27.2	10.2	7.89	22.9	80.8
MAX	168	53	61	467	195	269	45	244	18	28	322	1570
MIN	6.4	5.9	5.3	6.4	8.7	9.3	11	9.0	8.2	5.8	5.4	6.2

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1999, BY WATER YEAR (WY)

	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
MEAN	20.6	24.5	23.4	24.2	26.4	32.0	29.6	27.2	23.0	27.1	27.3	25.8
MAX	60.1	90.7	85.1	86.3	55.1	75.5	97.0	83.8	57.4	83.1	195	102
(WY)	1928	1973	1984	1979	1971	1983	1983	1968	1972	1922	1971	1966
MIN	1.58	5.05	6.25	3.71	6.56	6.03	10.3	5.97	3.94	3.24	.068	1.99
(WY)	1922	1923	1981	1925	1934	1981	1963	1923	1923	1923	1923	1923

01393450 ELIZABETH RIVER AT URSINO LAKE, AT ELIZABETH, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1922 - 1999
ANNUAL TOTAL	10294.9	9477.7	
ANNUAL MEAN	28.2	26.0	25.9
HIGHEST ANNUAL MEAN			48.3 1971
LOWEST ANNUAL MEAN			10.2 1923
HIGHEST DAILY MEAN	445 May 11	1570 Sep 16	1900 Aug 28 1971
LOWEST DAILY MEAN	5.3 Dec 6	5.3 Dec 6	.00 Jul 14 1922
ANNUAL SEVEN-DAY MINIMUM	5.8 Dec 1	5.8 Dec 1	.00 Aug 7 1923
INSTANTANEOUS PEAK FLOW		4510 Sep 16	4510 Sep 16 1999
INSTANTANEOUS PEAK STAGE		21.61 Sep 16	21.61 Sep 16 1999
INSTANTANEOUS LOW FLOW		5.2 Dec 6	
10 PERCENT EXCEEDS	53	40	51
50 PERCENT EXCEEDS	11	10	11
90 PERCENT EXCEEDS	6.2	6.0	5.6



01394500 RAHWAY RIVER NEAR SPRINGFIELD, NJ

LOCATION.--Lat 40°41'11", long 74°18'44", Union County, Hydrologic Unit 02030104, on left bank 50 ft downstream from bridge on eastbound U.S. Highway 22, 100 ft downstream from Pope Brook, and 1.5 mi south of Springfield.

DRAINAGE AREA.--25.5 mi².

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

REVISED RECORDS.--WSP 1622: 1945. WRD-NJ 1973: 1938(M), 1968(M), 1971(M).

GAGE.--Water-stage recorder. Former concrete control is no longer effective. Datum of gage is 66.17 ft above sea level.

REMARKS.--Records good except for estimated daily discharges which are fair. Water for municipal supply diverted from river by city of Orange at Orange Reservoir upstream on the West Branch Railway River. The flow past this station is affected by diversions by pumpage from wells by Orange, South Orange, Short Hills Water Co., and Springfield station of Elizabethtown Water Co. (no longer active) Several measurements of water temperature were made during the year. Satellite telemeter at station. Since 1980, the site may be affected during high flows by backwater from the Lenape Park flood control dam, about 1 mi downstream.

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 3	1300	1,500	6.69	Sep 17	0100	*3,290	*8.57
Mar 22	0645	1,010	5.65				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	e7.2	5.3	6.6	13	107	14	11	11	41	6.1	7.0
2	8.7	e6.3	5.3	5.9	235	29	13	11	11	17	5.8	7.1
3	9.1	e8.0	6.3	527	73	22	12	12	10	7.7	5.3	7.2
4	14	e6.9	6.6	30	30	50	14	37	9.9	7.5	5.5	7.2
5	8.1	e6.7	7.8	13	22	20	12	11	10	7.4	7.9	15
6	6.9	e5.6	6.7	11	20	32	12	11	10	7.3	5.6	42
7	7.2	e6.1	6.9	9.7	18	41	12	12	10	6.8	5.4	29
8	117	e8.2	9.6	8.4	29	19	11	54	10	6.7	6.3	19
9	25	e6.0	8.1	107	17	29	23	23	9.4	6.7	5.5	12
10	19	e5.6	6.3	20	17	16	35	13	9.9	7.0	5.2	51
11	9.4	43	4.8	11	16	15	29	11	9.4	6.8	5.8	9.7
12	7.9	12	4.7	9.9	17	14	38	11	9.3	6.7	6.1	7.9
13	13	e7.2	4.6	11	29	14	18	10	13	7.2	6.7	7.7
14	39	e7.1	5.4	9.0	14	21	15	9.4	17	6.7	106	7.3
15	10	e7.0	5.6	183	13	47	12	9.3	27	6.7	42	34
16	e8.0	e6.6	7.0	35	13	39	33	9.4	8.6	6.7	5.6	2270
17	e7.4	e6.7	6.7	28	13	34	22	9.2	9.2	6.8	5.4	1640
18	e7.4	e8.3	6.4	277	138	40	13	13	11	8.5	5.5	58
19	e7.7	e6.8	5.9	97	46	27	12	128	8.6	11	5.1	28
20	e7.2	e6.5	5.8	26	23	20	38	47	8.0	9.5	13	21
21	e6.8	e9.6	5.7	22	19	89	18	15	14	6.5	31	28
22	e8.2	e7.5	7.5	31	16	548	14	12	8.5	6.7	6.1	39
23	e6.5	e8.4	5.9	26	15	71	36	40	7.9	7.1	5.5	15
24	e8.5	e11	6.6	201	14	40	24	189	7.9	6.7	5.0	13
25	e7.0	e8.2	6.3	77	14	27	14	60	7.9	6.7	4.9	13
26	e7.2	52	6.3	32	13	21	13	22	8.0	6.7	300	15
27	e6.5	7.9	6.3	21	12	18	12	15	8.2	6.3	58	16
28	e7.5	5.0	6.2	18	58	48	12	14	7.6	6.2	9.2	12
29	e23	5.0	36	16	---	21	12	13	8.9	6.4	7.6	11
30	e7.6	5.0	24	14	---	16	12	12	7.9	6.5	7.0	101
31	e6.4	---	6.6	13	---	14	---	11	---	6.4	6.7	---
TOTAL	462.2	297.4	243.2	1896.5	958	1537	561	855.3	309.1	263.9	700.8	4543.1
MEAN	14.9	9.91	7.85	61.2	34.2	49.6	18.7	27.6	10.3	8.51	22.6	151
MAX	117	5.52	36	527	235	548	38	189	27	41	300	2270
MIN	6.4	5.0	4.6	5.9	12	14	11	9.2	7.6	6.2	4.9	7.0

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1999, BY WATER YEAR (WY)

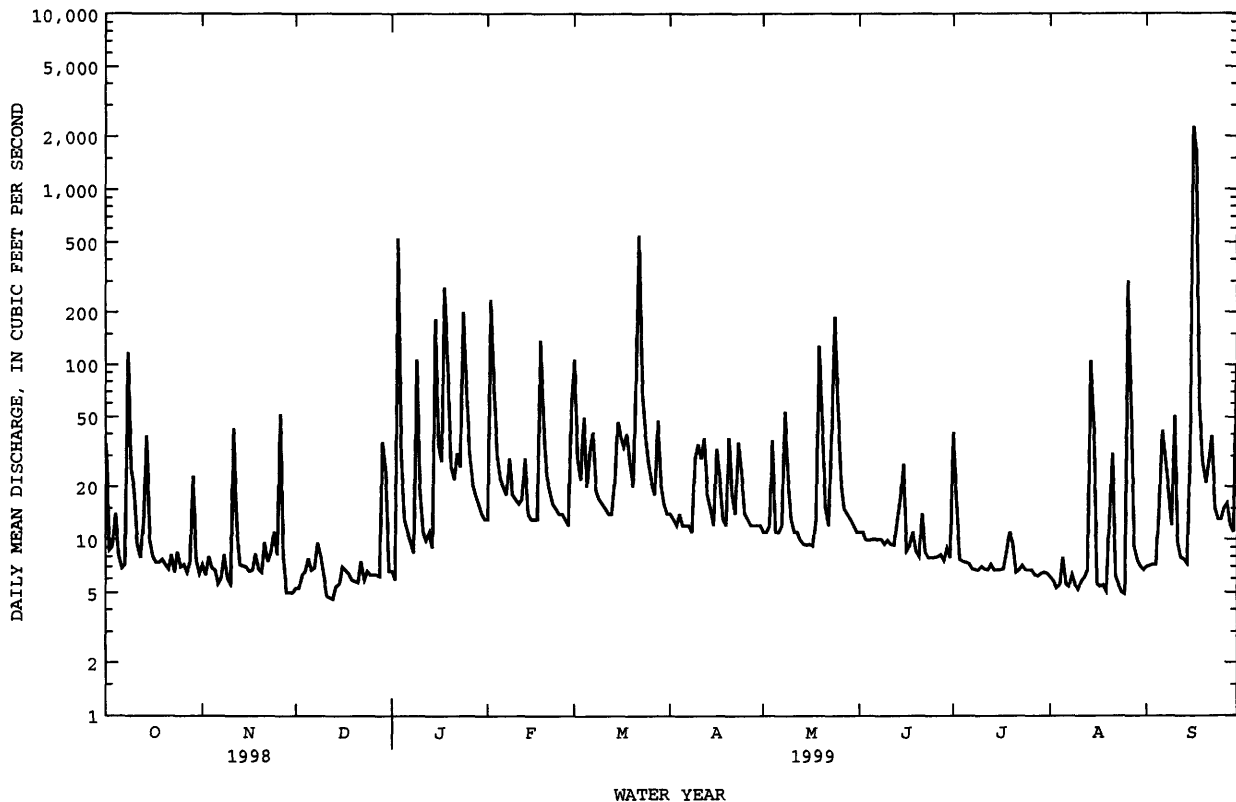
MEAN	18.7	27.3	30.8	31.7	34.6	47.9	43.0	34.7	24.0	25.1	22.7	23.3
MAX	108	107	129	116	79.5	120	139	112	110	138	112	151
(WY)	1997	1973	1984	1979	1998	1994	1983	1989	1972	1975	1942	1999
MIN	2.17	2.73	4.02	4.26	7.01	8.08	7.37	6.31	4.14	2.23	2.10	2.97
(WY)	1964	1950	1940	1966	1954	1981	1963	1965	1965	1966	1964	1964

01394500 RAHWAY RIVER NEAR SPRINGFIELD, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1939 - 1999	
ANNUAL TOTAL	14086.7		12627.5		30.3	
ANNUAL MEAN	38.6		34.6		55.9	
HIGHEST ANNUAL MEAN					10.0	
LOWEST ANNUAL MEAN					1973	
HIGHEST DAILY MEAN	561	Feb 24	2270	Sep 16	2270	Sep 16 1999
LOWEST DAILY MEAN	4.6	Dec 13	4.6	Dec 13	.40	Sep 11 1966
ANNUAL SEVEN-DAY MINIMUM	5.5	Dec 10	5.5	Dec 10	.71	Oct 8 1970
INSTANTANEOUS PEAK FLOW			7990a	Sep 16	7990a	Sep 16 1999
INSTANTANEOUS PEAK STAGE			10.67	Sep 16	10.67	Sep 16 1999
INSTANTANEOUS LOW FLOW			4.5	Many days	.10	Sep 11 1966
10 PERCENT EXCEEDS	80		42		60	
50 PERCENT EXCEEDS	16		11		11	
90 PERCENT EXCEEDS	6.7		6.1		3.4	

a From rating curve extend above 1,600 ft³/s on basis of slope-area measurement of peak flow.

e Estimated



01395000 RAHWAY RIVER AT RAHWAY, NJ

LOCATION.--Lat 40°37'05", long 74°17'00", Union County, Hydrologic Unit 02030104, on left bank 100 ft upstream from St. Georges Avenue bridge in Rahway and 0.9 mi upstream from Robinsons Branch.

DRAINAGE AREA.--40.9 mi².

PERIOD OF RECORD.--July 1908 to April 1915 (gage heights and discharge measurements only), October 1921 to current year.

REVISED RECORDS.--WSP 781: Drainage area. WSP 1552: 1922-23 (M), 1924, 1930-31 (M), 1937. WDR NJ-79-1: 1978.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 8.77 ft above sea level. Prior to Aug. 25, 1934, nonrecording gage at site 40 ft downstream from Church Street and 1,500 ft downstream from present site at datum 2.77 ft lower.

REMARKS.--Records good. Water for municipal supply diverted from river by Rahway and Orange. The flow past this station is affected by diversions by pumpage from wells by Orange, South Orange, Short Hills Water Co., Springfield station of Elizabethtown Water Co., by storage in the Lenape Park flood control reservoir (since 1980) and by gate operations at Hansel's Dam 5.6 mi upstream from gage in Cranford, and Taylor Park Dam 11.6 mi upstream from gage on the West Branch Rahway River in Millburn. Several measurements of water temperature, other than those published, were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 3	1830	1,320	4.42	Mar 22	0630	1,050	3.99
Jan 15	1715	629	3.24	May 24	2030	712	3.40
Jan 18	2100	856	3.66	Aug 26	0800	886	3.71
Feb 2	1730	665	3.31	Sep 17	0400	*5,590	*9.60

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	8.9	37	7.6	16	206	29	14	10	30	1.1	5.7
2	7.7	6.7	9.0	6.0	269	61	25	13	10	34	1.1	5.5
3	6.3	7.2	8.7	729	250	34	23	14	11	7.4	1.2	4.2
4	16	8.1	7.9	457	53	85	24	48	8.6	5.1	1.2	4.3
5	8.6	7.8	8.7	36	36	39	25	23	7.8	4.2	1.5	5.5
6	6.7	6.5	9.7	19	26	36	23	14	7.8	3.3	7.4	55
7	6.6	7.8	9.9	16	24	92	23	15	7.9	2.9	2.2	20
8	128	8.5	12	12	39	33	21	47	7.8	2.0	2.2	43
9	156	8.2	20	128	34	25	33	64	6.5	2.1	3.4	32
10	59	7.7	10	111	25	17	83	19	5.9	4.1	1.7	91
11	16	34	9.2	22	22	17	31	14	6.0	2.7	1.4	20
12	9.9	19	7.5	16	21	19	78	12	6.0	1.5	1.2	6.6
13	12	8.4	8.2	17	52	18	30	12	6.6	2.5	1.4	5.5
14	73	8.3	9.0	19	22	23	23	12	13	2.6	181	5.2
15	18	8.1	8.5	280	19	78	18	11	33	2.5	90	49
16	9.2	7.5	8.8	153	18	82	30	10	7.4	2.0	9.0	e1910
17	8.8	7.4	11	51	18	70	72	9.5	7.4	1.8	4.4	e3670
18	8.7	8.4	8.8	322	209	62	24	11	11	3.0	3.8	567
19	8.1	7.5	9.0	354	115	31	19	117	6.8	8.1	2.6	60
20	8.1	6.8	7.5	66	41	24	50	107	6.2	14	6.1	29
21	8.0	10	8.2	32	27	58	44	23	14	3.1	42	20
22	7.5	7.5	9.9	52	21	891	27	14	10	3.6	12	58
23	7.5	8.7	10	44	18	230	33	58	6.7	3.5	3.0	23
24	8.3	11	8.0	264	18	67	66	296	5.4	2.0	2.6	17
25	8.5	8.0	8.3	199	18	50	23	200	4.7	1.4	2.4	17
26	8.3	69	8.1	67	18	38	19	38	3.8	1.2	508	16
27	7.6	33	8.4	37	16	31	16	21	3.9	1.2	194	16
28	8.7	9.7	8.7	27	56	81	16	17	3.4	1.4	19	16
29	37	9.8	23	23	---	43	16	14	4.8	1.3	8.5	12
30	7.9	8.4	88	20	---	31	16	12	5.6	1.2	6.2	142
31	7.5	---	12	17	---	26	---	12	---	1.3	5.6	---
TOTAL	720.5	367.9	413.0	3603.6	1501	2598	960	1291.5	249.0	157.0	1127.2	6925.5
MEAN	23.2	12.3	13.3	116	53.6	83.8	32.0	41.7	8.30	5.06	36.4	231
MAX	156	69	88	729	269	891	83	296	33	34	508	3670
MIN	6.3	6.5	7.5	6.0	16	17	16	9.5	3.4	1.2	1.1	4.2

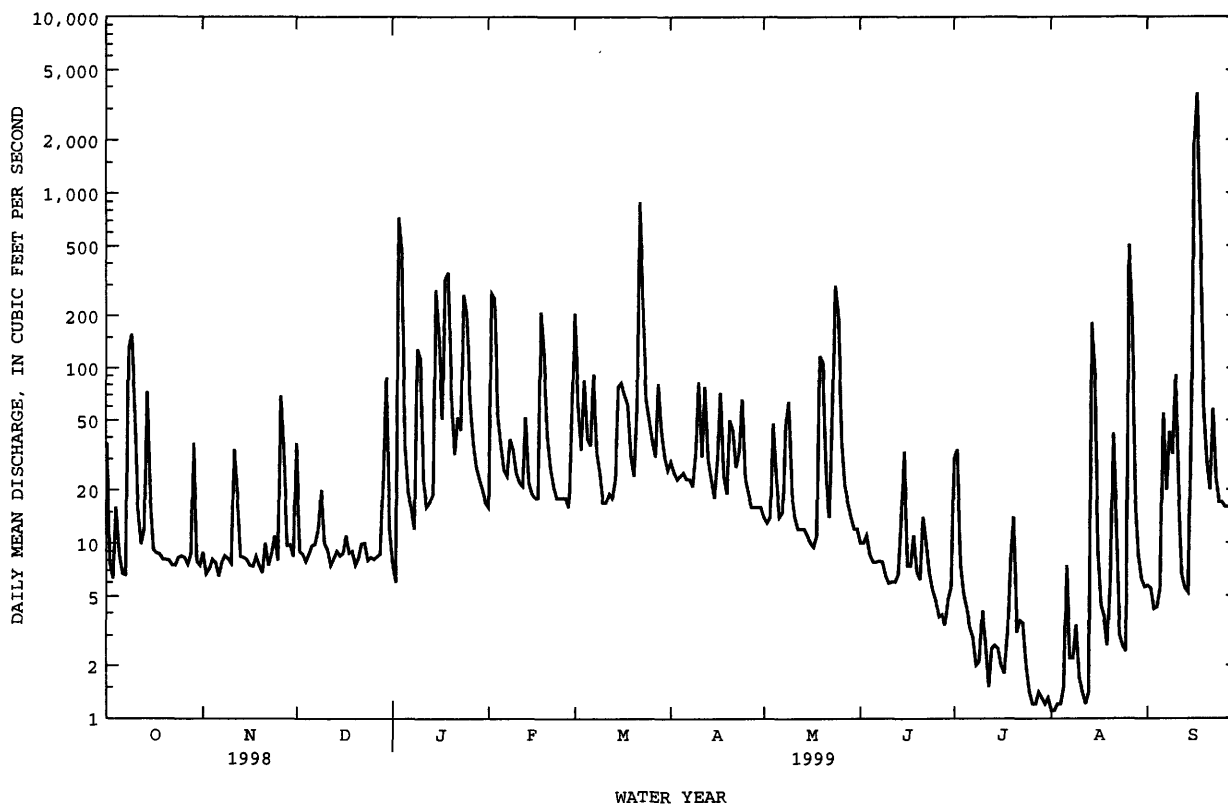
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1999, BY WATER YEAR (WY)

	MEAN	29.2	43.4	48.0	52.4	58.6	79.0	69.3	53.2	37.0	41.9	38.9	38.3
MAX	197	221	255	211	156	190	246	199	173	268	242	231	
(WY)	1997	1973	1984	1979	1925	1983	1983	1989	1972	1975	1971	1999	
MIN	1.48	3.05	3.27	1.41	12.5	12.6	7.80	6.20	3.32	.33	.43	2.26	
(WY)	1964	1966	1981	1981	1954	1981	1963	1965	1965	1966	1964	1964	

01395000 RAHWAY RIVER AT RAHWAY, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1922 - 1999
ANNUAL TOTAL	23551.6	19914.2	49.0
ANNUAL MEAN	64.5	54.6	105
HIGHEST ANNUAL MEAN			15.0
LOWEST ANNUAL MEAN			1973
HIGHEST DAILY MEAN	964 Apr 2	3670 Sep 17	3670 Sep 17 1999
LOWEST DAILY MEAN	5.6 Aug 15	1.1 Aug 1	.00 Oct 9 1964
ANNUAL SEVEN-DAY MINIMUM	6.7 Aug 4	1.2 Jul 29	.00 Jul 10 1981
INSTANTANEOUS PEAK FLOW		5590 Sep 17	5590 Sep 17 1999
INSTANTANEOUS PEAK STAGE		9.60 Sep 17	9.60 Sep 17 1999
INSTANTANEOUS LOW FLOW		1.0 Jul 29	.00 Oct 1 1981
10 PERCENT EXCEEDS	146	82	100
50 PERCENT EXCEEDS	25	14	19
90 PERCENT EXCEEDS	7.5	3.4	3.5

e Estimated



RARITAN RIVER BASIN

01396190 SOUTH BRANCH RARITAN RIVER AT FOUR BRIDGES, NJ

LOCATION.--Lat 40°48'21", long 74°44'28", Morris County, Hydrologic Unit 02030105, on right bank at bridge on Elizabeth Avenue, 1.7 mi west of Chester and 0.6 mi south of Drakes Brook on Bartley Road.

DRAINAGE AREA.--31.0 mi².

PERIOD OF RECORD.--January 1999

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 578.55 ft above sea level (levels from New Jersey Geological Survey bench mark).

REMARKS.--Records fair. 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)
Jan 24	1315	603	6.22	Mar 22	0500	1,800	7.66
Feb 2	1500	400	5.86	Sep 16	2030	*5,100	*10.60

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

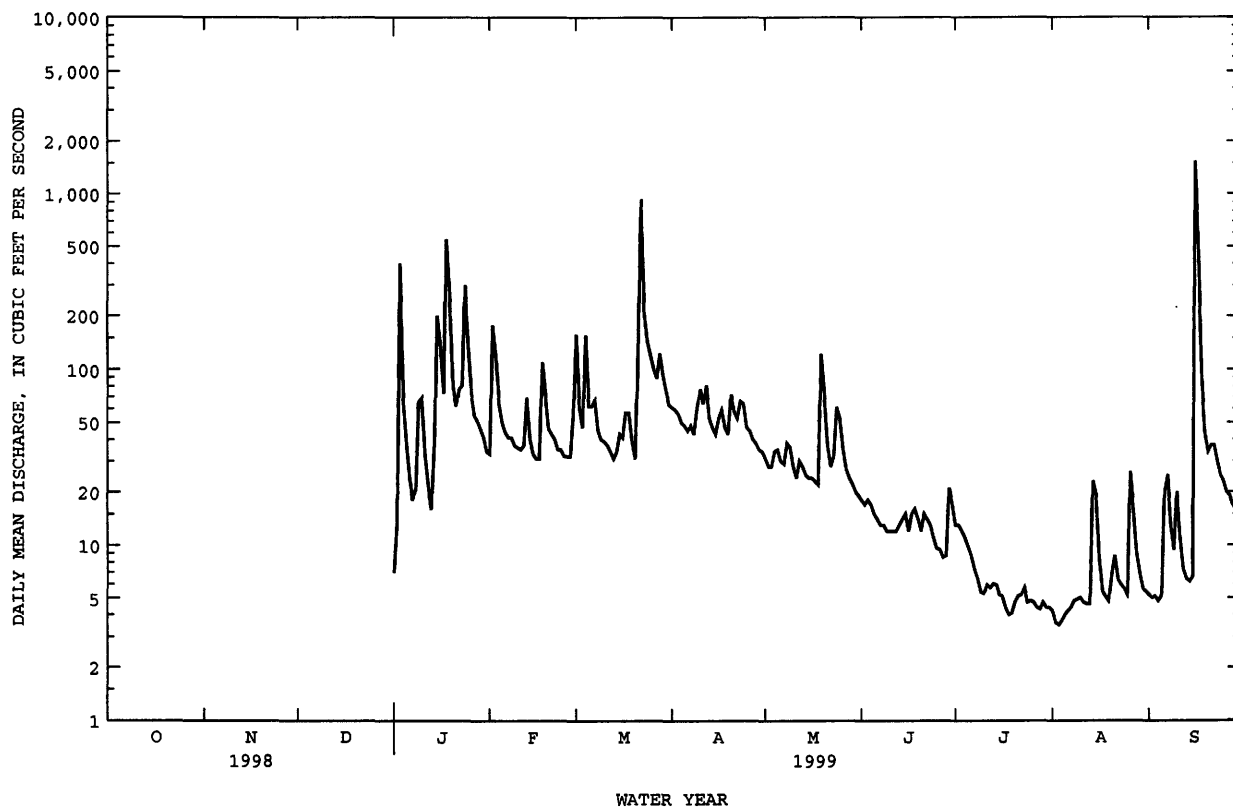
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	e7.0	33	156	61	31	18	13	4.2	5.2
2	---	---	---	e13	176	61	59	28	17	13	3.6	5.0
3	---	---	---	e400	115	47	56	28	18	12	3.5	5.1
4	---	---	---	e69	64	155	50	34	17	11	3.7	4.8
5	---	---	---	e39	50	62	48	35	15	9.8	4.0	5.1
6	---	---	---	e24	44	62	45	30	14	8.7	4.2	20
7	---	---	---	e18	41	67	48	29	13	7.3	4.4	25
8	---	---	---	e21	41	45	43	38	13	6.4	4.8	13
9	---	---	---	e65	37	40	60	36	12	5.4	4.9	9.4
10	---	---	---	e69	36	39	77	28	12	5.3	5.0	20
11	---	---	---	e33	35	37	64	24	12	5.9	4.7	11
12	---	---	---	e22	37	34	81	30	12	5.7	4.6	7.3
13	---	---	---	e16	69	31	53	28	13	6.0	4.6	6.4
14	---	---	---	e38	40	34	47	25	14	5.9	23	6.2
15	---	---	---	e200	33	43	43	24	15	5.2	19	6.6
16	---	---	---	e136	31	41	53	24	12	5.1	8.2	1530
17	---	---	---	e73	31	57	59	23	15	4.4	5.4	518
18	---	---	---	e549	109	57	47	22	16	4.0	5.1	93
19	---	---	---	e267	71	39	43	121	14	4.1	4.8	44
20	---	---	---	80	46	31	72	73	12	4.7	6.8	34
21	---	---	---	62	43	125	58	37	15	5.1	8.7	37
22	---	---	---	77	40	933	53	28	14	5.2	6.3	37
23	---	---	---	81	35	211	66	32	13	5.7	5.9	30
24	---	---	---	299	35	144	64	61	11	4.7	5.6	25
25	---	---	---	135	32	119	47	53	9.6	4.8	5.2	23
26	---	---	---	73	32	100	45	35	9.4	4.7	26	20
27	---	---	---	55	32	89	40	27	8.5	4.4	16	19
28	---	---	---	51	55	122	38	24	8.7	4.3	9.1	17
29	---	---	---	46	---	92	35	22	21	4.7	6.8	16
30	---	---	---	41	---	75	34	20	17	4.4	5.6	66
31	---	---	---	34	---	63	---	19	---	4.4	5.4	---
TOTAL	---	---	---	3093.0	1443	3211	1589	1069	411.2	195.3	229.1	2659.1
MEAN	---	---	---	99.8	51.5	104	53.0	34.5	13.7	6.30	7.39	88.6
MAX	---	---	---	549	176	933	81	121	21	13	26	1530
MIN	---	---	---	7.0	31	31	34	19	8.5	4.0	3.5	4.8

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 1999, BY WATER YEAR (WY)

MEAN	---	---	---	99.8	51.5	104	53.0	34.5	13.7	6.30	7.39	88.6
MAX	---	---	---	99.8	51.5	104	53.0	34.5	13.7	6.30	7.39	88.6
(WY)	---	---	---	1999	1999	1999	1999	1999	1999	1999	1999	1999
MIN	---	---	---	99.8	51.5	104	53.0	34.5	13.7	6.30	7.39	88.6
(WY)	---	---	---	1999	1999	1999	1999	1999	1999	1999	1999	1999

e Estimated

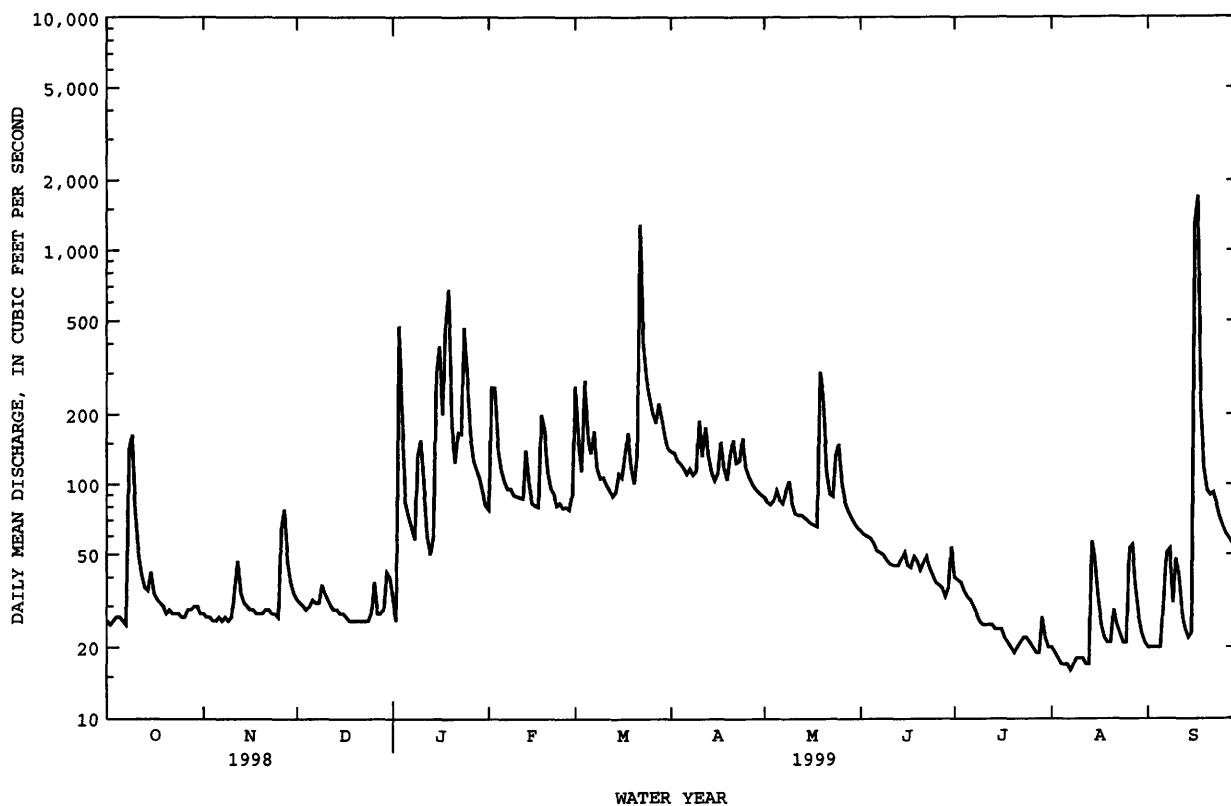
01396190 SOUTH BRANCH RARITAN RIVER AT FOUR BRIDGES, NJ--Continued



01396500 SOUTH BRANCH RARITAN RIVER NEAR HIGH BRIDGE, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1919 - 1999	
ANNUAL TOTAL	41307		32660		123	
ANNUAL MEAN	113		89.5		213	
HIGHEST ANNUAL MEAN					46.2	
LOWEST ANNUAL MEAN					13	
HIGHEST DAILY MEAN	851	Apr 10	1710	Sep 17	3340	Jan 25 1979
LOWEST DAILY MEAN	25	Oct 2	16	Aug 7	17	Aug 11 1966
ANNUAL SEVEN-DAY MINIMUM	26	Oct 1	17	Aug 3	17	Aug 3 1999
INSTANTANEOUS PEAK FLOW			4200	Sep 17	6910	Jan 25 1979
INSTANTANEOUS PEAK STAGE			10.86	Sep 17	14.26a	Jan 28 1994
INSTANTANEOUS LOW FLOW			16	Aug 7	6.6	Oct 11 1930
ANNUAL RUNOFF (CFSM)	1.73		1.37		1.88	
ANNUAL RUNOFF (INCHES)	23.53		18.61		25.61	
10 PERCENT EXCEEDS	236		163		236	
50 PERCENT EXCEEDS	78		51		86	
90 PERCENT EXCEEDS	28		22		36	

e Estimated
a Result of an ice jam



RARITAN RIVER BASIN

01396580 SPRUCE RUN AT GLEN GARDNER, NJ

LOCATION.--Lat 40°41'35", long 74°56'25", Hunterdon County, Hydrologic Unit 02030105, on right downstream wingwall of bridge on Sanatorium Road in Glen Gardner, 0.8 mi downstream from Alpaugh Brook, and 2.0 mi upstream from Spruce Run Reservoir.

DRAINAGE AREA.--11.3 mi².

PERIOD OF RECORD.--March 1978 to September 1988, December 1991 to current year.

REVISED RECORD.--WDR NJ-86-1: 1983-85(P). WDR NJ-93-1: Drainage area, longitude.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 389.10 ft above sea level.

REMARKS.--Records fair. Some regulation from unknown sources upstream. 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)
Jan 18	1800	836	4.57	Sep 16	1830	*2,750	*9.27
Mar 22	0015	596	3.99				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	3.3	3.7	3.2	12	43	21	12	5.0	2.2	1.6	1.3
2	1.2	3.3	3.4	3.1	70	17	22	11	4.7	2.5	1.5	1.2
3	1.3	3.3	3.4	125	35	13	19	11	4.5	2.3	1.6	1.1
4	2.0	3.3	3.4	18	17	55	19	12	4.4	2.1	1.6	1.0
5	1.8	3.9	3.4	17	13	19	17	12	3.9	2.0	1.6	1.3
6	1.6	3.5	3.4	9.6	11	22	16	11	3.8	1.9	1.7	1.5
7	1.5	3.4	3.4	4.1	9.4	22	19	11	3.6	1.7	1.6	6.5
8	40	3.8	3.8	6.5	9.6	17	16	15	3.4	1.6	1.7	2.8
9	12	4.0	4.3	17	8.1	14	22	14	3.2	1.6	1.9	1.8
10	13	4.2	3.7	15	9.8	13	37	11	3.0	1.6	1.8	4.5
11	4.1	7.8	3.5	10	9.6	12	23	9.8	2.9	1.8	1.8	2.4
12	3.5	5.8	3.3	6.8	7.8	11	32	9.4	2.9	1.6	1.8	1.6
13	3.2	4.1	3.3	5.6	17	11	20	8.8	2.9	1.7	1.9	1.2
14	3.5	3.8	3.2	7.5	8.5	12	17	8.4	3.8	1.8	11	1.1
15	4.2	3.6	2.9	47	7.5	15	16	8.0	3.7	1.9	3.6	1.7
16	3.3	3.6	3.0	26	6.5	16	25	7.7	2.7	1.9	2.8	650
17	3.3	3.6	3.1	14	7.0	29	29	7.5	2.7	1.8	2.2	86
18	3.3	3.4	3.1	201	41	26	19	7.7	3.1	1.8	2.0	17
19	3.2	3.4	3.0	38	19	17	16	43	2.8	1.7	1.7	8.3
20	3.0	3.5	3.0	15	12	14	29	25	2.5	1.9	1.9	5.4
21	2.9	3.7	3.0	13	9.7	66	24	11	3.0	1.9	2.4	6.7
22	2.9	3.5	3.2	20	9.8	224	21	9.1	3.1	2.3	2.1	55.9
23	2.9	3.4	3.0	21	13	56	27	11	2.6	2.2	1.9	4.5
24	2.9	3.4	2.9	101	7.3	43	27	19	2.3	2.1	1.7	2.6
25	2.9	3.3	3.2	28	8.2	37	18	17	2.2	1.9	1.5	2.0
26	2.9	13	3.9	17	7.5	31	16	9.7	2.3	1.8	7.0	1.6
27	3.0	7.9	3.6	13	7.5	28	14	8.3	2.2	1.7	5.3	1.3
28	3.3	4.8	2.9	12	14	40	14	7.1	2.1	1.6	2.7	1.2
29	4.2	4.1	3.7	10	---	29	13	6.3	2.7	1.5	1.9	1.1
30	3.6	3.9	7.0	8.4	---	24	12	5.7	2.7	1.5	1.6	35
31	3.4	---	6.1	7.6	---	22	---	5.2	---	1.6	1.4	---
TOTAL	145.3	129.6	109.8	840.4	407.8	998	620	364.7	94.7	57.5	76.8	859.6
MEAN	4.69	4.32	3.54	27.1	14.6	32.2	20.7	11.8	3.16	1.85	2.48	28.7
MAX	40	13	7.0	201	70	224	37	43	5.0	2.5	11	650
MIN	1.2	3.3	2.9	3.1	6.5	11	12	5.2	2.1	1.5	1.4	1.0
CFSM	.41	.38	.31	2.40	1.29	2.85	1.83	1.04	.28	.16	.22	2.54
IN.	.48	.43	.36	2.77	1.34	3.29	2.04	1.20	.31	.19	.25	2.83

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 1999, BY WATER YEAR (WY)

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
MEAN	13.0	18.5	24.5	27.1	25.3	36.4	35.7	25.0	14.2	11.2	6.22	9.14										
MAX	44.4	34.6	87.6	106	44.7	83.5	73.7	61.3	31.4	46.9	11.4	29.5										
(WY)	1996	1986	1997	1979	1979	1994	1983	1984	1992	1984	1978	1979										
MIN	3.54	4.32	3.54	5.66	9.93	12.8	9.74	8.95	3.16	1.85	2.48	1.88										
(WY)	1983	1999	1999	1981	1980	1981	1985	1995	1999	1999	1999	1980										

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

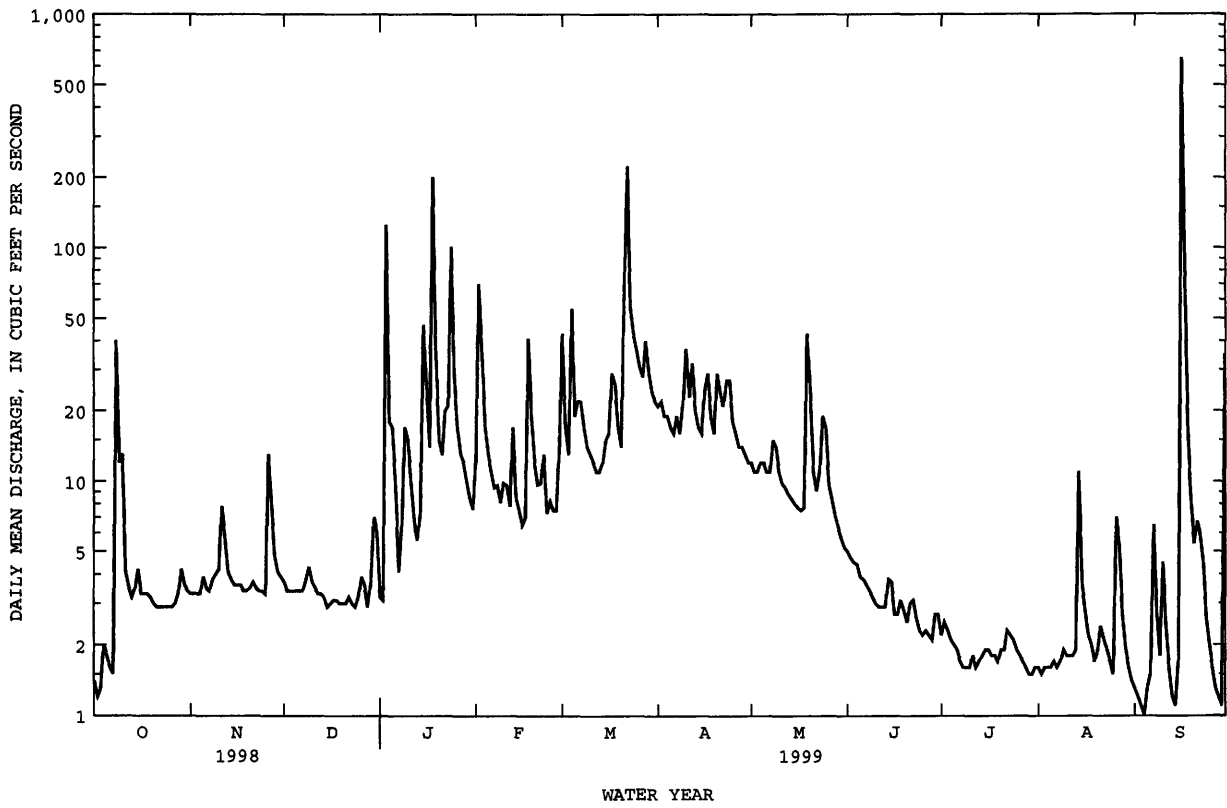
FOR 1999 WATER YEAR

WATER YEARS 1978 - 1999

ANNUAL TOTAL	6285.8	4704.2	
ANNUAL MEAN	17.2	12.9	20.8
HIGHEST ANNUAL MEAN			33.2
LOWEST ANNUAL MEAN			11.3
HIGHEST DAILY MEAN	148	May 11	650
LOWEST DAILY MEAN	1.2	Oct 2	1.0
ANNUAL SEVEN-DAY MINIMUM	1.5	Sep 29	1.3
INSTANTANEOUS PEAK FLOW			2750
INSTANTANEOUS PEAK STAGE			9.27
INSTANTANEOUS LOW FLOW			.85
ANNUAL RUNOFF (CFSM)	1.52		1.14
ANNUAL RUNOFF (INCHES)	20.69		15.49
10 PERCENT EXCEEDS	42		24
50 PERCENT EXCEEDS	7.3		4.1
90 PERCENT EXCEEDS	2.2		1.7

01396580 SPRUCE RUN AT GLEN GARDNER, NJ--Continued

e Estimated



01396660 MULHOCKAWAY CREEK AT VAN SYCKEL, NJ

LOCATION.--Lat 40°38'51", long 74°58'09", Hunterdon County, Hydrologic Unit 02030105, on left bank downstream side of bridge on Jutland Road, 0.2 mi south of Van Syckel, 0.8 mi north of Perryville, and 0.3 mi upstream from Spruce Run Reservoir.

DRAINAGE AREA.--11.8 mi².

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1973-77. July 1977 to current year.

REVISED RECORDS.--WDR-NJ 89-1: 1978(P), 1979(P), 1980(P), 1981(P), 1982(P).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 280.25 ft above sea level.

REMARKS.--Records good except for estimated discharges 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)
Jan 3	1330	376	2.86	Mar 22	0015	536	3.37
Jan 18	1815	847	4.10	Sep 16	1815	*3,130	*7.00
Jan 24	1100	309	2.63				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.9	3.8	3.7	3.8	11	47	17	12	6.4	3.2	1.7	1.8
2	3.8	3.8	3.6	3.7	67	19	17	12	6.3	3.5	1.1	1.6
3	3.8	3.8	3.6	129	33	19	16	12	6.2	3.0	1.1	1.6
4	5.4	3.8	3.6	19	20	64	17	13	5.7	2.7	1.1	1.6
5	4.6	3.8	3.6	8.7	16	22	15	12	5.3	2.4	1.3	2.1
6	4.2	4.0	3.6	9.6	15	26	14	12	5.1	2.2	1.3	5.4
7	4.2	4.0	3.6	9.5	14	25	13	12	5.0	2.0	1.1	8.2
8	68	4.1	4.4	9.3	15	17	13	23	4.8	2.0	1.7	3.8
9	17	4.0	4.7	9.8	15	16	21	16	4.6	2.0	1.5	3.4
10	16	4.2	4.1	12	15	16	34	12	4.6	2.2	1.3	9.8
11	e7.1	8.7	4.0	12	14	15	21	10	4.4	2.1	1.3	3.9
12	e6.0	5.0	3.9	12	17	14	23	10	4.4	2.0	1.3	2.7
13	e5.3	4.1	4.0	13	28	14	17	9.6	4.5	2.1	1.3	2.5
14	e9.0	4.2	3.9	13	15	15	15	9.2	5.0	2.0	16	2.4
15	e6.0	3.9	3.8	14	13	21	14	8.8	5.3	2.0	3.4	4.5
16	e5.1	3.7	3.9	18	13	24	36	8.7	4.3	1.8	2.3	918
17	e4.8	3.8	4.0	21	13	30	28	8.6	4.5	1.7	2.0	84
18	e4.6	3.8	3.9	154	54	23	18	8.5	5.2	1.8	1.8	21
19	e4.3	3.7	3.8	46	24	17	16	24	4.2	1.7	1.6	12
20	e4.0	3.9	3.8	23	18	15	26	14	4.1	2.0	2.1	9.5
21	e3.8	4.0	3.8	22	15	60	20	9.4	5.4	1.7	2.6	12
22	3.8	3.8	4.1	29	13	188	21	8.8	4.8	2.1	2.2	12
23	3.8	3.6	3.8	31	12	39	29	13	4.2	2.1	1.9	8.5
24	3.6	3.5	3.8	103	12	30	25	22	3.9	1.7	1.6	7.1
25	3.5	3.5	3.6	36	12	25	18	14	3.7	1.5	1.6	6.2
26	3.6	14	3.5	24	12	22	17	9.8	3.6	1.4	14	5.6
27	3.6	6.2	3.6	19	11	20	15	8.9	3.4	1.4	7.3	5.4
28	3.6	4.4	3.6	17	22	26	14	8.2	3.3	1.3	3.2	5.3
29	4.2	4.1	5.1	15	---	20	14	7.6	3.3	1.3	2.4	5.0
30	3.8	3.8	6.0	13	---	18	13	7.1	3.1	1.3	2.0	33
31	3.6	---	3.9	11	---	17	---	6.7	---	1.3	1.9	---
TOTAL	228.0	135.0	122.3	860.4	539	924	577	362.9	138.6	61.5	87.0	1199.9
MEAN	7.35	4.50	3.95	27.8	19.2	29.8	19.2	11.7	4.62	1.98	2.81	40.0
MAX	68	14	6.0	154	67	188	36	24	6.4	3.5	1.6	918
MIN	3.5	3.5	3.5	3.7	11	14	13	6.7	3.1	1.3	1.1	1.6
CFSM	.62	.38	.33	2.35	1.63	2.53	1.63	.99	.39	.17	.24	3.39
IN.	.72	.43	.39	2.71	1.70	2.91	1.82	1.14	.44	.19	.27	3.78

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 1999, BY WATER YEAR (WY)

MEAN	12.4	16.9	22.0	25.2	24.1	32.0	34.6	26.6	16.9	12.2	8.41	10.0
MAX	35.6	32.6	77.9	79.2	40.2	76.8	94.1	59.2	61.1	53.2	25.3	40.0
(WY)	1990	1986	1997	1979	1979	1994	1984	1984	1989	1984	1990	1999
MIN	4.55	4.50	3.95	5.01	11.1	10.2	6.88	10.0	4.62	1.98	2.79	2.85
(WY)	1983	1999	1999	1981	1980	1985	1985	1995	1999	1999	1995	1980

01396660 MULHOCKAWAY CREEK AT VAN SYCKEL, NJ--Continued

SUMMARY STATISTICS

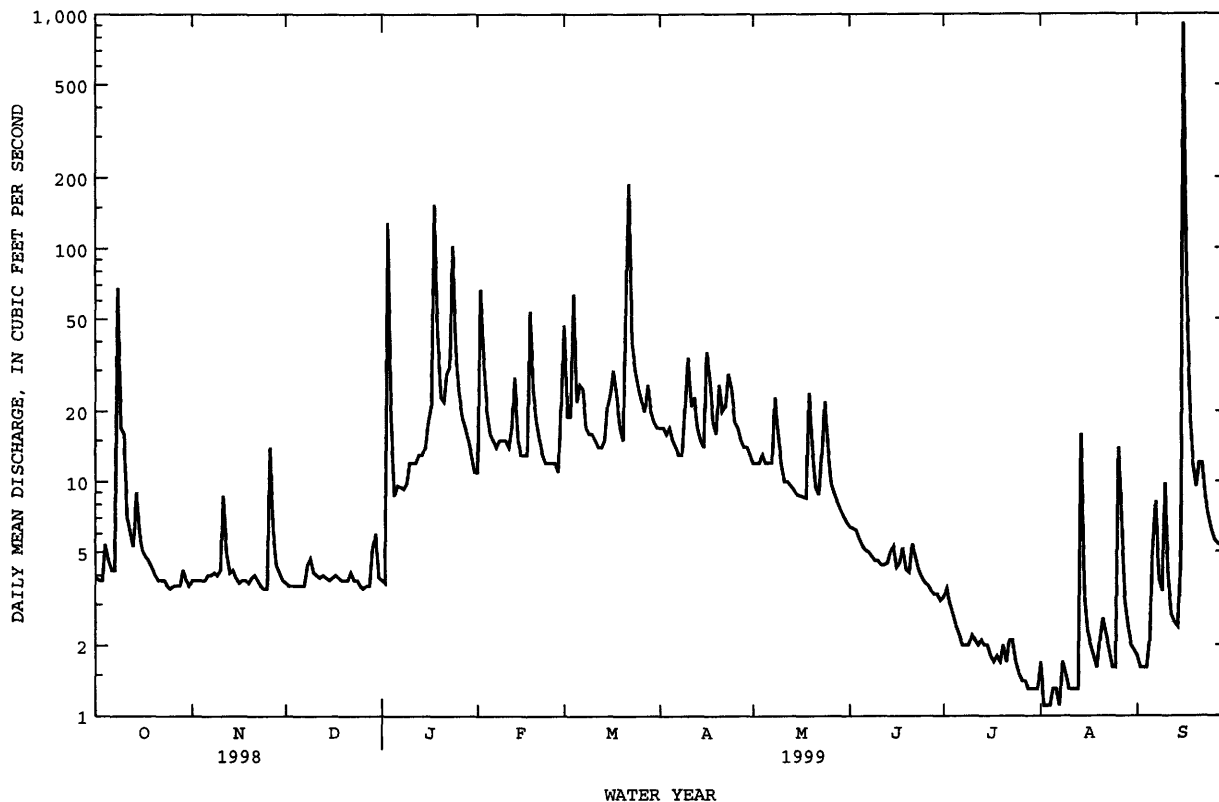
FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1977 - 1999

ANNUAL TOTAL	6262.7	5235.6	20.1	
ANNUAL MEAN	17.2	14.3	35.2	1984
HIGHEST ANNUAL MEAN			11.1	1992
LOWEST ANNUAL MEAN			918	Sep 16 1999
HIGHEST DAILY MEAN	166 May 6	918 Sep 16	1.1	Aug 2 1999
LOWEST DAILY MEAN	3.2 Aug 9	1.1 Aug 2	1.2	Aug 1 1999
ANNUAL SEVEN-DAY MINIMUM	3.6 Aug 3	1.2 Aug 1	3590	Sep 20 1989
INSTANTANEOUS PEAK FLOW		3130 Sep 16	7.41	Sep 20 1989
INSTANTANEOUS PEAK STAGE		7.00 Sep 16	1.0	Aug 2 1999
INSTANTANEOUS LOW FLOW		1.0 Aug 2	1.70	
ANNUAL RUNOFF (CFSM)	1.45	1.22	23.15	
ANNUAL RUNOFF (INCHES)	19.74	16.51	38	
10 PERCENT EXCEEDS	38	23	12	
50 PERCENT EXCEEDS	9.6	5.4	4.2	
90 PERCENT EXCEEDS	3.7	2.0		

e Estimated



01396800 SPRUCE RUN AT CLINTON, NJ

LOCATION.--Lat 40°38'21", long 74°54'58", Hunterdon County, Hydrologic Unit 02030105, 1,800 ft downstream from dam at Spruce Run Reservoir, 0.2 mi north of Clinton, 0.3 mi upstream from mouth, and 2.2 mi southwest of High Bridge.

DRAINAGE AREA.--41.3 mi².

PERIOD OF RECORD.--May 1959 to current year.

GAGE.--Water-stage recorder. Concrete control since Mar. 15, 1964. Datum of gage is 193.5 ft above sea level. May to Nov. 24, 1959, nonrecording gage; Nov. 25, 1959 to July 23, 1961, water-stage recorder at site 1,800 ft upstream and at datum 1.41 ft lower; July 24, 1961 to Mar. 14, 1964, water-stage recorder at site 1,500 ft upstream at datum 1.41 ft lower.

REMARKS.--Records good. Flow regulated by Spruce Run Reservoir (see Raritan River basin, reservoirs in). Several measurements of water temperature were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	173	12	12	19	5.7	9.2	5.9	6.4	6.7	11	42	108
2	173	11	13	19	5.9	8.0	6.0	6.3	8.2	9.8	42	114
3	173	14	13	20	6.0	7.8	6.0	6.0	12	9.8	42	133
4	167	15	15	7.3	7.3	8.4	5.9	6.4	31	11	43	150
5	166	14	15	9.1	8.5	7.9	5.8	6.4	57	13	44	150
6	168	17	15	9.1	8.5	8.1	6.0	6.4	79	21	42	108
7	152	20	15	9.1	8.5	6.9	6.0	6.4	105	26	42	74
8	65	17	15	9.3	8.5	6.0	6.2	6.7	126	27	43	38
9	8.4	19	12	10	8.5	6.2	7.7	6.5	142	34	42	21
10	6.5	17	13	9.8	8.8	7.0	6.6	6.3	164	40	42	20
11	4.7	13	12	9.7	9.9	6.9	5.5	6.1	163	40	42	9.0
12	5.1	4.0	11	9.1	10	6.7	6.4	6.4	157	39	42	35
13	7.7	8.3	12	9.3	11	6.9	7.3	7.2	155	38	44	67
14	9.0	13	16	9.1	10	7.3	6.8	7.0	135	38	28	95
15	11	13	18	12	9.8	7.9	7.3	6.0	100	40	11	56
16	10	13	19	10	9.5	7.5	7.4	6.0	103	40	16	e24
17	8.5	14	19	10	8.9	7.7	7.6	6.0	108	40	31	e23
18	6.8	14	19	13	9.3	7.7	6.6	6.0	109	40	36	9.6
19	7.1	14	19	11	8.2	7.8	6.8	7.2	108	40	37	6.6
20	9.5	15	20	11	6.8	6.8	8.1	6.5	123	40	37	7.1
21	12	14	20	10	6.4	7.9	7.4	6.4	136	40	39	8.8
22	11	13	21	10	6.4	12	7.4	6.4	111	41	69	7.9
23	9.8	17	23	9.8	7.4	9.3	6.5	6.5	113	41	87	8.5
24	9.9	20	21	12	9.5	7.9	5.1	6.8	154	40	129	8.5
25	10	16	20	11	9.6	7.5	4.8	23	181	40	156	7.4
26	11	12	20	9.4	8.5	6.3	4.9	29	182	41	69	6.9
27	44	7.2	20	8.7	8.5	6.3	5.2	6.6	188	42	11	7.1
28	54	7.1	20	8.5	8.8	6.0	6.9	6.3	208	42	8.7	7.4
29	8.8	7.9	20	8.5	---	6.5	6.7	6.1	120	42	19	7.6
30	16	9.8	20	7.5	---	7.1	6.4	6.0	18	43	91	9.1
31	18	---	19	6.4	---	5.8	---	6.0	---	42	124	---
TOTAL	1535.8	401.3	527	327.7	234.7	231.3	193.2	237.3	3402.9	1051.6	1550.7	1327.5
MEAN	49.5	13.4	17.0	10.6	8.38	7.46	6.44	7.65	113	33.9	50.0	44.2
MAX	173	20	23	20	11	12	8.1	29	208	43	156	150
MIN	4.7	4.0	11	6.4	5.7	5.8	4.8	6.0	6.7	9.8	8.7	6.6

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1999, BY WATER YEAR (WY)

	MEAN	59.3	30.9	49.6	60.6	65.4	78.0	99.5	72.7	62.0	73.5	60.1	76.1
MAX	290	96.2	308	258	162	190	342	225	278	244	171	241	
(WY)	1990	1990	1997	1979	1971	1993	1983	1984	1972	1975	1995	1989	
MIN	.000	.000	.000	.000	.000	.19	.86	.81	2.60	4.24	4.32	.50	
(WY)	1964	1964	1964	1964	1964	1964	1964	1964	1981	1964	1963	1963	

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

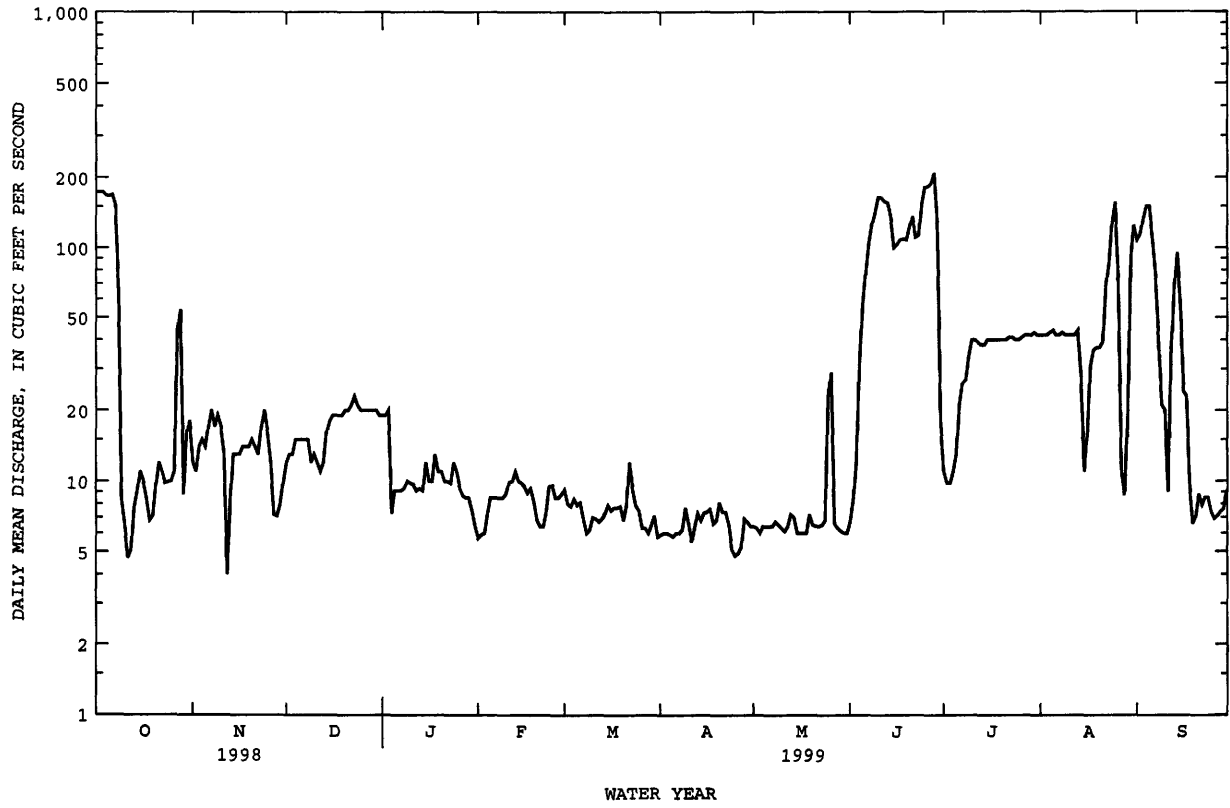
WATER YEARS 1959 - 1999

ANNUAL TOTAL	25833.7	11021.0	
ANNUAL MEAN	70.8	30.2	65.6
HIGHEST ANNUAL MEAN			111
LOWEST ANNUAL MEAN			3.81
HIGHEST DAILY MEAN	690	Apr 10	2060
LOWEST DAILY MEAN	4.0	Nov 12	.00a
ANNUAL SEVEN-DAY MINIMUM	5.8	Mar 12	.00a
INSTANTANEOUS PEAK FLOW			6410
INSTANTANEOUS PEAK STAGE			5.17
INSTANTANEOUS LOW FLOW			.00a
10 PERCENT EXCEEDS	180	106	152
50 PERCENT EXCEEDS	20	11	41
90 PERCENT EXCEEDS	6.5	6.3	7.0

a Result of reservoir filling.

e Estimated

01396800 SPRUCE RUN AT CLINTON, NJ--Continued



01397000 SOUTH BRANCH RARITAN RIVER AT STANTON, NJ

LOCATION.--Lat 40°34'21", long 74°52'10", Hunterdon County, Hydrologic Unit 02030105, on right bank at downstream side of bridge on Stanton Road at Stanton Station, 0.4 mi upstream from Prescott Brook, and 1.4 mi west of Stanton.

DRAINAGE AREA.--147 mi².

PERIOD OF RECORD.--July 1903 to December 1906, July 1919 to current year. Monthly discharge only for some periods published in WSP 1302.

REVISED RECORDS.--WSP 561: Drainage area. WSP 1552: 1904, 1922-24(M), 1928-29(M), 1933-35(M). WDR NJ-88-1: 1982.

GAGE.--Water-stage recorder. Datum of gage is 125.01 ft above sea level. Prior to Aug. 17, 1925, nonrecording gage on downstream side of highway bridge at same site and datum.

REMARKS.--Records good. Flow regulated by Spruce Run Reservoir since September 1963 (see Raritan River basin, reservoirs in). Water diverted by Hamden Pumping Station, 4.0 mi upstream, into Round Valley Reservoir since February 1966 (see Raritan River basin, diversions). Water can be released (maximum rate 186 ft³/s) from Round Valley Reservoir at Hamden Pumping Station since July 1990. Several measurements of water temperature were made during the year. National Weather Service telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	194	58	57	66	110	344	201	130	86	62	66	142
2	197	52	55	74	331	225	199	123	86	60	64	140
3	199	55	53	903	446	164	184	119	87	56	62	157
4	197	55	55	496	218	383	179	123	100	54	62	174
5	191	56	57	170	173	243	169	132	123	53	68	181
6	197	56	58	119	151	199	159	124	148	55	64	158
7	181	65	58	109	140	248	160	118	169	63	63	163
8	314	59	61	114	144	176	154	137	187	59	67	141
9	342	61	60	182	132	161	165	155	193	60	68	67
10	161	59	59	312	129	160	281	121	220	70	66	97
11	101	70	56	174	126	149	190	108	218	69	65	76
12	80	69	52	125	125	139	232	102	209	67	65	74
13	77	56	51	111	194	130	195	106	204	67	66	98
14	75	59	53	118	151	134	164	102	193	67	133	133
15	78	57	57	362	123	177	151	95	162	68	75	116
16	72	55	57	305	121	174	180	92	150	68	62	4210
17	67	56	57	181	121	185	245	90	156	68	64	3200
18	61	56	56	912	302	233	181	90	158	67	68	480
19	59	55	56	1060	300	180	161	285	161	66	65	241
20	56	56	55	292	183	154	187	417	166	67	68	181
21	60	56	56	188	152	230	234	160	194	66	74	170
22	59	55	58	241	135	2040	189	127	167	69	107	166
23	56	55	58	230	124	772	191	122	156	69	122	141
24	56	62	56	691	124	488	248	166	191	68	156	120
25	54	55	55	522	118	393	185	219	220	66	187	108
26	55	83	67	259	116	321	167	177	226	65	190	98
27	91	122	76	196	112	285	155	120	230	65	107	92
28	101	74	58	173	129	324	148	108	256	64	67	89
29	58	62	59	155	---	289	142	100	206	67	56	85
30	57	56	70	136	---	238	135	95	78	72	105	212
31	67	---	70	120	---	211	---	90	---	67	161	---
TOTAL	3613	1845	1806	9096	4730	9549	5531	4253	5100	2004	2713	11510
MEAN	117	61.5	58.3	293	169	308	184	137	170	64.6	87.5	384
MAX	342	122	76	1060	446	2040	281	417	256	72	190	4210
MIN	54	52	51	66	110	130	135	90	78	53	56	67

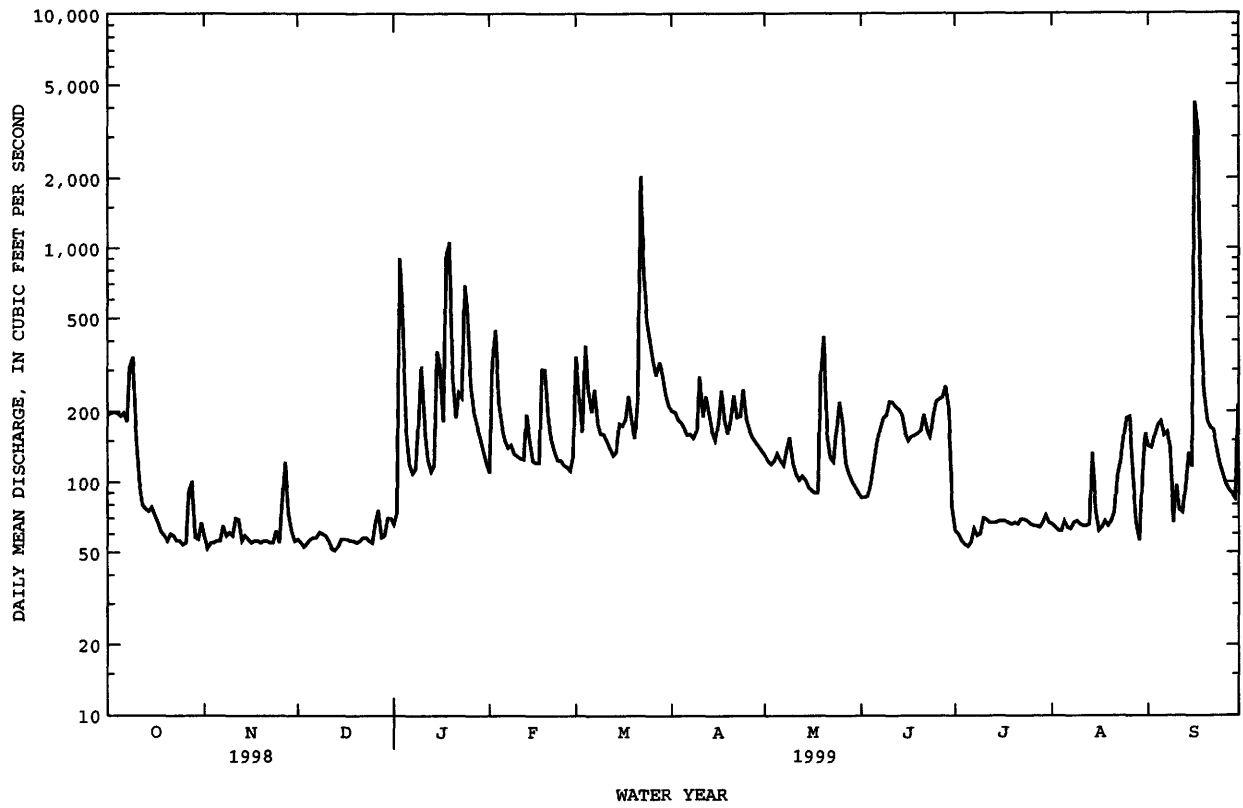
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1904 - 1999, BY WATER YEAR (WY)

	MEAN	165	204	265	289	318	402	376	271	191	178	163	164
MAX	641	659	1026	1099	807	1057	1137	750	967	752	793	554	
(WY)	1904	1952	1997	1979	1925	1936	1983	1989	1972	1975	1955	1989	
MIN	34.1	46.2	58.3	55.0	61.2	61.3	58.5	80.3	60.1	40.7	30.1	31.0	
(WY)	1964	1965	1999	1966	1967	1981	1981	1965	1965	1955	1957	1957	

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1904 - 1999
ANNUAL TOTAL	89455	61750	
ANNUAL MEAN	245	169	248
HIGHEST ANNUAL MEAN			413
LOWEST ANNUAL MEAN			95.0
HIGHEST DAILY MEAN	1980	4210	8060
LOWEST DAILY MEAN	51	51	12
ANNUAL SEVEN-DAY MINIMUM	55	55	25
INSTANTANEOUS PEAK FLOW		14800	18000
INSTANTANEOUS PEAK STAGE		13.90	15.22a
INSTANTANEOUS LOW FLOW		45	9.0
10 PERCENT EXCEEDS	505	246	489
50 PERCENT EXCEEDS	181	121	166
90 PERCENT EXCEEDS	57	56	63

a From rating curve extended above 6,400 ft³/s on basis of computation of flow over Clinton Dam, 6.5 mi upstream, at gage height 10.72 ft, contracted-opening measurement 1.7 mi downstream, and slope-area measurement 0.4 mi downstream at gage height 15.22 ft, adjusted to present site.

01397000 SOUTH BRANCH RARITAN RIVER AT STANTON, NJ--Continued



01398000 NESHANIC RIVER AT REAVILLE, NJ

LOCATION.--Lat 40°28'22", long 74°49'40" (revised), Hunterdon County, Hydrologic Unit 02030105, on left bank 50 ft downstream from bridge on Everitts Road, 0.6 mi southwest of Reaville, 1.5 mi downstream from Third Neshanic River, and 2.2 mi upstream from Back Brook.

DRAINAGE AREA.--25.7 mi².

PERIOD OF RECORD.--June 1930 to current year.

REVISED RECORDS.--WSP 1552: 1933, 1934(M), 1936(M), 1938, 1940(M), 1942(M), 1945-46, 1951, 1952(M).

GAGE.--Water-stage recorder. Concrete control since Sept. 26, 1935. Datum of gage is 109.46 ft above sea level.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature, other than those published, were made during the year.

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)
Mar 22	0345	2,110	7.84	Sept. 16	---	*23,100a	*15.33bb

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.27	1.1	1.3	1.1	e7.0	106	21	12	3.7	.46	.00	e1.0
2	.39	1.1	1.3	.82	e150	40	21	11	3.2	.43	.00	e1.0
3	.53	1.0	1.3	239	90	34	17	11	2.8	.40	.00	e1.0
4	.53	1.0	1.5	35	49	106	19	10	2.4	.42	.00	e1.5
5	.98	1.0	1.4	13	34	42	15	9.9	1.9	.26	.00	e1.5
6	.76	1.0	1.4	7.2	27	51	14	9.0	1.6	.07	.00	e2.0
7	.55	1.1	1.2	5.7	23	61	13	8.6	1.5	.00	.00	e3.0
8	18	.96	1.6	3.9	28	33	12	21	1.3	.00	.00	e4.0
9	9.9	.99	2.2	53	25	28	25	16	1.0	.00	e.00	e6.5
10	3.5	1.1	1.8	42	25	27	61	10	.81	.00	e.00	e22
11	1.9	3.7	1.6	13	20	22	27	8.9	.62	.00	e.00	e9.0
12	1.2	2.1	1.4	10	22	18	35	8.2	.54	.00	e.00	e4.0
13	.95	1.4	1.4	35	55	16	23	7.6	.61	.00	e.1	e3.0
14	2.9	1.2	1.4	17	24	18	19	7.4	1.2	.00	e7.0	e2.5
15	1.5	1.2	1.3	172	20	33	17	6.4	3.0	.00	e1.0	e4.5
16	.97	1.1	1.3	105	18	56	56	6.2	1.9	.00	e.8	e7000
17	.82	1.1	1.4	111	17	83	52	6.0	1.5	.00	e.5	e1100
18	.69	1.1	1.3	e300	182	62	29	5.7	1.9	.00	e.4	e60
19	.59	1.0	1.2	e200	82	39	24	22	1.7	.00	e.6	e45
20	.58	1.1	1.2	e40	49	30	28	15	1.3	.00	e.7	e30
21	.56	1.3	1.2	e20	36	205	24	7.2	1.8	.00	e1.0	e40
22	.59	1.1	1.4	e40	25	933	23	5.9	1.8	.00	e.8	31
23	.79	1.0	1.2	e50	19	133	47	7.7	1.7	.00	e.6	20
24	.81	1.1	1.2	e280	17	86	49	43	1.3	.00	e.6	15
25	.82	1.0	1.0	e65	16	61	29	25	1.0	.00	e1.0	12
26	.82	7.9	.95	e30	15	46	26	12	.92	.00	e22	9.2
27	.88	3.6	.92	e20	13	38	21	9.1	.87	.00	e18	7.9
28	.80	1.8	1.1	e15	31	41	17	7.1	.75	.00	e4.0	7.2
29	1.1	1.5	1.9	e10	---	31	15	5.8	.64	.00	e2.0	7.2
30	1.1	1.4	3.0	e7.0	---	24	14	5.1	.72	.00	e1.5	41
31	1.0	---	1.7	e6.0	---	21	---	4.5	---	.00	e1.5	---
TOTAL	56.78	47.05	44.07	1946.72	1119.0	2524	793	344.3	45.98	2.04	64.10	8492.0
MEAN	1.83	1.57	1.42	62.8	40.0	81.4	26.4	11.1	1.53	.066	2.07	283
MAX	18	7.9	3.0	300	182	933	61	43	3.7	.46	22	7000
MIN	.27	.96	.92	.82	7.0	16	12	4.5	.54	.00	.00	1.0
CFSM	.07	.06	.06	2.44	1.56	3.17	1.03	.43	.06	.00	.08	11.0
IN.	.08	.07	.06	2.82	1.62	3.65	1.15	.50	.07	.00	.09	12.2

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 1999, BY WATER YEAR (WY)

MEAN	15.3	33.9	48.8	57.8	58.5	77.2	55.9	33.4	21.3	18.6	18.0	19.0
MAX	147	139	206	280	147	201	200	135	119	138	216	283
(WY)	1997	1933	1997	1994	1939	1994	1983	1989	1972	1938	1971	1999
MIN	.67	.90	1.42	1.14	3.92	15.2	7.20	3.78	1.11	.066	.44	.47
(WY)	1965	1966	1999	1981	1934	1985	1985	1963	1965	1999	1964	1965

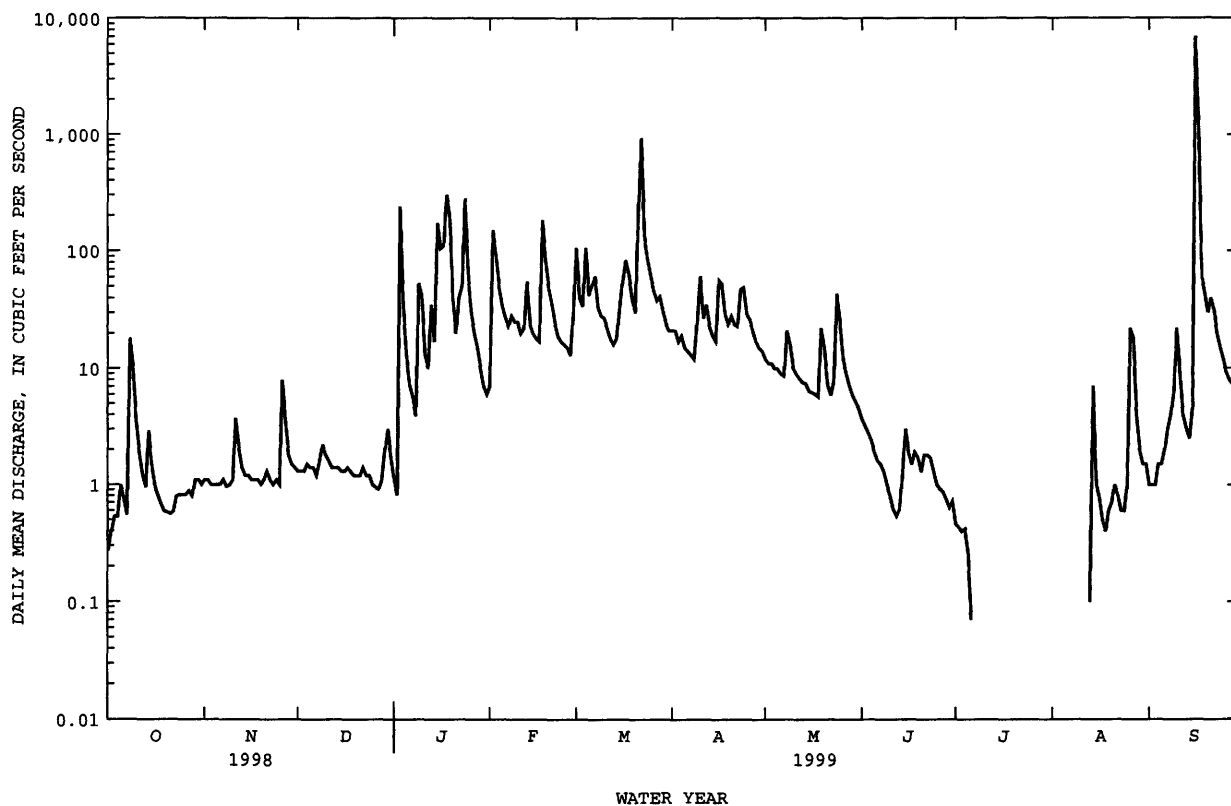
01398000 NESHANIC RIVER AT REAVILLE, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1931 - 1999
ANNUAL TOTAL	13927.69	15479.04	
ANNUAL MEAN	38.2	42.4	38.0
HIGHEST ANNUAL MEAN			70.8
LOWEST ANNUAL MEAN			14.5
HIGHEST DAILY MEAN	616 May 9	7000 Sep 16	7000 Sep 16 1999
LOWEST DAILY MEAN	.23 Sep 30	.00 Jul 7	.00 Jul 29 1965
ANNUAL SEVEN-DAY MINIMUM	.38 Sep 25	.00 Jul 7	.00 Aug 4 1966
INSTANTANEOUS PEAK FLOW		23100a Sep 16	23100a Sep 16 1999
INSTANTANEOUS PEAK STAGE		15.33b Sep 16	15.33b Sep 16 1999
INSTANTANEOUS LOW FLOW		.00 many days	.00 Jul 29 1965
ANNUAL RUNOFF (CFSM)	1.48	1.65	1.48
ANNUAL RUNOFF (INCHES)	20.16	22.41	20.10
10 PERCENT EXCEEDS	89	48	76
50 PERCENT EXCEEDS	5.3	3.0	12
90 PERCENT EXCEEDS	.65	.00	1.3

a From rating curve extended above 1,700 ft³/s on basis of slope-area measurement 0.7 mi downstream (adjusted to present site) at gage height 11.90 ft.

b From high-water mark in gage house.

e Estimated



01398500 NORTH BRANCH RARITAN RIVER NEAR FAR HILLS, NJ

LOCATION.--Lat 40°42'30", long 74°38'11", Somerset County, Hydrologic Unit 02030105, on left bank 75 ft upstream from Ravine Lake Dam, 1.6 mi north of Far Hills, and 2.3 mi upstream from Peapack Brook.

DRAINAGE AREA.--26.2 mi².

PERIOD OF RECORD.--October 1921 to September 1975, October 1977 to current year. Operated as crest-stage gage, water years 1976-77. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 781: Drainage area. WSP 1552: 1922-23, 1924-25(M), 1935(M). WSP 1902: 1954.

GAGE.--Water-stage recorder and crest-stage gage above masonry dam. Datum of gage is 224.49 ft above sea level (New Jersey Geological Survey bench mark). Prior to June 18, 1925, nonrecording gage in stilling box at left end of dam at same datum.

REMARKS.--Records good. Records given herein include diversion by small turbine at dam (average discharge, 3.0 ft³/s) and returned to river 1,000 ft downstream from Ravine Lake Dam. Turbine was not operating. Flow regulated occasionally by operation of waste gate in dam. Recording rain gage, with telemeter, 500 ft downstream from station. Several measurements of water temperature were made during the year. Gage-height and rain-gage radio telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Stage of 7.6 ft, from floodmark, occurred July 23, 1919, discharge about 7,000 ft³/s.

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)
Jan 3	1315	893	3.60	Mar 22	0445	1,350	4.09
Jan 18	1915	1,890	4.58	Sep 16	1915	*5,300	*6.76

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.8	e14	8.4	7.6	25	88	56	35	17	10	4.6	8.0
2	8.4	e8.4	8.2	5.8	137	50	57	33	16	14	3.9	7.3
3	8.2	e8.0	8.2	289	83	52	54	32	17	11	3.4	6.9
4	9.7	e7.5	8.2	63	49	117	54	37	17	8.8	3.0	6.9
5	11	e7.4	8.3	23	42	57	50	39	15	8.2	e3.0	7.9
6	10	e7.4	8.7	16	39	59	47	34	15	7.9	e3.1	28
7	9.8	e7.3	8.6	17	37	69	51	35	14	6.8	e3.1	34
8	82	e7.3	8.9	11	38	49	47	40	13	6.9	e3.2	37
9	51	e7.3	11	48	35	50	55	40	12	6.8	e3.3	27
10	18	e8.0	8.7	49	34	51	75	34	12	6.8	e3.4	49
11	12	e14	7.9	21	33	48	50	31	12	6.8	2.0	36
12	9.1	e15	7.3	17	32	45	72	29	12	7.1	3.4	24
13	8.7	e10	7.6	19	49	44	48	28	12	7.0	3.4	18
14	11	e8.0	7.4	19	35	47	43	28	13	6.5	32	15
15	12	8.5	7.2	54	30	58	41	27	15	6.3	36	14
16	9.1	7.6	7.3	50	29	55	43	27	12	6.3	20	1170
17	8.8	7.5	7.5	33	29	67	59	25	11	6.2	12	172
18	9.0	7.3	7.5	391	80	86	44	24	14	5.7	9.7	19
19	8.5	7.2	7.2	138	57	67	40	51	13	5.5	8.3	29
20	8.7	7.3	7.2	52	42	57	55	64	11	5.5	8.8	30
21	9.0	7.6	7.2	42	38	93	58	32	11	5.5	20	35
22	9.0	7.3	7.8	54	33	577	47	27	12	5.6	17	47
23	9.0	7.2	7.4	51	29	131	51	26	10	5.9	13	30
24	8.9	7.4	7.2	237	31	97	62	63	9.0	5.8	9.9	22
25	7.7	7.2	6.2	89	30	86	45	58	8.7	5.5	8.7	19
26	7.7	33	6.2	54	30	72	41	33	8.7	5.1	26	18
27	8.0	28	6.3	45	29	68	38	27	8.2	5.0	43	17
28	9.5	13	6.8	41	41	86	37	25	7.9	4.7	28	17
29	13	10	7.9	37	---	65	36	23	11	5.0	17	16
30	14	9.0	14	33	---	58	36	21	15	5.1	12	46
31	13	---	7.6	28	---	56	---	20	---	4.9	9.5	---
TOTAL	422.6	304.7	245.9	2034.4	1196	2605	1492	1048	374.5	208.2	373.7	2006.0
MEAN	13.6	10.2	7.93	65.6	42.7	84.0	49.7	33.8	12.5	6.72	12.1	66.9
MAX	82	33	14	391	137	577	75	64	17	14	43	1170
MIN	7.7	7.2	6.2	5.8	25	44	36	20	7.9	4.7	2.0	6.9
CFSM	.52	.39	.30	2.50	1.63	3.21	1.90	1.29	.48	.26	.46	2.55
IN.	.60	.43	.35	2.89	1.70	3.70	2.12	1.49	.53	.30	.53	2.85

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1999, BY WATER YEAR (WY)

	MEAN	26.5	42.8	49.7	55.0	59.4	82.0	82.4	59.6	38.6	30.4	27.5	27.3
MAX	120	170	124	182	128	207	226	178	190	132	153	134	
(WY)	1997	1928	1974	1979	1973	1936	1983	1989	1972	1984	1942	1971	
MIN	6.29	9.22	7.93	6.76	22.1	22.8	26.8	20.0	10.5	4.41	4.55	3.61	
(WY)	1954	1965	1999	1981	1934	1981	1985	1965	1965	1966	1965	1964	

01398500 NORTH BRANCH RARITAN RIVER NEAR FAR HILLS, NJ--Continued

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

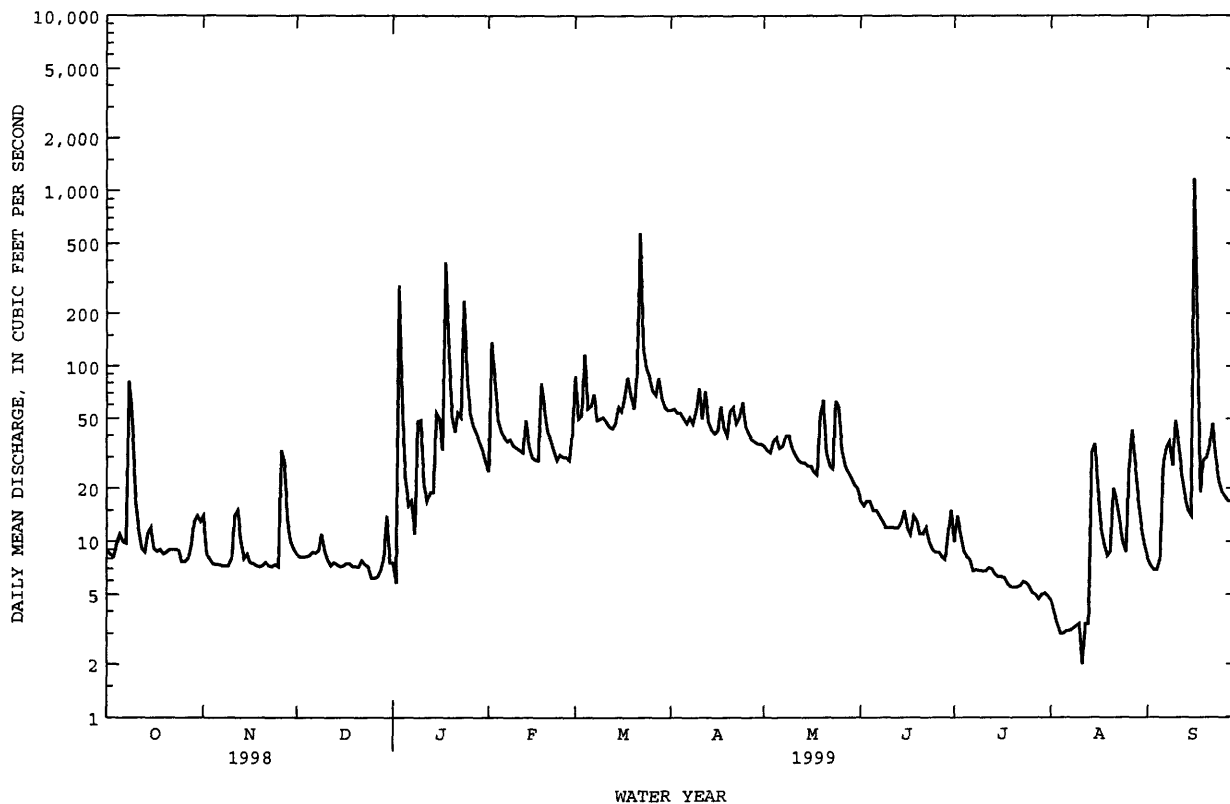
WATER YEARS 1922 - 1999

ANNUAL TOTAL	15655.3		12311.0		
ANNUAL MEAN	42.9		33.7		48.3
HIGHEST ANNUAL MEAN					89.7
LOWEST ANNUAL MEAN					17.7
HIGHEST DAILY MEAN	408	Apr 10	1170	Sep 16	1770
LOWEST DAILY MEAN	5.2	Sep 6	2.0	Aug 11	.20
ANNUAL SEVEN-DAY MINIMUM	6.6	Sep 1	3.0	Aug 5	.20
INSTANTANEOUS PEAK FLOW			5410	Sep 16	6390a
INSTANTANEOUS PEAK STAGE			6.76	Sep 16	7.28
INSTANTANEOUS LOW FLOW			1.2	Sep 17	.00b
ANNUAL RUNOFF (CFSM)	1.64		1.29		1.85
ANNUAL RUNOFF (INCHES)	22.23		17.48		25.07
10 PERCENT EXCEEDS	90		58		95
50 PERCENT EXCEEDS	31		17		33
90 PERCENT EXCEEDS	7.3		6.8		10

a From rating curve extended above 2000 ft³/sec on basis of peak flow over dam.

b Several times when lake was filling.

e Estimated



01399500 LAMINGTON (BLACK) RIVER NEAR POTTERSVILLE, NJ

LOCATION.--Lat 40°43'39", long 74°43'50", Morris County, Hydrologic Unit 02030105, on right bank 1.1 mi upstream from bridge on State Highway 512, 1.2 mi northwest of Pottersville, and 5.5 mi upstream from Cold Brook.

DRAINAGE AREA.--32.8 mi².

PERIOD OF RECORD.--October 1921 to current year. Monthly discharge only for October and November 1921, published in WSP 1302. Prior to October 1952, published as "Black River near Pottersville".

REVISED RECORDS.--WSP 741: 1932. WSP 781: Drainage area. WSP 1552: 1922, 1924-29(M), 1931(M), 1933-34(M), 1938(P), 1939(M), 1940, 1941(M), 1942-46(P), 1947(M), 1948-49(P), 1951-52(P), 1953(M). WDR-NJ-80-1: Correction 1979(P).

GAGE.--Water-stage recorder. Concrete control since July 1, 1937. Datum of gage is 284.14 ft above sea level (levels from New Jersey Geological Survey bench mark). Prior to July 1, 1922, nonrecording gage on downstream side of highway bridge at Pottersville, 1.1 mi downstream at different datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Flow regulated occasionally by pond above station. Several measurements of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 380 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 3	1200	593	3.29	Mar 22	0245	505	3.15
Jan 18	1445	554	3.23	Sep 16	1745	*1,670	*4.62
Jan 18	1800	957	3.85				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.6	10	23	15	e60	77	72	42	27	14	4.7	6.9
2	6.8	11	20	21	98	64	68	40	25	14	4.3	6.4
3	6.6	11	18	164	94	66	63	41	23	13	4.2	5.9
4	7.6	11	17	92	78	97	60	42	22	12	3.9	5.4
5	7.2	10	16	e78	78	75	57	42	21	11	3.5	5.6
6	6.9	10	16	e54	69	78	55	42	19	11	3.1	12
7	6.8	11	16	e33	58	79	56	42	19	9.9	2.9	16
8	48	10	16	e33	51	65	53	45	19	9.0	3.0	11
9	41	11	16	e58	47	59	57	44	19	8.1	3.2	9.2
10	28	11	15	e63	44	57	68	42	19	7.9	2.8	13
11	23	16	15	e43	43	53	64	41	18	7.7	2.8	11
12	24	14	15	e40	43	48	75	39	16	7.4	2.9	10
13	25	14	14	32	54	44	67	36	16	7.3	2.8	9.5
14	24	14	14	46	46	43	62	34	17	6.9	12	9.2
15	22	14	13	73	50	47	58	32	17	6.9	14	9.0
16	20	14	13	48	43	47	58	30	16	6.5	8.0	419
17	19	13	13	45	41	56	61	30	16	6.4	6.5	269
18	18	13	13	231	69	60	56	29	16	5.7	6.4	162
19	17	13	13	166	65	55	53	75	16	5.4	6.0	182
20	16	13	13	138	57	53	62	81	16	5.4	6.4	155
21	15	14	13	131	56	85	62	52	18	5.4	7.4	123
22	14	13	13	107	53	331	58	48	17	5.4	6.7	94
23	14	12	13	93	68	188	62	46	16	5.6	6.4	71
24	12	12	12	170	42	191	65	58	15	5.4	6.0	55
25	11	12	e12	137	38	155	58	55	14	5.2	5.6	44
26	11	30	e13	107	36	123	56	46	13	4.9	14	36
27	11	26	e13	95	34	102	53	45	12	4.7	12	31
28	11	23	e14	79	45	99	50	42	12	4.5	9.1	28
29	12	23	15	68	---	89	47	37	12	8.2	8.3	27
30	11	25	23	e60	---	80	44	33	14	5.4	7.7	46
31	11	---	33	e58	---	76	---	29	---	4.9	7.4	---
TOTAL	507.5	434	483	2578	1560	2742	1780	1340	520	235.1	194.0	1882.1
MEAN	16.4	14.5	15.6	83.2	55.7	88.5	59.3	43.2	17.3	7.58	6.26	62.7
MAX	48	30	33	231	98	331	75	81	27	14	14	419
MIN	6.6	10	12	15	34	43	44	29	12	4.5	2.8	5.4
CFSM	.50	.44	.48	2.54	1.70	2.70	1.81	1.32	.53	.23	.19	1.91
IN.	.58	.49	.55	2.92	1.77	3.11	2.02	1.52	.59	.27	.22	2.13

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1999, BY WATER YEAR (WY)

	MEAN	34.4	49.8	60.0	65.6	70.5	90.3	88.6	67.1	45.6	36.5	32.4	32.8
MAX	116	163	207	225	144	230	239	169	191	165	126	123	
(WY)	1956	1928	1997	1979	1973	1936	1984	1989	1972	1984	1928	1971	
MIN	5.69	11.2	15.4	11.7	28.0	32.0	25.9	19.0	10.1	5.48	5.61	3.76	
(WY)	1931	1965	1981	1981	1934	1981	1985	1965	1965	1965	1966	1964	

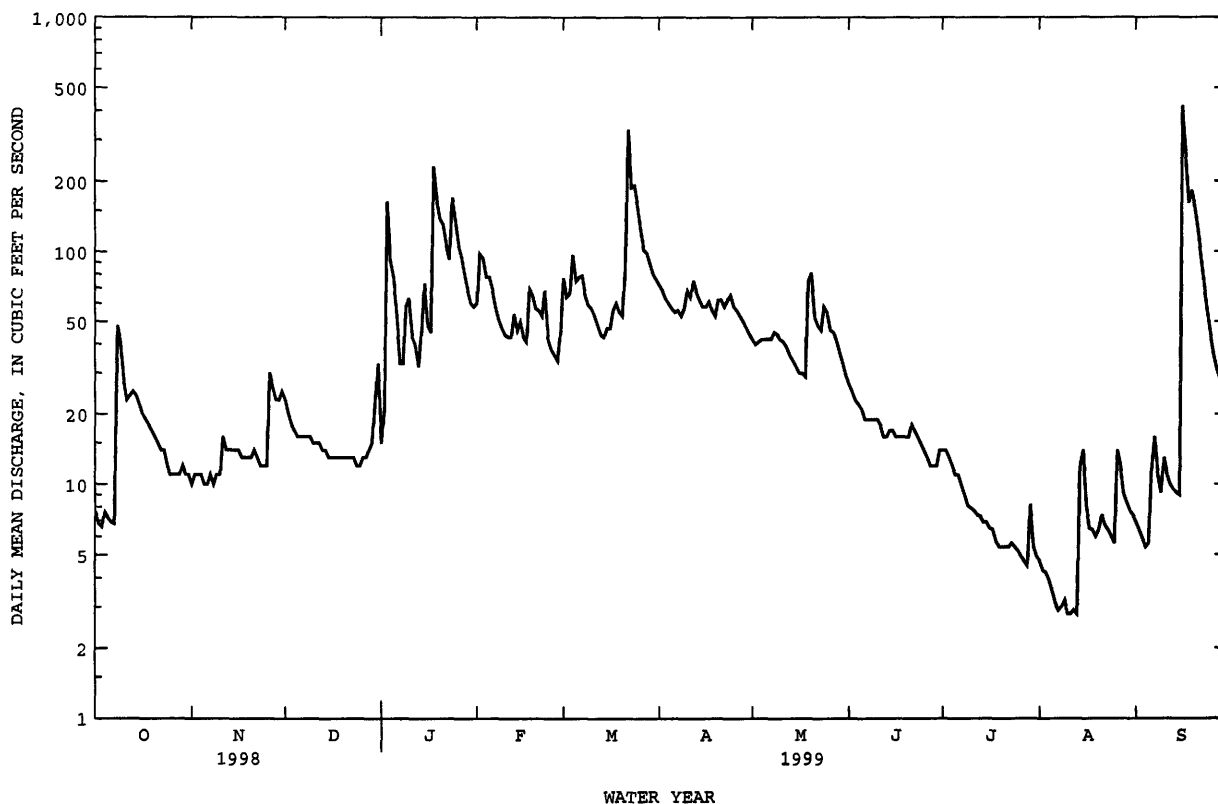
01399500 LAMINGTON (BLACK) RIVER NEAR POTTERSVILLE, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1922 - 1999	
ANNUAL TOTAL	18501.2		14255.7		56.0	
ANNUAL MEAN	50.7		39.1		104	
HIGHEST ANNUAL MEAN					20.5	
LOWEST ANNUAL MEAN					905	
HIGHEST DAILY MEAN	287	May 12	419	Sep 16	1.5	Jan 25 1979
LOWEST DAILY MEAN	6.6	Oct 3	2.8	Aug 10	2.4	Oct 4 1930
ANNUAL SEVEN-DAY MINIMUM	7.1	Oct 1	2.9	Aug 7	3460a	Sep 22 1964
INSTANTANEOUS PEAK FLOW			1670	Sep 16	5.94b	Jul 7 1984
INSTANTANEOUS PEAK STAGE			4.62	Sep 16	1.3	Jul 7 1984
INSTANTANEOUS LOW FLOW			2.7	many days	1.71	Oct 4 1930
ANNUAL RUNOFF (CFSM)	1.55		1.19		23.21	
ANNUAL RUNOFF (INCHES)	20.98		16.17		113	
10 PERCENT EXCEEDS	105		78		43	
50 PERCENT EXCEEDS	38		22		14	
90 PERCENT EXCEEDS	11		6.4			

a From rating curve extended above 380 ft³/s on basis of slope-area measurement at gage height 4.71 ft.

b From floodmark.

e Estimated.



01399670 SOUTH BRANCH ROCKAWAY CREEK AT WHITEHOUSE STATION, NJ

LOCATION.--Lat 40°37'10", long 74°46'30", Hunterdon County, Hydrologic Unit 02030105, on right bank 1,700 ft upstream from bridge on U.S. Route 22, 0.4 mi northeast of Whitehouse Station, and 0.8 mi upstream from mouth.

DRAINAGE AREA.--12.3 mi².

PERIOD OF RECORD.--October 1986 to current year. March 1977 to September 1986, water-stage recorder 1,700 ft downstream, at datum 8.07 ft lower (sta. 01399690), drainage area 13.2 mi².

REVISED RECORDS.--WDR NJ-88-1: 1987. WDR NJ-90-1: 1988.

GAGE.--Water-stage recorder. Datum of gage is 121.5 ft above sea level.

REMARKS.--Records good except for daily discharges below 5.0 ft³/s, which are fair. Releases from Round Valley Reservoir enter stream directly upstream from station (see Raritan River basin, reservoirs in and diversions from). Several measurements of water temperature were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.0	91	65	126	7.3	43	14	9.1	5.9	188	280	2.7
2	3.1	91	67	139	80	17	14	8.5	5.6	153	280	2.6
3	3.3	109	77	317	34	16	12	8.3	5.5	129	285	2.5
4	5.2	123	82	23	19	43	12	9.3	4.9	144	291	2.5
5	4.4	124	77	9.2	14	17	11	8.8	4.7	199	286	2.9
6	3.7	119	74	6.4	13	19	10	7.8	4.7	231	263	3.7
7	3.7	116	84	5.6	11	25	9.8	7.7	4.8	241	235	12
8	60	116	77	4.6	13	14	9.2	14	4.6	259	210	7.7
9	27	115	59	25	12	13	14	12	4.4	257	190	3.6
10	21	109	60	18	12	13	28	7.7	4.4	239	172	10
11	10	91	66	7.2	10	11	14	6.8	4.5	238	172	4.7
12	6.8	83	70	5.9	11	10	17	6.5	4.6	253	180	3.1
13	62	71	81	9.8	27	9.3	12	6.1	5.0	259	193	2.8
14	103	64	97	8.8	11	10	10	5.7	5.1	255	100	2.7
15	98	76	110	53	9.8	19	9.8	5.5	6.1	255	5.2	3.1
16	95	90	104	23	9.7	24	19	5.3	4.3	259	3.9	885
17	90	97	100	23	9.5	22	23	5.3	4.4	268	72	111
18	86	96	100	236	63	17	13	5.2	4.9	287	118	22
19	89	97	96	45	25	13	11	49	4.2	292	112	15
20	108	98	98	19	17	11	20	25	3.9	285	103	11
21	115	88	100	17	13	54	17	10	5.1	260	43	12
22	117	82	93	29	11	302	19	8.4	4.8	235	3.3	12
23	112	92	87	28	8.9	47	22	11	4.1	213	3.0	8.8
24	109	105	92	127	9.0	34	25	28	3.6	239	2.8	7.4
25	118	105	97	37	8.6	27	16	19	3.3	266	2.7	6.7
26	118	68	124	22	8.7	22	14	11	3.4	274	17	5.8
27	111	7.7	121	18	7.9	20	12	9.1	3.3	279	14	5.5
28	101	27	118	16	17	25	11	7.9	3.3	283	5.1	5.3
29	99	53	111	12	---	19	11	7.2	123	292	3.8	4.9
30	92	62	90	10	---	15	9.8	6.8	215	292	2.7	24
31	91	---	104	8.4	---	14	---	6.2	---	283	2.8	---
TOTAL	2066.2	2665.7	2781	1428.9	492.4	945.3	439.6	338.2	465.4	7607	3651.3	1203.0
MEAN	66.7	88.9	89.7	46.1	17.6	30.5	14.7	10.9	15.5	245	118	40.1
MAX	118	124	124	317	80	302	28	49	215	292	291	885
MIN	3.1	7.7	59	4.6	7.3	9.3	9.2	5.2	3.3	129	2.7	2.5

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 1999, BY WATER YEAR (WY)

	MEAN	28.3	28.1	34.9	34.5	26.1	33.5	31.6	25.2	18.6	30.2	29.8	29.1
MAX		116	88.9	91.6	93.3	51.1	74.5	85.0	60.5	38.7	245	128	146
(WY)		1981	1999	1981	1981	1979	1994	1983	1989	1989	1999	1980	1980
MIN		4.55	6.58	9.85	8.31	9.90	10.2	3.80	8.18	8.50	4.78	5.49	4.19
(WY)		1995	1982	1996	1985	1992	1985	1985	1995	1993	1993	1983	1983

SUMMARY STATISTICS

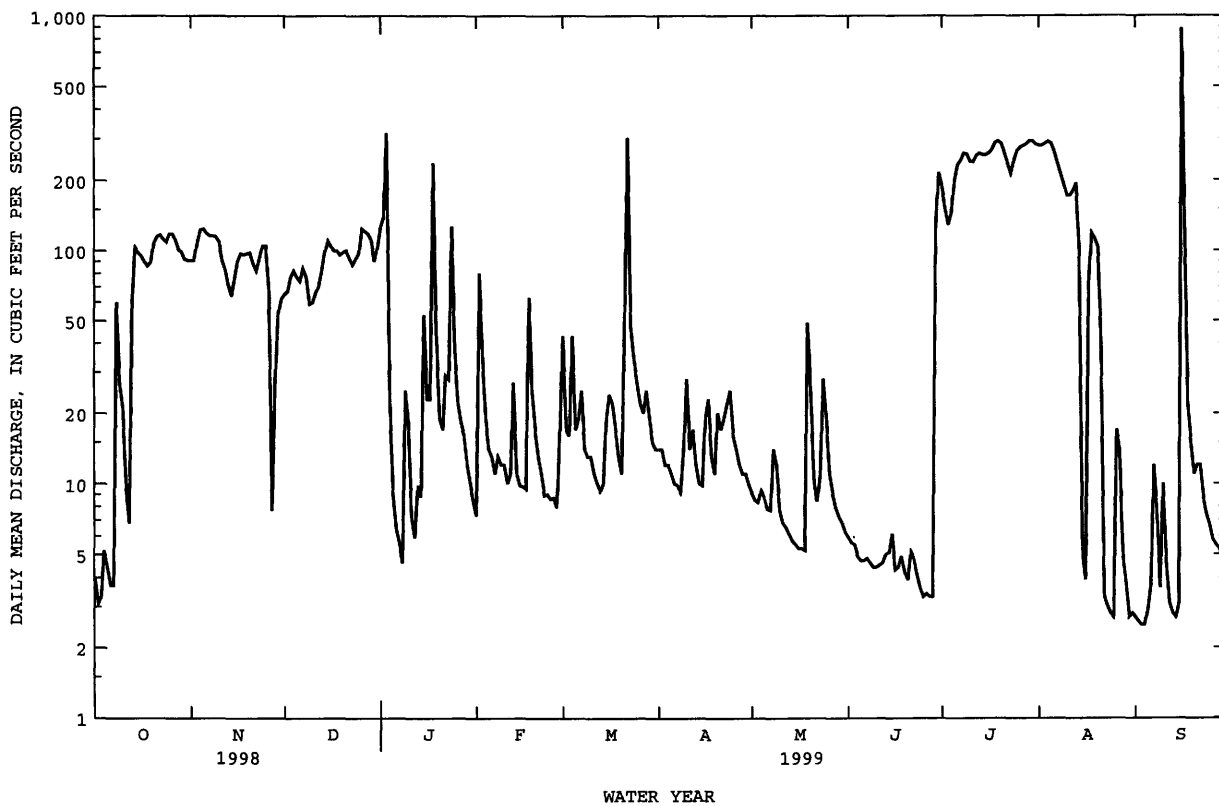
FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1977 - 1999

ANNUAL TOTAL	14130.0	24084.0	
ANNUAL MEAN	38.7	66.0	
HIGHEST ANNUAL MEAN			29.5
LOWEST ANNUAL MEAN			66.0
HIGHEST DAILY MEAN	197	885	11.1
LOWEST DAILY MEAN	3.1	2.5	885
ANNUAL SEVEN-DAY MINIMUM	3.5	2.7	.07
INSTANTANEOUS PEAK FLOW		2620	.09
INSTANTANEOUS PEAK STAGE		10.68	10.68
INSTANTANEOUS LOW FLOW		2.5	.00
10 PERCENT EXCEEDS	102	221	69
50 PERCENT EXCEEDS	19	19	14
90 PERCENT EXCEEDS	4.0	4.4	4.8

01399670 SOUTH BRANCH ROCKAWAY CREEK AT WHITEHOUSE STATION, NJ--Continued



01400000 NORTH BRANCH RARITAN RIVER NEAR RARITAN, NJ

LOCATION.--Lat 40°34'10", long 74°40'45", Somerset County, Hydrologic Unit 02030105, on right bank, 400 ft upstream from U.S. Highway 202, 1.4 mi upstream from confluence with South Branch, and 2.7 mi west of Raritan.

DRAINAGE AREA.--190 mi².

PERIOD OF RECORD.--June 1923 to current year. Monthly discharge only for June 1923, published in WSP 1302. Prior to October 1943, published as "at Milltown".

REVISED RECORDS.--WSP 1552: 1924-26, 1928-35. WDR NJ-79-1: 1971-78(P).

GAGE.--Water-stage recorder. Concrete control since Sept. 1, 1936. Datum of gage is 50.43 ft above sea level. Prior to Oct. 17, 1936, nonrecording gage at site 30 ft downstream at same datum.

REMARKS.--Records good, except those above 2,000 ft³/s, which are fair. Releases from Round Valley Reservoir enter basin upstream from gage. Several measurements of water temperature were made during the year. National Weather Service gage-height telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 3	1915	6,270	8.63	Mar 22	0900	8,990	9.72
Jan 19	0130	7,270	9.07	Sep 16	2400	*29,000	*18.98

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	138	134	175	155	832	297	188	117	237	263	32
2	33	135	126	175	966	375	290	180	110	219	261	28
3	31	144	134	2710	727	308	263	174	109	188	261	28
4	42	169	141	582	366	913	252	184	101	179	268	26
5	47	170	138	206	302	403	236	195	96	211	272	28
6	40	167	133	129	263	375	222	177	92	245	254	60
7	37	161	136	131	236	548	221	174	90	247	229	79
8	346	161	149	91	241	308	213	213	87	258	210	94
9	398	162	131	459	222	272	243	223	83	264	196	59
10	183	162	122	475	216	265	435	176	80	251	181	105
11	120	172	124	203	201	244	270	161	79	245	171	84
12	90	170	123	143	195	221	368	153	78	248	176	55
13	105	137	131	163	408	204	275	143	80	258	183	45
14	190	119	145	157	231	209	240	138	83	252	312	40
15	172	130	161	785	189	356	223	131	97	252	110	42
16	157	139	160	542	185	418	253	127	81	252	66	7640
17	150	149	154	333	180	389	369	123	78	259	66	9010
18	141	149	153	2030	904	367	247	120	81	270	141	483
19	139	149	149	2050	532	276	222	630	77	278	136	366
20	153	150	147	468	323	242	307	559	71	275	130	303
21	165	147	151	392	268	383	323	225	80	259	134	260
22	166	133	149	585	223	4860	279	180	86	244	48	235
23	163	134	139	485	188	984	311	172	74	217	40	184
24	156	155	140	1830	203	742	412	471	68	223	35	149
25	159	154	136	848	178	613	271	430	62	253	30	128
26	167	247	159	476	177	499	247	225	60	257	109	111
27	157	171	167	356	169	422	227	188	59	261	168	101
28	148	98	169	301	238	499	211	166	56	263	78	96
29	160	125	177	251	---	404	205	149	105	272	51	92
30	142	125	188	208	---	340	194	134	258	277	40	297
31	140	---	141	174	---	310	---	122	---	268	35	---
TOTAL	4332	4522	4507	17913	8686	17581	8126	6631	2678	7682	4654	20260
MEAN	140	151	145	578	310	567	271	214	89.3	248	150	675
MAX	398	247	188	2710	966	4860	435	630	258	278	312	9010
MIN	31	98	122	91	155	204	194	120	56	179	30	26

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 1999, BY WATER YEAR (WY)

MEAN	178	282	354	399	432	523	475	343	223	185	184	173
MAX	882	824	1077	1416	948	1272	1368	1027	1270	1291	1068	675
(WY)	1997	1973	1997	1979	1925	1936	1983	1989	1972	1984	1942	1999
MIN	26.6	46.1	73.1	79.4	109	163	117	84.1	46.4	25.5	22.3	14.8
(WY)	1931	1965	1966	1940	1934	1981	1985	1926	1965	1966	1932	1964

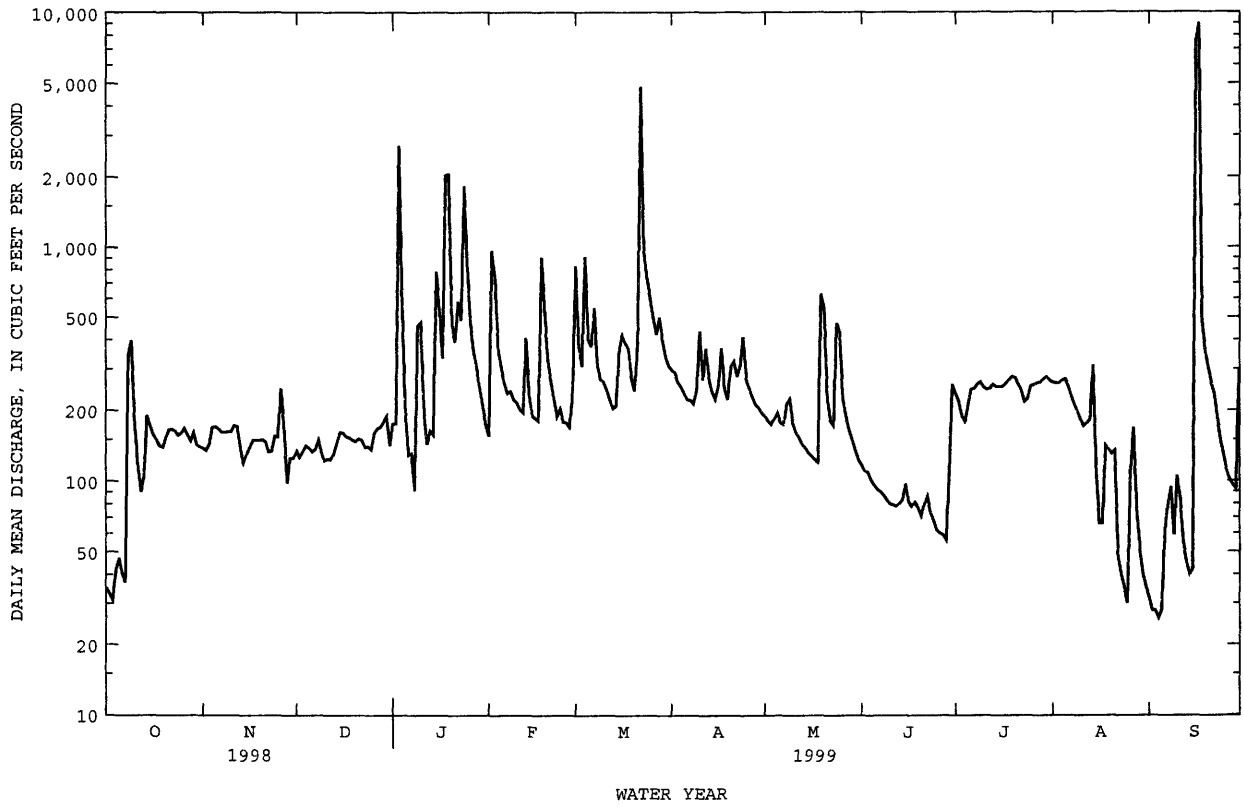
SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1924 - 1999
--------------------	------------------------	---------------------	-------------------------

ANNUAL TOTAL	107305		107572			
ANNUAL MEAN	294		295		312	
HIGHEST ANNUAL MEAN					605	1984
LOWEST ANNUAL MEAN					120	1965
HIGHEST DAILY MEAN	2690	Apr 10	9010	Sep 17	15300	Jul 7 1984
LOWEST DAILY MEAN	31	Oct 3	26	Sep 4	7.5	Sep 26 1964
ANNUAL SEVEN-DAY MINIMUM	37	Sep 28	31	Aug 30	8.9	Sep 22 1964
INSTANTANEOUS PEAK FLOW			29000b	Sep 16	29100	Oct 19 1996
INSTANTANEOUS PEAK STAGE			18.98	Sep 16	18.98	Sep 16 1999
INSTANTANEOUS LOW FLOW			26	Sep 2	3.0a	Nov 28 1930
10 PERCENT EXCEEDS	603		420		625	
50 PERCENT EXCEEDS	171		177		185	
90 PERCENT EXCEEDS	57		78		56	

a About, result of freezeup.

b Adjusted for backwater conditions.

01400000 NORTH BRANCH RARITAN RIVER NEAR RARITAN, NJ--Continued



01400500 RARITAN RIVER AT MANVILLE, NJ

LOCATION.--Lat 40°33'18", long 74°35'02", Somerset County, Hydrologic Unit 02030105, on left bank at downstream side of bridge on North Main Street (Finderne Avenue) at Manville, and 1.4 mi upstream from Millstone River.

DRAINAGE AREA.--490 mi².

PERIOD OF RECORD.--June 1903 to March 1907 (published as "at Finderne"), August 1908 to April 1915 (gage heights only, published in WSP 521), August 1921 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 1552: 1904, 1906, 1922, 1923(M), 1924-25, 1926-29(M), 1930, 1932-33(M), 1924-54. WDR NJ-75-1: 1964(M), 1969(M), 1970(P), 1971(P), 1972(P), 1973(P).

GAGE.--Water-stage recorder. Datum of gage is 20.61 ft above sea level. Prior to Aug. 15, 1923, nonrecording gage on downstream side of highway bridge at same site and datum. From Oct. 1, 1952 to Sept. 30, 1966, water-stage recorder at station at Bound Brook, above Calco Dam (station 01403000) used as auxiliary gage when stage is above 5.0 ft. In Oct. 1, 1966, water-stage recorder at station at Bound Brook, used as auxiliary gage, was moved downstream to present site (station 01403060). Between June 9, 1978 and June 7, 1979, gage temporarily relocated at site 1.4 mi downstream, just upstream from Millstone River, because of reconstruction of highway bridge.

REMARKS.--Records good except for records over 5,000 ft³/s which are fair. Records given herein represent flow at gage only. Slight diurnal fluctuation at low flow. Flow regulated by Spruce Run and Round Valley Reservoirs (see Raritan River basin, reservoirs in). Diversion to Round Valley Reservoir since March 1966 (see Raritan River basin, diversions). Prior to Sept. 1, 1986, water diverted 1,500 ft upstream from station by Johns-Manville Corporation and returned to river, 600 ft downstream from Millstone River. Several measurements of water temperature were made during the year. National Weather Service gage-height telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 10,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 19	0400	11,600	13.00	Sep 16	2400	*77,600	*27.10
Mar 22	1415	14,500	14.80				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	218	186	185	336	356	1550	569	388	214	301	319	162
2	221	176	170	458	1620	914	569	370	205	276	315	146
3	227	173	175	4340	2100	639	516	352	201	239	311	148
4	247	201	181	2450	957	1740	494	356	193	216	316	163
5	238	203	186	853	697	992	469	376	200	238	329	183
6	233	203	186	2070	567	767	430	351	218	284	329	217
7	233	199	185	1300	504	1150	417	335	238	285	287	218
8	438	205	204	665	516	708	406	407	259	299	276	326
9	1140	203	197	1590	493	593	424	492	253	307	259	302
10	386	204	176	2600	474	553	928	347	269	301	232	306
11	269	226	174	1470	427	507	608	297	278	296	217	266
12	181	238	171	1680	415	453	705	272	270	297	223	159
13	160	200	172	433	755	410	600	261	268	310	229	135
14	281	166	184	2210	554	410	490	252	281	306	596	145
15	243	172	199	5020	429	630	445	236	273	305	381	178
16	221	179	206	1730	411	789	477	225	218	306	193	e17200
17	209	187	199	881	394	923	877	218	220	309	112	e30700
18	194	190	194	3360	1750	1010	574	214	218	325	174	e4260
19	186	186	190	6050	1610	698	487	728	223	334	186	878
20	188	188	187	1320	844	560	512	1330	209	338	180	656
21	203	189	192	795	635	619	695	468	249	322	223	585
22	209	175	196	1100	504	10400	574	337	254	308	136	562
23	203	173	188	983	406	3720	572	307	218	286	135	460
24	195	192	187	3600	408	1880	939	780	214	280	141	366
25	195	198	180	2770	376	1330	639	1270	246	310	170	313
26	203	294	185	1270	370	1020	552	626	267	313	407	270
27	195	341	217	850	350	863	502	368	255	318	671	242
28	222	202	214	689	411	918	458	308	274	318	241	229
29	239	185	230	583	---	839	437	275	299	324	134	218
30	183	178	261	497	---	680	412	250	357	337	99	550
31	181	---	178	429	---	603	---	229	---	329	132	---
TOTAL	7941	6012	5949	54382	19333	38868	16777	13025	7341	9317	7953	60543
MEAN	256	200	192	1754	690	1254	559	420	245	301	257	2018
MAX	1140	341	261	6050	2100	10400	939	1330	357	338	671	30700
MIN	160	166	170	336	350	410	406	214	193	216	99	135

01400500 RARITAN RIVER AT MANVILLE, NJ--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1904 - 1999, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	462	675	888	1006	1069	1364	1161	807	524	472	458	475
MAX	2433	2460	2877	3856	2406	3260	3507	2707	2581	2542	2552	2068
(WY)	1904	1933	1997	1979	1925	1936	1983	1989	1972	1975	1955	1971
MIN	64.8	87.5	148	188	265	354	259	212	88.8	65.1	50.5	51.2
(WY)	1942	1932	1966	1966	1934	1981	1985	1926	1965	1955	1932	1941

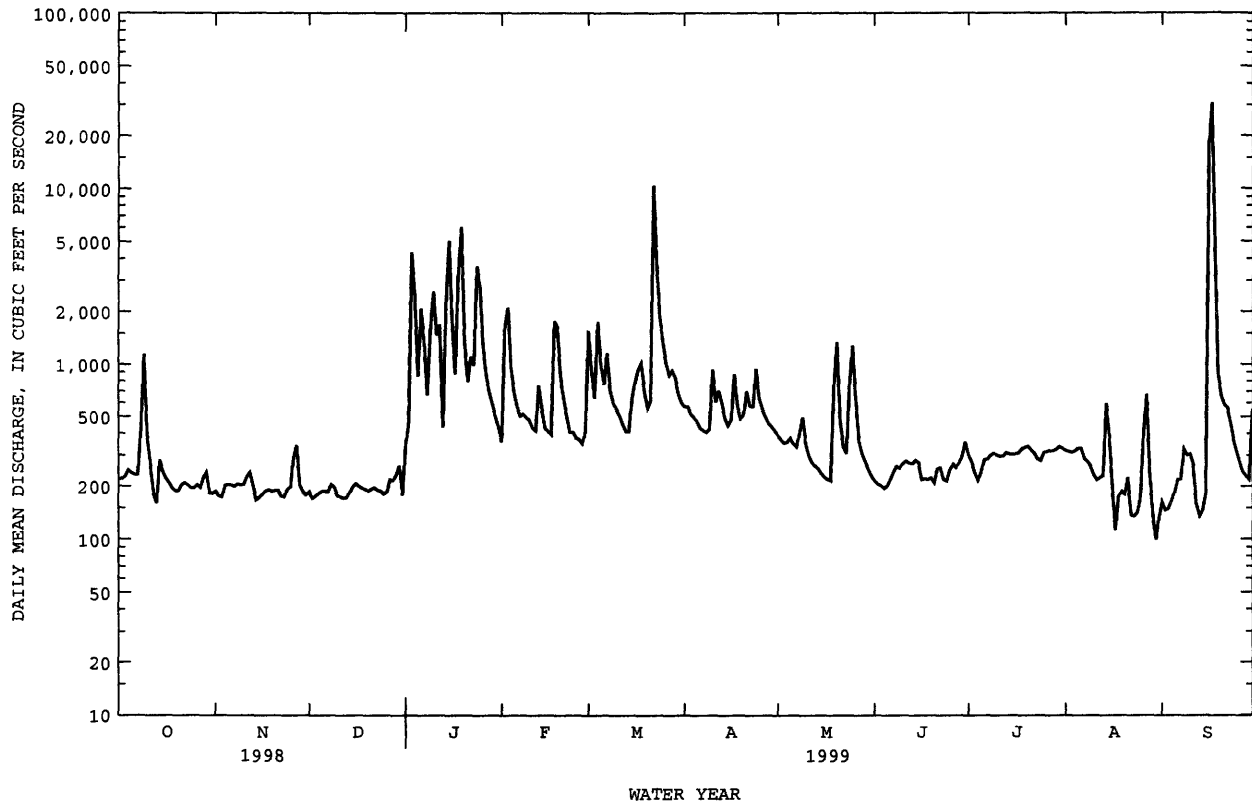
SUMMARY STATISTICS FOR 1998 CALENDAR YEAR FOR 1999 WATER YEAR WATER YEARS 1904 - 1999

ANNUAL TOTAL	289461	247441	
ANNUAL MEAN	793	678	779
HIGHEST ANNUAL MEAN			1365
LOWEST ANNUAL MEAN			309
HIGHEST DAILY MEAN	7910	Apr 10	30700
LOWEST DAILY MEAN	160	Oct 13	99
ANNUAL SEVEN-DAY MINIMUM	180	Nov 29	141
INSTANTANEOUS PEAK FLOW			77600b
INSTANTANEOUS PEAK STAGE			27.49
INSTANTANEOUS LOW FLOW			95
10 PERCENT EXCEEDS	1850	1010	1600
50 PERCENT EXCEEDS	355	306	440
90 PERCENT EXCEEDS	188	181	140

a Does not include water diverted to Johns-Manville plant.

b From rating curve extended above 14,000 ft³/sec on basis of slope-area measurements at gage heights 14.9, 20.42, and 27.49 ft.

e Estimated



RARITAN RIVER BASIN

01401000 STONY BROOK AT PRINCETON, NJ

LOCATION.--Lat 40°19'59", long 74°40'56", Mercer County, Hydrologic Unit 02030105, on right bank 10 ft downstream from bridge on U.S. Highway 206, 1.6 mi southwest of Princeton, and 4.0 mi upstream from Carnegie Lake.

DRAINAGE AREA.--44.5 mi².

PERIOD OF RECORD.--October 1953 to current year.

GAGE.--Water-stage recorder, crest-stage gage, and concrete control. Datum of gage is 62.23 ft above sea level (levels from New Jersey Geological Survey bench mark).

REMARKS.--Records fair. Since July 1959 some regulation by several small reservoirs, combined capacity, 49,800,000 gal. Several measurements of water temperature, other than those published, were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,800 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 18	2200	1,920	5.61	May 24	1915	2,100	5.86
Mar 22	0700	3,900	8.30	Sep 16	2115	*8,780	*14.02

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.98	1.3	1.6	2.5	e5.8	213	31	21	8.4	2.2	.39	2.2
2	.88	1.3	1.5	1.8	290	84	33	18	7.1	3.8	.63	2.3
3	.89	1.6	1.7	376	224	44	30	17	6.2	8.1	.72	2.0
4	1.5	1.8	1.7	99	78	178	28	17	5.3	5.1	.36	2.1
5	1.7	1.7	1.7	e6.2	45	70	27	17	4.1	2.8	.30	2.7
6	1.4	1.7	1.6	e6.0	28	54	25	17	3.9	2.1	.54	3.1
7	1.5	1.6	1.6	e5.2	23	e140	23	16	3.6	1.6	.61	3.9
8	32	1.8	1.9	3.6	31	e44	21	16	3.4	1.3	1.0	5.5
9	38	1.9	2.2	20	e33	e31	21	20	2.9	1.0	1.1	14
10	6.8	1.9	2.1	e50	e25	e28	142	17	2.6	1.1	.55	64
11	4.0	3.7	2.1	e13	e20	e26	81	14	2.4	.88	.45	22
12	2.7	2.3	1.9	e9.3	e18	22	176	12	2.3	.79	.43	7.1
13	2.0	2.0	1.9	e13	e17	19	101	12	2.3	.77	.42	4.4
14	3.6	1.8	1.8	15	e14	19	55	11	2.5	.66	183	3.3
15	3.5	1.7	1.7	524	e12	46	39	10	5.1	.69	15	3.2
16	2.8	1.7	1.7	e150	e13	74	39	9.2	4.2	.69	6.1	3730
17	2.0	1.6	1.7	e56	e15	202	108	9.1	3.0	.72	2.9	1990
18	1.6	1.6	1.7	699	357	195	72	9.1	2.7	.60	2.4	126
19	1.5	1.5	1.5	329	e98	79	48	28	2.5	.63	2.2	60
20	1.3	1.5	1.7	69	e31	45	38	66	2.5	1.3	3.4	37
21	1.4	1.6	2.0	34	e17	135	37	25	2.8	.95	4.1	41
22	1.7	1.6	2.0	53	e11	1950	35	15	2.8	1.2	3.2	43
23	2.0	1.7	1.8	52	e8.8	250	41	14	2.5	1.3	2.3	30
24	1.9	1.9	2.0	528	e9.4	145	129	587	2.2	1.1	1.9	20
25	1.7	1.6	2.0	e165	e14	113	59	381	2.0	.82	1.7	17
26	1.5	3.3	1.9	e47	17	81	40	102	1.8	.67	86	14
27	1.3	5.2	1.9	e26	15	63	33	46	1.7	.56	172	12
28	1.2	3.1	2.0	e17	31	59	28	28	1.6	.44	14	12
29	1.4	2.3	2.7	e13	---	53	26	20	1.6	.50	5.4	12
30	1.3	1.9	3.4	e9.0	---	41	24	13	1.6	.46	3.3	28
31	1.3	---	3.0	e7.6	---	34	---	10	---	.41	2.5	---
TOTAL	127.35	60.2	60.0	3399.2	1501.0	4537	1590	1597.4	97.6	45.24	518.90	6313.8
MEAN	4.11	2.01	1.94	110	53.6	146	53.0	51.5	3.25	1.46	16.7	210
MAX	38	5.2	3.4	699	357	1950	176	587	8.4	8.1	183	3730
MIN	.88	1.3	1.5	1.8	5.8	19	21	9.1	1.6	.41	.30	2.0
CFSM	.09	.05	.04	2.46	1.20	3.29	1.19	1.16	.07	.03	.38	4.73
IN.	.11	.05	.05	2.84	1.25	3.79	1.33	1.34	.08	.04	.43	5.28

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 1999, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)
28.6	52.2	90.2	98.7	104	133
181	212	363	319	203	337
1997	1973	1997	1996	1971	1994
1.00	1.50	1.94	3.22	19.7	31.3
1958	1966	1999	1981	1978	1985
106	64.1	32.6	32.4	30.0	30.8
295	216	165	216	240	210
1983	1989	1975	1955	1999	1999
20.9	8.95	2.67	.56	.14	1.31
1985	1985	1963	1957	1957	1966
1957	1957	1966	1970		

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

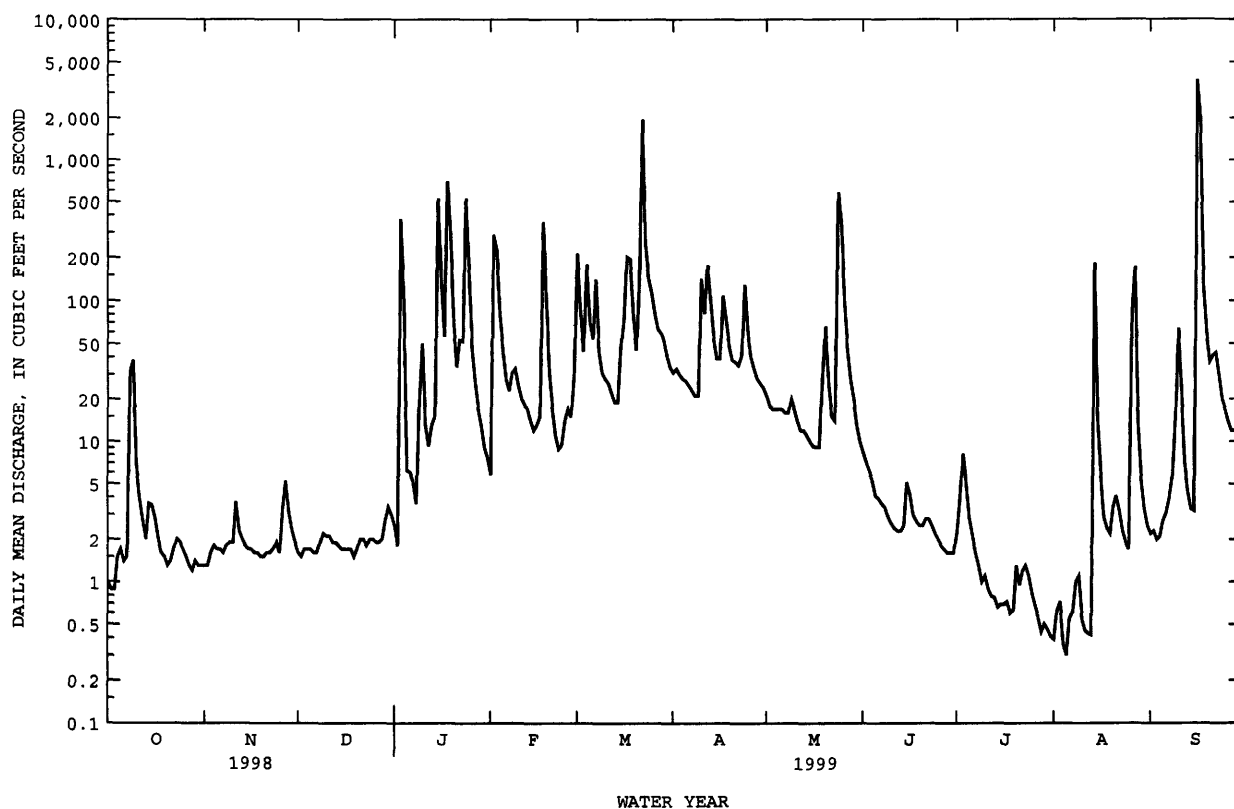
WATER YEARS 1954 - 1999

ANNUAL TOTAL	27352.73	19847.69	66.7
ANNUAL MEAN	74.9	54.4	118
HIGHEST ANNUAL MEAN			28.5
LOWEST ANNUAL MEAN			1966
HIGHEST DAILY MEAN	1510	3730	3730
LOWEST DAILY MEAN	.66	.30	.00
ANNUAL SEVEN-DAY MINIMUM	.84	.47	.00
INSTANTANEOUS PEAK FLOW		8780 a	8960 a
INSTANTANEOUS PEAK STAGE		14.02	14.26
INSTANTANEOUS LOW FLOW		.26	.00
ANNUAL RUNOFF (CFSM)	1.68	1.22	1.50
ANNUAL RUNOFF (INCHES)	22.87	16.59	20.38
10 PERCENT EXCEEDS	154	85	141
50 PERCENT EXCEEDS	9.0	5.2	22
90 PERCENT EXCEEDS	1.4	1.2	2.0

01401000 STONY BROOK AT PRINCETON, NJ--Continued

e Estimated

a From rating extended above 4,000 ft³/s on basis of contracted-opening measurement of peak flow.



01401650 PIKE RUN AT BELLE MEAD, NJ

LOCATION.--Lat 40°28'05", long 74°38'57", Somerset County, Hydrologic Unit 02030105, on right bank 20 ft upstream from bridge on Township Line Road, 0.7 mi east of Belle Mead, 0.8 mi upstream from Cruiser Brook, and 1.0 mi downstream from bridge on U.S. Route 206.

DRAINAGE AREA.--5.36 mi².

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

GAGE.--Water-stage recorder, crest-stage gage, and concrete parking-block control. Datum of gage is 58.85 ft above sea level.

REMARKS.--Records fair. Several measurements of water temperature were made during the year. Some regulation during summer months, possibly from irrigation. Rain-gage and gage-height radio telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1810, 13.5 ft, Aug. 28, 1971, from floodmark, present datum.

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)
Jan 3	1245	308	5.35	Mar 22	0430	1,090	8.04
Jan 18	2045	382	5.70	Sep 16	1500	*8,200	*13.61

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.01	.09	2.3	39	2.9	1.8	1.2	.00	.00	1.1
2	.00	.00	.00	.00	60	9.3	3.2	1.6	1.1	.00	.00	1.2
3	.00	.00	.00	88	28	6.2	2.6	1.6	.93	.00	.00	1.2
4	.00	.00	.00	11	10	39	2.6	1.6	.80	.00	.00	.69
5	.00	.00	.00	8.2	6.2	8.5	2.3	1.7	.71	.00	.00	.60
6	.00	.00	.00	1.8	4.5	9.7	2.2	1.5	.60	.00	.00	.71
7	.00	.00	.00	1.4	3.7	17	2.2	1.5	.57	.00	.00	.80
8	9.2	.00	.07	1.1	5.7	6.4	2.1	2.0	.50	.00	.00	6.4
9	4.7	.00	.38	16	5.9	4.3	3.4	2.6	.43	.00	.00	2.2
10	1.4	.05	.25	13	5.5	4.0	16	1.6	.39	.00	.00	14
11	.82	.84	.07	11	3.7	3.4	4.8	1.3	.24	.00	.00	4.1
12	.43	1.0	.00	3.4	3.9	2.8	7.5	1.2	.20	.00	.00	1.5
13	.15	.30	.00	7.3	11	2.5	4.3	1.2	.36	.00	.00	.97
14	2.4	.02	.00	4.2	4.1	2.7	3.3	1.2	.76	.00	20	.80
15	.86	.00	.00	66	3.3	6.4	2.7	1.1	1.1	.00	1.3	1.5
16	.34	.00	.00	21	3.1	22	5.5	1.1	.44	.00	16	e1590
17	.06	.00	.00	18	3.1	28	9.3	1.1	.34	.00	1.1	e51
18	.00	.00	.00	133	61	16	4.2	1.1	.38	.00	.42	e7.6
19	.00	.00	.00	37	19	7.0	3.4	19	.23	.00	.11	e3.0
20	.00	.00	.00	12	8.2	4.8	3.6	11	.08	.00	.27	e1.7
21	.00	.00	.00	8.9	5.3	36	3.9	2.7	.23	.00	.99	3.0
22	.00	.00	.02	16	3.8	315	3.5	2.0	.38	.00	.43	3.2
23	.00	.00	.02	15	6.7	21	7.9	2.3	.16	.00	.12	1.8
24	.00	.00	.00	87	2.4	11	13	69	.00	.00	.00	1.1
25	.00	.00	.00	29	2.3	7.8	4.9	22	.00	.00	.00	.66
26	.00	3.5	.00	13	2.3	5.7	3.8	5.6	.00	.00	18	.40
27	.00	1.9	.00	7.8	2.2	4.7	2.9	3.4	.00	.00	51	.32
28	.00	.52	.00	6.0	7.5	5.1	2.4	2.4	.00	.00	3.6	.23
29	.21	.24	.17	4.4	---	4.2	2.2	2.0	.00	.00	1.7	.12
30	.00	.09	2.1	3.3	---	3.5	2.1	1.6	.00	.00	1.2	5.3
31	.00	---	.56	2.6	---	2.9	---	1.3	---	.00	1.1	---
TOTAL	20.57	8.46	3.65	646.49	284.7	655.9	134.7	171.1	12.13	0.00	117.34	1707.20
MEAN	.66	.28	.12	20.9	10.2	21.2	4.49	5.52	.40	.000	3.79	56.9
MAX	9.2	3.5	2.1	133	61	315	16	69	1.2	.00	51	1590
MIN	.00	.00	.00	.00	2.2	2.5	2.1	1.1	.00	.00	.00	.12
CFSM	.12	.05	.02	3.89	1.90	3.95	.84	1.03	.08	.00	.71	10.6
IN.	.14	.06	.03	4.49	1.98	4.55	.93	1.19	.08	.00	.81	11.8

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 1999, BY WATER YEAR (WY)

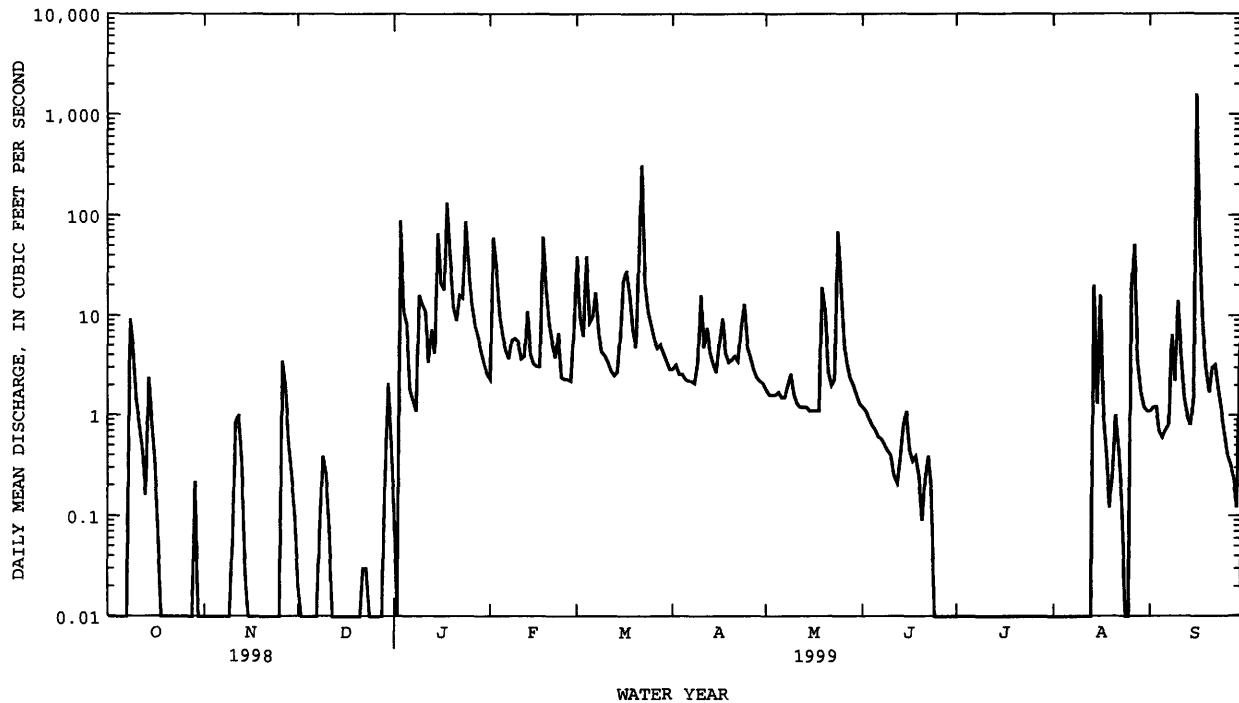
MEAN	5.61	8.30	11.4	14.5	12.9	14.8	13.2	9.15	4.59	6.33	3.14	5.55
MAX	40.1	22.3	35.5	43.3	27.5	38.8	43.1	26.2	20.9	26.1	9.94	56.9
(WY)	1997	1989	1997	1996	1994	1994	1983	1989	1989	1984	1990	1999
MIN	.55	.28	.12	.043	4.74	3.05	2.18	1.89	.37	.000	.17	.51
(WY)	1995	1999	1999	1981	1992	1981	1985	1986	1995	1999	1980	1983

01401650 PIKE RUN AT BELLE MEAD, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1980 - 1999
ANNUAL TOTAL	3053.52	3762.24	
ANNUAL MEAN	8.37	10.3	9.16
HIGHEST ANNUAL MEAN			14.3 1984
LOWEST ANNUAL MEAN			3.79 1981
HIGHEST DAILY MEAN	184 Jan 23	1590 Sep 16	1590 Sep 16 1999
LOWEST DAILY MEAN	.00 Oct 1	.00 Oct 1	.00 Aug 20 1980
ANNUAL SEVEN-DAY MINIMUM	.00 Oct 1	.00 Oct 1	.00 Aug 20 1980
INSTANTANEOUS PEAK FLOW		8200 Sep 16	8200 Sep 16 1999
INSTANTANEOUS PEAK STAGE		13.61a Sep 16	13.61a Sep 16 1999
INSTANTANEOUS LOW FLOW		.00 Oct 1	.00 Aug 20 1980
ANNUAL RUNOFF (CFSM)	1.56	1.92	1.71
ANNUAL RUNOFF (INCHES)	21.19	26.11	23.22
10 PERCENT EXCEEDS	15	13	16
50 PERCENT EXCEEDS	1.4	1.1	2.7
90 PERCENT EXCEEDS	.00	.00	.25

a From high-water mark in gage.

e Estimated.



01402000 MILLSTONE RIVER AT BLACKWELLS MILLS, NJ

LOCATION.--Lat 40°28'30", long 74°34'34", Somerset County, Hydrologic Unit 02030105, on left bank 30 ft downstream from highway bridge at Blackwells Mills, and 0.3 mi downstream from Six Mile Run.

DRAINAGE AREA.--258 mi².

PERIOD OF RECORD.--June 1903 to December 1904 (gage heights only), August 1921 to current year. Monthly discharge only for some periods, published in WSP 1302. Published as "at Millstone" 1903-04.

REVISED RECORDS.--WSP 1552: 1924-25(M), 1926.

GAGE.--Water-stage recorder. Concrete control since Nov. 18, 1933. Datum of gage is 26.97 ft above sea level. June 27, 1903 to Dec. 31, 1904, nonrecording gage at bridge 2.0 mi downstream at Millstone at different datum. Aug. 4, 1921 to Aug. 16, 1928, nonrecording gage at present site and datum.

REMARKS.--Records good. Inflow from and losses to Delaware and Raritan Canal above station. Flow slightly regulated by Carnegie Lake, capacity, 310,000,000 gal and several smaller reservoirs, combined capacity, 49,800,000 gal. Several measurements of water temperature were made during the year. National Weather Service gage-height telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 19	0800	3,250	7.72	Sep 17	0400	*26,200	*21.01
Mar 22	1915	5,850	10.46				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

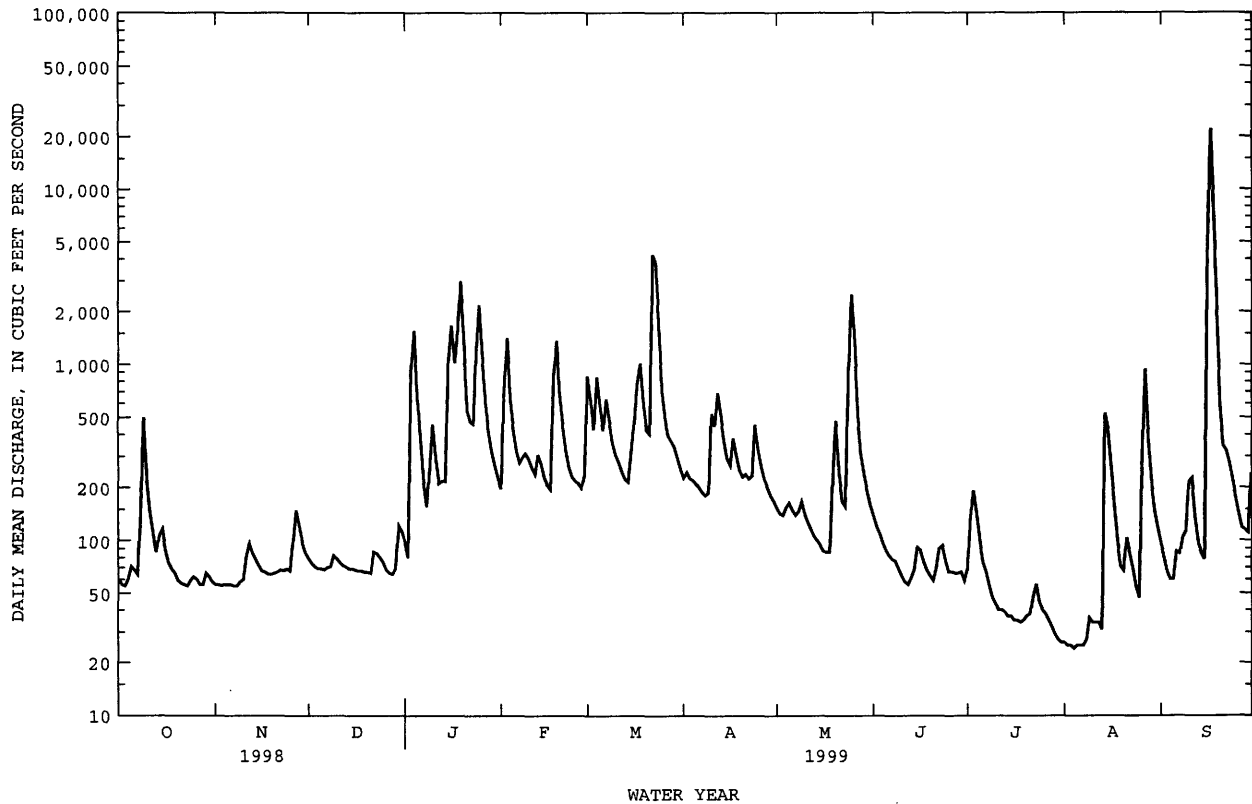
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	56	79	98	197	856	227	153	138	69	26	95
2	56	56	74	80	704	625	244	142	120	137	25	80
3	55	55	71	928	1410	428	225	139	109	191	25	66
4	60	56	69	1550	625	845	219	154	96	140	24	60
5	71	56	69	638	423	578	209	163	88	98	25	60
6	68	56	68	395	322	422	201	149	82	75	25	86
7	64	55	70	216	277	634	188	139	78	66	25	84
8	140	55	71	156	296	479	180	146	76	55	27	104
9	498	58	82	260	311	363	186	166	69	47	36	112
10	224	60	79	455	291	309	523	141	63	43	34	216
11	145	81	75	292	259	278	446	126	58	40	34	226
12	107	96	72	211	238	246	688	115	56	40	34	135
13	86	85	71	218	306	223	520	105	61	39	31	96
14	107	78	69	217	273	215	372	99	68	37	527	84
15	116	72	69	1060	228	312	293	93	91	37	420	78
16	88	67	68	1660	207	457	268	87	88	35	254	5350
17	75	66	67	1020	196	762	379	86	76	35	157	22000
18	69	64	67	1530	819	1010	305	86	68	34	98	7310
19	65	64	66	2980	1360	598	250	219	63	35	71	2210
20	59	65	66	1340	668	422	230	478	59	37	67	572
21	57	66	65	546	449	403	238	241	69	38	103	344
22	56	68	86	473	325	4220	224	167	90	48	84	325
23	55	67	84	459	259	3830	233	156	93	56	69	278
24	59	69	80	1200	229	1630	453	856	77	44	54	224
25	62	67	75	2180	217	701	327	2490	66	40	47	179
26	60	99	68	1090	211	486	262	1480	66	38	311	144
27	56	148	65	586	199	393	222	520	65	35	937	118
28	56	120	64	408	237	366	201	310	65	32	379	115
29	65	97	69	319	---	342	181	236	66	29	207	111
30	62	85	121	266	---	296	168	190	59	27	144	240
31	58	---	112	226	---	256	---	159	---	26	116	---
TOTAL	2859	2187	2311	23057	11536	22985	8662	9791	2323	1703	4416	41102
MEAN	92.2	72.9	74.5	744	412	741	289	316	77.4	54.9	142	1370
MAX	498	148	121	2980	1410	4220	688	2490	138	191	937	22000
MIN	55	55	64	80	196	215	168	86	56	26	24	60
CFSM	.36	.28	.29	2.88	1.60	2.87	1.12	1.22	.30	.21	.55	5.31
IN.	.41	.32	.33	3.32	1.66	3.31	1.25	1.41	.33	.25	.64	5.93

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1999, BY WATER YEAR (WY)

	199	332	465	521	569	694	542	364	237	245	216	231
MEAN	199	332	465	521	569	694	542	364	237	245	216	231
MAX	1079	1113	1550	1743	1199	1882	1520	1264	823	1808	1267	1370
(WY)	1997	1973	1997	1979	1925	1994	1983	1989	1989	1975	1971	1999
MIN	42.6	51.2	67.0	62.9	105	158	103	82.8	45.5	19.3	17.3	20.2
(WY)	1942	1966	1966	1981	1934	1985	1985	1963	1963	1966	1981	1980

01402000 MILLSTONE RIVER AT BLACKWELLS MILLS, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1922 - 1999	
ANNUAL TOTAL	153283		132932		384	
ANNUAL MEAN	420		364		690	
HIGHEST ANNUAL MEAN					165	
LOWEST ANNUAL MEAN					1975	
HIGHEST DAILY MEAN	4950	May 11	22000	Sep 17	22000	Sep 17 1999
LOWEST DAILY MEAN	48	Aug 9	24	Aug 4	5.0	Sep 16 1923
ANNUAL SEVEN-DAY MINIMUM	53	Aug 4	25	Aug 1	6.3	Aug 7 1966
INSTANTANEOUS PEAK FLOW			26200	Sep 17	26200	Sep 17 1999
INSTANTANEOUS PEAK STAGE			21.01	Sep 17	21.01	Sep 17 1999
INSTANTANEOUS LOW FLOW			22	Aug 4	5.0	Sep 16 1923
ANNUAL RUNOFF (CFSM)	1.63		1.41		1.49	
ANNUAL RUNOFF (INCHES)	22.10		19.17		20.20	
10 PERCENT EXCEEDS	965		625		825	
50 PERCENT EXCEEDS	153		115		199	
90 PERCENT EXCEEDS	58		52		58	



01403060 RARITAN RIVER BELOW CALCO DAM. AT BOUND BROOK, NJ

LOCATION.--Lat 40°33'05", long 74°32'54", Somerset County, Hydrologic Unit 02030105, on right bank 1,000 ft downstream from Calco Dam and Cuckold Brook, 1,400 ft upstream from bridge on Interstate 287, 1.2 mi downstream from Millstone River, and 1.2 mi southwest of Bound Brook.

DRAINAGE AREA.--785 mi² (includes 11 mi² which drains into the Delaware and Raritan Canal).

PERIOD OF RECORD.--September 1903 to March 1909, October 1944 to current year. Monthly discharge only for some periods, published in WSP 1302. Prior to October 1966 published as "Raritan River at Bound Brook" (station 01403000).

REVISED RECORDS.--WSP 1552: 1903-07, 1946 (M), 1949, 1952 (P).

GAGE.--Water-stage recorder. Datum of gage is sea level. Sept. 12, 1903 to Mar. 31, 1909, nonrecording gages at highway bridge, 1.2 mi downstream at different datum. October 1944 to Sept. 30, 1966, water-stage recorder and concrete control at site 1.000

ft upstream at datum 18.06 ft higher.

REMARKS.--Records good. Water diverted 1.2 mi above station by Elizabethtown Water Co. for municipal supply (see Raritan River basin, diversions). Flow regulated by Spruce Run and Round Valley Reservoirs (see Raritan River basin, reservoirs in). Diversions to and releases from Round Valley Reservoir (see Raritan River basin, diversions and station 01399690). Slight diurnal fluctuations at low flow. Several measurements of water temperature were made during the year. National Weather Service gage-height telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 12,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 19	0900	13,000	25.96	Sep 17	0600	*82,900	*42.13
Mar 22	1815	18,100	28.36				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	157	170	173	220	462	2650	769	430	240	224	150	152
2	156	154	151	194	2360	1790	790	392	197	260	135	121
3	163	144	157	3830	3910	1160	704	372	179	273	143	110
4	196	172	151	4700	1860	2860	674	392	149	195	145	122
5	196	169	161	1140	1260	1840	622	426	137	152	156	146
6	193	168	161	652	931	1310	554	395	169	161	190	217
7	188	164	157	458	780	2050	529	379	153	144	173	209
8	468	175	182	282	809	1330	503	475	171	149	186	354
9	1790	158	189	739	810	999	540	597	144	153	169	344
10	569	172	162	1820	771	865	1560	400	159	155	148	437
11	362	220	154	689	662	777	1100	319	161	146	129	430
12	215	256	149	432	623	673	1450	290	154	146	133	223
13	178	203	149	491	1150	585	1180	281	180	172	134	147
14	328	157	147	591	854	571	833	267	204	148	1100	136
15	291	157	154	2710	621	953	674	239	253	152	772	183
16	232	153	169	3510	570	1380	693	210	180	137	390	e12400
17	210	163	165	2060	538	1850	1330	194	182	124	192	e61000
18	187	165	160	4490	2690	2180	868	193	167	126	181	e12400
19	163	158	155	9020	3270	1450	672	916	142	139	162	e3550
20	160	172	157	2970	1770	1020	663	2070	134	185	154	e1750
21	175	173	153	1530	1210	1040	894	685	193	180	250	1190
22	168	160	173	1820	852	12600	742	436	221	193	156	1120
23	174	148	169	1650	631	8410	739	398	168	161	120	839
24	168	164	157	4830	590	3710	1470	1630	117	128	103	613
25	171	159	153	5440	532	2350	965	3500	136	148	118	478
26	180	303	146	2670	524	1750	758	2200	146	145	649	376
27	171	415	169	1680	487	1410	644	918	125	141	1730	326
28	203	241	168	1230	590	1430	561	553	144	139	603	284
29	233	192	193	930	---	1300	514	417	188	145	287	284
30	171	169	269	724	---	1010	469	347	253	153	158	789
31	162	---	176	583	---	838	---	284	---	160	149	---
TOTAL	8378	5574	5129	64085	32117	64141	24464	20605	5146	5034	9265	100730
MEAN	270	186	165	2067	1147	2069	815	665	172	162	299	3358
MAX	1790	415	269	9020	3910	12600	1560	3500	253	273	1730	61000
MIN	156	144	146	194	462	571	469	193	117	124	103	110

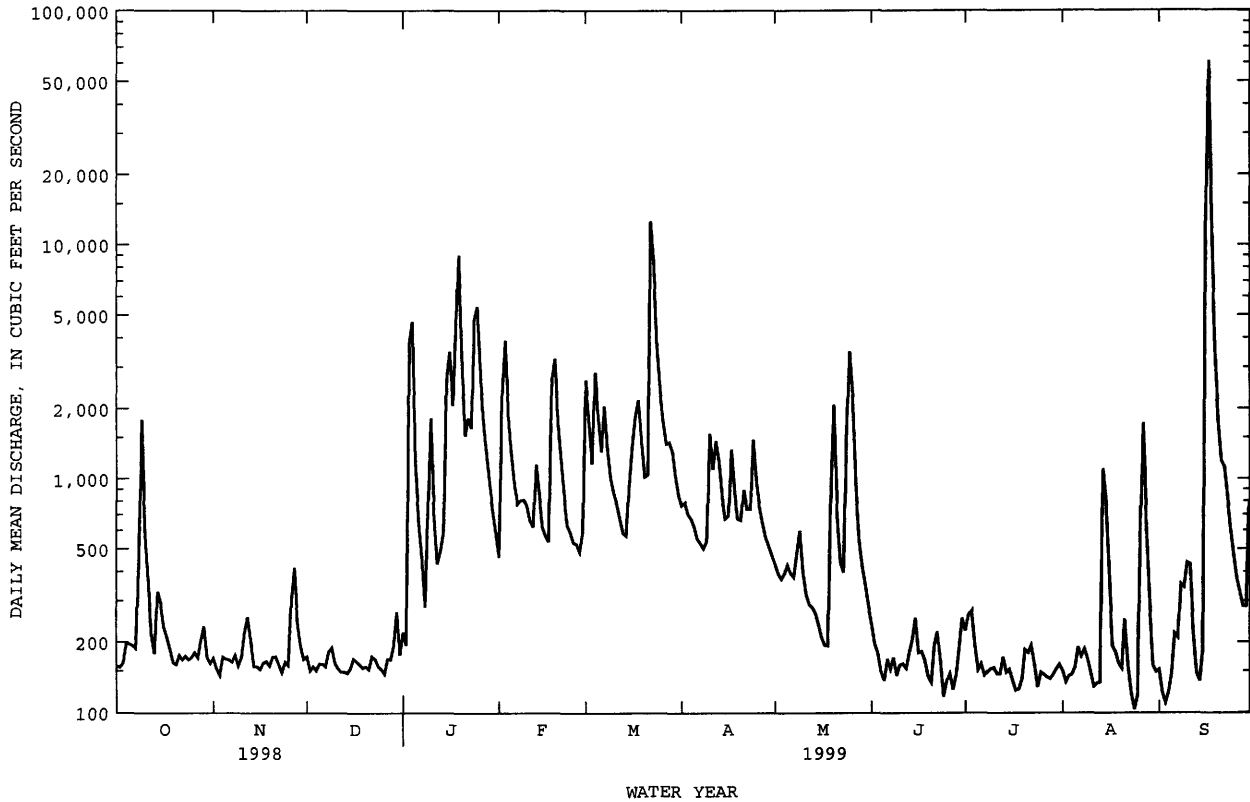
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1903 - 1999, BY WATER YEAR (WY)

MEAN	676	1034	1473	1628	1691	2155	1770	1275	760	679	651	690
MAX	2953	3684	4615	5825	3232	5093	5326	3862	3883	4624	3576	3358
(WY)	1904	1973	1997	1979	1971	1994	1983	1989	1972	1975	1955	1999
MIN	113	138	165	179	485	454	230	329	117	84.7	69.9	76.1
(WY)	1958	1966	1999	1981	1980	1985	1985	1992	1965	1955	1957	1957

01403060 RARITAN RIVER BELOW CALCO DAM, AT BOUND BROOK, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1903 - 1999	
ANNUAL TOTAL	411675		344668		1204	
ANNUAL MEAN	1128		944		2046	
HIGHEST ANNUAL MEAN					480	
LOWEST ANNUAL MEAN					1204	
HIGHEST DAILY MEAN	12000	May 12	61000	Sep 17	61000	Sep 17 1999
LOWEST DAILY MEAN	133	Aug 30	103	Aug 24	37	Sep 6 1964
ANNUAL SEVEN-DAY MINIMUM	154	Sep 27	137	Aug 30	46	Sep 4 1957
INSTANTANEOUS PEAK FLOW			82900	Sep 17	82900	Sep 17 1999
INSTANTANEOUS PEAK STAGE			42.13a	Sep 17	42.13a	Sep 17 1999
INSTANTANEOUS LOW FLOW			79	Aug 24	---	
10 PERCENT EXCEEDS	2840		1790		2610	
50 PERCENT EXCEEDS	367		256		632	
90 PERCENT EXCEEDS	157		146		168	

a From floodmark, highest since 1896.
e Estimated



LOCATION.--Lat 40°36'44", long 74°35'28", Somerset County, Hydrologic Unit 02030105, on left bank 150 ft upstream from bridge on Crim Road, 1.4 mi northwest of Martinsville, and 1.8 mi upstream from confluence with East Branch, Middle Brook.

PERIOD OF RECORD.--June 1979 to current year.

REVISED RECORDS.--WDR NJ-91-1: 1990. WDR NJ-96-1: 1980-94 (P).

GAGE.--Water-stage recorder. Datum of gage is 240.48 ft above sea level (levels by Somerset County).

REMARKS.--Records fair. Several measurements of water temperature were made during the year. Rain-gage and gage-height radio
telemeter at station.

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)
Jan 3	0945	406	5.67	Mar 22	0145	462	5.92
Jan 18	1730	304	5.16	Sep 16	1645	*1,490	*9.30
Jan 24	1045	158	4.33				

REVISIONS.--Peak discharges for the annual maximums (*) for the water years 1990 and 1997 have been revised as shown in the following table. They supersede the peak flows published in the state report for water years 1990 and 1997.

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 16, 1990	0945	*529	*6.21
Oct 19, 1996	1730	*700	*6.89

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

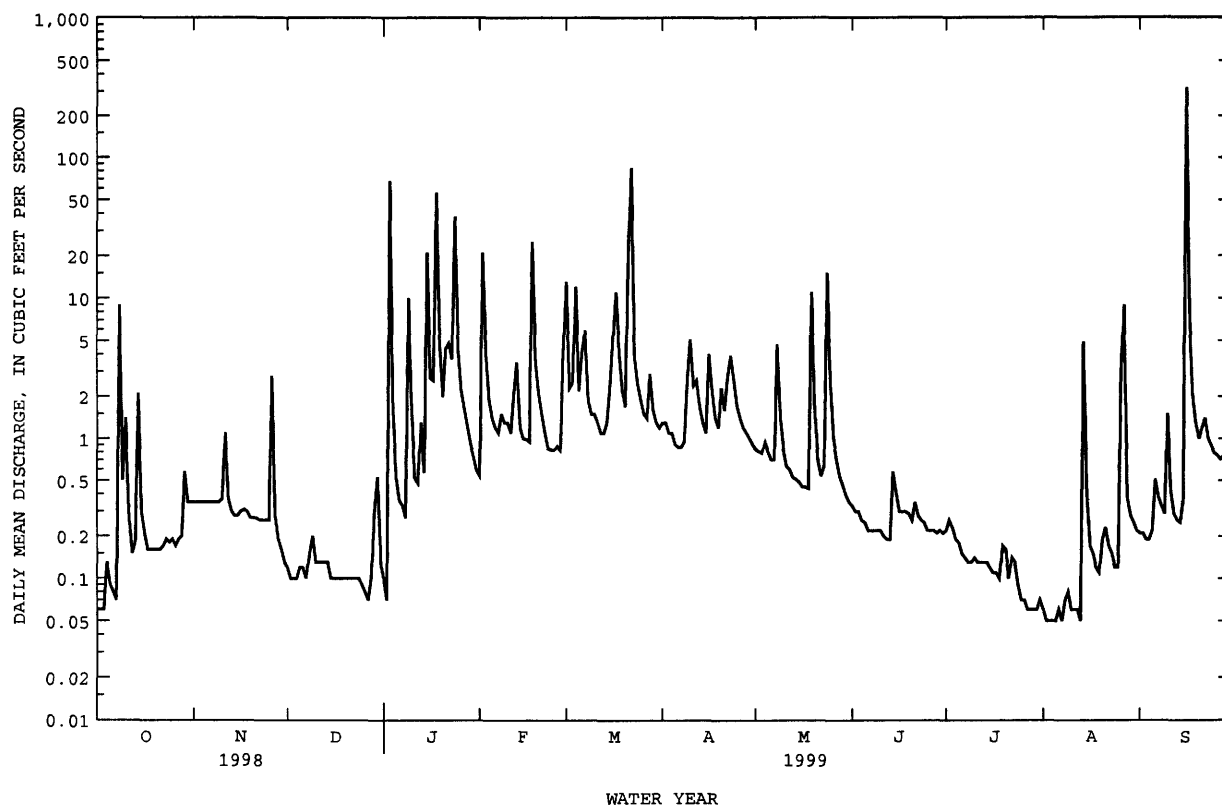
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.06	.35	.12	.10	.54	13	1.3	.84	.33	.22	.06	.21
2	.06	.35	.10	.07	21	2.3	1.3	.81	.30	.26	.05	.21
3	.06	.35	.10	68	4.1	2.5	1.1	.79	.30	.23	.05	.19
4	.13	.35	.10	1.6	1.9	12	1.1	.94	.26	.19	.05	.19
5	.09	.35	.12	.53	1.4	2.2	.91	.81	.25	.18	.05	.22
6	.08	.35	.12	.36	1.2	4.1	.87	.71	.22	.15	.06	.51
7	.07	.35	.10	.33	1.1	5.9	.87	.71	.22	.14	.05	.38
8	8.9	.35	.15	.27	1.5	1.9	.95	4.7	.22	.13	.07	.33
9	.50	.35	.20	10	1.3	1.5	2.6	1.4	.22	.13	.08	.29
10	1.4	.37	.13	1.6	1.3	1.5	5.1	.83	.22	.14	.06	1.5
11	.28	1.1	.13	.52	1.1	1.3	2.4	.63	.20	.13	.06	.42
12	.15	.37	.13	.48	2.1	1.1	2.6	.60	.19	.13	.06	.29
13	.18	.30	.13	1.3	3.5	1.1	1.7	.53	.19	.13	.05	.26
14	2.1	.28	.13	.57	1.2	1.3	1.3	.51	.58	.13	4.9	.25
15	.30	.28	.10	21	1.0	2.3	1.1	.49	.41	.12	.40	.37
16	.21	.30	.10	2.7	.99	5.0	4.0	.45	.30	.11	.17	318
17	.16	.31	.10	2.6	.95	11	2.2	.45	.30	.11	.15	8.2
18	.16	.30	.10	56	25	4.2	1.4	.44	.30	.10	.12	2.1
19	.16	.27	.10	5.3	3.6	2.2	1.2	11	.29	.17	.11	1.3
20	.16	.27	.10	2.0	2.1	1.7	2.3	1.6	.26	.16	.19	1.0
21	.16	.27	.10	4.4	1.5	20	1.6	.70	.35	.10	.23	1.2
22	.17	.26	.10	4.8	1.1	84	2.7	.54	.28	.14	.17	1.4
23	.19	.26	.10	3.7	.85	4.0	3.9	.63	.26	.13	.15	1.0
24	.18	.26	.10	38	.83	2.5	2.6	15	.25	.09	.12	.89
25	.19	.26	.09	4.4	.83	1.9	1.7	2.6	.22	.07	.12	.79
26	.17	2.8	.08	2.2	.88	1.5	1.4	1.0	.22	.07	3.0	.76
27	.19	.28	.07	1.6	.83	1.4	1.2	.71	.22	.06	8.9	.71
28	.20	.19	.10	1.2	4.4	2.9	1.1	.54	.21	.06	.38	.75
29	.58	.16	.30	.90	---	1.6	1.0	.46	.22	.06	.28	.78
30	.35	.13	.53	.74	---	1.3	.90	.39	.21	.06	.25	5.1
31	.35	---	.13	.59	---	1.2	---	.35	---	.07	.22	---
TOTAL	17.94	12.17	4.06	237.86	88.10	200.4	54.40	52.16	8.00	3.97	20.61	349.60
MEAN	.58	.41	.13	7.67	3.15	6.46	1.81	1.68	.27	.13	.66	11.7
MAX	8.9	2.8	.53	68	25	84	5.1	15	.58	.26	8.9	318
MIN	.06	.13	.07	.07	.54	1.1	.87	.35	.19	.06	.05	.19
CF5M	.29	.20	.07	3.86	1.58	3.25	.91	.85	.13	.06	.33	5.86
IN.	.34	.23	.08	4.45	1.65	3.75	1.02	.98	.15	.07	.39	6.55

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1979 - 1999, BY WATER YEAR (WY)

MEAN	2.39	3.63	4.51	4.83	4.22	6.47	5.77	4.70	2.15	2.06	1.04	2.05
MAX	9.28	10.5	11.5	11.9	9.02	21.4	11.6	19.4	6.88	6.40	5.85	11.7
(WY)	1990	1989	1984	1996	1988	1994	1983	1989	1989	1984	1990	1999
MIN	.22	.41	.13	.12	.92	1.64	.74	.76	.27	.083	.12	.11
(WY)	1987	1999	1999	1981	1980	1985	1985	1986	1999	1980	1980	1980

01403150 WEST BRANCH MIDDLE BROOK NEAR MARTINSVILLE, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1979 - 1999	
ANNUAL TOTAL	946.33		1049.27		3.66	
ANNUAL MEAN	2.59		2.87		5.48	
HIGHEST ANNUAL MEAN					1.88	
LOWEST ANNUAL MEAN					1.88	
HIGHEST DAILY MEAN	62	May 11	318	Sep 16	318	Sep 16 1999
LOWEST DAILY MEAN	.04	Sep 12	.05	Aug 2	.00	Sep 19 1980
ANNUAL SEVEN-DAY MINIMUM	.04	Sep 11	.05	Aug 1	.00	Sep 19 1980
INSTANTANEOUS PEAK FLOW			1490	Sep 16	1490	Sep 16 1999
INSTANTANEOUS PEAK STAGE			9.30	Sep 16	9.30	Sep 16 1999
INSTANTANEOUS LOW FLOW			.05	Aug 2	.00	Sep 19 1980
ANNUAL RUNOFF (CFSM)	1.30		1.44		1.84	
ANNUAL RUNOFF (INCHES)	17.69		19.61		24.96	
10 PERCENT EXCEEDS	5.2		3.6		6.2	
50 PERCENT EXCEEDS	.42		.36		.87	
90 PERCENT EXCEEDS	.10		.10		.14	



RARITAN RIVER BASIN

01403400 GREEN BROOK AT SEELEY MILLS, NJ

LOCATION.--Lat 40°39'58", long 74°24'15", Somerset County, Hydrologic Unit 02030105, on right bank at Seeley Mills, 250 ft downstream from Blue Brook, 300 ft downstream from bridge on Diamond Hill Road, and 0.5 mi northwest of Scotch Plains.

DRAINAGE AREA.--6.23 mi².

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1959-64, 1969; annual maximum, water years 1969-79. June 1979 to current year. Fragmentary records 1944-53 in the files of the U.S. Geological Survey. Crest-stage data 1927-38, 1958-68 in files of Union County Park Commission.

REVISED RECORDS.--WDR-NJ 81-1: 1979(M). WDR-NJ 87-1: 1971(M), 1973(M), 1975(M).

GAGE.--Water-stage recorder. Datum of gage is 184.44 ft above sea level. From 1944 to 1953, water-stage recorder and masonry dam about 400 ft downstream, above lower Seeley Mills dam at different datum. From July 1969 to May 1979, crest-stage gage about 450 ft downstream below lower Seeley Mills dam (washed out May 29, 1968) at different datum.

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

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 23, 1938 reached an elevation of 196.5 ft, New Jersey Geological Survey datum, above lower Seeley Mills dam, discharge, 5,840 ft³/s, computed by State Water Policy Commission.

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)
Jan 3	1015	488	3.06	Sep 16	2200	*4,090	*8.50

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.3	.84	.83	1.3	1.6	43	4.5	1.2	.48	.53	e.22	.54
2	.62	.83	.87	1.2	51	15	4.3	1.1	.43	.49	e.22	.49
3	.65	.97	.98	97	40	11	3.6	1.1	.42	.32	e.23	.49
4	1.6	.83	.98	21	17	32	3.1	2.1	.34	.32	e.36	.49
5	.67	.83	1.4	3.6	11	13	2.4	1.3	.30	.30	.63	1.9
6	.62	.83	1.4	1.1	7.4	16	2.3	1.2	.30	.34	.85	12
7	.60	.85	1.2	.74	6.2	23	1.8	1.2	.30	.33	.56	1.4
8	24	.97	2.9	.62	8.0	10	1.7	7.0	.29	.30	.44	.73
9	6.4	.98	2.2	22	6.1	7.8	5.5	3.3	.25	.29	.42	2.1
10	4.4	.98	1.3	9.8	6.1	7.2	9.5	1.3	.23	.33	.36	6.5
11	1.4	5.7	1.2	3.3	4.9	6.0	5.6	1.1	.23	.30	.31	1.4
12	.85	.92	1.1	.96	7.6	4.3	7.4	1.1	.23	.30	.30	.73
13	4.8	.70	1.1	2.3	14	3.6	3.0	.91	.23	.31	.30	.61
14	13	.70	1.1	.99	5.6	5.0	2.0	.64	1.4	.30	23	.55
15	1.7	.70	1.1	43	4.0	11	1.7	.55	.65	.32	7.6	5.8
16	1.2	.70	1.1	21	3.9	13	6.9	.55	.26	.34	.68	e1470
17	.98	.71	1.3	8.6	3.8	23	7.2	.54	.27	.35	.55	e1320
18	.95	.71	1.2	75	45	29	2.5	.73	.27	.37	.53	e33
19	.88	.72	1.1	47	26	16	1.9	7.8	.26	.32	.47	e7.9
20	.83	.78	1.1	14	13	11	7.2	3.8	.26	.30	1.6	e3.2
21	.73	.89	1.1	10	8.9	24	5.3	.72	.49	.33	1.3	4.3
22	.72	.79	1.6	16	5.7	99	4.0	.57	.27	.34	.60	6.6
23	.83	.86	1.2	16	3.8	40	5.3	2.8	.27	.34	.55	2.9
24	.83	.82	1.1	62	3.4	24	7.8	9.6	.29	.34	.55	2.3
25	.89	.77	1.1	42	3.3	17	3.6	14	.27	.33	.54	2.1
26	.83	14	1.1	18	3.4	12	2.7	4.3	.27	.29	32	2.1
27	.92	2.2	1.1	10	3.0	9.9	2.1	1.9	.27	.24	15	2.0
28	1.5	.98	1.2	7.3	17	21	1.8	1.2	.30	e.23	1.5	1.8
29	2.7	.98	7.1	4.7	---	11	1.6	.85	.30	e.23	.72	1.8
30	.83	.89	6.5	3.0	---	6.2	1.7	.61	.30	e.22	.55	16
31	.76	---	1.7	1.9	---	4.8	---	.53	---	e.23	.60	---
TOTAL	80.99	44.43	50.26	565.41	330.7	568.8	120.0	75.60	10.43	9.88	93.54	2911.73
MEAN	2.61	1.48	1.62	18.2	11.8	18.3	4.00	2.44	.35	.32	3.02	97.1
MAX	24	14	7.1	97	51	99	9.5	14	1.4	.53	32	1470
MIN	.60	.70	.83	.62	1.6	3.6	1.6	.53	.23	.22	.22	.49
CFSM	.42	.24	.26	2.93	1.90	2.95	.64	.39	.06	.05	.48	15.6
IN.	.48	.27	.30	3.38	1.97	3.40	.72	.45	.06	.06	.56	17.39

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1979 - 1999, BY WATER YEAR (WY)

	MEAN	7.40	9.60	12.0	12.5	11.8	17.6	18.0	13.1	7.09	6.58	4.45	9.76
MAX	31.9	22.4	46.9	27.1	22.3	40.9	41.1	42.0	23.4	18.9	16.1	97.1	
(WY)	1997	1986	1984	1996	1998	1994	1983	1992	1992	1984	1990	1999	
MIN	1.21	1.48	1.62	1.67	2.95	5.11	3.50	2.44	.35	.32	1.33	1.68	
(WY)	1995	1999	1999	1981	1980	1985	1985	1999	1999	1999	1981	1994	

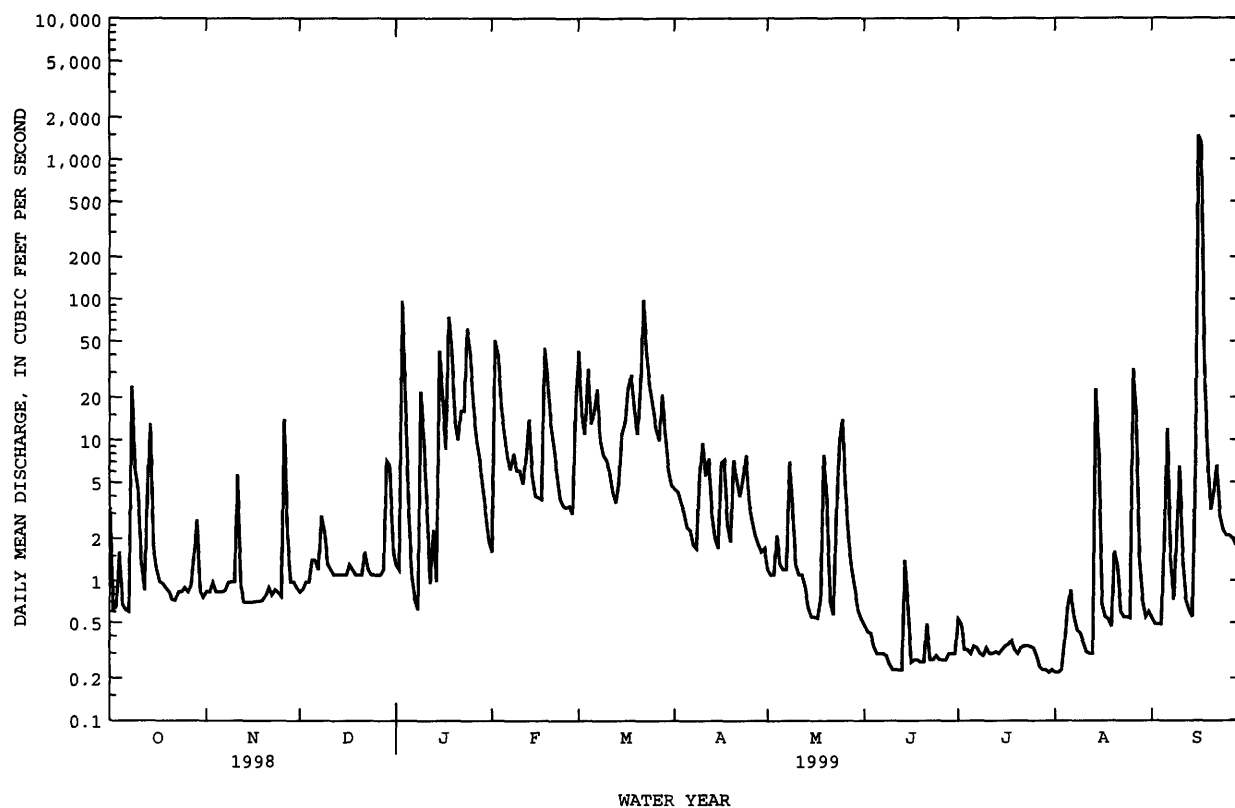
01403400 GREEN BROOK AT SEELEY MILLS, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1979 - 1999
ANNUAL TOTAL	3840.60	4861.77	
ANNUAL MEAN	10.5	13.3	10.8
HIGHEST ANNUAL MEAN			18.2 1984
LOWEST ANNUAL MEAN			5.16 1981
HIGHEST DAILY MEAN	134 Feb 24	1470 Sep 16	1470 Sep 16 1999
LOWEST DAILY MEAN	.60 Oct 7	.22 Jul 30	.00 Sep 11 1981
ANNUAL SEVEN-DAY MINIMUM	.71 Nov 13	.23 Jul 28	.05 Sep 24 1981
INSTANTANEOUS PEAK FLOW		4090 Sep 16	6240a Aug 2 1973
INSTANTANEOUS PEAK STAGE		8.50 Sep 16	16.10b Aug 2 1973
INSTANTANEOUS LOW FLOW		.22 Jul 30	.00 Sep 11 1981
ANNUAL RUNOFF (CFSM)	1.69	2.14	1.74
ANNUAL RUNOFF (INCHES)	22.93	29.03	23.60
10 PERCENT EXCEEDS	23	16	21
50 PERCENT EXCEEDS	3.5	1.2	4.9
90 PERCENT EXCEEDS	.86	.30	1.5

a From rating curve extended above 600 ft³/s on basis of slope area measurement of peak flow.

b Site and datum then in use.

e Estimated



RARITAN RIVER BASIN

01403535 EAST BRANCH STONY BROOK AT BEST LAKE, AT WATCHUNG, NJ

LOCATION.--Lat 40°38'25", long 74°26'52", Somerset County, Hydrologic Unit 02030105, 700 ft upstream from dam on Best Lake in Watchung, 1,400 ft upstream from mouth, and 0.5 mi northeast of Watchung.

DRAINAGE AREA.--1.57 mi².

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

GAGE.--Water-stage recorder above concrete dam. Datum of gage is 193.87 ft above sea level (levels by Somerset County).

REMARKS.--Records fair except those below 2.0 ft³/s which are poor. Records given herein represent flow over dam and leakage through ports in dam. Several measurements of water temperature were made during the year. Rain-gage and gage-height radio telemeter at station.

COOPERATION.--Gage-height record collected in cooperation with Somerset County.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of August 2, 1973, reached a stage of 5.9 ft, present datum, from floodmarks, discharge, 2,840 ft³/s, by computation of flow over dam, embankment, and road.

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)
Jan 3	0915	332	2.31	Sep 16	1230	361	2.38
Jan 18	1745	100	1.69	Sep 16	1600	328	2.30
Mar 22	0315	100	1.69	Sep 16	1815	*2,420	*5.44

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

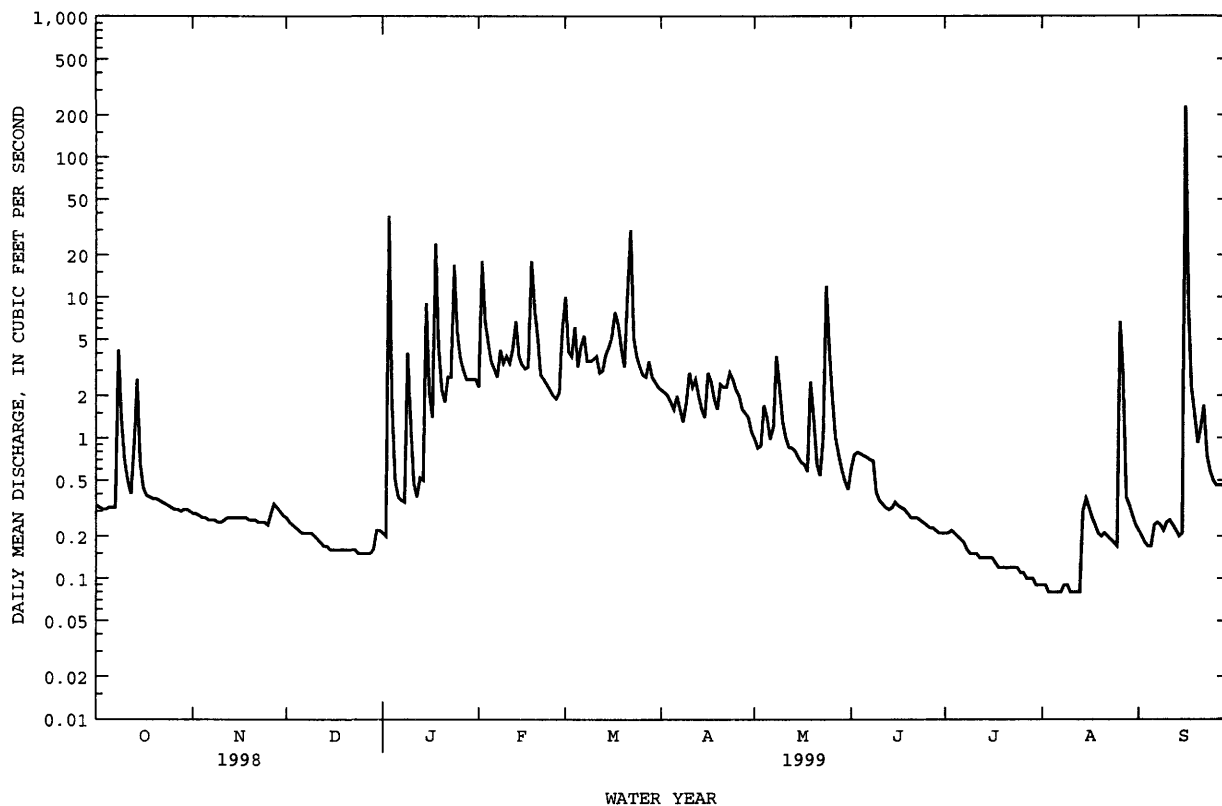
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.33	.29	.27	.21	2.3	10	2.2	.98	.61	.21	.09	.22
2	.32	.29	.25	.20	18	4.1	2.1	.85	.76	.21	.09	.20
3	.31	.28	.24	38	6.7	3.8	2.0	.88	.79	.22	.08	.18
4	.31	.27	.23	1.7	4.7	6.1	1.8	1.7	.77	.21	.08	.17
5	.32	.27	.22	.50	3.5	3.2	1.6	1.4	.75	.20	.08	.17
6	.32	.26	.21	.38	3.1	4.5	2.0	.98	.73	.19	.08	.24
7	.32	.26	.21	.36	2.7	5.3	1.6	1.2	.70	.18	.08	.25
8	4.2	.26	.21	.35	4.2	3.5	1.3	3.8	.69	.16	.09	.24
9	1.3	.25	.21	4.0	3.4	3.5	1.8	2.3	.41	.15	.09	.22
10	.69	.25	.20	1.3	3.8	3.6	2.9	1.3	.36	.15	.08	.25
11	.50	.26	.19	.48	3.4	3.8	2.3	1.0	.34	.15	.08	.26
12	.40	.27	.18	.38	4.3	2.9	2.6	.86	.32	.14	.08	.24
13	.88	.27	.17	.52	6.7	3.0	2.0	.85	.31	.14	.08	.22
14	2.6	.27	.17	.50	3.8	3.9	1.6	.81	.32	.14	.30	.20
15	.66	.27	.16	9.0	3.3	4.4	1.4	.73	.35	.14	.37	.21
16	.44	.27	.16	2.1	3.1	5.3	2.9	.67	.33	.14	.32	230
17	.39	.27	.16	1.4	3.2	7.8	2.5	.65	.32	.13	.27	8.7
18	.38	.27	.16	24	18	6.3	1.9	.58	.31	.12	.24	2.3
19	.37	.26	.16	4.5	8.2	4.3	1.6	2.5	.29	.12	.21	1.5
20	.37	.26	.16	2.2	5.2	3.2	2.4	1.4	.27	.12	.20	.92
21	.36	.26	.16	1.8	2.8	11	2.3	.65	.27	.12	.21	1.2
22	.35	.25	.16	2.7	2.6	30	2.3	.54	.27	.12	.20	1.7
23	.34	.25	.16	2.7	2.4	5.2	2.9	1.0	.26	.12	.19	.75
24	.33	.25	.15	17	2.2	3.8	2.6	12	.25	.12	.18	.58
25	.32	.24	.15	5.7	2.0	3.2	2.2	4.2	.24	.11	.17	.50
26	.31	.29	.15	3.7	1.9	2.8	2.0	1.9	.23	.11	6.7	.46
27	.31	.34	.15	3.0	2.1	2.7	1.6	1.0	.23	.10	2.8	.46
28	.30	.32	.15	2.6	6.0	3.5	1.5	.76	.22	.10	.38	.46
29	.31	.30	.16	2.6	---	2.7	1.4	.59	.21	.10	.33	.44
30	.31	.28	.22	2.6	---	2.5	1.1	.49	.21	.09	.28	2.7
31	.30	---	.22	2.6	---	2.3	---	.43	---	.09	.24	---
TOTAL	18.95	8.13	5.75	139.08	133.6	162.2	60.4	49.00	12.12	4.40	14.67	255.94
MEAN	.61	.27	.19	4.49	4.77	5.23	2.01	1.58	.40	.14	.47	8.53
MAX	4.2	.34	.27	38	18	30	2.9	12	.79	.22	6.7	230
MIN	.30	.24	.15	.20	1.9	2.3	1.1	.43	.21	.09	.08	.17
CFSM	.39	.17	.12	2.86	3.04	3.33	1.28	1.01	.26	.09	.30	5.43
IN.	.45	.19	.14	3.30	3.17	3.84	1.43	1.16	.29	.10	.35	6.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 1999, BY WATER YEAR (WY)

MEAN	1.74	2.73	3.22	3.34	3.44	4.64	4.60	3.50	1.70	1.53	.82	1.32
MAX	9.14	5.73	10.1	7.90	5.96	10.7	10.2	10.9	4.97	4.53	2.19	8.53
(WY)	1997	1986	1984	1996	1998	1994	1983	1989	1992	1984	1990	1999
MIN	.12	.27	.19	.068	1.40	1.67	.82	1.25	.40	.14	.095	.24
(WY)	1995	1999	1999	1981	1992	1981	1985	1986	1999	1999	1980	1994

01403535 EAST BRANCH STONY BROOK AT BEST LAKE, AT WATCHUNG, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1980 - 1999
ANNUAL TOTAL	1022.05	864.24	
ANNUAL MEAN	2.80	2.37	2.72
HIGHEST ANNUAL MEAN			4.47
LOWEST ANNUAL MEAN			1.48
HIGHEST DAILY MEAN	41 May 11	230 Sep 16	230 Sep 16 1999
LOWEST DAILY MEAN	.15 Dec 24	.08 Aug 3	.00 Aug 30 1980
ANNUAL SEVEN-DAY MINIMUM	.15 Dec 22	.08 Aug 1	.00 Sep 3 1980
INSTANTANEOUS PEAK FLOW		2420 Sep 16	2420 Sep 16 1999
INSTANTANEOUS PEAK STAGE		5.44 Sep 16	5.44 Sep 16 1999
INSTANTANEOUS LOW FLOW		.08 Aug 4	.00 Aug 30 1980
ANNUAL RUNOFF (CFSM)	1.78	1.51	1.74
ANNUAL RUNOFF (INCHES)	24.22	20.48	23.58
10 PERCENT EXCEEDS	5.8	3.9	5.4
50 PERCENT EXCEEDS	.72	.38	1.1
90 PERCENT EXCEEDS	.26	.15	.26



01403540 STONY BROOK AT WATCHUNG, NJ

LOCATION.--Lat 40°38'12", long 74°27'06", Somerset County, Hydrologic Unit 02030105, on right bank at Watchung Borough Administration Building in Watchung, 150 ft downstream from bridge on Mountain Boulevard, 400 ft downstream from East Branch Stony Brook, and 2.9 mi upstream from confluence with Green Brook.

DRAINAGE AREA.--5.51 mi².

PERIOD OF RECORD.--October 1974 to current year.

REVISID RECORDS.--WDR NJ-86-1: 1973 (P).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 162.24 ft above sea level. Prior to Oct. 1, 1996, at datum 10.00 ft higher.

REMARKS.--Records good. Occasional regulation from Watchung and Best Lakes directly upstream from station and other small lakes. Several measurements of water temperature were made during the year. Gage-height radio telemetry at station. Channel significantly enlarged and modified in 1991, and modified again in 1997 when the right wall was replaced.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 2, 1973, reached a stage of 24.5 ft, from floodmark, corrected to current datum, discharge, 10,500 ft³/s, from slope-area measurements of peak flow.

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)
Jan 3	0945	375	12.23	Mar 22	0330	379	12.24
Jan 3	1045	526	12.59	Sep 16	1230	1,800	14.45
Jan 18	1830	353	12.17	Sep 16	1815	*5,380	*17.16

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

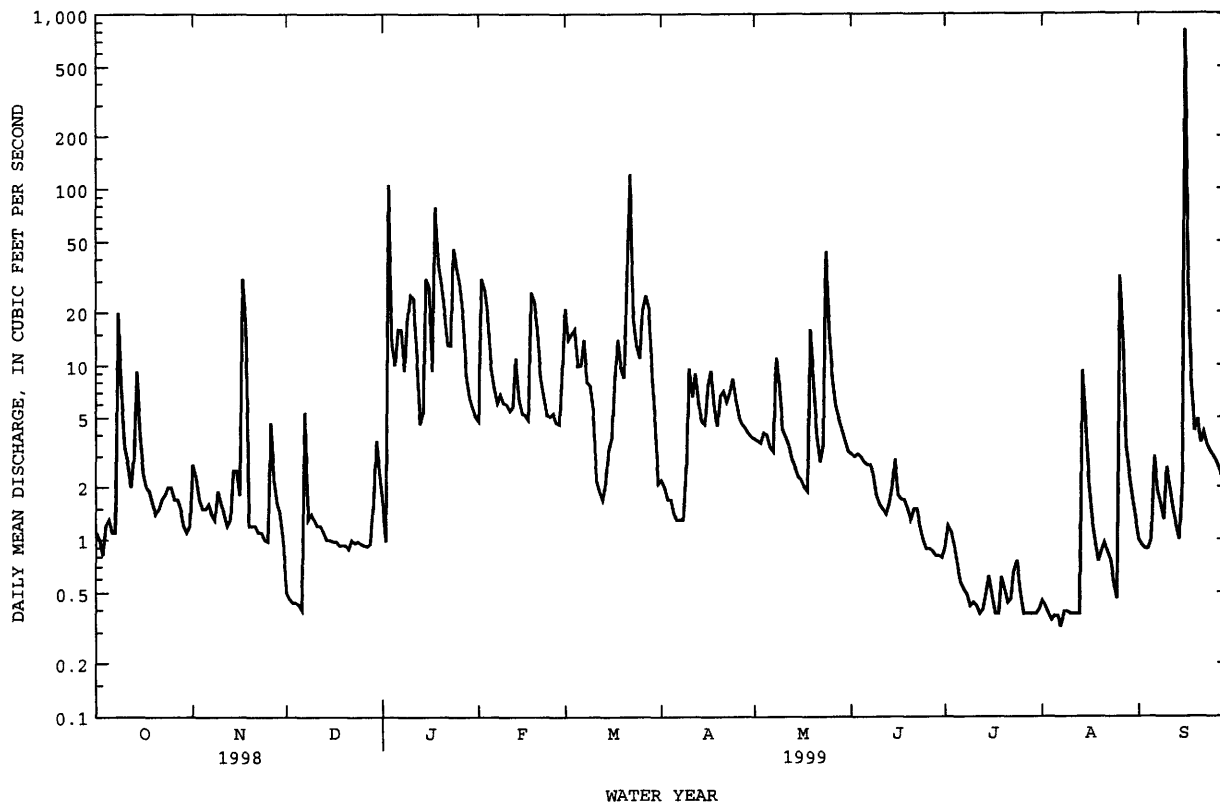
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	2.7	.50	1.6	4.8	21	2.2	3.8	3.1	.91	.45	1.0
2	1.0	2.3	.46	.98	31	14	2.0	3.7	3.0	1.2	.42	.93
3	.82	1.7	.44	106	27	15	1.7	3.6	3.1	1.1	.38	.89
4	1.2	1.5	.44	13	19	16	1.7	4.1	3.0	.91	.35	.89
5	1.3	1.5	.43	10	9.8	9.9	1.4	4.0	2.8	.70	.37	1.0
6	1.1	1.6	.40	16	7.5	10	1.3	3.4	2.7	.57	.37	3.0
7	1.1	1.4	5.4	16	6.1	14	1.3	3.2	2.7	.52	.32	1.9
8	20	1.3	1.3	9.3	6.8	8.0	1.3	11	2.4	.49	.39	1.6
9	7.1	1.9	1.4	18	6.1	7.7	2.6	8.0	1.8	.42	.39	1.3
10	3.4	1.6	1.3	25	6.0	5.5	9.6	4.3	1.6	.44	.38	2.6
11	2.8	1.4	1.2	24	5.5	2.2	6.6	3.9	1.5	.42	.38	2.0
12	2.0	1.2	1.2	12	5.8	1.9	9.0	3.5	1.4	.38	.38	1.5
13	3.0	1.3	1.1	4.6	11	1.7	6.0	2.9	1.6	.40	.38	1.2
14	9.3	2.5	1.0	5.3	6.4	2.1	4.8	2.6	2.0	.49	9.3	1.0
15	3.9	2.5	1.0	31	5.3	3.3	4.6	2.3	2.9	.62	4.6	2.1
16	2.4	1.8	.98	28	5.2	3.8	7.7	2.2	1.8	.48	2.1	814
17	2.0	31	.98	9.3	4.9	8.0	9.3	2.0	1.7	.38	1.3	30
18	1.9	17	.93	79	26	14	5.7	1.9	1.7	.38	.98	7.9
19	1.6	1.2	.93	39	23	9.6	4.5	16	1.5	.61	.75	4.2
20	1.4	1.2	.93	29	16	8.5	6.7	7.9	1.3	.52	.86	4.9
21	1.5	1.2	.89	20	8.5	32	7.1	3.9	1.5	.44	.96	3.6
22	1.7	1.1	1.0	13	6.6	122	6.2	2.8	1.5	.46	.85	4.1
23	1.8	1.1	.96	13	5.2	19	7.0	3.5	1.2	.68	.76	3.5
24	2.0	1.0	.98	46	5.1	13	8.4	44	1.0	.76	.56	3.2
25	2.0	.98	.95	36	5.3	11	6.3	16	.89	.50	.46	3.0
26	1.7	4.7	.93	29	4.7	21	5.1	8.5	.89	.38	32	2.8
27	1.7	2.2	.92	19	4.6	25	4.6	5.9	.86	.38	14	2.5
28	1.5	1.6	.95	8.9	9.1	21	4.4	5.0	.81	.38	3.4	2.2
29	1.2	1.4	1.6	6.6	---	9.2	4.1	4.3	.81	.38	2.3	1.8
30	1.1	.98	3.7	5.7	---	4.7	3.9	3.7	.79	.38	1.7	12
31	1.2	---	2.4	5.1	---	2.1	---	3.2	---	.40	1.3	---
TOTAL	85.82	94.86	37.60	679.38	282.3	456.2	147.1	195.1	53.85	17.08	83.14	922.61
MEAN	2.77	3.16	1.21	21.9	10.1	14.7	4.90	6.29	1.79	.55	2.68	30.8
MAX	20	31	5.4	106	31	122	9.6	44	3.1	1.2	32	814
MIN	.82	.98	.40	.98	4.6	1.7	1.3	1.9	.79	.38	.32	.89
CF5M	.50	.57	.22	3.98	1.83	2.67	.89	1.14	.33	.10	.49	5.58
IN.	.58	.64	.25	4.59	1.91	3.08	.99	1.32	.36	.12	.56	6.25

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 1999, BY WATER YEAR (WY)

MEAN	6.01	9.31	12.0	14.4	12.2	17.6	16.1	12.0	6.40	6.20	3.54	5.59
MAX	24.6	25.6	37.1	37.5	20.1	45.0	38.3	37.8	20.1	32.1	11.0	30.8
(WY)	1997	1996	1984	1979	1988	1994	1983	1989	1992	1975	1990	1999
MIN	.81	1.94	1.21	1.08	3.60	5.60	3.89	3.42	1.79	.55	.75	.87
(WY)	1995	1977	1999	1981	1980	1985	1985	1986	1999	1999	1998	1983

01403540 STONY BROOK AT WATCHUNG, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1975 - 1999
ANNUAL TOTAL	3293.96	3055.04	
ANNUAL MEAN	9.02	8.37	10.1
HIGHEST ANNUAL MEAN			16.0 1984
LOWEST ANNUAL MEAN			5.43 1995
HIGHEST DAILY MEAN	149 May 11	814 Sep 16	814 Sep 16 1999
LOWEST DAILY MEAN	.38 Aug 7	.32 Aug 7	.00 Sep 18 1982
ANNUAL SEVEN-DAY MINIMUM	.44 Aug 4	.37 Aug 3	.06 Sep 13 1982
INSTANTANEOUS PEAK FLOW		5380 Sep 16	5380 Sep 16 1999
INSTANTANEOUS PEAK STAGE		17.16 Sep 16	20.40 Jul 14 1975
INSTANTANEOUS LOW FLOW		.32 Aug 4	.00 Sep 13 1982
ANNUAL RUNOFF (CFSM)	1.64	1.52	1.84
ANNUAL RUNOFF (INCHES)	22.24	20.63	24.94
10 PERCENT EXCEEDS	19	16	20
50 PERCENT EXCEEDS	3.0	2.2	4.6
90 PERCENT EXCEEDS	.75	.49	1.1



01405030 LAWRENCE BROOK AT WESTONS MILLS, NJ

LOCATION.--Lat 40°28'59", long 74°24'45", Middlesex County, Hydrologic Unit 02030105, on left bank at dam on Westons Mill Pond at Westons Mills, 200 ft downstream from bridge on State Route 18, and 1.3 mi upstream from mouth.

DRAINAGE AREA.--44.9 mi².

PERIOD OF RECORD.--Water-quality records water years 1976-81. December 1988 to October 1994, July 1995 to current year.

REVISED RECORDS.--WDR NJ-89-1: Drainage area.

GAGE.--Water-stage recorder above masonry dam. Datum of gage is sea level.

REMARKS.--Records fair. Flow regulated by Farrington Lake, capacity, 655,250,000 gal. Diversion at gage by New Brunswick Water Department (see Raritan River basin, diversions). Several measurements of water temperature were made during the year.

COOPERATION.--Water-stage recorder inspected by and records of gate openings and diversions provided by employees of City of New Brunswick.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	2.2	6.4	2.8	26	160	14	10	3.9	3.1	3.6	2.8
2	22	1.5	11	2.2	128	73	17	10	5.1	2.9	3.0	3.6
3	21	1.4	10	202	121	56	15	14	4.6	2.9	2.8	5.8
4	21	.31	8.4	202	56	88	15	9.8	5.1	3.2	2.6	6.4
5	22	.56	9.0	44	41	59	14	3.5	4.7	2.6	8.4	8.8
6	14	.35	8.2	29	34	56	14	6.1	4.3	2.5	16	6.4
7	23	.32	7.8	24	32	82	14	10	3.6	2.7	18	5.4
8	36	.09	7.5	24	50	52	14	11	3.6	2.5	19	4.6
9	136	1.2	6.0	73	43	39	25	12	3.8	2.3	15	3.0
10	45	1.0	5.7	74	34	31	101	9.8	3.9	2.5	13	7.5
11	24	7.1	5.3	32	30	26	52	8.4	3.7	2.3	7.8	6.3
12	16	.35	4.6	27	33	23	124	8.0	3.6	2.4	.05	7.1
13	20	.40	5.1	25	45	21	48	7.2	4.4	1.7	.28	5.2
14	27	5.9	6.5	21	34	25	28	6.9	3.9	1.8	65	5.3
15	29	6.9	5.6	265	29	62	22	5.8	3.1	1.3	32	4.5
16	24	.05	6.2	166	27	79	28	6.2	2.8	1.1	33	1740
17	25	.05	4.7	65	26	111	45	8.6	2.7	2.0	6.4	1110
18	24	.05	4.9	223	218	106	24	11	3.0	2.3	1.9	91
19	20	.05	4.9	246	149	63	18	30	3.3	2.4	2.1	64
20	21	1.9	5.9	64	69	40	20	63	3.6	2.7	5.3	32
21	14	.16	5.1	49	53	71	22	21	4.7	2.6	6.2	32
22	.05	.05	3.7	53	42	569	18	12	4.6	3.2	6.1	35
23	.05	.28	3.6	56	36	157	33	28	4.3	3.3	3.9	19
24	.05	1.0	4.0	264	33	55	59	444	4.2	3.4	1.9	11
25	.16	.05	3.7	228	30	26	26	388	4.5	3.4	2.1	2.1
26	.05	2.8	4.0	82	34	22	18	71	4.1	3.4	97	.05
27	.05	.68	3.4	55	25	21	13	25	4.2	3.4	55	.91
28	.48	1.1	2.7	44	46	25	12	13	4.1	3.2	9.0	7.8
29	.06	1.9	2.9	38	---	18	11	6.8	3.4	3.4	3.7	9.3
30	3.2	.22	3.1	33	---	13	10	2.6	2.5	3.6	1.7	60
31	1.8	---	2.7	29	---	11	---	2.1	---	3.6	2.4	---
TOTAL	611.95	39.92	172.6	2742.0	1524	2240	874	1264.8	117.3	83.7	444.23	3296.86
MEAN	19.7	1.33	5.57	88.5	54.4	72.3	29.1	40.8	3.91	2.70	14.3	110
MAX	136	7.1	11	265	218	569	124	444	5.1	3.6	97	1740
MIN	.05	.05	2.7	2.2	25	11	10	2.1	2.5	1.1	.05	.05

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1999, BY WATER YEAR (WY)

MEAN	39.4	37.3	65.6	71.3	55.4	82.5	72.8	68.0	44.3	41.0	43.7	47.9
MAX	104	70.9	174	114	113	179	116	169	98.9	92.7	103	184
(WY)	1997	1996	1993	1996	1998	1993	1993	1989	1989	1989	1990	1989
MIN	13.1	1.33	5.57	28.0	21.3	44.7	27.4	24.9	3.91	2.70	7.32	16.7
(WY)	1993	1999	1999	1992	1992	1992	1995	1995	1999	1999	1995	1997

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

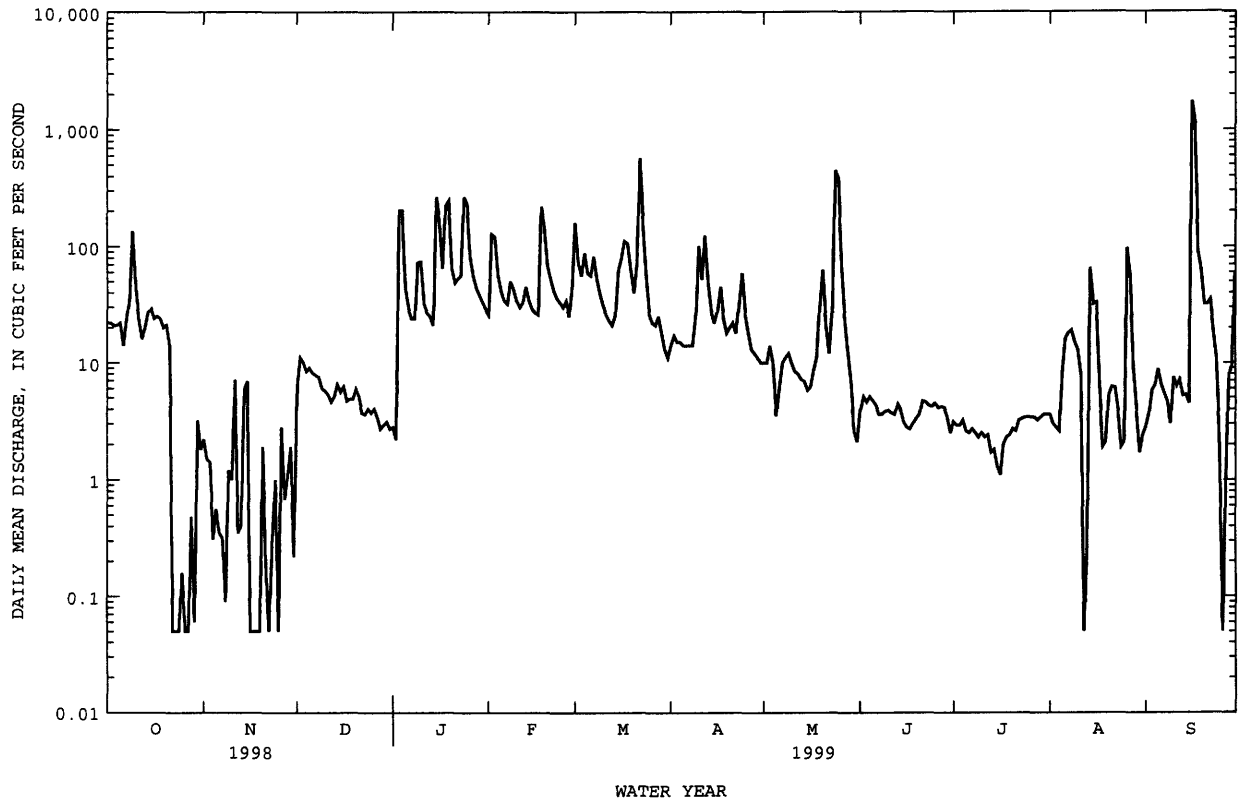
FOR 1999 WATER YEAR

WATER YEARS 1989 - 1999

ANNUAL TOTAL	22753.57	13411.36	
ANNUAL MEAN	62.3	36.7	53.4
HIGHEST ANNUAL MEAN			69.1
LOWEST ANNUAL MEAN			30.6
HIGHEST DAILY MEAN	887	1740	2200
LOWEST DAILY MEAN	.05	.05	.00
ANNUAL SEVEN-DAY MINIMUM	.13	.13	.00
INSTANTANEOUS PEAK FLOW		4280a	4850a
INSTANTANEOUS PEAK STAGE		18.95	19.20
INSTANTANEOUS LOW FLOW		.05	.00
10 PERCENT EXCEEDS	121	67	103
50 PERCENT EXCEEDS	31	9.0	30
90 PERCENT EXCEEDS	2.7	1.5	6.8

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

01405030 LAWRENCE BROOK AT WESTONS MILLS, NJ--Continued



01405400 MANALAPAN BROOK AT SPOTSWOOD, NJ

LOCATION.--Lat 40°23'22", long 74°23'27", Middlesex County, Hydrologic Unit 02030105, on right bank of DeVoe Lake Dam in Spotswood, 0.1 mi upstream from Cedar Brook, and 0.6 mi upstream from confluence with Matchaponix Brook.

DRAINAGE AREA.--40.7 mi².

PERIOD OF RECORD.--January 1957 to current year.

REVISED RECORDS.--WSP 1722: 1957-60.

GAGE.--Water-stage recorder above concrete dam. Datum of gage is sea level (levels by Duhermal Water System). January 1957 to September 1966 at datum 17.72 ft higher.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Discharge given herein includes flow through sluice gate when open. Gate open Jan. 14,31, Feb. 6-18, 22-28, Mar. 4-16, July. 27 to Sept. 15 and Sept. 20 to Sept. 30. Some regulation by Lake Manalapan, Helmetta Pond, and DeVoe Lake. Several measurements of water temperature were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	93	17	21	24	e35	3.8	44	35	18	35	e14	e1.7
2	18	17	20	20	e56	41	45	30	16	22	e13	e2.0
3	15	17	20	134	66	10	43	24	16	13	e12	e2.7
4	16	17	21	335	33	e92	43	23	16	11	e12	e3.2
5	19	17	21	264	e56	e91	42	21	15	8.9	e12	e3.3
6	18	17	21	28	e42	e84	39	21	15	7.4	e11	e3.0
7	16	17	21	12	e40	e90	37	22	15	7.0	e12	e2.5
8	25	17	21	4.6	e45	e88	36	28	15	7.0	e14	e2.1
9	53	17	22	14	e48	e88	37	28	14	7.0	e13	e1.7
10	40	17	23	51	e47	e77	42	29	14	7.1	e11	e2.3
11	30	21	22	23	e44	e63	31	32	14	7.4	e6.0	e2.6
12	24	30	21	6.0	e46	e55	89	29	14	7.0	e1.3	e2.4
13	21	27	21	3.1	e50	e50	160	27	16	7.3	e.70	e2.1
14	27	25	21	e16	e50	e46	163	30	15	7.0	e3.7	e1.8
15	27	22	21	55	e45	e49	37	29	14	7.9	e15	e2.2
16	22	21	20	261	e42	e73	36	27	13	7.0	e16	31
17	21	21	20	143	e46	e116	39	25	13	7.0	e9.0	489
18	20	21	20	68	e84	e147	37	19	13	7.5	e4.0	486
19	18	21	19	210	106	e155	37	26	13	11	e2.4	15
20	18	21	19	115	76	e126	39	28	13	9.1	e2.8	e4.8
21	17	23	19	30	e72	e94	40	20	20	8.2	e3.8	e4.2
22	17	23	19	19	e59	190	40	25	18	14	e4.7	e3.8
23	17	22	20	17	e54	274	43	27	16	13	e3.7	e3.0
24	17	22	21	76	e49	282	47	93	15	9.6	e2.5	e2.4
25	17	22	20	251	e46	196	50	296	15	8.2	e2.4	e.90
26	16	25	19	112	e51	51	85	23	15	4.6	e6.5	e.10
27	17	29	19	33	e49	107	57	11	14	e15	e14	e.10
28	17	27	19	16	e59	75	51	38	13	e15	e9.0	e.20
29	19	24	23	7.5	---	62	38	19	13	e14	e3.8	e.40
30	18	22	39	.88	---	55	37	19	13	e15	e2.1	e.40
31	17	---	31	e6.0	---	46	---	20	---	e15	e1.7	---
TOTAL	730	639	664	2355.08	1496	2976.8	1564	1124	444	335.2	239.10	1076.90
MEAN	23.5	21.3	21.4	76.0	53.4	96.0	52.1	36.3	14.8	10.8	7.71	35.9
MAX	93	30	39	335	106	282	163	296	20	35	16	489
MIN	15	17	19	.88	33	3.8	31	11	13	4.6	.70	.10
CFSM	.58	.52	.53	1.87	1.31	2.36	1.28	.89	.36	.27	.19	.88
IN.	.67	.58	.61	2.15	1.37	2.72	1.43	1.03	.41	.31	.22	.98

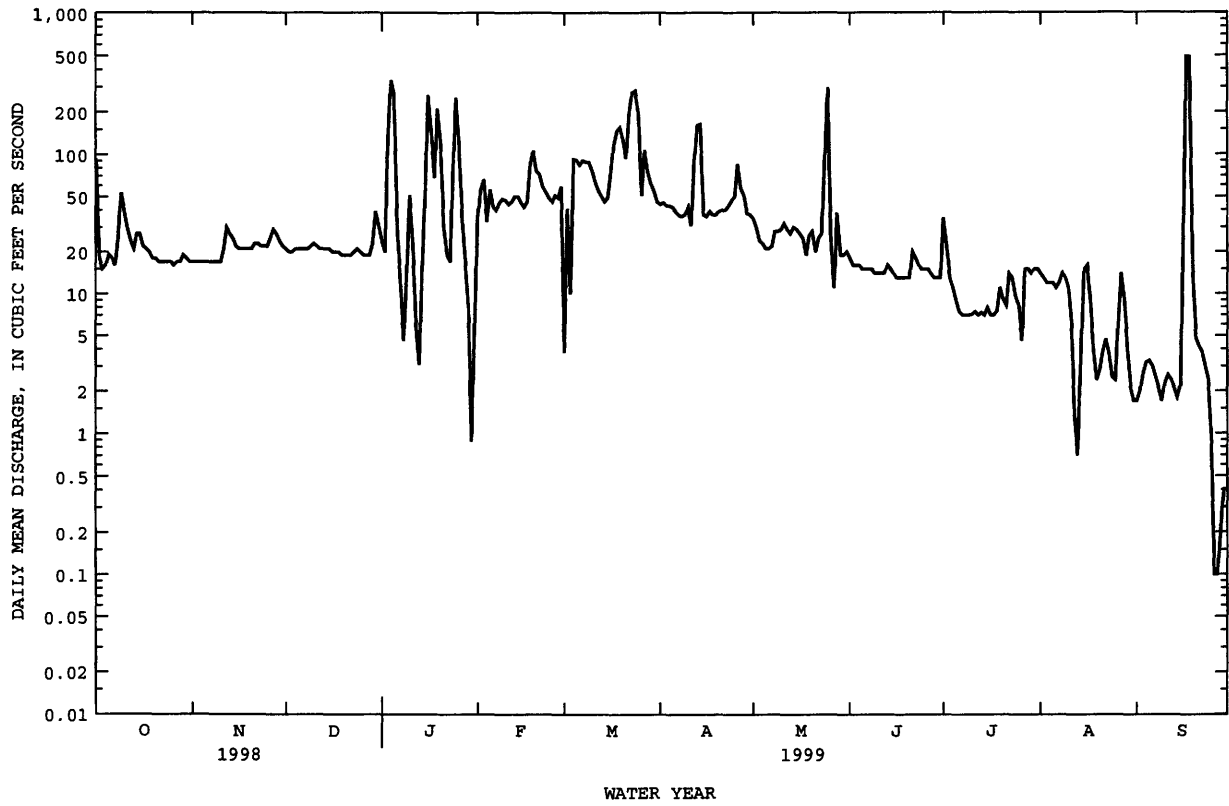
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 1999, BY WATER YEAR (WY)

	MEAN	40.7	56.8	74.7	80.1	77.9	91.9	84.7	67.6	46.7	43.2	42.6	40.7
MAX	95.2	154	156	186	139	164	154	148	109	141	128	138	
(WY)	1990	1978	1984	1978	1979	1958	1983	1984	1968	1975	1990	1989	
MIN	13.7	21.3	21.4	21.1	29.8	37.0	31.1	26.5	14.8	4.40	5.56	11.6	
(WY)	1983	1999	1999	1981	1992	1985	1985	1977	1999	1966	1966	1965	

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1957 - 1999
ANNUAL TOTAL	22246.00	13644.08	
ANNUAL MEAN	60.9	37.4	62.5
HIGHEST ANNUAL MEAN			101
LOWEST ANNUAL MEAN			34.3
HIGHEST DAILY MEAN	641	489	1390
LOWEST DAILY MEAN	.00	.10	.00
ANNUAL SEVEN-DAY MINIMUM	11	.64	.64
INSTANTANEOUS PEAK FLOW		555	1700a
INSTANTANEOUS PEAK STAGE		18.66	20.50
INSTANTANEOUS LOW FLOW		.00	.00
ANNUAL RUNOFF (CFSM)	1.50	.92	1.54
ANNUAL RUNOFF (INCHES)	20.33	12.47	20.87
10 PERCENT EXCEEDS	101	80	118
50 PERCENT EXCEEDS	40	21	45
90 PERCENT EXCEEDS	16	3.8	18

a Sluice gate open
e Estimated

01405400 MANALAPAN BROOK AT SPOTSWOOD, NJ--Continued



RESERVOIRS IN RARITAN RIVER BASIN

01396790 SPRUCE RUN RESERVOIR.--Lat 40°38'37", long 74°55'26", Hunterdon County, Hydrologic Unit 02030105, at dam on Spruce Run, 0.5 mi north of Clinton, and 0.6 mi upstream from mouth. DRAINAGE AREA, 41.3 mi². PERIOD OF RECORD, November 1963 to current year. GAGE, water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir is formed by earthfill dam with concrete spillway; dam completed in October 1963 with crest of spillway at elevation 273.00 ft. Usable capacity, 11,000,000,000 gal. Dead storage 300,000 gal. Reservoir used for water supply and recreation. Outflow mostly regulated by gates. Water is released to maintain minimum flow on the South Branch Raritan River and, at times, for municipal supply. Records given herein represent usable capacity.

COOPERATION.--Records provided by New Jersey Water Supply Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 11,820,000,000 gal, Jan. 24, 1979, elevation, 274.72 ft; minimum observed, 3,100,000,000 gal, Oct. 18, 1983, elevation, 246.68 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 9,930,000,000 gal, June 2-3, elevation, 270.39 ft; minimum observed, 3,630,000,000 gal, Oct. 7, elevation, 248.92 ft.

REVISED RECORDS.--WDR NJ-84-1: (M). WDR NJ-85-1: 1984.

01397050 ROUND VALLEY RESERVOIR.--Lat 40°36'39", long 74°50'42", Hunterdon County, Hydrologic Unit 02030105, at main dam on Prescott Brook, 1.8 mi south of Lebanon, 3.2 mi upstream from mouth, and 4.5 mi west of Whitehouse. DRAINAGE AREA, 5.7 mi². PERIOD OF RECORD, March 1966 to current year. Nonrecording gage read daily. Datum of gage is sea level.

REMARKS.--Reservoir is formed by earthfill dam at main dam on Prescott Brook and two dams on South Branch Rockaway River at Lebanon; storage began in March 1966. Capacity at spillway level, 55,000,000,000 gal, elevation, 385.00 ft. Reservoir is used primarily for storage and is filled by pumping from South Branch Raritan River at Hamden Pumping Station (see following page). Outflow is controlled by operation of gates in pipe in dams. Water is released into South Branch Rockaway Creek and Prescott Brook.

COOPERATION.--Records provided by New Jersey Water Supply Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 55,400,000,000 gal, June 15, 1975, elevation, 385.63 ft; minimum observed (after first filling), 37,100,000,000 gal, Feb. 9, 1981, elevation, 361.30 ft.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 54,330,000,000 gal, Oct. 9, elevation, 384.15 ft; minimum observed, 42,280,000,000 gal, Sept. 4, elevation, 368.26 ft.

REVISED RECORDS.--WDR NJ-85-1: 1984.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

Date	Elevation (feet)†	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)	Elevation (feet)†	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)
01396790 SPRUCE RUN RESERVOIR				01397050 ROUND VALLEY RESERVOIR		
Sept. 30.....	251.76	4,210	--	384.04	54,240	--
Oct. 31.....	250.16	3,880	-16.5	382.36	52,860	-68.9
Nov. 30.....	250.07	3,860	-1.0	380.00	51,200	-85.6
Dec. 31.....	249.47	3,740	-6.0	377.48	49,440	-87.8
CAL YR 1998			-8.0			-20.9
Jan. 31.....	256.67	5,450	+85.3	377.74	49,570	+6.5
Feb. 28.....	259.90	6,320	+48.1	377.90	49,700	+7.2
Mar. 31.....	265.89	8,220	+94.8	378.30	50,000	+15.0
Apr. 30.....	268.90	9,330	+57.2	378.45	50,080	+4.1
May 31.....	270.36	9,910	+28.9	378.63	50,220	+7.0
June 30.....	265.44	8,070	-94.9	378.20	49,900	-16.5
July 31.....	263.50	7,460	-30.4	371.61	44,910	-249.0
Aug. 31.....	261.03	6,670	-39.4	368.34	42,340	-128.2
Sept. 30.....	265.65	8,150	+76.3	369.24	43,120	+40.2
WTR YR 1999			+18.1			-47.1

† Elevation at 0900 of the last day of each month.

DIVERSIONS IN RARITAN RIVER BASIN

- 01396920 Water is diverted 4.0 mi upstream from the gaging station on South Branch Raritan River at Stanton (see station 01397000), at the Hamden Pumping Station, for storage in Round Valley Reservoir. Water can also be released from Round Valley Reservoir into the South Branch Raritan River at Hamden and are noted as negative discharge. Records provided by New Jersey Water Supply Authority. REVISED RECORDS.--WDR NJ-85-1: 1984.
- 01399669 Water is released from Round Valley Reservoir and enters the South Branch Rockaway Creek directly upstream from gaging station (01399670) at Whitehouse Station. Records provided by New Jersey Water Supply Authority.
- 01400509 Elizabethtown Water Company diverts water from the Raritan and Millstone Rivers just upstream from the mouth of the Millstone River at Manville. Records given herein represent the total diversion from both rivers. Records provided by the Elizabethtown Water Company. REVISION.--The mean diversion for water year 1991 has been revised to 146 ft³/s superceding the figure published in WDR NJ-91-1.
- 01400836 Water is diverted from Carnegie Lake (Millstone River) at Princeton to the Delaware and Raritan Canal at the aqueduct 4.1 mi downstream from the gaging station on the Delaware and Raritan Canal at Port Mercer (station 01460440). Negative discharge indicates flow from Canal to Carnegie Lake. Records provided by New Jersey Water Supply Authority. REVISED RECORDS.--WDR NJ-85-1: 1984.
- 01402910 Water is diverted from the Raritan River just below the Millstone River to the Delaware and Raritan Canal at Ten Mile Lock for municipal supply. Negative discharge indicates flow from Canal to Millstone River. Records provided by the New Jersey Water Supply Authority. REVISED RECORDS.--WDR NJ-85-1: 1984.
- 01405029 Water is diverted from Lawrence Brook at Westons Mills, just upstream of gaging station (01405030), by City of New Brunswick (since 1873), for municipal supply. Records provided by City of New Brunswick Water Department.
- 01460570 Elizabethtown Water Company diverts water from the Delaware and Raritan Canal 1200 ft downstream from Ten Mile Lock at Franklin for municipal supply. Records provided by the Elizabethtown Water Company.

DIVERSIONS, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

MONTH	<u>01396920</u> Hamden pumping station	<u>01399669</u> Whitehouse Release	<u>01400509</u> Raritan and Millstone Rivers	<u>01400836</u> Carnegie Lake	<u>01402910</u> Ten Mile Lock diversion	<u>01405029</u> Westons Mills	<u>01460570</u> Delaware and Raritan Canal	<u>01407500</u> Swimming River diversion
October	-56.7	0	173	0	-47.5	2.96	0	35.1
November	-83.0	0	167	0	-44.8	2.33	0	33.7
December	-87.5	0	170	0	-37.3	1.96	0	32.4
CAL YR 1998	-25.5	1.3	183	.39	-43.7	2.82	.26	--
January	-10.2	0	176	0	-35.3	4.95	0	30.8
February	0	0	171	0	-33.7	3.32	0	28.3
March	0	0	172	0	-41.7	9.59	0	32.2
April	0	0	175	0	-42.1	3.01	0	30.6
May	0	0	185	0	-46.4	5.64	2.2	32.9
June	-10.5	0	231	0	-29.2	5.81	17.4	45.8
July	-225.8	0	250	0	-10.3	6.77	31.3	44.8
August	-104.6	0	195	0	-31.1	4.25	4.2	29.0
September ...	0	0	161	0	-36.2	8.20	0	27.0
WTR YR 1999	-48.9	0	186	0	-36.3	4.91	4.64	33.6

01407500 SWIMMING RIVER NEAR RED BANK, NJ

LOCATION.--Lat 40°19'10", long 74°06'55", Monmouth County, Hydrologic Unit 02030104, on left bank 50 ft upstream from spillway at Swimming River Reservoir, 3.3 mi southwest of Red Bank, and 4.8 mi upstream from mouth.

DRAINAGE AREA.--49.2 mi².

PERIOD OF RECORD.--August 1922 to current year.

REVISED RECORDS.--WSP 891: 1939. WDR NJ-83-1: Drainage area. WDR NJ-90-1: 1989.

GAGE.--Water-stage recorder above concrete dam. Datum of gage is 30.00 ft above sea level. Prior to Jan. 19, 1962, at site 800 ft upstream at datum 17.67 ft lower. Jan. 19 to Mar. 30, 1962, nonrecording gage, 700 ft upstream at datum 13.87 ft lower.

REMARKS.--Records excellent for days of no flow, good above 200 ft³/s, and fair below 200 ft³/s. Records given herein represent flow over spillway and flow or leakage through blowoff gates. Diversion above station for municipal supply. Flow regulated by Swimming River Reservoir. Several measurements of water temperature were made during the year.

COOPERATION.--Water-stage recorder inspected by and record of diversion furnished by New Jersey-American Water Co.

EXTREMES OUTSIDE PERIOD OF RECORD.--A flood in July 1919 reached a stage of 7.84 ft (site and datum then in use), from floodmark, discharge about 11,800 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,060 ft³/s, Sep 17, gage height, 5.90 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	26	114	42	32	4.5	.00	.00	.00
2	.00	.00	.00	.00	80	60	50	27	2.9	.00	.00	.00
3	.00	.00	.00	34	127	41	47	47	1.6	.00	.00	.00
4	.00	.00	.00	253	64	53	46	63	.61	.00	.00	.00
5	.00	.00	.00	61	49	37	44	54	.09	.00	.00	.00
6	.00	.00	.00	35	39	38	41	46	.00	.00	.00	.00
7	.00	.00	.00	29	37	75	36	44	.00	.00	.00	.00
8	.00	.00	.00	24	48	46	33	51	.00	.00	.00	.00
9	.00	.00	.00	48	45	38	35	76	.00	.00	.00	.00
10	.00	.00	.00	77	38	33	116	48	.00	.00	.00	.00
11	.00	.00	.00	37	35	29	71	40	.00	.00	.00	.00
12	.00	.00	.00	25	34	23	144	31	.00	.00	.00	.00
13	.00	.00	.00	23	37	20	72	23	.00	.00	.00	.00
14	.00	.00	.00	23	33	21	53	19	.00	.00	.00	.00
15	.00	.00	.00	376	30	66	47	17	.00	.00	.00	.00
16	.00	.00	.00	241	28	70	47	15	.00	.00	.00	118
17	.00	.00	.00	73	30	90	57	13	.00	.00	.00	553
18	.00	.00	.00	154	195	132	45	12	.00	.00	.00	93
19	.00	.00	.00	300	166	65	40	15	.00	.00	.00	46
20	.00	.00	.00	82	69	46	44	29	.00	.00	.00	34
21	.00	.00	.00	56	49	51	47	25	.00	.00	.00	38
22	.00	.00	.00	60	40	424	44	19	.00	.00	.00	46
23	.00	.00	.00	52	33	140	49	23	.00	.00	.00	33
24	.00	.00	.00	183	32	80	73	128	.00	.00	.00	23
25	.00	.00	.00	237	33	64	49	194	.00	.00	.00	19
26	.00	.00	.00	85	36	57	40	50	.00	.00	.00	16
27	.00	.00	.00	56	32	51	32	30	.00	.00	.00	13
28	.00	.00	.00	49	44	63	32	20	.00	.00	.00	13
29	.00	.00	.00	44	---	56	33	15	.00	.00	.00	11
30	.00	.00	.00	39	---	47	32	11	.00	.00	.00	15
31	.00	---	.00	33	---	41	---	7.1	---	.00	.00	---
TOTAL	0.00	0.00	0.00	2789.00	1509	2171	1541	1224.1	9.70	0.00	0.00	1071.00
MEAN	.0000	.0000	.0000	90.0	53.9	70.0	51.4	39.5	.32	.0000	.0000	35.7
MAX	.00	.00	.00	376	195	424	144	194	4.5	.00	.00	553
MIN	.00	.00	.00	.00	26	20	32	7.1	.00	.00	.00	.00
CFSM	.00	.00	.00	1.83	1.10	1.42	1.04	.80	.01	.00	.00	.73
IN.	.00	.00	.00	2.11	1.14	1.64	1.17	.93	.01	.00	.00	.81
(†)	35.1	33.7	32.4	30.8	28.3	32.2	30.6	32.9	45.8	44.8	29.0	27.0
MEAN*	35.1	33.7	32.4	120.8	82.2	102.2	82.0	72.4	46.1	44.8	29.0	62.7

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1999, BY WATER YEAR (WY)

	MEAN	38.4	54.1	67.3	79.9	91.1	104	91.4	70.5	47.3	39.2	37.3	37.3
MAX	163	208	196	248	201	216	209	227	135	187	128	210	
(WY)	1944	1973	1978	1979	1994	1980	1998	1972	1938	1955	1938		
MIN	.000	.000	.000	.000	1.19	18.1	2.93	4.07	.000	.000	.000	.000	
(WY)	1971	1981	1981	1981	1989	1985	1962	1985	1985	1966	1957	1980	

01407500 SWIMMING RIVER NEAR RED BANK, NJ--Continued

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

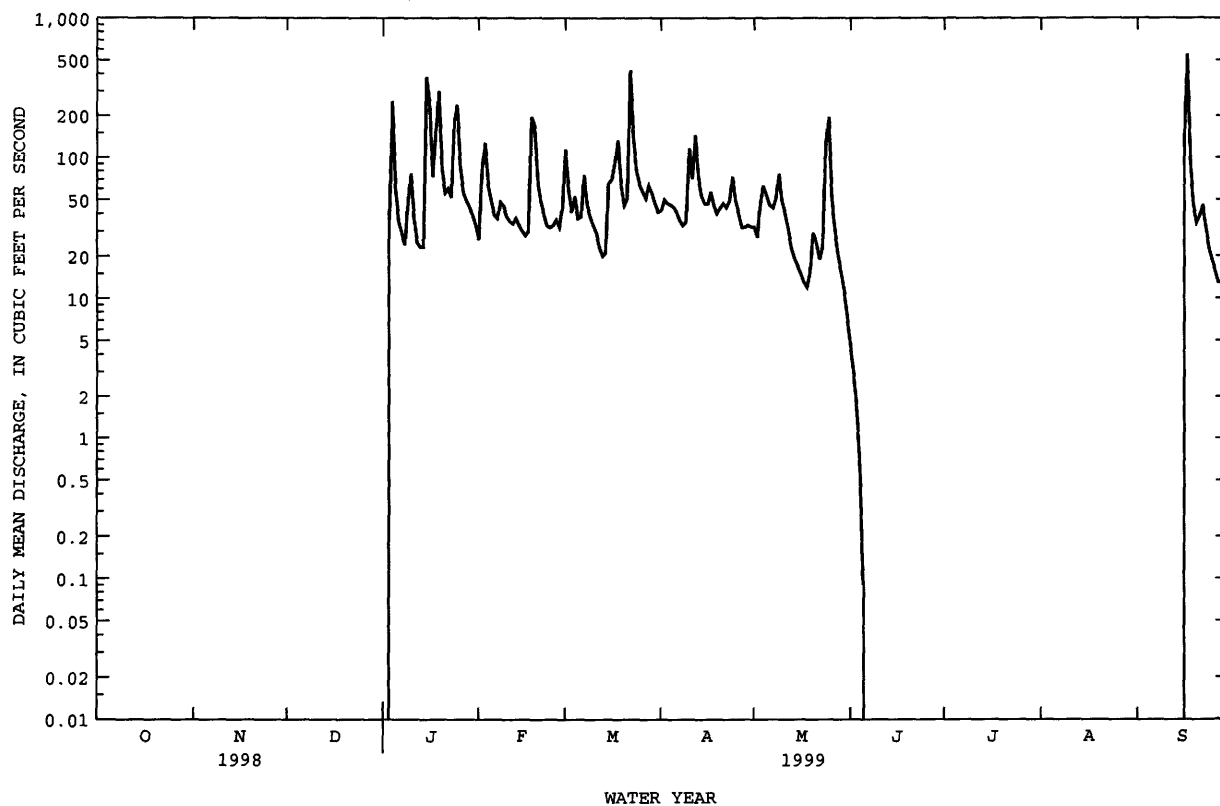
WATER YEARS 1922 - 1999

ANNUAL TOTAL	29904.99	10314.80	
ANNUAL MEAN	81.9	28.3	62.9
HIGHEST ANNUAL MEAN			123
LOWEST ANNUAL MEAN			9.76
HIGHEST DAILY MEAN	1470	553	3050
LOWEST DAILY MEAN	.00	.00	.00
ANNUAL SEVEN-DAY MINIMUM	.00	.00	.00
INSTANTANEOUS PEAK FLOW		1060	8910a
INSTANTANEOUS PEAK STAGE		5.90	8.96
ANNUAL RUNOFF (CFSM) *	1.67	.57	1.28
ANNUAL RUNOFF (INCHES) *	22.61	7.80	17.38
10 PERCENT EXCEEDS	161	65	120
50 PERCENT EXCEEDS	34	.00	45
90 PERCENT EXCEEDS	.00	.00	.37

a From rating curve extended above 1,000 ft³/s on basis of weir formula, site and datum then in use.

(†) Diversion and change in contents, in cubic feet per second, from Swimming River Reservoir.

* Adjusted for diversion and change in contents.



01407705 SHARK RIVER NEAR NEPTUNE CITY, NJ

LOCATION.--Lat 40°11'56", long 74°04'14", Monmouth County, Hydrologic Unit 02030104, on left bank 100 ft upstream from bridge on Remsen Mill Road, 0.3 mi downstream from Robins Swamp Brook, and 1.7 mi west of Neptune City.

DRAINAGE AREA.--9.96 mi².

PERIOD OF RECORD.--October 1966 to current year.

GAGE.--Water-stage recorder, crest-stage gage, and concrete control. Datum of gage is 7.05 ft above sea level.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Diversion above station by New Jersey-American Water Co. for municipal supply (See Shark River basin diversions) and by farmers for irrigation. Entire flow from 0.34 mi² of drainage area, subsequent to November 1962, controlled by Glendola Reservoir (capacity 1,000 million gal) on Robins Swamp Brook, 0.6 mi southwest of gage. Water pumped into Glendola Reservoir from Manasquan River or Reservoir subsequent to July 1990 (see Manasquan River Basin diversions). Several measurements of water temperature were made during the year.

COOPERATION.--Water-stage recorder inspected by New Jersey-American Water Co.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 860 ft³/s, Jan 3, gage height, 6.00 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	6.2	4.6	3.5	e16	e44	12	5.4	3.4	16	2.7	4.5
2	3.4	6.5	5.1	4.2	e46	e19	13	5.4	4.4	10	3.0	4.3
3	4.0	7.3	5.2	271	e40	e16	11	15	4.1	15	3.9	4.5
4	5.5	7.0	5.2	87	e22	e32	11	12	3.7	2.2	4.3	5.0
5	4.6	5.1	5.1	15	e19	e17	10	9.0	3.5	2.0	11	5.4
6	3.8	3.9	5.1	6.7	e16	e19	8.1	7.0	3.3	3.6	4.0	6.7
7	3.6	4.8	4.7	e5.9	e15	e47	7.5	6.2	3.2	2.9	4.0	5.1
8	4.8	3.8	4.3	e5.3	e21	16	7.4	6.9	2.7	2.7	4.9	4.6
9	5.6	6.7	2.7	e34	e17	8.0	13	7.9	3.0	2.8	4.8	4.1
10	8.4	6.5	5.2	e24	e16	6.4	35	5.6	3.6	3.0	3.7	6.0
11	3.3	9.1	4.0	e14	e14	4.9	20	4.0	3.4	2.5	3.8	3.6
12	3.8	3.6	3.7	e9.8	e14	4.6	34	4.9	3.6	2.5	3.7	4.0
13	4.1	6.2	2.5	e10	e18	5.5	17	5.1	4.2	3.9	4.7	3.7
14	6.7	6.6	3.2	e12	e14	7.1	14	5.0	4.3	2.7	47	3.5
15	3.4	6.6	3.0	e199	e13	24	12	4.5	3.7	3.0	3.6	4.9
16	2.9	6.6	2.2	e48	e13	27	11	4.2	3.0	2.8	4.3	213
17	3.7	6.6	2.8	e24	e14	40	11	4.2	3.5	2.2	4.0	90
18	3.9	6.8	2.2	e69	e82	37	9.4	4.0	3.3	2.1	3.6	12
19	3.1	4.6	2.5	e86	e39	16	8.2	5.6	4.3	2.7	3.2	7.0
20	5.2	4.2	2.8	e23	e21	12	8.7	6.1	4.4	3.6	19	5.4
21	9.3	5.1	4.0	e20	e18	17	8.8	3.9	15	3.6	12	5.5
22	9.4	3.9	3.1	e20	e15	94	8.0	3.8	4.9	3.8	3.8	5.0
23	9.4	5.0	4.3	e23	e14	27	8.9	8.1	3.9	3.4	3.6	5.1
24	9.5	3.6	3.7	e84	e13	16	11	36	3.1	2.8	4.1	6.6
25	9.4	3.5	4.4	e59	e13	14	8.0	21	2.5	2.7	4.0	6.6
26	9.4	19	4.5	e27	e15	12	7.1	13	3.0	2.5	28	6.3
27	9.4	6.9	4.0	e20	e13	11	6.5	11	5.2	2.3	18	6.3
28	9.8	6.0	4.3	e18	e21	17	6.2	9.0	2.6	2.1	3.5	6.4
29	10	5.4	6.7	e16	---	14	6.0	7.8	3.6	2.6	3.1	5.7
30	8.1	4.8	8.2	e15	---	12	5.5	7.3	4.5	2.7	4.5	10
31	6.1	---	2.9	e14	---	12	---	6.7	---	2.8	5.1	---
TOTAL	186.6	181.9	126.2	1267.4	592	648.5	349.3	255.6	120.9	119.5	232.9	460.8
MEAN	6.02	6.06	4.07	40.9	21.1	20.9	11.6	8.25	4.03	3.85	7.51	15.4
MAX	10	19	8.2	271	82	94	35	36	15	16	47	213
MIN	2.9	3.5	2.2	3.5	13	4.6	5.5	3.8	2.5	2.0	2.7	3.5

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1999, BY WATER YEAR (WY)

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
MEAN	10.0	13.0	16.9	18.6	16.6	22.3	19.9	16.8	9.13	9.71	11.0	8.88																					
MAX	34.0	31.7	44.2	41.1	42.4	56.3	48.3	50.9	21.9	30.1	29.2	22.6																					
(WY)	1990	1978	1970	1978	1998	1993	1983	1998	1975	1984	1992	1989																					
MIN	2.81	1.73	4.07	3.57	3.79	6.53	6.39	3.51	2.13	3.47	3.11	1.28																					
(WY)	1982	1982	1999	1981	1974	1986	1985	1986	1986	1985	1995	1988																					

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

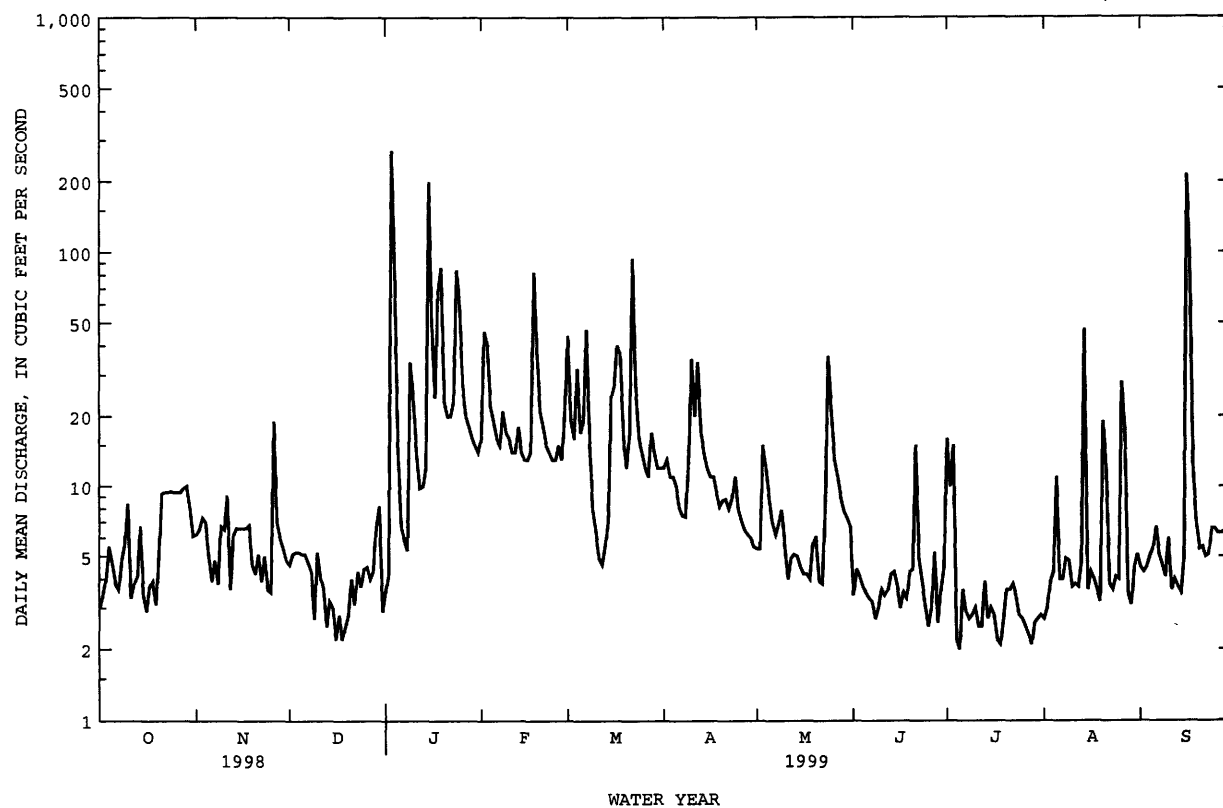
WATER YEARS 1967 - 1999

ANNUAL TOTAL	7046.0	4541.6	
ANNUAL MEAN	19.3	12.4	14.4
(I)	9.0	10.4	
HIGHEST ANNUAL MEAN			24.9
LOWEST ANNUAL MEAN			6.80
HIGHEST DAILY MEAN	370	Mar 9	560
LOWEST DAILY MEAN	1.9	Aug 28	.00
ANNUAL SEVEN-DAY MINIMUM	2.6	Dec 13	.70
INSTANTANEOUS PEAK FLOW			1170
INSTANTANEOUS PEAK STAGE			6.59
INSTANTANEOUS LOW FLOW			.00
10 PERCENT EXCEEDS	34		28
50 PERCENT EXCEEDS	8.1		8.2
90 PERCENT EXCEEDS	3.4		2.6

e Estimated

I Diversion, equivalent in cubic feet per second, from Shark River by New Jersey-American Water Company, for municipal supply.

01407705 SHARK RIVER NEAR NEPTUNE CITY, NJ--Continued



01407760 JUMPING BROOK NEAR NEPTUNE CITY, NJ

LOCATION.--Lat 40°12'13", long 74°03'58", Monmouth County, Hydrologic Unit 02030104, on left bank 60 ft downstream from dam on Jumping Brook Reservoir, 0.8 mi upstream from mouth, and 1.4 mi west of Neptune City.

DRAINAGE AREA.--6.46 mi².

PERIOD OF RECORD.--October 1966 to current year. Records for water years 1976-83 are unpublished but are available in the files of New Jersey District Office.

REVISED RECORDS.--WDR-84-1: drainage area.

GAGE.--Water-stage recorder, crest-stage gage, and concrete control. Datum of gage is 13.76 ft above sea level.

REMARKS.--Records good except those above 300 ft³/s, which are fair. Diversion above station by New Jersey-American Water Co. for municipal supply (See shark river basin diversions for record) and by farmers for irrigation. Several measurements of water temperature were made during the year.

COOPERATION.--Water-stage recorder inspected by and records of diversion provided by New Jersey-American Water Co.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.0	3.0	3.1	3.2	5.7	19	8.7	4.3	2.9	20	1.5	2.2
2	3.0	2.7	2.9	2.8	24	7.5	8.1	4.3	2.8	13	1.5	2.1
3	3.1	3.2	2.9	257	18	6.2	6.4	17	3.0	15	1.4	2.4
4	4.9	3.7	2.9	31	9.9	17	7.4	9.3	2.6	9.0	1.5	2.3
5	4.1	3.7	2.9	7.8	7.6	7.0	6.3	6.3	2.6	4.7	6.9	2.2
6	3.4	3.5	2.9	5.5	6.2	7.5	5.9	5.5	2.7	3.5	3.0	4.3
7	3.2	2.8	3.0	5.1	5.8	21	5.8	5.3	2.5	2.8	2.3	2.7
8	4.6	2.9	3.7	4.7	9.8	7.2	5.2	6.0	2.3	2.5	2.7	6.5
9	8.3	2.8	4.1	19	6.9	6.1	13	5.9	2.6	2.1	3.0	3.0
10	10	2.8	3.5	12	5.8	5.8	29	4.8	2.6	2.2	1.8	6.0
11	5.3	8.0	3.0	5.8	5.3	5.3	15	4.5	2.5	2.1	1.9	4.2
12	4.3	5.4	2.8	4.9	5.5	5.1	26	4.5	2.6	2.3	1.7	2.9
13	4.1	3.6	3.3	5.0	7.9	4.8	9.4	4.3	3.0	4.7	1.6	2.6
14	9.1	3.2	3.3	5.0	5.5	6.8	7.0	3.6	2.8	2.9	45	2.0
15	5.3	3.2	2.9	133	5.0	24	6.3	3.7	3.5	2.1	5.7	5.1
16	4.0	3.1	3.0	21	5.0	23	6.4	3.7	2.6	1.9	4.0	245
17	3.7	2.8	3.2	9.3	5.0	27	7.3	3.3	2.7	1.8	3.2	42
18	3.6	2.8	3.0	37	44	22	6.0	3.8	2.6	1.7	2.4	8.0
19	3.4	2.8	2.9	42	17	10	5.4	6.9	2.5	2.1	1.5	5.2
20	3.3	3.0	2.9	10	7.9	9.4	6.0	7.9	2.5	3.1	12	4.2
21	3.3	3.5	2.7	8.0	6.5	15	6.0	4.5	16	1.7	13	4.9
22	3.2	2.9	3.4	8.5	5.7	67	5.4	4.0	5.2	2.9	4.2	4.4
23	3.2	2.8	2.8	8.4	5.1	15	6.9	8.0	3.5	3.6	2.9	3.7
24	3.2	2.8	3.1	52	5.0	10	8.3	31	3.1	2.5	2.5	3.3
25	3.1	2.8	2.9	29	5.0	9.9	5.5	21	3.1	2.0	2.6	3.0
26	3.0	19	2.7	11	5.2	7.7	5.2	6.7	2.6	1.7	31	2.8
27	3.2	8.3	2.6	8.1	4.9	7.0	4.7	5.0	2.4	1.6	25	2.8
28	2.9	4.2	2.9	7.2	9.1	17	4.7	4.0	2.6	1.5	5.7	2.8
29	3.5	3.6	7.1	6.5	---	9.5	4.4	3.8	2.2	1.5	3.5	2.8
30	3.1	3.4	8.9	5.9	---	6.9	4.3	3.5	2.8	1.4	3.0	12
31	2.9	---	4.0	5.6	---	6.8	---	3.3	---	1.5	2.6	---
TOTAL	130.3	122.3	105.3	771.3	254.3	413.5	246.0	209.7	97.4	121.4	200.6	397.4
MEAN	4.20	4.08	3.40	24.9	9.08	13.3	8.20	6.76	3.25	3.92	6.47	13.2
MAX	10	19	8.9	257	44	67	29	31	16	20	45	245
MIN	2.9	2.7	2.6	2.8	4.9	4.8	4.3	3.3	2.2	1.4	1.4	2.0

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1999, BY WATER YEAR (WY)

	MEAN	7.03	8.83	10.6	12.9	11.8	14.3	14.1	12.6	6.96	7.04	7.55	6.81
MAX	34.5	47.3	30.5	55.5	62.1	47.1	66.5	53.8	23.7	21.5	19.0	24.2	
(WY)	1990	1978	1970	1979	1979	1984	1980	1989	1972	1989	1992	1971	
MIN	1.97	1.89	2.78	1.94	3.53	3.86	3.29	2.08	2.11	2.44	1.52	1.25	
(WY)	1982	1982	1981	1981	1968	1985	1985	1977	1986	1988	1982	1982	

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

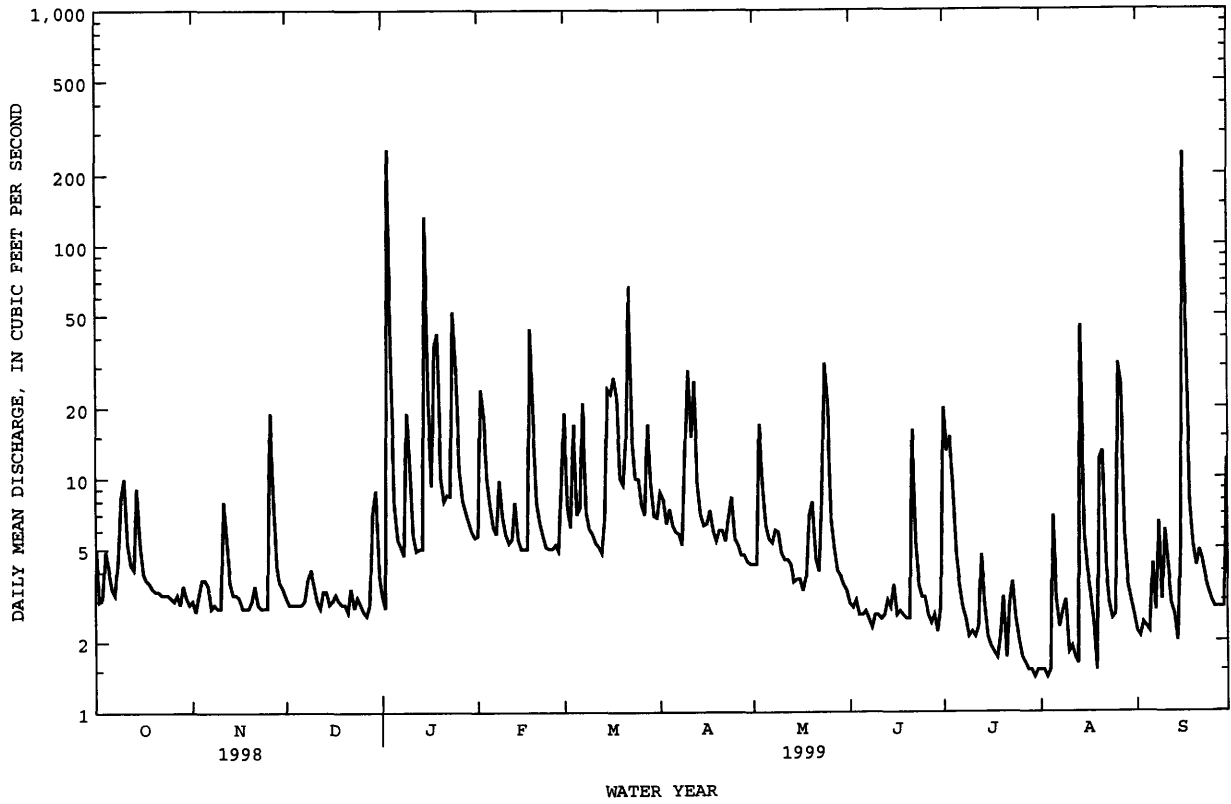
WATER YEARS 1967 - 1999

ANNUAL TOTAL	5174.6	3069.5	
ANNUAL MEAN	14.2	8.41	10.0
(I)	.00	.00	
HIGHEST ANNUAL MEAN			20.4
LOWEST ANNUAL MEAN			4.05
HIGHEST DAILY MEAN	276	Mar 9	954
LOWEST DAILY MEAN	2.5	Sep 15	.12
ANNUAL SEVEN-DAY MINIMUM	2.9	Dec 21	.51
INSTANTANEOUS PEAK FLOW			711a
INSTANTANEOUS PEAK STAGE			7.01
INSTANTANEOUS LOW FLOW			1.4
10 PERCENT EXCEEDS	23		15
50 PERCENT EXCEEDS	7.0		4.2
90 PERCENT EXCEEDS	2.9		2.4

a From rating curve extended above 150 ft³/s.

I Diversion, in cubic feet per second, from Jumping Brook by New Jersey American Water Company, for municipal supply.

01407760 JUMPING BROOK NEAR NEPTUNE CITY, NJ--Continued



SHARK RIVER BASIN

DIVERSIONS IN SHARK RIVER BASIN

01407704 Water is diverted from Shark River just upstream of gaging station (01407705) near Neptune City by New Jersey-American Water Company (since 1962), for municipal supply. Records provided by New Jersey-American Water Company.

01407759 Water is diverted from Jumping Brook just upstream of gaging station (01407760) near Neptune City by New Jersey-American Water Company (since 1962), for municipal supply. Records provided by New Jersey-American Water Company.
REVISED RECORDS.--WDR NJ-98-1: 1997.

DIVERSIONS, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

MONTH	01407704 Shark River	01407759 Jumping Brook
October	0	0
November .....	.4	0
December	11.2	0
CAL YR 1998	--	--
January	21.7	0
February	20.6	0
March	18.0	0
April	12.2	0
May	13.4	0
June	8.9	0
July	7.0	0
August	7.7	0
September	9.2	0
WTR YR 1999	10.8	0

01408000 MANASQUAN RIVER AT SQUANKUM, NJ

LOCATION.--Lat 40°09'41", Long 74°09'18" (revised), Monmouth County, Hydrologic Unit 02040301, on right bank 50 ft upstream from northbound bridge on State Highway 547 (Squankum Park Road) in Squankum, and 0.4 mi downstream from Marsh Bog Brook.

DRAINAGE AREA.--44.0 mi².

PERIOD OF RECORD.--July 1931 to current year. Monthly discharge only for July 1931, published in WSP 1302.

REVISED RECORDS.--WDR NJ-83-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 18.82 ft above sea level. Prior to Aug. 13, 1940, water stage recorder at site 80 ft upstream at same datum.

REMARKS.--Records good except for daily discharges above 300 ft³/s, which are fair. Several measurements of water temperature, other than those published, were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 4	0445	*1,060	*7.38	Sep 17	0745	955	7.05

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	15	24	26	62	124	70	50	42	31	15	20
2	25	18	24	24	102	77	74	49	66	36	15	19
3	24	35	24	360	140	62	70	73	65	49	13	18
4	30	34	18	497	86	74	68	69	63	27	13	18
5	31	29	10	103	82	63	67	59	61	24	14	19
6	26	16	11	69	71	57	64	55	49	22	26	26
7	26	15	15	61	67	115	63	53	27	19	13	21
8	27	15	27	56	70	73	62	53	25	18	14	20
9	55	16	27	90	73	61	65	61	24	18	20	18
10	32	17	26	97	68	60	140	50	24	18	14	99
11	28	21	26	58	64	57	88	46	23	19	14	48
12	25	27	25	52	61	54	147	45	24	17	14	27
13	24	35	25	51	62	51	102	44	27	22	14	23
14	34	24	27	50	61	49	92	42	34	21	169	22
15	29	23	25	289	58	85	86	41	31	19	47	24
16	24	22	24	224	56	115	81	40	26	17	28	338
17	23	21	24	101	54	137	80	39	26	16	22	563
18	22	21	24	148	149	155	77	38	26	16	19	108
19	22	21	24	262	136	113	73	43	24	16	17	73
20	22	21	24	109	86	102	71	67	23	21	29	59
21	21	24	24	88	71	94	70	42	56	17	67	62
22	21	29	26	85	64	310	69	39	40	17	28	64
23	21	26	27	82	59	138	67	53	29	20	22	51
24	21	25	25	160	56	105	73	80	26	17	20	46
25	21	25	25	197	54	94	59	111	24	16	20	42
26	21	31	24	104	54	83	56	61	24	15	48	39
27	21	26	24	84	52	77	54	51	23	14	78	37
28	19	26	24	79	58	97	52	47	22	14	33	35
29	12	25	27	74	---	88	51	44	21	14	24	35
30	12	25	49	69	---	79	50	41	22	13	22	61
31	13	---	31	66	---	73	---	38	---	14	20	---
TOTAL	762	708	760	3815	2076	2922	2241	1624	997	617	912	2035
MEAN	24.6	23.6	24.5	123	74.1	94.3	74.7	52.4	33.2	19.9	29.4	67.8
MAX	55	35	49	497	149	310	147	111	66	49	169	563
MIN	12	15	10	24	52	49	50	38	21	13	13	18
CFSM	.56	.54	.56	2.80	1.69	2.14	1.70	1.19	.76	.45	.67	1.54
IN.	.64	.60	.64	3.23	1.76	2.47	1.89	1.37	.84	.52	.77	1.72

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 1999, BY WATER YEAR (WY)

	MEAN	50.7	69.3	81.3	90.7	96.4	113	100	80.1	57.4	52.0	51.0	51.6
MAX	130	231	212	218	214	221	218	204	126	200	108	183	183
(WY)	1972	1978	1978	1979	1979	1984	1983	1998	1968	1938	1948	1938	1938
MIN	22.1	22.3	24.5	30.7	37.8	47.2	38.6	38.8	26.6	19.9	16.7	16.7	16.7
(WY)	1964	1966	1999	1981	1992	1985	1995	1955	1957	1966	1932	1932	1932

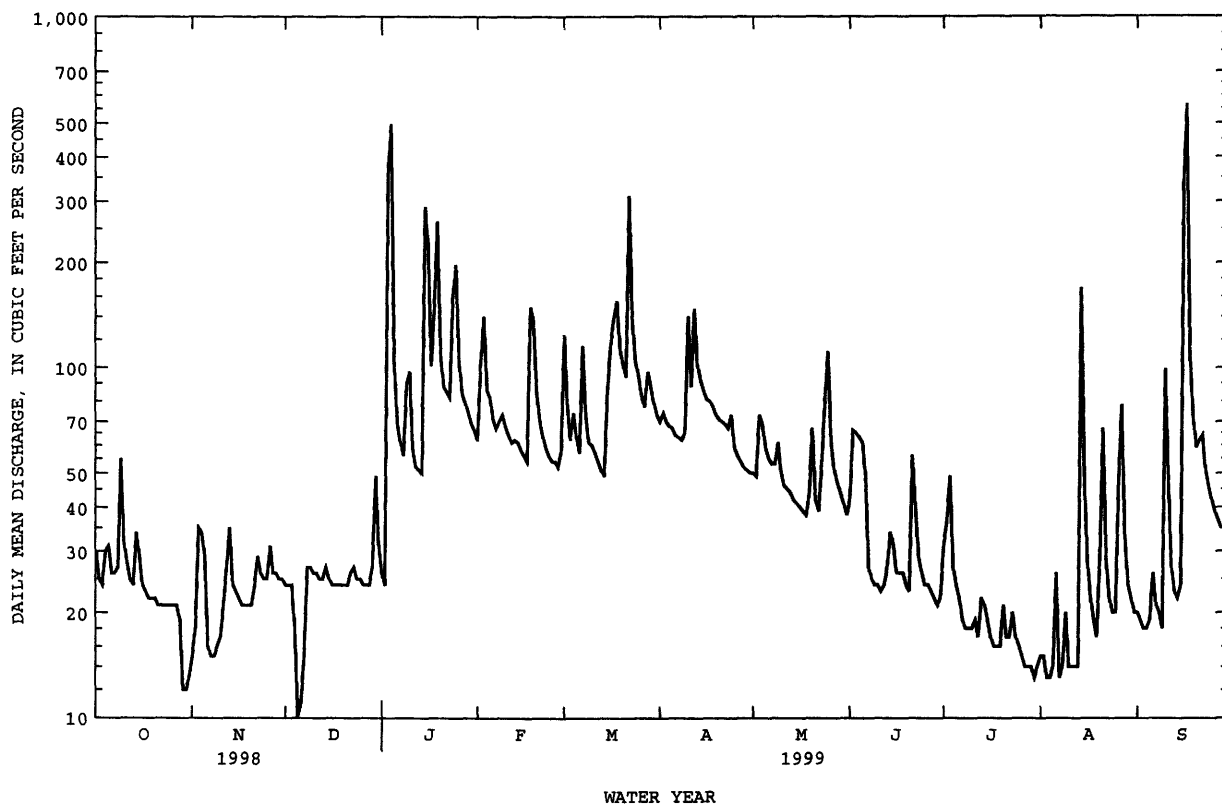
SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1932 - 1999

ANNUAL TOTAL	31049	19469	
ANNUAL MEAN	85.1	53.3	74.4
HIGHEST ANNUAL MEAN			131
LOWEST ANNUAL MEAN			40.2
HIGHEST DAILY MEAN	1040	May 10	1720
LOWEST DAILY MEAN	10	Dec 5	10
ANNUAL SEVEN-DAY MINIMUM	16	Oct 27	14
INSTANTANEOUS PEAK FLOW			1060
INSTANTANEOUS PEAK STAGE			7.38
INSTANTANEOUS LOW FLOW			10
ANNUAL RUNOFF (CFSM)	1.93	1.21	1.69
ANNUAL RUNOFF (INCHES)	26.25	16.46	22.97
10 PERCENT EXCEEDS	158	97	130
50 PERCENT EXCEEDS	55	35	54
90 PERCENT EXCEEDS	24	17	26



01408029 MANASQUAN RIVER NEAR ALLENWOOD, NJ

LOCATION.--Lat 40°08'48", long 74°07'23", Monmouth County, Hydrologic Unit 02040301, on left bank just downstream from pumping station of Manasquan Water Supply System, 1400 ft upstream from Hospital Road near Allenwood, 1.2 mi downstream from Mill Run, and 7.9 mi from mouth.

DRAINAGE AREA.--63.3 mi².

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

REVISED RECORDS.--WDR NJ-92-1: 1991 Diversion.

GAGE.--Water-stage recorder and concrete control. Datum of gage is sea level (New Jersey Water Supply Authority benchmark).

REMARKS.--Records good. Diversion by New Jersey-American Water Company from Manasquan Reservoir since 1990 and by Manasquan Water Supply System at gage to Manasquan Reservoir for municipal supply since March 1990 (see Manasquan River, diversions). Records of diversions provided by New Jersey Water Supply Authority. Several measurements of water temperature were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	33	17	17	57	170	76	42	28	22	15	14
2	15	32	14	15	129	100	86	42	18	20	14	13
3	15	31	14	570	202	74	72	80	18	30	13	15
4	17	32	14	1050	114	95	72	84	15	13	14	14
5	20	20	15	126	98	74	69	65	14	14	14	13
6	15	15	16	63	78	69	62	56	17	14	15	16
7	16	15	16	44	70	173	61	52	17	15	14	13
8	17	15	16	36	86	95	58	41	16	16	14	15
9	48	15	22	44	70	73	66	26	15	15	14	13
10	29	16	17	56	64	67	227	36	18	17	14	39
11	24	29	15	50	53	58	130	43	15	15	13	21
12	18	27	15	34	60	46	255	39	17	14	14	14
13	16	18	17	38	72	39	137	38	17	15	14	14
14	27	15	18	48	58	53	98	35	17	13	179	14
15	23	14	15	476	52	130	81	33	17	13	25	16
16	16	13	15	428	51	186	76	30	15	14	16	516
17	15	15	15	65	50	235	83	29	15	13	12	1070
18	16	15	14	165	218	260	69	30	16	14	14	47
19	15	14	14	451	237	143	64	37	15	14	15	17
20	14	15	14	138	119	101	64	64	14	13	19	18
21	16	18	15	70	88	95	65	34	38	13	15	17
22	15	16	16	60	72	540	61	29	23	14	13	20
23	27	14	17	20	61	271	61	47	14	13	14	13
24	33	15	18	168	58	149	81	121	14	15	13	21
25	34	14	15	369	58	119	61	203	15	14	15	25
26	32	37	13	157	59	97	57	71	15	13	43	21
27	33	39	14	108	55	86	52	48	14	13	63	20
28	33	25	15	97	67	124	48	37	14	14	21	19
29	34	20	22	80	---	110	47	32	14	14	15	18
30	35	18	52	70	---	87	45	27	14	14	12	46
31	34	---	25	63	---	76	---	26	---	14	14	---
TOTAL	720	615	535	5176	2456	3995	2484	1577	509	465	700	2132
MEAN	23.2	20.5	17.3	167	87.7	129	82.8	50.9	17.0	15.0	22.6	71.1
MAX	48	39	52	1050	237	540	255	203	38	30	179	1070
MIN	14	13	13	15	50	39	45	26	14	13	12	13

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1999, BY WATER YEAR (WY)

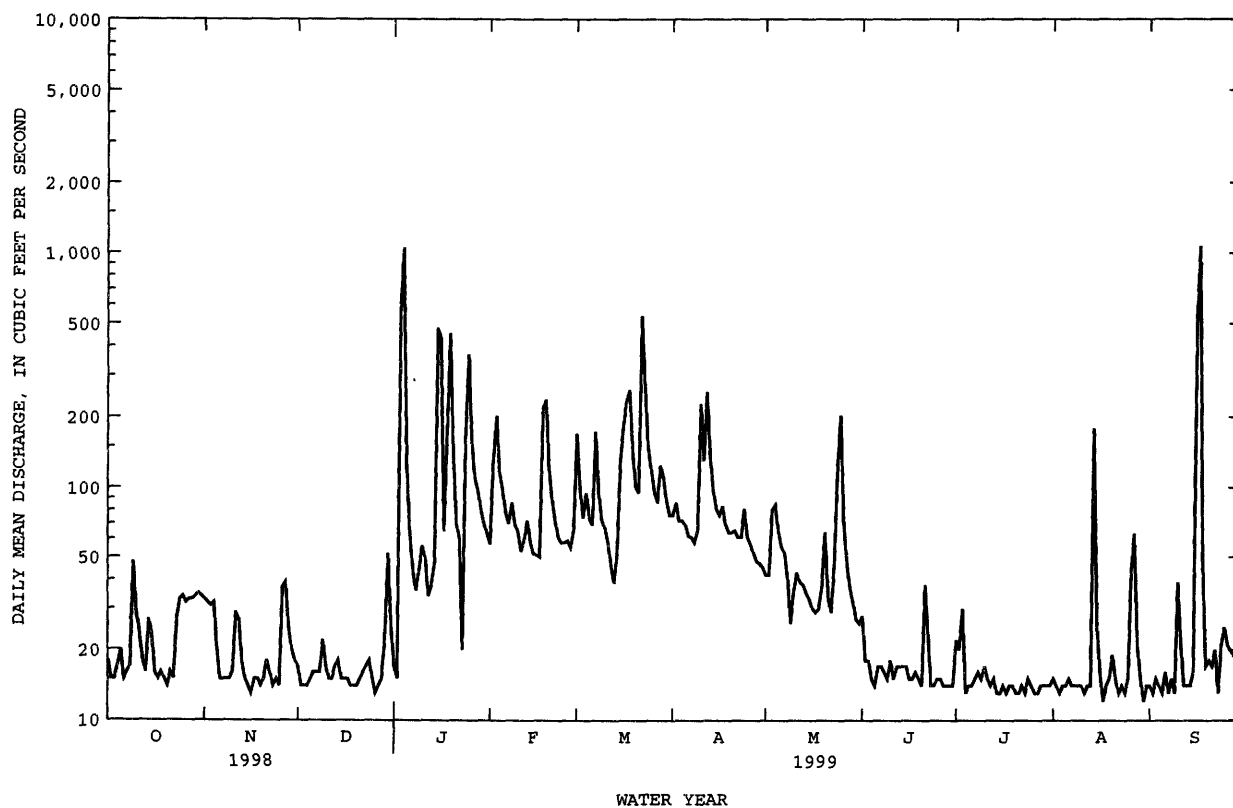
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
MEAN	49.5	57.7	97.5	139	110	171	118	89.3	49.6	38.1
MAX	152	129	227	218	270	319	180	312	124	66.4
(WY)	1997	1996	1997	1996	1998	1993	1997	1998	1998	1990
MIN	19.2	20.5	17.3	57.1	35.8	44.5	28.0	31.2	17.0	15.0
(WY)	1995	1999	1999	1995	1992	1992	1992	1992	1999	1999

MANASQUAN RIVER BASIN

01408029 MANASQUAN RIVER NEAR ALLENWOOD, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1990 - 1999	
ANNUAL TOTAL	45138		21364		84.4	
ANNUAL MEAN	124		58.5		39.4	1998
HIGHEST ANNUAL MEAN					133	1995
LOWEST ANNUAL MEAN					1930	Dec 12 1992
HIGHEST DAILY MEAN	1740	May 10	1070	Sep 17	12	Jun 23 1990
LOWEST DAILY MEAN	12	Jul 28	13	Jul 14	13	Jul 14 1999
ANNUAL SEVEN-DAY MINIMUM	14	Jul 24	1940	Jan 4	2580	Mar 9 1999
INSTANTANEOUS PEAK FLOW			14.83	Jan 4	15.87	Mar 9 1999
INSTANTANEOUS PEAK STAGE			1.2	Jul 19	.00a	Jun 24 1993
INSTANTANEOUS LOW FLOW						
10 PERCENT EXCEEDS	261		119		168	
50 PERCENT EXCEEDS	50		25		45	
90 PERCENT EXCEEDS	15		14		15	

a Result of pumping to Manasquan Reservoir.



RESERVOIRS IN MANASQUAN RIVER BASIN

01407965 MANASQUAN RESERVOIR.--Lat 40°10'48", long 74°11'40", Monmouth County, Hydrologic Unit 02040301, at dam on Timber Swamp Brook, 1.6 mi southwest of Farmingdale, and 1.2 mi upstream from the Manasquan River. DRAINAGE AREA, 3.18 mi² (revised). PERIOD OF RECORD, March 1990 to current year. GAGE, water-stage recorder. Datum of gage is sea level. REMARKS.--Reservoir is formed by an earthfill dam 4,840 ft long, utilizing a soil-bentonite cut-off wall to control water seepage; dam completed in July 1990 with nominal crest elevation 112.0 ft, but filling began earlier. Usable capacity 4,669,700,000 gal (revised) at elevation 103.0 ft, which represents the normal and service spillway elevation; outflow is regulated through an inlet/outlet tower and the reservoir is filled by pumping from the Manasquan River Intake Pumping Station and the Reservoir Pumping Station through 5.25 mi of 66-in. pipeline (see station 01408029). Water is used for municipal supply. COOPERATION.--Records provided by New Jersey Water Supply Authority. EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 4,694,000,000 gal, Mar. 26, 1993, elevation, 103.1 ft; minimum (after first filling), 3,531,000,000 gal, Feb. 26, 1992, elevation 97.7 ft. EXTREMES FOR CURRENT YEAR.--Maximum contents 4,600,000,000 gal, Apr. 15, elevation, 102.7 ft; minimum, 3,170,000,000 gal, Aug. 13, elevation, 95.97 ft.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

Date	Elevation (feet)†	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)
01407965 MANASQUAN RESERVOIR			
Sept. 30.....	101.10	4,240	--
Oct. 31.....	99.90	3,990	-12.5
Nov. 30.....	99.20	3,840	-7.7
Dec. 31.....	98.70	3,740	-5.0
CAL YR 1998			-1.7
Jan. 31.....	102.20	4,480	+36.9
Feb. 28.....	102.40	4,530	+2.8
Mar. 31.....	102.60	4,570	+2.0
Apr. 30.....	102.50	4,550	-1.0
May 31.....	102.30	4,500	-2.5
June 30.....	100.50	4,110	-20.1
July 31.....	97.60	3,510	-29.9
Aug. 31.....	96.63	3,310	-10.0
Sept. 30.....	98.17	3,410	+5.2
WTR YR 1999			-3.5

† Elevation at 2400 of the last day of each month.

DIVERSIONS IN MANASQUAN RIVER BASIN

0140802880 New Jersey Water Supply Authority diverts water from the Manasquan Reservoir System, for municipal supply. Figures include water pumped to Glendola Reservoir for New Jersey American Water Company.

0140802890 New Jersey Water Supply Authority diverts water from the Manasquan Reservoir System to the Glendola Reservoir of New Jersey American Water Company in the Shark River Basin, for municipal supply.

DIVERSIONS, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

MONTH	0140802880	0140802890
	Manasquan Reservoir System	Glendola Reservoir NJ American Water Company
October	19.4	17.2
November	20.8	17.2
December	23.3	18.5
CAL YR 1998	23.8	17.8
January	48.2	16.5
February	24.7	16.4
March	24.8	17.3
April	22.7	15.8
May	25.4	16.0
June	25.2	28.1
July	22.2	32.9
August	28.4	24.7
September	40.9	19.5
WTR YR 1999	27.2	20.0

METEDECONK RIVER BASIN

01408120 NORTH BRANCH METEDECONK RIVER NEAR LAKEWOOD, NJ

LOCATION.--Lat 40°05'30", long 74°09'10", Ocean County, Hydrologic Unit 02040301, on upstream right bank at bridge on State Route 549, 1.0 mi upstream from confluence with South Branch Metedeconk River, and 2.3 mi east of Lakewood.

DRAINAGE AREA.--34.9 mi².

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 3.89 ft above sea level. Prior to Nov. 17, 1977, gage located on upstream left side of bridge. Nov. 17, 1977 to Dec. 19, 1984, gage located on the downstream side of bridge.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. Satellite telemeter at station.

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)
Jan 3	2330	*654	*7.77	Aug 14	1945	291	6.44
Jan 16	0030	317	6.58	Sep 16	2115	493	7.27

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	22	25	27	44	78	52	37	26	40	12	19
2	23	22	23	26	62	71	57	36	e33	42	12	18
3	19	22	22	208	92	59	52	64	e36	65	11	18
4	23	22	22	494	83	64	50	65	e34	31	11	19
5	25	22	21	197	70	53	48	49	e34	22	11	19
6	22	23	21	96	56	50	45	43	e32	19	11	22
7	21	22	21	50	51	77	45	41	e24	17	11	21
8	21	23	22	38	61	68	44	44	e21	16	12	21
9	35	23	30	56	59	56	45	62	e20	16	14	19
10	35	23	26	73	52	49	120	42	e19	16	12	27
11	29	35	23	53	47	46	113	37	e20	16	12	41
12	25	47	21	43	45	43	150	35	20	15	12	30
13	23	31	21	40	52	42	110	35	23	20	12	22
14	28	27	23	39	47	42	79	33	26	19	194	19
15	32	25	21	175	42	e91	59	32	33	17	170	22
16	26	23	21	265	42	108	54	31	24	16	43	243
17	23	23	20	148	41	113	55	31	21	15	23	397
18	22	23	20	119	88	119	51	31	22	14	20	205
19	22	22	19	200	132	101	47	35	20	15	17	108
20	21	22	19	144	100	77	47	46	20	25	44	55
21	20	24	19	92	70	65	48	38	59	17	129	37
22	20	23	20	68	53	e167	46	32	43	21	49	37
23	20	22	21	59	46	e157	47	41	26	25	26	35
24	21	22	21	101	43	e127	55	76	22	19	21	32
25	21	21	20	161	43	e94	47	106	20	16	20	29
26	21	44	20	119	43	e71	43	69	20	15	76	27
27	21	68	20	85	41	58	41	47	19	14	84	26
28	21	37	20	63	46	73	39	36	18	13	50	26
29	22	28	26	55	---	71	39	32	18	12	27	26
30	22	26	44	50	---	60	37	29	18	12	21	48
31	22	---	33	47	---	53	---	27	---	12	20	---
TOTAL	727	817	705	3391	1651	2403	1765	1362	771	632	1187	1668
MEAN	23.5	27.2	22.7	109	59.0	77.5	58.8	43.9	25.7	20.4	38.3	55.6
MAX	35	68	44	494	132	167	150	106	59	65	194	397
MIN	19	21	19	26	41	42	37	27	18	12	11	18
CFSM	.67	.78	.65	3.13	1.69	2.22	1.69	1.26	.74	.58	1.10	1.59
IN.	.77	.87	.75	3.61	1.76	2.56	1.88	1.45	.82	.67	1.27	1.78

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 1999, BY WATER YEAR (WY)

	MEAN	43.9	58.4	70.7	77.6	71.7	84.7	82.2	66.9	47.8	43.2	43.0	39.0
MAX	92.6	141	129	153	153	160	153	160	89.6	107	88.8	80.9	
(WY)	1990	1973	1978	1979	1979	1984	1984	1998	1984	1984	1990	1989	
MIN	23.5	26.1	22.7	25.2	33.0	38.8	32.9	27.1	25.7	20.4	15.2	17.8	
(WY)	1999	1982	1999	1981	1992	1981	1995	1977	1999	1999	1981	1988	

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

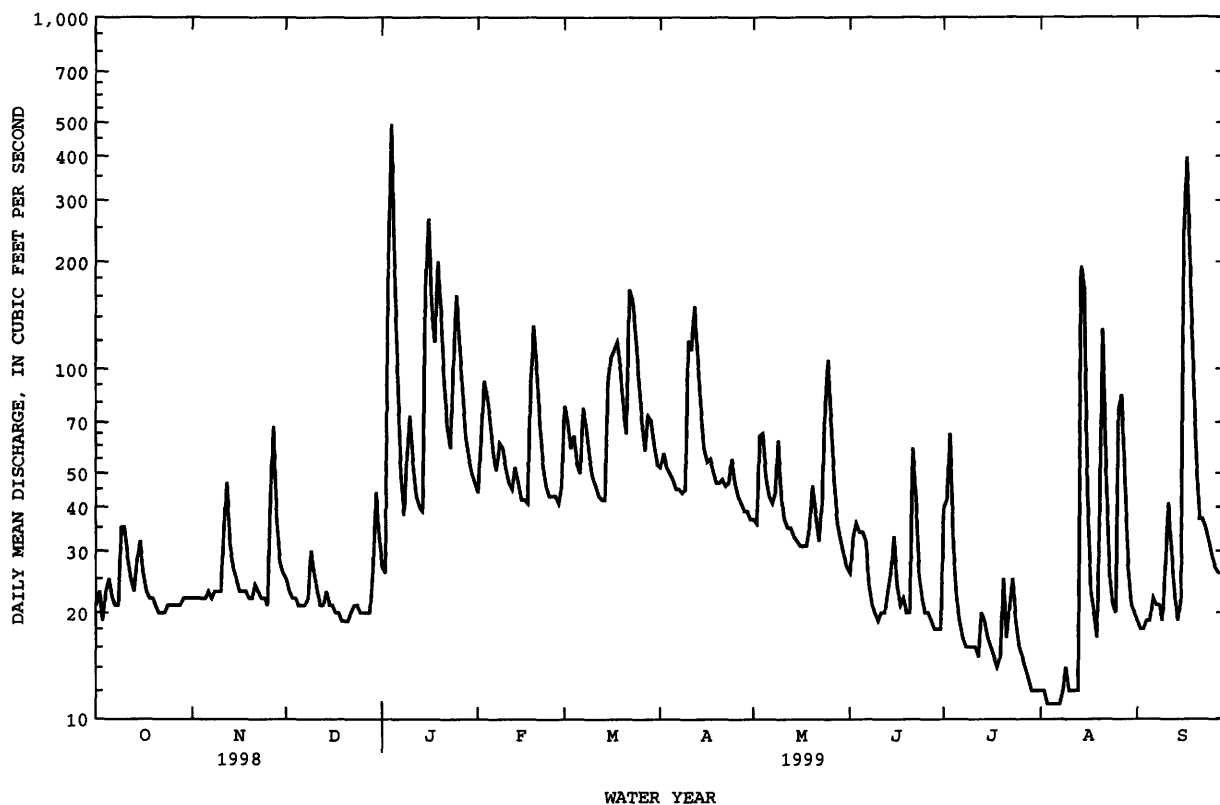
FOR 1999 WATER YEAR

WATER YEARS 1973 - 1999

ANNUAL TOTAL	27523	17079	
ANNUAL MEAN	75.4	46.8	60.7
HIGHEST ANNUAL MEAN			91.5
LOWEST ANNUAL MEAN			34.7
HIGHEST DAILY MEAN	573	May 10	838
LOWEST DAILY MEAN	17	Sep 29	10
ANNUAL SEVEN-DAY MINIMUM	19	Sep 24	11
INSTANTANEOUS PEAK FLOW			1370a
INSTANTANEOUS PEAK STAGE			9.28
INSTANTANEOUS LOW FLOW			10
ANNUAL RUNOFF (CFSM)	2.16	1.34	1.74
ANNUAL RUNOFF (INCHES)	29.34	18.20	23.64
10 PERCENT EXCEEDS	160	92	111
50 PERCENT EXCEEDS	49	32	46
90 PERCENT EXCEEDS	21	18	22

01408120 NORTH BRANCH METEDECONK RIVER NEAR LAKEWOOD, NJ--Continued

a From rating curve extended above 600 ft³/s.
e Estimated



01408150 SOUTH BRANCH METEDECONK RIVER NEAR LAKEWOOD, NJ

LOCATION.--Lat 40°05'09", long 74°11'09", Ocean County, Hydrologic Unit 02040301, on right side of dam at Lake Shenandoah, 1.5 mi downstream from Lake Carasaljo, 0.8 mi east of Lakewood, and 2.0 mi upstream from mouth.

DRAINAGE AREA.--27.5 mi².

PERIOD OF RECORD.--June 1992 to March 1999 (Discontinued).

GAGE.--Water-stage recorder and crest-stage gage above a concrete dam. Datum of gage is 23.0 ft above sea level.

REMARKS.--Records good except for estimated daily discharges which are poor. Regulation from Lakes Carasaljo, Manetta, and Shenandoah. Diversions for golf course irrigation during growing season occur upstream of gaging station.

PEAK DISCHARGES FOR OCTOBER 1998 TO MARCH 1999.--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)
Jan 4	1045	*651	*3.39	Jan 18	2400	261	2.66

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO MARCH 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	23	34	46	54	58	---	---	---	---	---	---
2	27	27	34	48	62	69	---	---	---	---	---	---
3	34	45	34	105	79	102	---	---	---	---	---	---
4	39	47	28	410	88	83	---	---	---	---	---	---
5	39	42	15	e155	79	50	---	---	---	---	---	---
6	37	23	15	e94	60	47	---	---	---	---	---	---
7	35	21	21	e60	51	50	---	---	---	---	---	---
8	36	21	39	e50	58	56	---	---	---	---	---	---
9	38	21	39	e71	60	58	---	---	---	---	---	---
10	40	21	37	e75	58	e52	---	---	---	---	---	---
11	40	29	35	e53	56	e47	---	---	---	---	---	---
12	39	35	35	48	54	e44	---	---	---	---	---	---
13	37	47	36	45	55	e42	---	---	---	---	---	---
14	38	35	36	44	54	e46	---	---	---	---	---	---
15	38	32	36	142	51	e74	---	---	---	---	---	---
16	38	31	34	167	44	e92	---	---	---	---	---	---
17	38	30	26	141	44	e102	---	---	---	---	---	---
18	37	30	24	119	78	e97	---	---	---	---	---	---
19	35	30	25	188	106	e87	---	---	---	---	---	---
20	32	30	26	100	95	e71	---	---	---	---	---	---
21	31	33	27	94	94	e62	---	---	---	---	---	---
22	30	43	33	e73	64	e99	---	---	---	---	---	---
23	30	37	40	e69	52	e116	---	---	---	---	---	---
24	30	35	42	e90	49	e128	---	---	---	---	---	---
25	30	34	42	106	49	e117	---	---	---	---	---	---
26	30	42	43	108	46	e86	---	---	---	---	---	---
27	30	36	40	116	38	e59	---	---	---	---	---	---
28	28	35	29	100	45	e59	---	---	---	---	---	---
29	18	35	31	71	---	e58	---	---	---	---	---	---
30	17	35	31	62	---	e56	---	---	---	---	---	---
31	20	---	34	57	---	e51	---	---	---	---	---	---
TOTAL	1005	985	1001	3107	1723	2218	---	---	---	---	---	---
MEAN	32.4	32.8	32.3	100	61.5	71.5	---	---	---	---	---	---
MAX	40	47	43	410	106	128	---	---	---	---	---	---
MIN	14	21	15	44	38	42	---	---	---	---	---	---
CFSM	1.18	1.19	1.17	3.64	2.24	2.60	---	---	---	---	---	---
IN.	1.36	1.33	1.35	4.20	2.33	3.00	---	---	---	---	---	---

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1999, BY WATER YEAR (WY)

MEAN	42.4	49.0	57.6	75.7	69.7	83.8	70.8	67.8	46.8	45.1	52.8	42.1
MAX	73.5	72.9	101	100	96.6	122	93.0	139	72.2	68.7	76.8	61.4
(WY)	1997	1996	1997	1999	1998	1998	1997	1998	1998	1996	1992	1993
MIN	28.5	32.8	32.3	50.5	43.7	41.3	31.6	36.1	26.7	28.3	30.6	23.6
(WY)	1995	1999	1999	1995	1995	1995	1995	1995	1994	1992	1995	1995

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

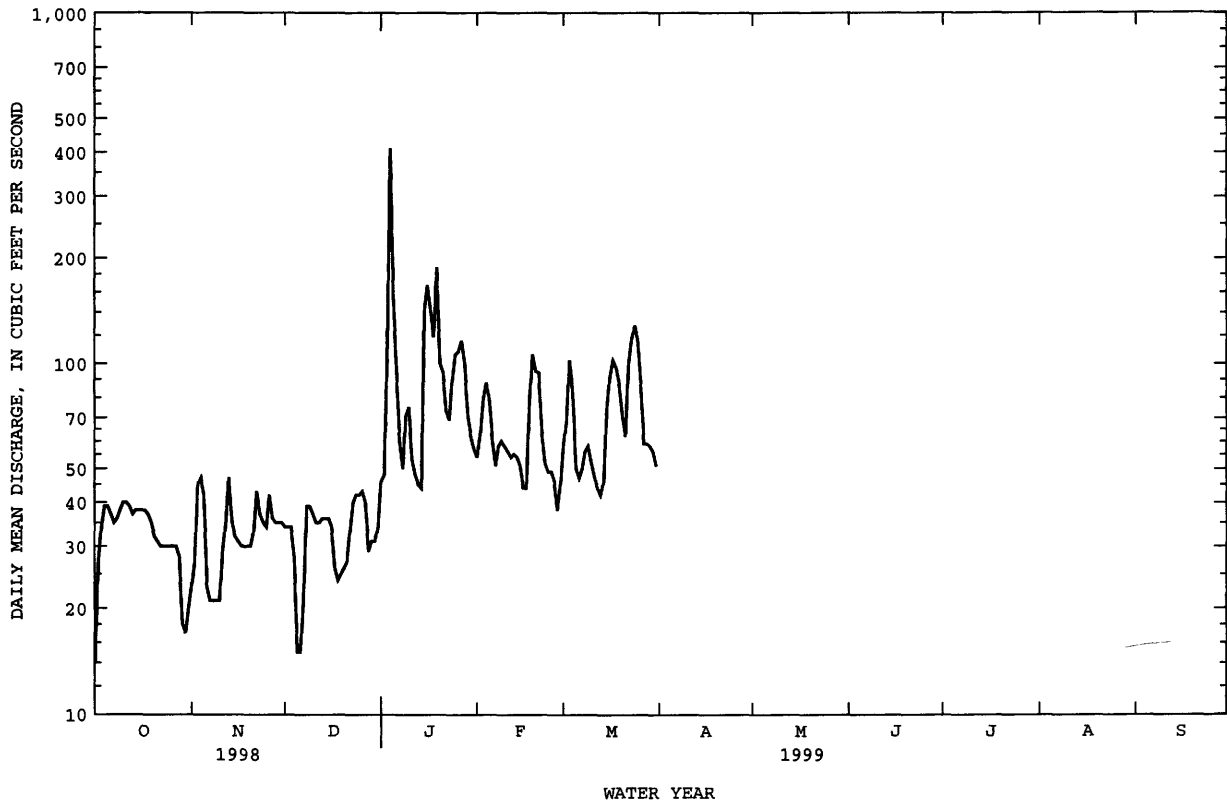
FOR OCT. 1998 TO MARCH 1999

WATER YEARS 1992 - MAR 1999

ANNUAL TOTAL	25595											
ANNUAL MEAN	70.1									59.2		
HIGHEST ANNUAL MEAN										74.1		1998
LOWEST ANNUAL MEAN										36.4		1995
HIGHEST DAILY MEAN	459	May 11				410	Jan 4			514	Dec 12	1992
LOWEST DAILY MEAN	14	Oct 1				14	Oct 1			5.2	Sep 4	1996
ANNUAL SEVEN-DAY MINIMUM	23	Oct 27								13	Aug 29	1995
INSTANTANEOUS PEAK FLOW						651	Jan 4			652	Dec 12	1992
INSTANTANEOUS PEAK STAGE						3.39	Jan 4			3.39	Jan 5	1992
INSTANTANEOUS LOW FLOW						11	Oct 1			4.5	Sep 4	1996
ANNUAL RUNOFF (CFSM)	2.55									2.15		
ANNUAL RUNOFF (INCHES)	34.62									29.27		
10 PERCENT EXCEEDS	122									102		
50 PERCENT EXCEEDS	54									46		
90 PERCENT EXCEEDS	28									25		

e Estimated

01408150 SOUTH BRANCH METEDECONK RIVER NEAR LAKEWOOD, NJ--Continued



01408168 BARNEGAT BAY AT MANTOLOKING, NJ

LOCATION.--Lat 40°02'24", long 74°03'25", Ocean County, Hydrologic Unit 02040301, at east end of Downer Avenue in Mantoloking and 0.1 mi south of bridge on State Route 528.

PERIOD OF RECORD.--Tidal crest-stage gage 1979-85, 1993. June 1993 to current year.

GAGE.--Water-stage recorder. Datum of gage is 10.00 ft below sea level. Gage-height record converted to elevation above or below (-) sea level for publication.

REMARKS.--No gage-height or doubtful record, May 16-18. Summaries for months with short periods of no gage-height record have been estimated with little or no loss of accuracy unless otherwise noted. Some periods cannot be estimated and are noted by dash (--) lines.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation known, 4.93 ft, Oct. 11, 1992, from crest-stage gage; minimum recorded, -0.42 ft, Oct. 8, 1996.

EXTREMES FOR CURRENT YEAR.--Maximum elevation recorded, 3.68 ft, Mar. 9; minimum recorded, -0.25 ft, Jan. 1.

Summaries of tide elevations during the year are as follows:

TIDE ELEVATIONS, IN FEET, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
Maximum	Elevation	e2.50	e2.20	2.49	3.00	2.21	3.20	e2.30	2.09	2.10	2.52	2.46	3.06
high tide	Date	13	11	30	15	3,26	4	16	25	15	2	14	16
Minimum	Elevation	.42	e.10	-.01	-.40	.10	-.43	.34	e.60	.80	.50	.20	-.07
low tide	Date	26	25	23	14	14	28	5	2	21	13	30	18
Mean high tide		---	---	1.29	1.21	1.57	1.22	---	1.51	1.49	1.65	1.73	1.76
Mean water level		---	---	1.02	.91	1.28	.94	---	1.28	1.26	1.40	1.46	1.46
Mean low tide		---	---	.78	.64	1.01	.68	---	.98	1.00	1.13	1.18	1.18

e Estimated.

01408200 BARNEGAT BAY AT BAY SHORE, NJ

LOCATION.--Lat 39°56'56", long 74°06'52", Ocean County, Hydrologic Unit 02040301, at west end of bridge on State Route 37 over Barnegat Bay at Bay Shore, 2.2 mi west of Seaside Heights, and 4.5 mi east of Toms River.

PERIOD OF RECORD.--Tidal crest-stage gage 1965-86, 1992. August 1993 to current year.

GAGE.--Water-stage recorder. Datum of gage is 10.00 ft below sea level. Gage-height record converted to elevation above or below (-) sea level for publication.

REMARKS.--No gage-height or doubtful record, Oct. 4 to Nov. 5, Mar. 4 to Apr. 3, and Aug. 3 to Sept. 1. Summaries for months with short periods of no gage-height record have been estimated with little or no loss of accuracy unless otherwise noted. Some periods cannot be estimated and are noted by dash (--) lines.

COOPERATION.--Record of stage collected in cooperation with the U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation known, 4.27 ft, Oct. 30, 1991, from crest-stage gage; minimum recorded, -0.10 ft, Mar. 29, 1996.

EXTREMES FOR CURRENT YEAR.--Maximum elevation recorded, 3.34 ft, Mar. 9; minimum recorded, 0.3 ft, Nov. 27 and Mar. 15, but lower elevation could have occurred during the period of missing record.

Summaries of tide elevations during the year are as follows:

TIDE ELEVATIONS, IN FEET, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
Maximum	Elevation	2.66	2.30	2.62	2.99	2.35	2.88	2.40	2.14	2.18	2.35	2.40	3.05
high tide	Date	13	11	30	2,15	3,26	4	16	24	14	2	14	16
Minimum	Elevation	0.45	0.30	0.12	0.12	0.23	-0.35	0.41	0.74	0.65	0.81	0.71	0.35
low tide	Date	25	25	23	14	14	28	1	2	8	3	30	18
Mean high tide		1.56	1.50	1.40	1.33	1.70	1.33	1.63	1.69	1.65	1.76	1.88	1.89
Mean water level		1.28	1.21	1.10	1.00	1.39	1.06	1.33	1.40	1.37	1.47	1.28	1.60
Mean low tide		0.98	0.91	0.81	0.70	1.06	0.75	1.00	1.08	1.08	1.15	1.59	1.32

01408500 TOMS RIVER NEAR TOMS RIVER, NJ

LOCATION.--Lat 39°59'10", long 74°13'29", Ocean County, Hydrologic Unit 02040301, on left bank 500 ft downstream from bridge on State Route 527 (Oak Ridge Parkway), 1.9 mi downstream from Union Branch, and 2.6 mi northwest of community of Toms River.

DRAINAGE AREA.--123 mi².

PERIOD OF RECORD.--October 1928 to current year. Monthly discharge only for October and November 1928, published in WSP 1302.

REVISED RECORDS.--WSP 1702: 1938. WDR NJ-76-1: 1975(M). WDR NJ-77-1: 1976.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 8.10 ft above sea level.

REMARKS.--Records good except for estimated daily discharges, which are poor. Diversions by Ciba-Geigy Inc., 800 ft. upstream July 1966 through an unknown date; the effluent is returned by pipeline directly into the Atlantic Ocean, thus bypassing station. Several measurements of water temperature were made during the year.

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)
Jan 5	2215	618	7.14	Sep 18	1245	*1,170	*9.56
Jan 19	0030	499	6.46				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	90	83	96	109	206	218	210	153	116	95	53	102
2	93	82	93	99	204	235	207	152	111	104	52	96
3	89	82	91	203	227	243	204	165	107	97	51	92
4	94	82	90	354	246	234	199	184	102	100	50	90
5	101	81	89	535	252	219	193	184	99	90	50	90
6	100	82	90	548	e230	212	188	176	97	82	51	92
7	97	82	89	426	e200	224	180	169	97	77	50	91
8	96	83	90	278	e190	222	175	168	94	72	52	90
9	104	84	99	e215	e200	217	171	183	91	69	56	89
10	123	84	99	e225	e205	204	222	174	87	68	55	112
11	118	94	97	e210	e175	192	247	160	86	68	54	162
12	99	108	94	e200	e150	182	318	151	87	66	53	167
13	92	107	94	e170	e160	175	341	145	91	74	55	142
14	94	102	96	166	e170	174	346	140	101	75	211	126
15	99	98	94	244	e140	233	295	136	109	73	218	115
16	96	94	93	291	e110	271	249	134	106	69	197	261
17	92	113	92	375	125	299	249	131	100	65	189	474
18	91	126	91	456	199	322	217	128	97	63	118	1040
19	88	104	89	487	252	323	199	134	94	63	97	794
20	87	92	89	426	289	302	190	152	91	62	110	538
21	85	93	89	406	310	265	189	155	130	64	154	363
22	84	92	90	357	263	314	187	139	150	66	127	258
23	82	91	89	294	224	347	186	137	136	69	109	227
24	83	91	92	e310	202	422	191	166	118	66	98	207
25	84	90	91	e380	192	416	190	202	104	64	91	186
26	84	103	89	e415	185	336	188	208	96	60	145	167
27	83	113	88	e390	180	267	176	216	91	58	194	161
28	84	107	89	320	182	257	167	173	87	59	179	158
29	85	101	97	264	---	246	165	147	85	55	159	146
30	83	97	115	239	---	237	158	132	86	54	129	158
31	82	---	119	222	---	222	---	123	---	53	112	---
TOTAL	2862	2841	2903	9614	5668	8030	6397	4917	3046	2200	3319	6794
MEAN	92.3	94.7	93.6	310	202	259	213	159	102	71.0	107	226
MAX	123	126	119	548	310	422	346	216	150	104	218	1040
MIN	82	81	88	99	110	174	158	123	85	53	50	89
CFSM	.75	.77	.76	2.52	1.65	2.11	1.73	1.29	.83	.58	.87	1.84
IN.	.87	.86	.88	2.91	1.71	2.43	1.93	1.49	.92	.67	1.00	2.05

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 1999, BY WATER YEAR (WY)

	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940
MEAN	155	198	223	247	252	292	281	245	186	156	160	151
MAX	325	475	447	506	455	541	573	541	463	439	359	414
(WY)	1972	1973	1973	1978	1973	1958	1984	1998	1968	1938	1990	1971
MIN	83.3	85.5	93.6	104	128	143	120	118	96.8	71.0	57.9	63.0
(WY)	1942	1966	1999	1981	1992	1985	1985	1992	1977	1999	1966	1995

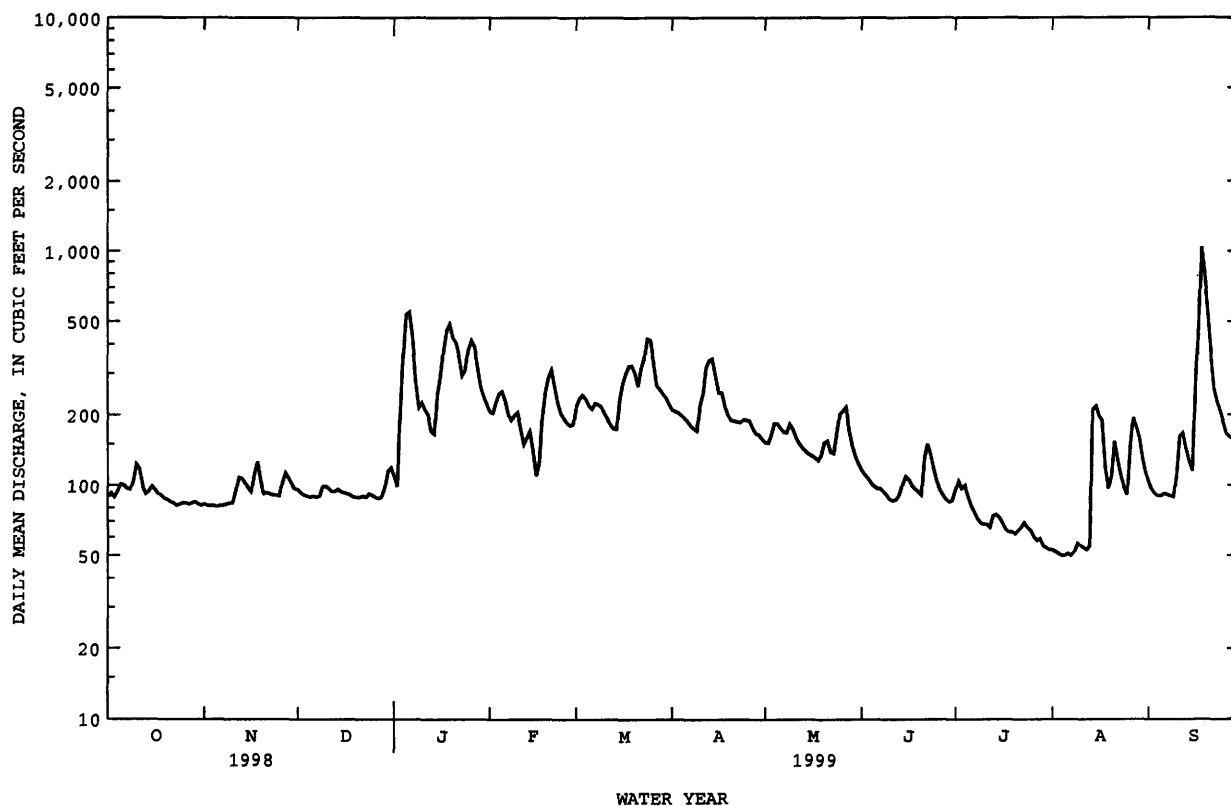
01408500 TOMS RIVER NEAR TOMS RIVER, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1929 - 1999	
ANNUAL TOTAL	91228		58591		212	
ANNUAL MEAN	250		161		335	
HIGHEST ANNUAL MEAN					128	
LOWEST ANNUAL MEAN					1910	
HIGHEST DAILY MEAN	1530	May 11	1040	Sep 18	1910	Sep 23 1938
LOWEST DAILY MEAN	81	Nov 5	50	Aug 4	43	Sep 11 1995
ANNUAL SEVEN-DAY MINIMUM	82	Oct 31	51	Aug 2	44	Sep 10 1995
INSTANTANEOUS PEAK FLOW			1170	Sep 18	2000a	Sep 23 1938
INSTANTANEOUS PEAK STAGE			9.56	Sep 18	12.50b	Sep 23 1938
INSTANTANEOUS LOW FLOW			49	Aug 7	42	Sep 11 1995
ANNUAL RUNOFF (CFSM)	2.03		1.31		1.72	
ANNUAL RUNOFF (INCHES)	27.59		17.72		23.42	
10 PERCENT EXCEEDS	513		290		355	
50 PERCENT EXCEEDS	200		123		184	
90 PERCENT EXCEEDS	90		75		96	

a From rating curve extended above 1500 ft³/s

b From flood mark.

e Estimated



BARNEGAT BAY

01409110 BARNEGAT BAY AT WARETOWN, NJ

LOCATION.--Lat 39°47'29", long 74°10'58", Ocean County, Hydrologic Unit 02040301, on the pier of the Waretown Fishing Station at the end of Bryant Road on west side of Barnegat Bay, 0.7 mi east of Waretown, and 3.2 mi south of Forked River.

PERIOD OF RECORD.--August 1993 to current year.

GAGE.--Water-stage recorder. Datum of gage is 10.00 ft below sea level. Gage-height record converted to elevation above or below (-) sea level for publication.

REMARKS.--No gage-height or doubtful record, Oct. 28 to Nov. 5, 1998, Dec. 14 to Feb. 2. Summaries for months with short periods of no gage-height record have been estimated with little or no loss of accuracy unless otherwise noted. Some periods cannot be estimated and are noted by dash (--) lines.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation recorded, 3.63 ft, Oct. 19, 1996; minimum recorded, -0.64 ft, Mar. 4, 1996.

EXTREMES FOR CURRENT YEAR.--Maximum elevation recorded, 3.61 ft, Feb. 6; minimum recorded, 0.00 ft, Jan. 1, but lower elevation could have occurred during the periods of missing record.

Summaries of tide elevations during the year are as follows:

TIDE ELEVATIONS, IN FEET, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
Maximum	Elevation	2.50	e2.10	2.39	2.61	2.27	2.59	2.27	2.10	2.09	2.14	2.36	2.92
high tide	Date	13	6	30	15	26	15	16	4	14	30	31	16
Minimum	Elevation	0.52	e0.40	0.07	0.05	0.33	0.07	0.38	0.72	0.57	0.62	0.91	0.03
low tide	Date	25	25	23	2	10	5	1	31	7	3	17	18
Mean high tide		1.57	---	1.30	1.19	1.62	1.30	1.56	1.62	1.52	1.57	1.80	1.80
Mean water level		1.33	---	1.05	0.97	1.36	1.06	1.29	1.38	1.28	1.33	1.52	1.52
Mean low tide		1.08	---	0.81	0.67	1.09	0.78	1.01	1.12	1.02	1.05	1.24	1.24

e Estimated.

01409135 BARNEGAT BAY AT LOVELADIES, NJ

LOCATION.--Lat 39°43'24", long 74°08'06", Ocean County, Hydrologic Unit 02040301, on the bulkhead at Mathew's Point Park on the east shore of Barnegat Bay in Loveladies on Long Beach Island, 2.0 mi north of Harvey Cedars, and 3.0 mi south of Barnegat Inlet.

PERIOD OF RECORD.--August 1993 to current year.

GAGE.--Water-stage recorder. Datum of gage is 10.00 ft below sea level. Gage-height record converted to elevation above or below (-) sea level for publication.

REMARKS.--No gage-height or doubtful record, Dec. 24 to Feb. 3, Mar. 10-20, 23 to Apr. 6, and May 19 to Sept. 4. Summaries for months with short periods of no gage-height record have been estimated with little or no loss of accuracy unless otherwise noted. Some periods cannot be estimated and are noted by dash (--) lines.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation recorded, 4.46 ft, Feb. 6, 1996; minimum recorded, -0.34 ft, Mar. 5, 1996.

EXTREMES FOR CURRENT YEAR.--Maximum elevation recorded, 4.46 ft, Feb. 6; minimum recorded, 0.50 ft, Nov. 8.

Summaries of tide elevations during the year are as follows:

TIDE ELEVATIONS, IN FEET, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
Maximum	Elevation	2.84	2.60	3.13	3.08	2.94	3.41	2.81	e2.60	2.56	e2.60	2.91	3.48
high tide	Date	14	6	30	15	26	15	16	4	14	30	31	16
Minimum	Elevation	0.84	0.71	0.57	0.46	0.72	0.49	e0.75	1.04	0.95	e0.90	1.22	0.42
low tide	Date	25	25	23	2	11	5	1	31	7	3	17	18
Mean high tide		2.07	1.94	1.86	1.80	2.21	1.92	---	2.08	2.00	---	2.29	2.30
Mean water level		1.72	1.59	1.51	1.43	1.84	1.57	---	1.75	1.68	---	1.86	1.92
Mean low tide		1.38	1.26	1.18	1.09	1.49	1.24	---	1.44	1.37	---	1.55	1.57

e Estimated.

MULLICA RIVER BASIN

01409400 MULLICA RIVER NEAR BATSTO, NJ

LOCATION.--Lat 39°40'28", long 74°39'55", Atlantic County, Hydrologic Unit 02040301, on right bank 2.4 mi upstream from Sleeper Branch, and 2.5 mi north of Batsto.

DRAINAGE AREA.--46.7 mi².

PERIOD OF RECORD.--September 1957 to current year.

REVISED RECORDS.--WRD-NJ 1969: 1958(M), 1960(M), 1967-68(M), WDR NJ-83-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 11.93 ft above sea level.

REMARKS.--Records fair. Some regulation from upstream cranberry bogs and Atsion Lake. Diversions from Sleeper Branch enter river upstream from gage and substantially increase the discharge at the gage. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 364 ft³/s, Sep 17, gage height, 3.28 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	24	19	27	103	107	86	70	47	32	15	59
2	21	24	18	25	110	113	94	58	46	33	15	55
3	22	26	17	72	128	108	110	57	42	50	14	50
4	22	20	18	136	127	116	112	56	39	46	15	34
5	22	19	18	136	122	113	108	55	37	40	16	29
6	21	19	18	121	117	105	101	55	36	34	18	30
7	21	19	18	110	114	113	98	54	35	30	14	41
8	21	19	19	93	117	110	97	55	35	28	13	44
9	25	19	21	93	117	106	80	56	36	26	13	42
10	24	19	20	95	107	102	93	55	37	25	13	48
11	25	22	21	85	87	97	93	54	29	24	13	42
12	27	22	21	80	83	92	112	56	29	23	14	35
13	27	22	23	77	91	88	154	56	31	27	13	34
14	31	22	24	76	92	89	171	53	31	27	50	33
15	28	22	23	115	92	137	133	52	35	25	69	38
16	26	22	23	156	90	173	101	51	33	24	50	108
17	26	21	23	159	82	178	107	50	32	23	38	289
18	27	21	22	155	102	157	100	49	31	23	32	332
19	25	21	22	185	125	149	96	57	29	22	29	252
20	24	22	22	192	130	140	97	83	29	26	29	259
21	24	23	22	177	125	135	96	95	55	25	40	285
22	24	23	22	174	117	179	98	99	56	24	46	248
23	24	24	22	183	107	225	99	76	51	23	39	169
24	23	25	24	185	100	240	108	72	38	23	34	102
25	22	27	27	208	94	275	104	104	32	22	30	86
26	21	38	23	170	92	254	107	111	33	21	37	77
27	23	34	21	130	88	228	110	91	34	19	80	70
28	25	23	23	122	90	213	95	81	35	17	94	69
29	25	23	27	130	---	189	75	71	26	16	87	65
30	26	21	29	128	---	131	73	63	38	16	72	69
31	24	---	27	116	---	92	---	51	---	15	62	---
TOTAL	747	686	677	3911	2949	4554	3108	2046	1097	809	1104	3094
MEAN	24.1	22.9	21.8	126	105	147	104	66.0	36.6	26.1	35.6	103
MAX	31	38	29	208	130	275	171	111	56	50	94	332
MIN	21	19	17	25	82	88	73	49	26	15	13	29

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 1999, BY WATER YEAR (WY)

	MEAN	67.4	87.0	119	140	140	162	151	124	76.3	70.5	74.6	61.1
MAX	192	305	305	311	292	312	358	273	159	177	253	223	
(WY)	1976	1973	1973	1978	1979	1994	1983	1989	1979	1989	1958	1975	
MIN	24.1	22.0	21.8	29.3	64.4	59.1	50.3	53.3	32.3	21.9	19.8	17.6	
(WY)	1966	1966	1999	1981	1992	1985	1985	1992	1977	1977	1995	1995	

SUMMARY STATISTICS

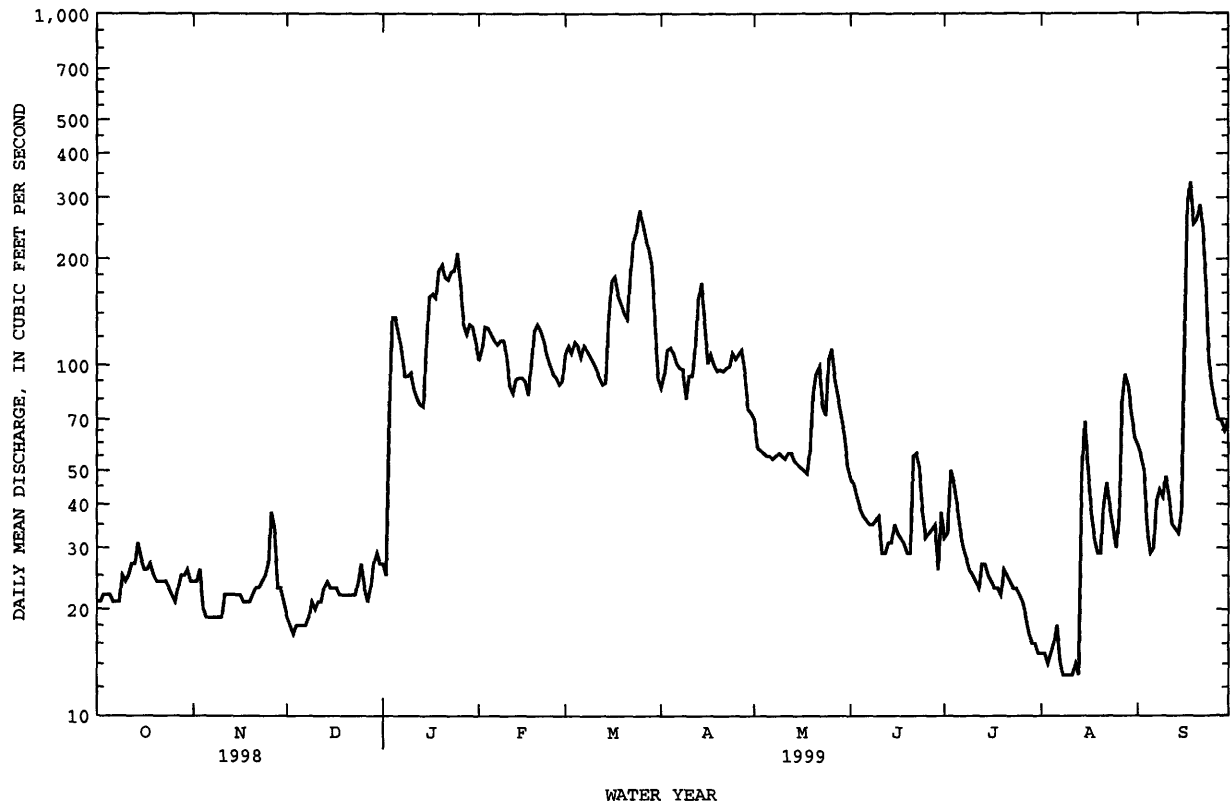
FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1957 - 1999

ANNUAL TOTAL	38563	24782	
ANNUAL MEAN	106	67.9	106
HIGHEST ANNUAL MEAN			168
LOWEST ANNUAL MEAN			50.4
HIGHEST DAILY MEAN	729	May 12	1630
LOWEST DAILY MEAN	17	Dec 3	5.1
ANNUAL SEVEN-DAY MINIMUM	18	Dec 1	6.4
INSTANTANEOUS PEAK FLOW			1840
INSTANTANEOUS PEAK STAGE		3.28	6.14
INSTANTANEOUS LOW FLOW			4.9
10 PERCENT EXCEEDS	243	135	201
50 PERCENT EXCEEDS	51	46	85
90 PERCENT EXCEEDS	21	21	31

01409400 MULLICA RIVER NEAR BATSTO, NJ--Continued



MULLICA RIVER BASIN

01409500 BATSTO RIVER AT BATSTO, NJ

LOCATION.--Lat 39°38'33", long 74°39'00", Burlington County, Hydrologic Unit 02040301, on right bank 30 ft downstream from bridge on State Highway 542 at Batsto, and 1.0 mi upstream from mouth.

DRAINAGE AREA.--67.8 mi².

PERIOD OF RECORD.--October 1927 to current year. Monthly discharge only for April to September 1939, published in WSP 1302.

REVISED RECORDS.--WSP 1432: 1930, 1933, 1936, 1938. WDR NJ-83-1: Drainage area. WDR-87-1: 1939 (M). WDR-94-1: 1993 (M).

GAGE.--Water-stage recorder. Concrete control since Oct. 12, 1939; prior to Mar. 24, 1939, wooden control at site 50 ft downstream. Datum of gage is 1.4 ft above sea level.

REMARKS.--Records fair. Considerable regulation at times by sluice gates prior to December 1954 and by automatic Bascule and sluice gates since July 1959 at Batsto Lake, 300 ft upstream; the capacity of Batsto Lake is about 60,000,000 gal. Several measurements of water temperature, other than those published, were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	41	50	48	124	113	121	89	74	55	38	93
2	40	42	48	46	122	121	118	86	70	56	38	81
3	41	42	46	79	129	124	115	85	66	66	38	75
4	42	41	44	122	140	130	111	87	63	77	38	72
5	45	42	44	145	138	124	108	87	61	67	38	70
6	42	42	44	146	132	125	104	85	59	61	38	68
7	40	43	43	138	124	127	105	84	57	55	38	63
8	40	43	43	129	123	128	104	83	57	51	38	61
9	45	43	46	116	124	130	101	83	57	50	35	60
10	45	42	46	108	125	123	119	81	55	48	38	66
11	48	46	45	106	119	118	129	79	54	44	37	68
12	46	49	44	100	115	113	140	77	52	44	39	66
13	46	48	47	98	115	107	147	65	55	47	40	61
14	53	45	51	95	113	105	149	73	55	51	75	59
15	52	46	50	123	109	143	140	74	56	49	113	59
16	51	46	47	140	103	159	135	71	54	48	137	114
17	50	47	47	180	98	199	136	70	54	47	99	302
18	47	46	45	212	106	210	130	69	54	45	71	630
19	44	46	44	219	120	189	124	70	54	43	59	512
20	44	47	44	208	140	170	116	87	53	43	59	355
21	44	48	44	198	142	157	111	101	77	42	70	260
22	45	50	44	178	134	176	110	96	80	42	81	205
23	45	49	45	158	112	200	108	102	72	41	81	162
24	44	47	46	156	109	253	108	102	66	41	71	135
25	44	46	45	162	112	256	106	113	60	40	63	119
26	43	50	44	194	107	227	103	140	55	38	67	108
27	43	56	44	202	103	198	99	140	52	38	105	98
28	42	54	45	186	103	181	97	119	51	38	137	90
29	43	52	48	170	---	153	93	102	51	38	164	88
30	42	51	52	153	---	152	92	91	53	38	137	88
31	41	---	51	137	---	128	---	80	---	39	115	---
TOTAL	1377	1390	1426	4452	3341	4839	3479	2771	1777	1482	2197	4288
MEAN	44.4	46.3	46.0	144	119	156	116	89.4	59.2	47.8	70.9	143
MAX	53	56	52	219	142	256	149	140	80	77	164	630
MIN	40	41	43	46	98	105	92	65	51	38	35	59
CFSM	.66	.68	.68	2.12	1.76	2.30	1.71	1.32	.87	.71	1.05	2.11
IN.	.76	.76	.78	2.44	1.83	2.66	1.91	1.52	.97	.81	1.21	2.35

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1999, BY WATER YEAR (WY)

MEAN	87.1	111	124	141	148	171	156	143	102	91.4	102	91.5
MAX	241	307	302	280	361	353	322	285	242	257	332	242
(WY)	1959	1973	1973	1949	1939	1958	1970	1998	1948	1938	1958	1960
MIN	43.9	43.4	46.0	55.6	75.9	79.5	71.8	65.1	50.9	40.6	42.0	40.5
(WY)	1966	1966	1999	1966	1931	1981	1985	1977	1977	1977	1957	1995

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

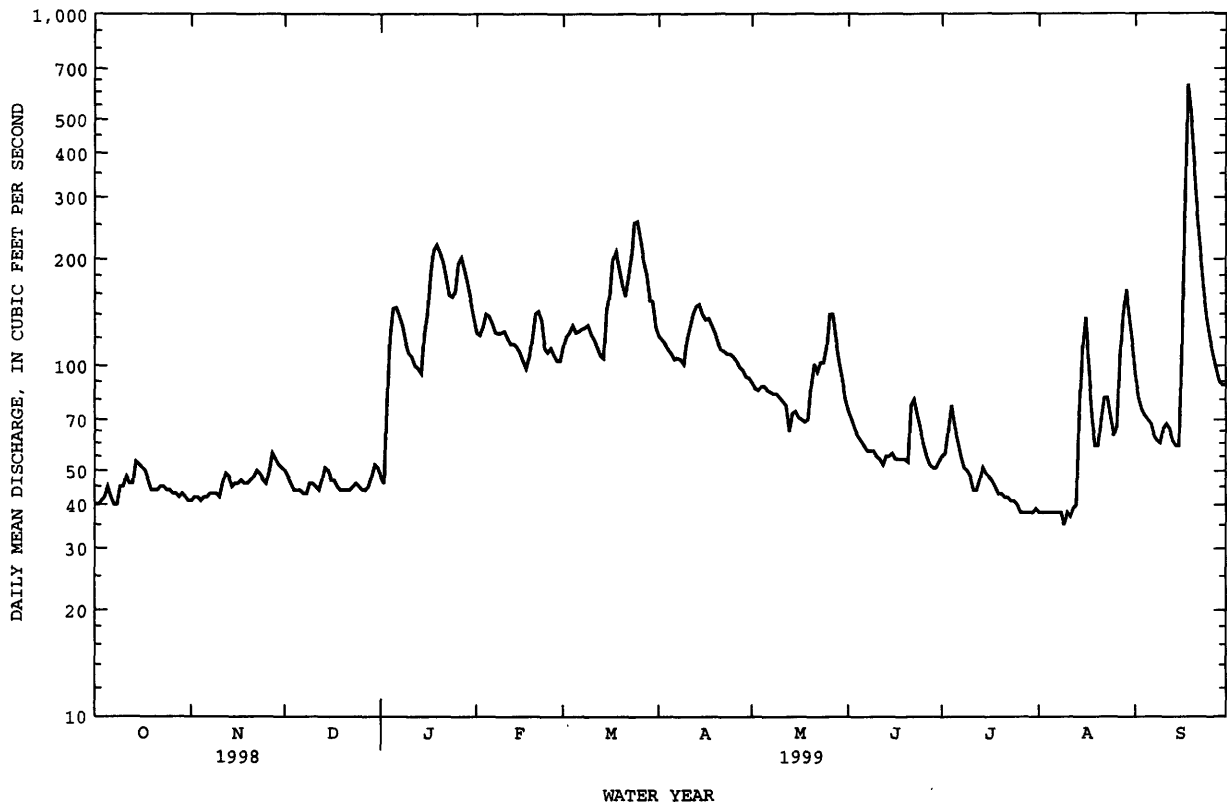
FOR 1999 WATER YEAR

WATER YEARS 1928 - 1999

ANNUAL TOTAL	42438	32819	
ANNUAL MEAN	116	89.9	122
HIGHEST ANNUAL MEAN			193
LOWEST ANNUAL MEAN			66.2
HIGHEST DAILY MEAN	835	May 11	2000
LOWEST DAILY MEAN	38	Sep 29	5.7
ANNUAL SEVEN-DAY MINIMUM	40	Sep 26	35
INSTANTANEOUS PEAK FLOW			650
INSTANTANEOUS PEAK STAGE			4.64
ANNUAL RUNOFF (CFSM)	1.71		1.33
ANNUAL RUNOFF (INCHES)	23.28		18.01
10 PERCENT EXCEEDS	214		152
50 PERCENT EXCEEDS	72		70
90 PERCENT EXCEEDS	43		42

a From floodmark.

01409500 BATSTO RIVER AT BATSTO, NJ--Continued



01409510 BATSTO RIVER AT PLEASANT MILLS, NJ

LOCATION.--Lat 39°37'55", long 74°38'40", Burlington County, Hydrologic Unit 02040301, on right bank, 0.4 mi upstream from Mullica River, 0.5 mi southeast of Pleasant Mills, and 0.9 mi downstream from highway bridge on State Highway 542 at Batsto.

DRAINAGE AREA.--73.6 mi².

PERIOD OF RECORD.--July 1958 to current year. Annual maximum only published for 1958 to 1965.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 8.6 ft below sea level. Gage-height record converted to elevation above or below (-) sea level for publication.

REMARKS.--No gage-height or doubtful record, May 11 to June 15. Summaries for months with short periods of no gage-height record have been estimated with little or no loss of accuracy unless otherwise noted. Some periods cannot be estimated and are noted by dash (--) lines.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation recorded, 7.2 ft, Mar. 7, 1962; minimum recorded (after 1965), -0.67 ft, Jan. 2, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum elevation recorded, 4.58 ft, Sept. 16; minimum recorded, 0.20 ft, Dec. 22.

Summaries of tide elevations during the year are as follows:

TIDE ELEVATIONS, IN FEET, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
Maximum	Elevation	3.66	3.42	3.51	4.23	3.50	4.08	3.53	3.53	3.47	3.58	3.98	4.58
high tide	Date	9	1,4	30	3	18	15	17	3	12	14	31	16
Minimum	Elevation	0.77	0.35	0.20	0.54	0.60	0.40	0.42	0.41	0.36	0.49	0.54	0.86
low tide	Date	31	24	22	13	14	12	1	12	7	2	9	15
Mean high tide		3.06	2.82	2.65	2.72	2.89	2.51	2.85	2.96	2.84	2.85	3.04	3.19
Mean water level		1.93	1.52	1.41	1.88	1.98	1.59	1.79	1.86	1.70	1.70	2.04	2.33
Mean low tide		0.97	0.51	0.35	0.93	0.85	0.76	0.68	0.66	0.56	0.65	1.01	1.33

01410000 OSWEGO RIVER AT HARRISVILLE, NJ

LOCATION.--Lat 39°39'47", long 74°31'26", Burlington County, Hydrologic Unit 02040301, on right bank 50 ft downstream from bridge on State Highway Spur 563 at Harrisville, and 0.3 mi upstream from confluence with West Branch Wading River.

DRAINAGE AREA.--72.5 mi².

PERIOD OF RECORD.--October 1930 to current year. Monthly discharge only for some periods, published in WSP 1302. Prior to October 1955, published as "East Branch Wading River at Harrisville".

REVISED RECORDS.--WDR NJ-83-1: Drainage area.

GAGE.--Water-stage recorder. Concrete control since June 23, 1939. Datum of gage is 4.62 ft above sea level.

REMARKS.--Records fair except for estimated daily discharge, which are poor. Figures given herein represent flow over main spillway and through bypass channel. Flow regulated by Harrisville Pond 200 ft above station, capacity, about 30,000,000 gal and by ponds and cranberry bogs 5 to 10 mi upstream. Flow probably reduced by ground-water outflow to nearby surface drainage basins, such as Oyster Creek. Several measurements of water temperature, other than those published, were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e44	37	33	37	86	94	84	63	47	41	e27	79
2	e43	37	32	36	99	92	88	59	44	45	e26	69
3	e42	37	32	116	115	84	84	59	43	54	e25	62
4	e41	37	32	190	111	89	81	65	41	47	e26	58
5	e40	37	32	158	104	82	118	83	40	40	e25	55
6	42	38	33	115	97	80	108	99	39	36	e24	52
7	45	39	34	105	91	96	80	88	39	e35	e23	50
8	47	40	35	103	99	91	103	91	37	e34	e23	53
9	53	40	40	109	96	85	94	85	36	e33	e27	55
10	49	40	38	114	89	82	113	74	35	e34	e26	69
11	49	59	38	103	83	77	109	69	35	e33	e29	65
12	49	65	39	90	79	73	125	63	36	e33	e28	56
13	49	60	40	83	82	69	118	61	38	e35	e28	53
14	55	55	37	79	78	71	107	58	39	e34	e110	49
15	57	52	36	146	73	157	98	56	40	e32	e148	49
16	52	54	36	178	72	169	95	54	39	e31	e92	201
17	49	50	36	158	70	158	94	53	38	e31	e63	452
18	47	45	35	150	90	147	88	51	38	e30	e48	452
19	46	42	34	193	108	116	82	56	38	e30	e41	315
20	44	42	34	186	101	102	80	62	39	e30	e53	200
21	41	42	33	150	92	106	84	58	99	e30	e80	134
22	38	41	33	129	84	161	83	54	95	e31	e78	118
23	37	41	32	117	78	180	82	58	73	e33	e70	97
24	37	41	34	138	75	190	84	64	58	e32	e60	86
25	38	40	33	168	72	132	80	74	50	e31	e52	83
26	41	46	33	157	71	108	75	70	47	e30	214	75
27	42	48	33	138	68	97	70	64	44	e29	396	72
28	40	35	34	125	72	104	67	59	42	e28	316	69
29	41	34	36	115	---	108	65	55	40	e27	192	66
30	41	33	40	104	---	98	63	52	40	e26	119	67
31	39	---	39	95	---	88	---	49	---	e27	95	---
TOTAL	1378	1307	1086	3885	2435	3386	2702	2006	1369	1042	2564	3361
MEAN	44.5	43.6	35.0	125	87.0	109	90.1	64.7	45.6	33.6	82.7	112
MAX	57	65	40	193	115	190	125	99	99	54	396	452
MIN	37	33	32	36	68	69	63	49	35	26	23	49
CFSM	.61	.60	.48	1.73	1.20	1.51	1.24	.89	.63	.46	1.14	1.55
IN.	.71	.67	.56	1.99	1.25	1.74	1.39	1.03	.70	.53	1.32	1.72

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 1999, BY WATER YEAR (WY)

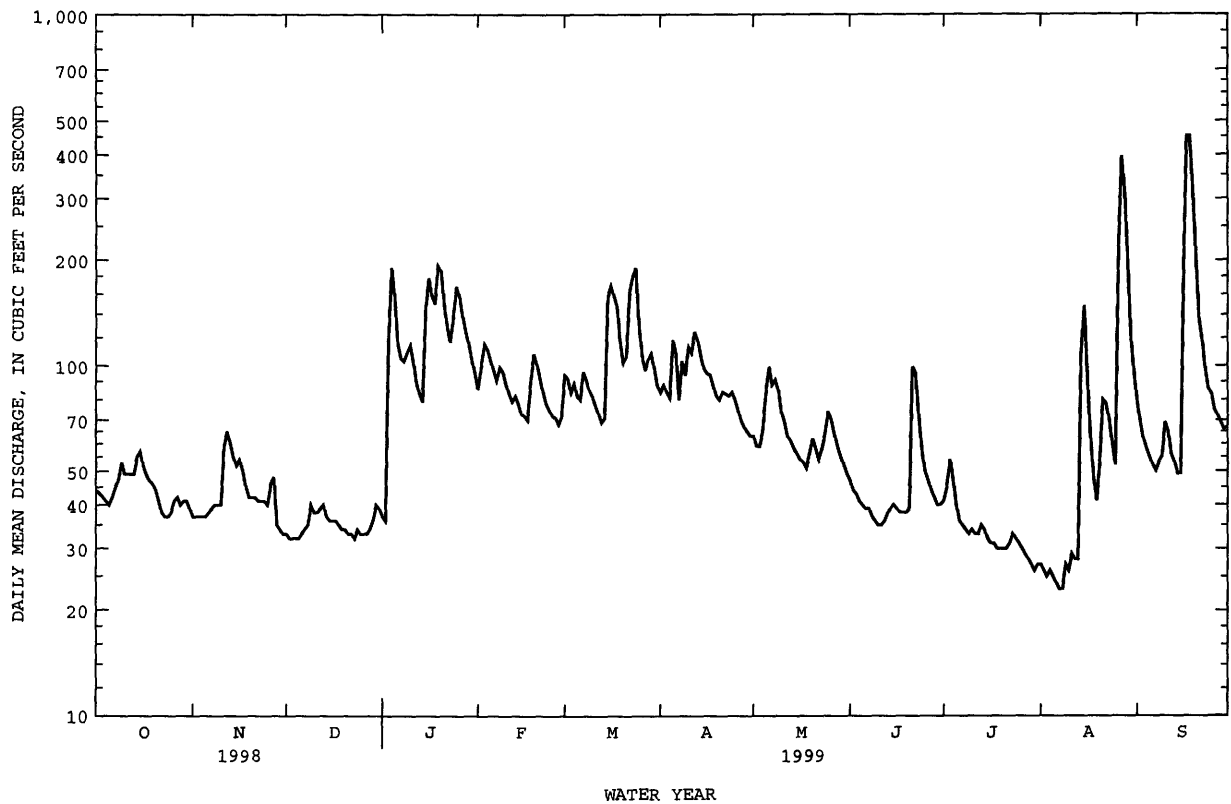
	MEAN	63.7	81.7	84.1	102	104	120	114	98.7	71.5	66.7	75.9	62.2
MAX	176	234	200	242	210	255	253	261	162	201	207	163	
(WY)	1959	1973	1973	1979	1939	1998	1970	1998	1998	1938	1933	1938	
MIN	28.6	30.8	27.1	33.9	53.2	51.9	41.3	43.9	33.7	24.2	23.9	24.4	
(WY)	1966	1966	1966	1966	1931	1985	1985	1942	1966	1977	1957	1951	

MULLICA RIVER BASIN

01410000 OSWEGO RIVER AT HARRISVILLE, NJ

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1931 - 1999	
ANNUAL TOTAL	42854		26521		86.9	
ANNUAL MEAN	117		72.7		138	
HIGHEST ANNUAL MEAN					41.4	
LOWEST ANNUAL MEAN					1220	
HIGHEST DAILY MEAN	694	May 12	452	Sep 17	4.0	Aug 20 1939
LOWEST DAILY MEAN	32	Dec 2	23	Aug 7	14	Jun 23 1967
ANNUAL SEVEN-DAY MINIMUM	32	Nov 30	25	Aug 2	1390	Sep 7 1966
INSTANTANEOUS PEAK FLOW			511	Sep 17	9.54	Aug 20 1939
INSTANTANEOUS PEAK STAGE			4.75	Sep 17	.00	Oct 26 1932
INSTANTANEOUS LOW FLOW					1.20	
ANNUAL RUNOFF (CFSM)	1.62		1.00		16.28	
ANNUAL RUNOFF (INCHES)	21.99		13.61		150	
10 PERCENT EXCEEDS	236		118		71	
50 PERCENT EXCEEDS	77		57		37	
90 PERCENT EXCEEDS	37		33			

- a From rating curve extended above 640 ft³/s.
 b From high-water mark in gage house.
 c While pond filling.
 d Determined by using min-clip reading on float tape 2.72 ft.
 e Estimated.



01410150 EAST BRANCH BASS RIVER NEAR NEW GRETN, NJ

LOCATION.--Lat 39°37'23", long 74°26'30", Burlington County, Hydrologic Unit 02040301, on left bank upstream from bridge on Stage Road, 0.7 mi west of Lake Absegami, 2.2 mi north of New Gretna, and 5.3 mi upstream from mouth.

DRAINAGE AREA.--8.11 mi².

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1969 to 1974. January 1978 to current year.

REVISED RECORDS.--WDR NJ-81-1: 1978-80(P). WDR NJ-92-1: 1978, 1979, 1989, 1991 (P).

GAGE.--Water-stage recorder. Datum of gage is 1.10 ft above sea level.

REMARKS.--Records good, except for gage height record above 6.0 ft. which is considered fair. Some regulation by Lake Absegami. Several measurements of water temperature, other than those published, were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 65 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
No peak greater than base discharge.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	10	10	10	17	20	17	14	11	11	10	14
2	11	10	9.9	9.7	20	18	19	14	11	11	10	14
3	10	10	9.9	17	24	17	18	14	11	11	10	13
4	11	10	9.9	26	21	16	17	15	11	11	10	14
5	12	10	9.8	20	19	16	17	15	11	11	10	14
6	12	10	9.8	15	17	16	16	14	11	11	10	14
7	11	10	9.8	14	17	20	16	14	11	10	10	13
8	11	10	10	14	19	18	16	14	11	10	10	13
9	17	10	11	15	18	16	16	14	11	10	10	13
10	16	10	11	17	17	16	24	13	11	10	10	16
11	13	11	10	15	16	16	22	13	11	10	10	17
12	12	12	10	14	16	15	22	13	11	10	10	14
13	11	11	10	14	17	15	20	13	11	11	10	13
14	12	11	11	14	16	16	17	13	11	11	20	13
15	13	10	10	24	16	37	16	13	11	11	24	14
16	12	10	10	29	15	34	17	12	11	11	16	35
17	11	10	10	22	15	24	17	12	11	10	13	49
18	11	10	10	22	19	20	16	12	11	10	12	30
19	11	10	9.9	28	23	18	16	13	11	10	11	20
20	11	10	9.8	23	19	18	16	13	11	11	18	18
21	11	10	9.8	20	17	19	16	12	21	11	38	17
22	11	10	9.8	18	16	30	17	12	22	11	26	18
23	11	10	9.8	18	15	28	17	16	15	12	17	17
24	11	10	9.9	24	15	23	17	18	12	11	14	16
25	11	9.9	9.8	32	15	21	16	16	12	11	14	16
26	11	12	9.8	25	15	19	15	14	11	11	19	15
27	10	13	9.7	21	15	18	15	13	11	10	21	15
28	10	12	9.8	19	16	21	14	12	11	10	18	15
29	10	11	11	18	---	21	14	12	11	10	15	15
30	10	10	12	17	---	19	14	12	11	10	14	17
31	10	---	11	17	---	17	---	11	---	10	14	---
TOTAL	355	312.9	314.2	591.7	485	622	510	416	357	328	454	522
MEAN	11.5	10.4	10.1	19.1	17.3	20.1	17.0	13.4	11.9	10.6	14.6	17.4
MAX	17	13	12	32	24	37	24	18	22	12	38	49
MIN	10	9.9	9.7	9.7	15	15	14	11	11	10	10	13
CFSM	1.41	1.29	1.25	2.35	2.14	2.47	2.10	1.65	1.47	1.30	1.81	2.15
IN.	1.63	1.44	1.44	2.71	2.22	2.85	2.34	1.91	1.64	1.50	2.08	2.39

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 1999, BY WATER YEAR (WY)

	12.3	13.8	15.4	18.8	18.3	21.3	21.6	19.9	15.7	13.8	14.8	12.4
MEAN	12.3	13.8	15.4	18.8	18.3	21.3	21.6	19.9	15.7	13.8	14.8	12.4
MAX	24.2	23.1	28.3	35.0	34.3	40.8	38.6	41.5	35.2	25.8	43.7	21.0
(WY)	1990	1990	1997	1978	1998	1998	1984	1998	1998	1978	1997	1989
MIN	8.13	8.75	9.78	9.28	11.2	10.5	9.06	8.95	8.11	7.80	6.54	6.77
(WY)	1983	1982	1986	1981	1992	1981	1985	1985	1986	1985	1995	1995

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

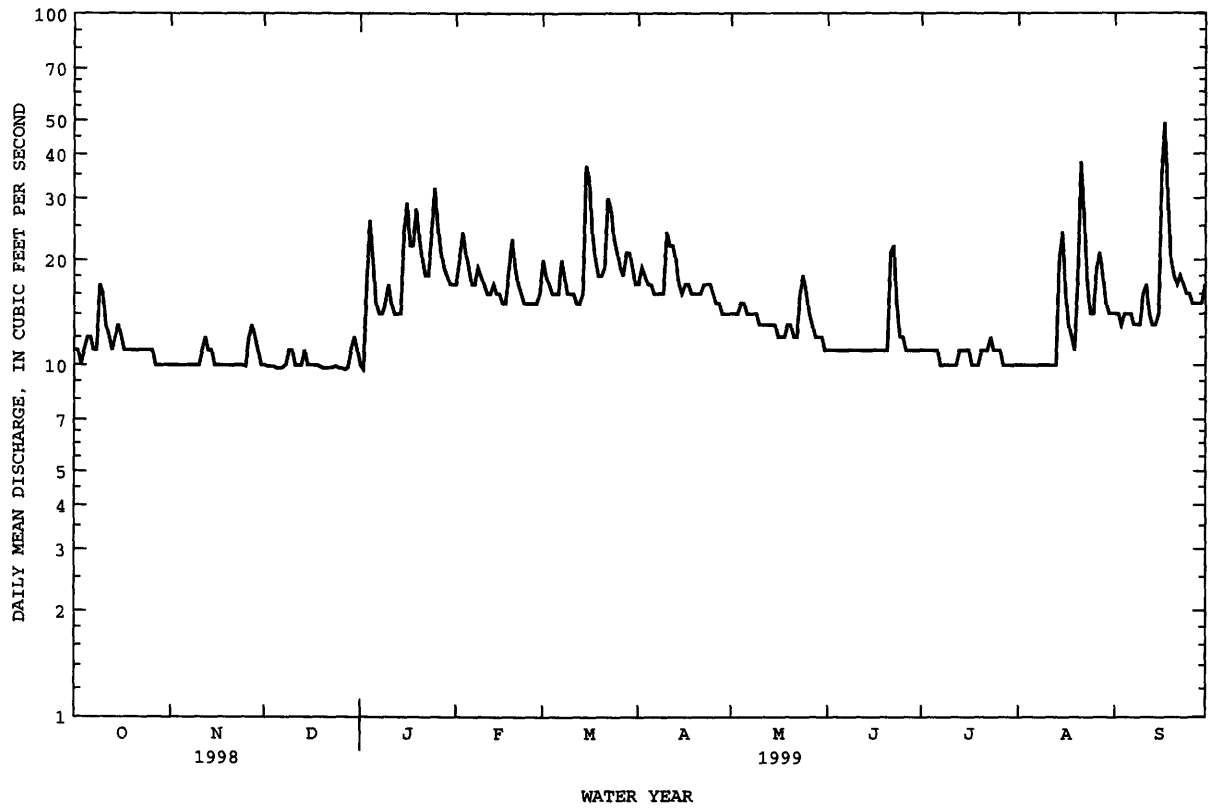
WATER YEARS 1978 - 1999

ANNUAL TOTAL	8476.1	5267.8	
ANNUAL MEAN	23.2	14.4	16.2
HIGHEST ANNUAL MEAN			25.3
LOWEST ANNUAL MEAN			9.60
HIGHEST DAILY MEAN	83	Jun 14	533
LOWEST DAILY MEAN	9.7	Dec 27	4.8
ANNUAL SEVEN-DAY MINIMUM	9.8	Dec 21	5.0
INSTANTANEOUS PEAK FLOW			1130a
INSTANTANEOUS PEAK STAGE			7.28
INSTANTANEOUS LOW FLOW			4.7
ANNUAL RUNOFF (CFSM)	2.86	1.78	2.00
ANNUAL RUNOFF (INCHES)	38.88	24.16	27.18
10 PERCENT EXCEEDS	41	20	27
50 PERCENT EXCEEDS	19	13	14
90 PERCENT EXCEEDS	10	10	8.6

a From rating curve extended above 200 ft³/sec.

MULLICA RIVER BASIN

01410150 EAST BRANCH BASS RIVER NEAR NEW GRETN, NJ--Continued



01411000 GREAT EGG HARBOR RIVER AT FOLSOM, NJ

LOCATION.--Lat 39°35'42", long 74°51'06", Atlantic County, Hydrologic Unit 02040302, on left bank 25 ft upstream from bridge on State Highway 54, 1.0 mi south of Folsom, and 2.0 mi upstream from Pennypot Stream.

DRAINAGE AREA.--57.1 mi².

PERIOD OF RECORD.--September 1925 to current year. Prior to October 1947, published as "Great Egg River at Folsom".

REVISED RECORDS.--WSP 1432: 1928(M), 1933. WDR NJ-83-1: Drainage area.

GAGE.--Water-stage recorder. Concrete control since Nov. 26, 1934. Datum of gage is 53.32 ft above sea level. Prior to Mar. 6, 1941, water-stage recorder at site 100 ft downstream at same datum. Mar. 6 to Oct. 5, 1941, nonrecording gage at site 145 ft downstream at datum 0.25 ft higher.

REMARKS.--Records good. Several measurements of water temperature were made during the year. Satellite rain-gage and gage-height telemeter at station.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 350 ft³/s, Sep 18, gage height, 5.55 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	30	36	42	77	85	89	66	51	40	18	37
2	28	29	35	40	79	98	90	65	48	41	18	35
3	29	29	35	68	95	101	88	64	46	50	18	33
4	31	29	34	103	103	96	84	64	45	50	16	33
5	34	29	34	121	101	96	83	64	43	43	16	33
6	33	29	34	142	90	97	80	63	42	38	18	33
7	31	30	34	118	81	97	76	62	41	36	17	34
8	31	30	34	81	82	102	74	62	39	33	17	37
9	35	30	37	72	87	99	74	61	37	32	17	36
10	39	30	39	78	88	88	95	58	36	31	16	40
11	41	32	37	79	82	82	110	57	35	29	16	48
12	38	39	36	73	76	77	119	54	35	29	16	43
13	36	38	37	70	79	73	125	60	36	30	16	39
14	40	36	39	67	86	72	124	68	39	31	30	36
15	42	35	38	91	83	102	110	61	44	29	42	35
16	38	34	37	117	75	125	100	56	44	27	37	79
17	36	33	36	156	72	148	95	54	38	26	36	145
18	35	32	36	178	79	149	88	51	37	25	31	309
19	35	32	35	163	101	133	83	58	36	23	27	299
20	34	32	35	156	116	114	79	76	35	23	29	218
21	33	32	35	150	121	101	76	75	60	23	37	163
22	32	32	35	130	108	126	77	66	68	23	36	132
23	32	32	35	111	92	196	81	62	57	24	32	116
24	32	32	36	107	80	265	83	67	49	23	29	101
25	32	32	35	122	74	243	82	96	44	22	27	85
26	31	37	35	150	72	193	77	99	41	20	31	74
27	30	42	35	159	70	152	74	83	38	20	69	67
28	30	41	34	137	69	125	72	71	37	19	78	63
29	30	38	36	115	---	111	70	62	36	18	62	60
30	30	37	40	99	---	103	68	58	42	18	46	61
31	30	---	43	86	---	96	---	55	---	18	40	---
TOTAL	1036	993	1117	3381	2418	3745	2626	2018	1279	894	938	2524
MEAN	33.4	33.1	36.0	109	86.4	121	87.5	65.1	42.6	28.8	30.3	84.1
MAX	42	42	43	178	121	265	125	99	68	50	78	309
MIN	28	29	34	40	69	72	68	51	35	18	16	33
CFSM	.59	.58	.63	1.91	1.51	2.12	1.53	1.14	.75	.51	.53	1.47
IN.	.67	.65	.73	2.20	1.58	2.44	1.71	1.31	.83	.58	.61	1.64

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 1999, BY WATER YEAR (WY)

	MEAN	60.3	77.7	92.5	103	106	122	115	95.7	71.2	62.5	64.0	60.4
MAX	148	213	212	203	228	229	234	199	149	187	182	215	
(WY)	1939	1973	1973	1936	1939	1958	1983	1958	1948	1938	1967	1940	
MIN	27.8	30.1	35.1	39.3	50.7	60.1	53.9	47.1	34.4	22.1	19.3	25.6	
(WY)	1931	1966	1966	1981	1931	1981	1985	1955	1977	1966	1966	1964	

SUMMARY STATISTICS

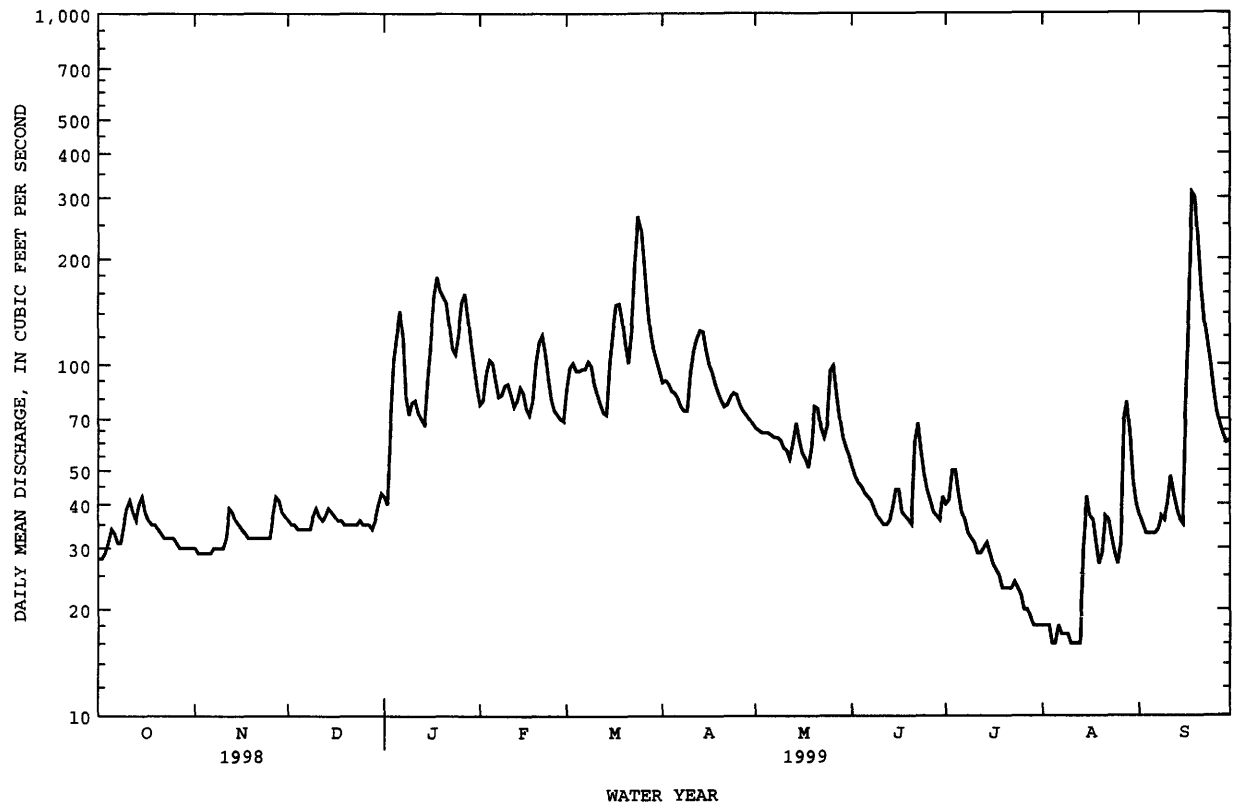
FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1925 - 1999

ANNUAL TOTAL	29725	22969	85.8
ANNUAL MEAN	81.4	62.9	
HIGHEST ANNUAL MEAN			133
LOWEST ANNUAL MEAN			44.4
HIGHEST DAILY MEAN	357	May 12	309
LOWEST DAILY MEAN	24	Sep 30	16
ANNUAL SEVEN-DAY MINIMUM	27	Sep 27	16
INSTANTANEOUS PEAK FLOW			350
INSTANTANEOUS PEAK STAGE			5.55
INSTANTANEOUS LOW FLOW			16
ANNUAL RUNOFF (CFSM)	1.43	1.10	1.50
ANNUAL RUNOFF (INCHES)	19.37	14.96	20.41
10 PERCENT EXCEEDS	155	116	148
50 PERCENT EXCEEDS	54	43	73
90 PERCENT EXCEEDS	30	29	36

01411000 GREAT EGG HARBOR RIVER AT FOLSOM, NJ--Continued



01411300 TUCKAHOE RIVER AT HEAD OF RIVER, NJ

LOCATION.--Lat 39°18'25", long 74°49'15", Cape May County, Hydrologic Unit 02040302, on right bank at highway bridge on State Route 49, 0.2 mi upstream from McNeals Branch, 0.4 mi southeast of Head of River, and 3.7 mi west of Tuckahoe.

DRAINAGE AREA.--30.8 mi².

PERIOD OF RECORD.--December 1969 to current year.

REVISED RECORDS.--WDR NJ-78-1: 1975(M), 1976(M). WDR NJ-89-1: (M). WDR NJ-91-1: 1990. WRD NJ-97-1: 1971(M), 1978(M), 1979 (M), 1983 (P), 1994(P).

GAGE.--Water-stage recorder, wooden control, and downstream tidal crest-stage gage. Datum of gage is sea level.

REMARKS.--Records good. Occasional regulation by ponds above station. There is a fish gate in the left weir which was open this year. Planks were placed on top of the center and right weirs from April 5 to May 12 raise water level for fish migration. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 178 ft³/s, Mar.15, gage height, 5.00 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	17	17	21	33	51	40	31	18	19	8.4	11
2	11	17	16	19	39	46	47	30	17	18	8.3	10
3	11	16	16	55	51	40	47	30	17	18	7.9	10
4	13	16	16	148	46	38	46	31	16	17	7.7	9.3
5	15	16	16	98	42	34	47	30	16	15	7.5	11
6	14	16	16	47	38	33	46	30	16	13	7.3	14
7	13	17	16	36	37	63	42	30	15	12	7.2	12
8	20	17	17	32	39	59	38	29	15	11	7.1	11
9	94	17	28	35	38	46	37	27	14	10	7.6	12
10	57	16	25	41	35	41	74	25	14	11	7.1	22
11	29	s19	21	34	34	38	85	23	14	10	7.1	21
12	23	23	19	29	33	35	118	26	14	10	7.1	16
13	21	19	25	28	42	34	115	25	15	13	6.9	15
14	30	18	29	29	40	36	84	24	16	13	11	14
15	31	19	23	62	35	133	63	24	28	12	27	14
16	24	18	21	109	33	149	59	24	20	11	23	58
17	21	17	20	75	33	94	57	24	17	10	17	94
18	19	17	20	58	42	64	51	23	17	10	13	75
19	18	16	19	93	57	50	47	27	16	9.6	11	43
20	17	16	19	78	47	45	45	34	18	10	16	30
21	17	17	19	55	40	45	44	27	55	11	25	24
22	17	16	18	47	36	99	46	24	58	12	21	23
23	17	16	18	42	34	119	50	26	34	12	15	20
24	16	16	19	55	33	84	53	30	24	11	12	19
25	16	16	18	104	32	63	46	31	21	10	12	18
26	16	20	18	78	32	53	40	27	18	9.5	16	17
27	16	22	17	55	31	48	37	24	17	9.0	16	17
28	16	19	18	47	34	49	36	23	17	8.9	15	16
29	16	18	24	42	---	47	34	21	15	8.8	13	15
30	17	17	27	38	---	43	32	20	14	8.6	12	18
31	17	---	23	35	---	40	---	19	---	8.4	13	---
TOTAL	674	524	618	1725	1066	1819	1606	819	606	361.8	385.2	689.3
MEAN	21.7	17.5	19.9	55.6	38.1	58.7	53.5	26.4	20.2	11.7	12.4	23.0
MAX	94	23	29	148	57	149	118	34	58	19	27	94
MIN	11	16	16	19	31	33	32	19	14	8.4	6.9	9.3
CFSM	.71	.57	.65	1.81	1.24	1.91	1.74	.86	.66	.38	.40	.75
IN.	.81	.63	.75	2.08	1.29	2.20	1.94	.99	.73	.44	.47	.83

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 1999, BY WATER YEAR (WY)

	MEAN	27.0	34.2	42.5	53.0	55.1	70.1	70.4	55.8	37.8	27.3	27.4	22.8
MAX	59.9	81.4	97.0	101	101	162	174	123	83.7	55.8	99.3	64.7	
(WY)	1997	1973	1997	1978	1973	1998	1983	1998	1984	1996	1997	1989	
MIN	15.1	16.8	19.4	16.0	24.4	26.4	21.3	20.0	14.8	11.7	10.6	7.04	
(WY)	1978	1992	1981	1981	1995	1995	1985	1977	1977	1999	1988	1980	

SUMMARY STATISTICS

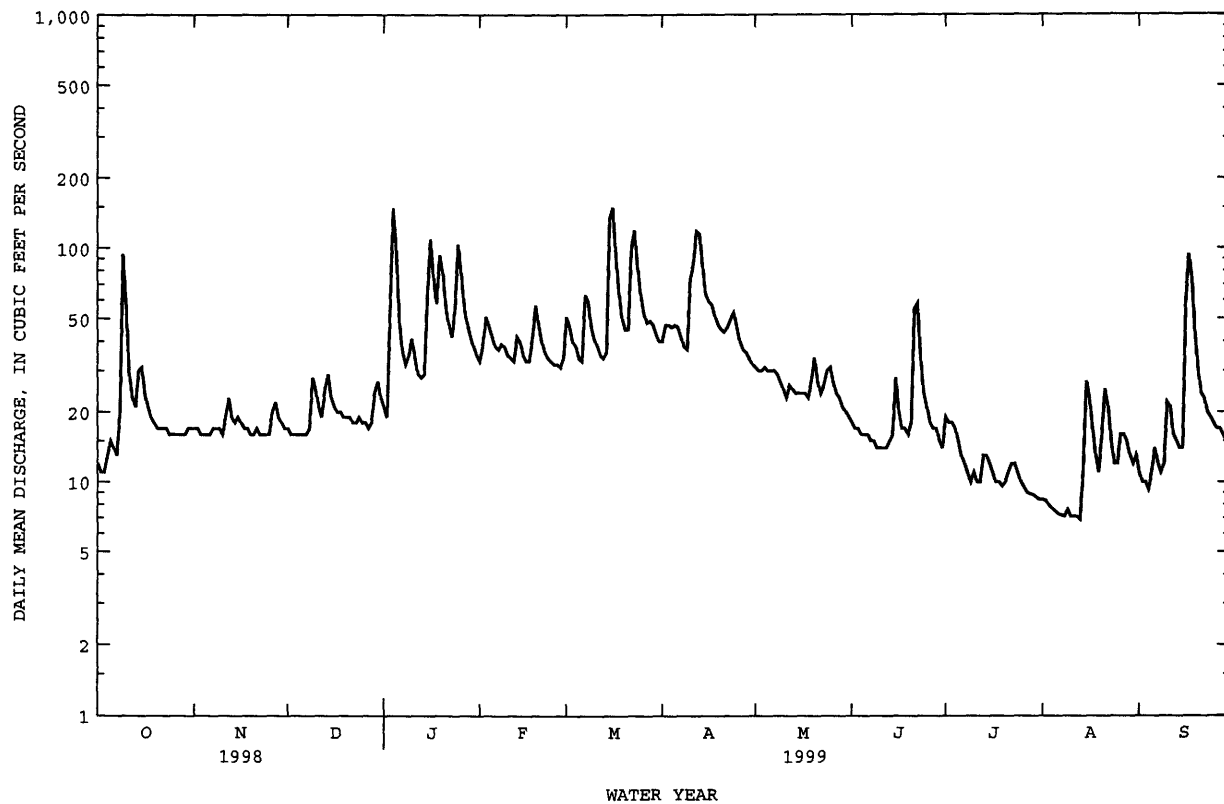
FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

WATER YEARS 1970 - 1999

ANNUAL TOTAL	22167	10893.3	
ANNUAL MEAN	60.7	29.8	43.5
HIGHEST ANNUAL MEAN			66.0
LOWEST ANNUAL MEAN			21.7
HIGHEST DAILY MEAN	392	May 13	920
LOWEST DAILY MEAN	10	Sep 29	1.3
ANNUAL SEVEN-DAY MINIMUM	11	Sep 23	1.9
INSTANTANEOUS PEAK FLOW			178
INSTANTANEOUS PEAK STAGE			5.00
INSTANTANEOUS LOW FLOW			5.7
ANNUAL RUNOFF (CFSM)	1.97	.97	1.41
ANNUAL RUNOFF (INCHES)	26.77	13.16	19.18
10 PERCENT EXCEEDS	142	55	84
50 PERCENT EXCEEDS	29	21	33
90 PERCENT EXCEEDS	13	11	15

01411300 TUCKAHOE RIVER AT HEAD OF RIVER, NJ--Continued



01411456 LITTLE EASE RUN NEAR CLAYTON, NJ

LOCATION.--Lat 39°39'32", long 75°04'04", Gloucester County, Hydrologic Unit 02040206, on right bank 30 ft downstream from bridge on Academy Road (County Route 610), 0.9 mi west of Fries Mill, 1.3 mi east of Clayton, and 1.4 mi downstream from Beaverdam Branch.

DRAINAGE AREA.--9.77 mi².

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1966, 1976-84, 1987. February 1988 to current year.

GAGE.--Water-stage recorder. Datum of gage is 100.94 ft above sea level.

REMARKS.--Records fair. Occasional regulation from unknown sources. Several measurements of water temperature were made during the year.

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)
Sep 17	0530	*92	*4.06	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

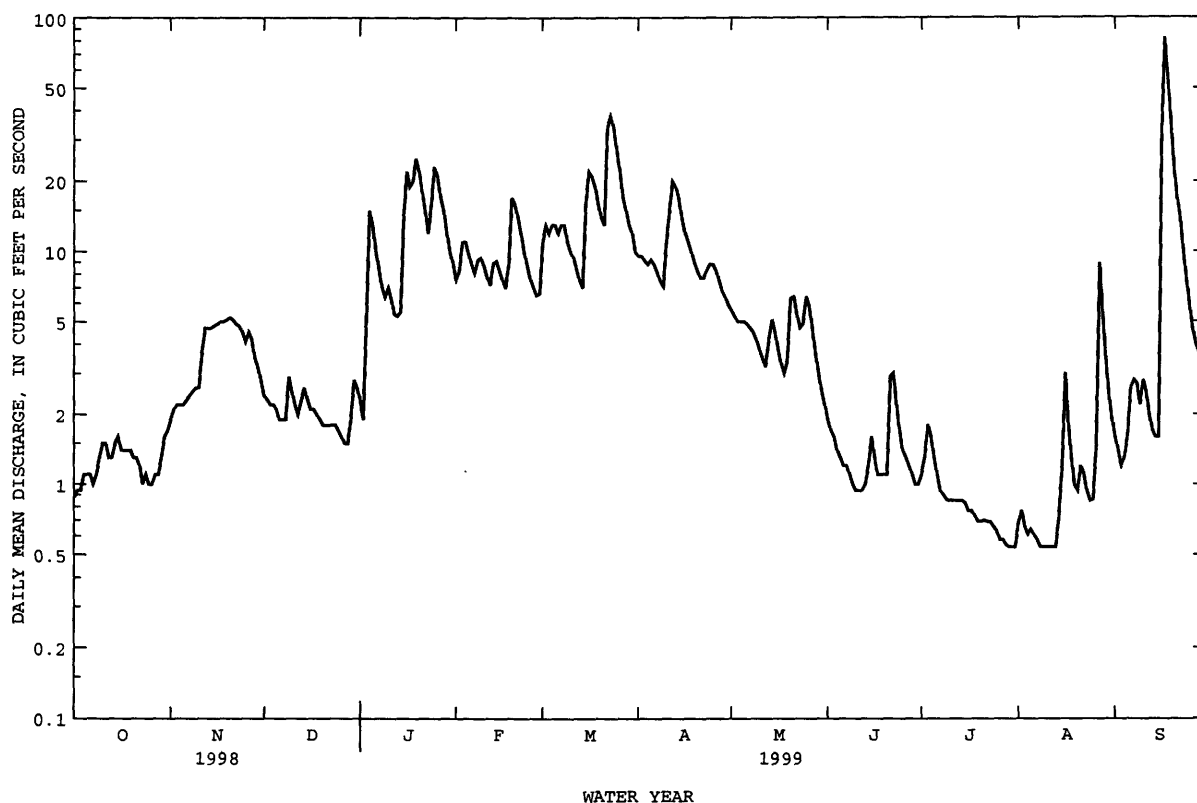
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.88	1.9	2.4	2.3	7.6	11	9.6	5.6	1.9	1.1	.69	1.6
2	.94	2.1	2.3	1.9	8.2	13	9.5	5.3	1.7	1.3	.77	1.4
3	.94	2.2	2.2	5.2	11	12	9.1	5.0	1.6	1.8	.66	1.2
4	1.1	2.2	2.2	15	11	13	8.8	5.0	1.4	1.6	.61	1.3
5	1.1	2.2	2.1	13	9.8	13	9.2	5.0	1.3	1.3	.64	1.6
6	1.1	2.3	1.9	10	8.8	12	8.8	4.9	1.2	1.1	.61	2.6
7	1.0	2.4	1.9	8.4	8.1	13	8.2	4.7	1.2	.94	.58	2.8
8	1.1	2.5	1.9	7.0	9.2	13	7.5	4.5	1.1	.90	.54	2.7
9	1.3	2.6	2.9	6.4	9.4	11	7.1	4.2	1.0	.86	.54	2.2
10	1.5	2.6	2.5	7.0	8.7	10	11	3.8	.94	.85	.54	2.8
11	1.5	3.7	2.2	6.3	7.8	9.4	15	3.5	.94	.85	.54	2.5
12	1.3	4.7	2.0	5.4	7.2	8.4	20	3.2	.94	.85	.54	2.0
13	1.3	4.7	2.3	5.3	8.9	7.5	19	4.1	1.0	.85	.54	1.7
14	1.5	4.7	2.6	5.5	9.1	7.0	17	5.1	1.2	.85	.72	1.6
15	1.6	4.8	2.3	14	8.3	16	14	4.5	1.6	.83	1.2	1.6
16	1.4	4.9	2.1	22	7.6	22	12	3.8	1.3	.77	3.0	31
17	1.4	5.0	2.1	19	7.0	21	11	3.3	1.1	.77	1.8	82
18	1.4	5.0	2.0	20	8.9	19	10	3.0	1.1	.73	1.3	56
19	1.4	5.1	1.9	25	17	16	9.0	3.4	1.1	.69	1.0	37
20	1.3	5.2	1.8	22	16	14	8.3	6.3	1.1	.69	.94	23
21	1.3	5.1	1.8	18	14	13	7.7	6.4	2.9	.70	1.2	17
22	1.2	4.9	1.8	15	12	34	7.7	5.4	3.0	.69	1.1	14
23	1.0	4.8	1.8	12	10	38	8.3	4.7	2.2	.69	.93	10
24	1.1	4.5	1.8	16	8.7	34	8.8	4.9	1.7	.66	.85	7.6
25	1.0	4.1	1.7	23	7.6	27	8.8	6.4	1.4	.63	.86	5.9
26	1.0	4.5	1.6	21	7.0	22	8.3	5.8	1.3	.58	1.5	4.7
27	1.1	4.2	1.5	17	6.5	17	7.5	4.7	1.2	.58	8.9	4.0
28	1.1	3.5	1.5	15	6.6	15	6.8	3.7	1.1	.55	5.4	3.7
29	1.3	3.2	1.9	12	---	13	6.4	3.0	1.0	.54	3.4	3.3
30	1.6	2.8	2.8	10	---	12	5.9	2.5	1.0	.54	2.4	4.0
31	1.7	---	2.6	8.9	---	10	---	2.2	---	.54	1.9	---
TOTAL	38.46	112.4	64.4	388.6	262.0	496.3	300.3	137.9	41.52	26.33	46.20	332.8
MEAN	1.24	3.75	2.08	12.5	9.36	16.0	10.0	4.45	1.38	.85	1.49	11.1
MAX	1.7	5.2	2.9	25	17	38	20	6.4	3.0	1.8	8.9	82
MIN	.88	1.9	1.5	1.9	6.5	7.0	5.9	2.2	.94	.54	.54	1.2
CFSM	.13	.38	.21	1.28	.96	1.64	1.02	.46	.14	.09	.15	1.14
IN.	.15	.43	.25	1.48	1.00	1.89	1.14	.53	.16	.10	.18	1.27

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1999, BY WATER YEAR (WY)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
MEAN	5.76	7.69	12.0	15.5	14.4	20.5	17.1	12.5	6.34	4.96	5.10	4.71
MAX	19.7	15.0	35.5	26.5	22.4	38.7	26.2	29.3	15.4	19.0	15.2	20.4
(WY)	1990	1990	1997	1991	1997	1994	1996	1989	1989	1989	1989	1989
MIN	1.24	3.75	2.08	6.98	6.37	9.91	5.65	4.45	1.38	.85	.93	.92
(WY)	1999	1999	1999	1992	1992	1992	1992	1999	1999	1999	1998	1998

01411456 LITTLE EASE RUN NEAR CLAYTON, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1988 - 1999
ANNUAL TOTAL	3651.96	2247.21	
ANNUAL MEAN	10.0	6.16	10.7
HIGHEST ANNUAL MEAN			14.3
LOWEST ANNUAL MEAN			5.70
HIGHEST DAILY MEAN	63 Mar 22	82 Sep 17	111 Sep 20 1989
LOWEST DAILY MEAN	.67 Sep 29	.54 Jul 29	.41 Aug 16 1988
ANNUAL SEVEN-DAY MINIMUM	.75 Sep 24	.55 Aug 7	.50 Aug 10 1988
INSTANTANEOUS PEAK FLOW		92 Sep 17	124 Sep 20 1989
INSTANTANEOUS PEAK STAGE		4.06 Sep 17	4.27 Sep 20 1989
INSTANTANEOUS LOW FLOW		.47 Jul 26	.35 Aug 15 1988
ANNUAL RUNOFF (CFSM)	1.02	.63	1.10
ANNUAL RUNOFF (INCHES)	13.91	8.56	14.90
10 PERCENT EXCEEDS	23	15	23
50 PERCENT EXCEEDS	4.7	3.0	7.2
90 PERCENT EXCEEDS	.94	.85	1.4



LOCATION.--Lat 39°29'44", long 75°04'38" (revised), Salem County, Hydrologic Unit 02040206, on right bank just upstream from bridge on Almond Road (State Route 540) at Norma, 0.8 mi downstream from Blackwater Branch, and 2.9 mi west of Vineland.

PERIOD OF RECORD.--July 1932 to current year. Monthly discharge only for December 1933, published in WSP 1302.

GAGE.--Water-stage recorder and crest-stage gage. Concrete control since Dec. 27, 1937. Datum of gage is 46.94 ft above sea level.

REMARKS.--Records fair. Occasional regulation by ponds above station. Several measurements of water temperature, other than those published, were made during the year. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 380 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sep 19	0500	*468	*3.60	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	48	63	63	135	129	162	112	108	111	48	87
2	46	48	60	60	146	137	166	112	102	106	51	80
3	45	46	58	126	161	144	160	112	97	100	46	76
4	50	46	57	198	157	159	157	112	92	97	44	73
5	52	46	56	182	152	156	159	112	87	92	43	80
6	52	46	56	177	142	150	154	112	87	83	43	103
7	52	46	55	154	133	171	148	112	86	76	43	99
8	52	46	56	128	141	166	144	111	86	72	44	95
9	59	47	63	123	136	157	142	109	83	69	44	92
10	63	48	61	124	131	147	181	106	77	68	42	100
11	63	54	60	113	125	137	195	102	75	66	42	95
12	62	61	58	107	121	130	231	99	75	63	41	88
13	60	62	61	103	133	124	236	98	79	67	34	83
14	72	61	64	102	130	122	230	99	84	64	44	78
15	71	59	61	161	126	185	217	101	94	63	57	77
16	65	58	63	214	122	206	203	99	91	60	79	175
17	61	58	63	214	119	205	192	97	89	59	83	380
18	58	58	61	219	142	204	178	96	88	57	81	439
19	56	58	77	230	165	193	166	114	85	56	69	454
20	54	58	80	224	166	171	156	146	87	59	65	385
21	53	61	70	215	165	161	148	148	149	60	80	311
22	54	60	64	192	158	230	151	140	144	57	78	261
23	54	58	60	172	145	271	155	143	136	57	74	216
24	54	58	60	181	133	279	159	147	122	56	69	190
25	54	58	59	226	127	280	153	211	108	55	66	173
26	53	64	58	218	122	266	145	197	98	54	72	144
27	52	71	56	216	107	247	139	163	91	51	128	89
28	51	69	56	201	104	229	131	147	86	49	138	105
29	49	67	60	182	---	211	126	137	82	49	128	111
30	48	65	65	162	---	191	122	125	99	50	114	129
31	48	---	72	145	---	175	---	114	---	49	96	---
TOTAL	1709	1685	1913	5132	3844	5733	5006	3833	2867	2075	2086	4868
MEAN	55.1	56.2	61.7	166	137	185	167	124	95.6	66.9	67.3	162
MAX	72	71	80	230	166	280	236	211	149	111	138	454
MIN	45	46	55	60	104	122	122	96	75	49	34	73
CF5M	.49	.50	.55	1.48	1.23	1.65	1.49	1.10	.85	.60	.60	1.45
IN.	.57	.56	.64	1.78	1.28	1.90	1.66	1.27	.95	.69	.69	1.62

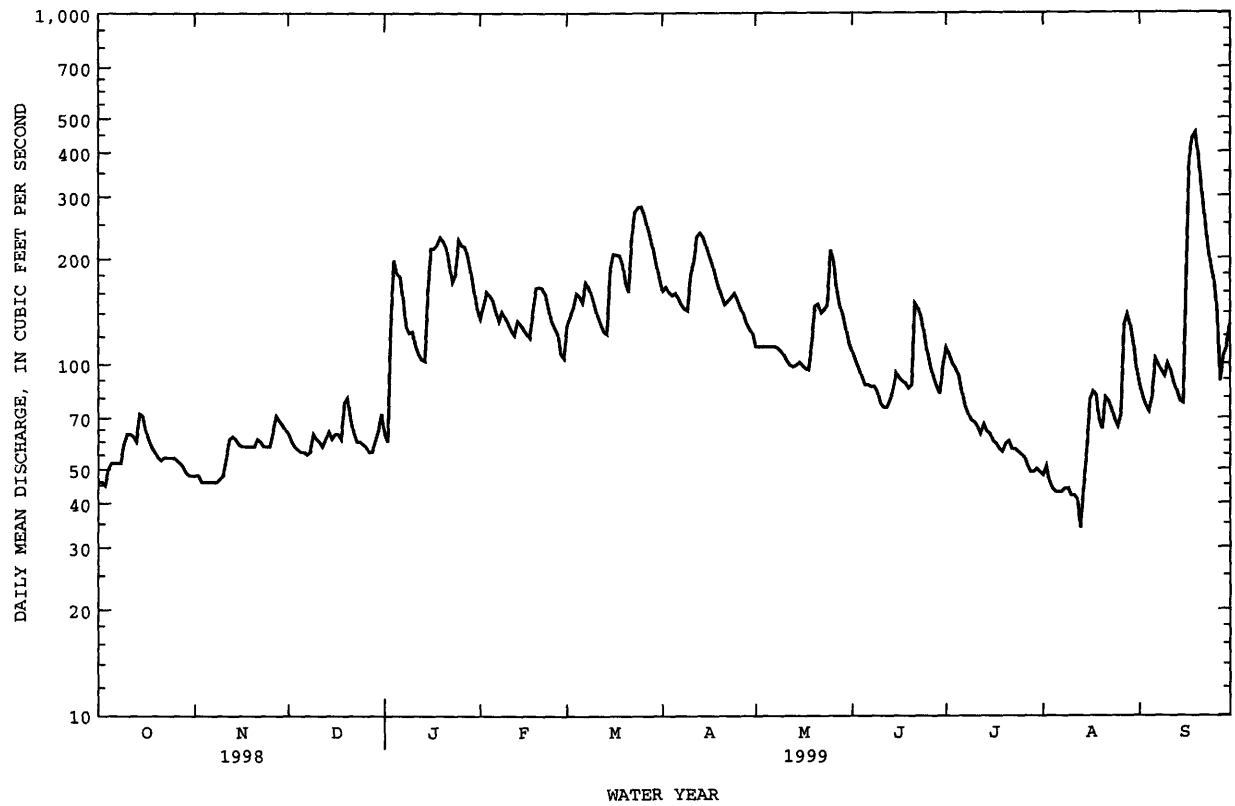
MEAN	112	138	166	190	201	231	226	190	146	123	124	121
MAX	266	330	385	380	418	427	437	387	291	333	327	591
(WY)	1990	1973	1973	1936	1939	1979	1984	1958	1979	1975	1958	1940
MIN	48.6	46.7	57.1	64.7	95.7	97.2	90.9	79.5	57.7	35.6	34.6	40.6
(WY)	1966	1966	1966	1966	1981	1981	1966	1977	1966	1966	1966	1965

ANNUAL TOTAL	54205		40751				
ANNUAL MEAN	149		112			164	
HIGHEST ANNUAL MEAN						253	1973
LOWEST ANNUAL MEAN						67.4	1966
HIGHEST DAILY MEAN	472	Mar 23	454	Sep 19	5260	Sep 2	1940
LOWEST DAILY MEAN	45	Oct 3	34	Aug 13	23	Sep 8	1964
ANNUAL SEVEN-DAY MINIMUM	46	Nov 3	41	Aug 7	23	Sep 7	1966
INSTANTANEOUS PEAK FLOW			468	Sep 19	7360a	Sep 2	1940
INSTANTANEOUS PEAK STAGE			3.60	Sep 19	8.72	Sep 2	1940
INSTANTANEOUS LOW FLOW			33	Aug 13	23	Sep 8	1964
ANNUAL RUNOFF (CFSM)	1.33		1.00		1.46		
ANNUAL RUNOFF (INCHES)	18.00		13.54		19.87		
10 PERCENT EXCEEDS	281		196		281		
50 PERCENT EXCEEDS	122		97		143		
90 PERCENT EXCEEDS	54		51		68		

a From rating curve extended above 3,000 ft³/s highest since 1867.

MAURICE RIVER BASIN

01411500 MAURICE RIVER AT NORMA, NJ--Continued



01434000 DELAWARE RIVER AT PORT JERVIS, NY
(National water-quality assessment program station)

LOCATION.--Lat 41°22'14", long 74°41'52", Pike County, PA, Hydrologic Unit 02040104, on right bank 250 ft downstream from bridge (on U.S. Highways 6 and 209) between Port Jervis, N.Y. and Matamoras, PA, 1.2 mi upstream from Neversink River, and 6.5 mi downstream from Mongaup River.

DRAINAGE AREA.--3,070 mi².

PERIOD OF RECORD.--October 1904 to current year.

REVISED RECORDS.--WSP 1031: 1905-36. WDR NY-71-1: 1970. WDR NY-82-1: Drainage area. WDR NY-86-1: 1979-80.

GAGE.--Water-stage recorder. Datum of gage is 415.35 ft above sea level. October 1904 to August 13, 1928, non-recording gage at bridge 250 ft upstream at present datum; operated by U.S. Weather Service prior to June 20, 1914.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated by Lake Wallenpaupack and by Toronto, Cliff Lake, and Swinging Bridge Reservoirs (see Reservoirs in Delaware River Basin) and smaller reservoirs. Large diurnal fluctuations at medium and low flows caused by powerplants on tributary streams. Subsequent to September 1954, entire flow from 371 mi² of drainage area controlled by Pepacton Reservoir, and subsequent to October 1963, entire flow from 454 mi² of drainage area controlled by Cannonsville Reservoir (see Reservoirs in Delaware River Basin). Part of flow from these reservoirs diverted for New York City municipal supply. Remainder of flow (except for conservation releases and spill) impounded for release during periods of low flow in the lower Delaware River basin, as directed by the Delaware River Master. Satellite gage-height telemeter and National Weather Service telephone gage-height telemeter at station. Also published as a NAWQA water-quality miscellaneous site.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge prior to current degree of regulation, 233,000 ft³/s, Aug. 19, 1955, gage height, 23.91 ft, from floodmarks in gage house, from rating curve extended above 89,000 ft³/s, on basis of slope-area measurement of peak flow; maximum discharge since current degree of regulation, 134,000 ft³/s, Jan. 20, 1996, gage height, 18.37 ft; maximum gage height, 26.6 ft, Feb. 12, 1981 (ice jam), from floodmarks; minimum observed discharge, 175 ft³/s, Sept. 23, 1908, gage height, 0.6 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--The U.S. Weather Bureau reported a discharge of 205,000 ft³/s, Oct. 10, 1903, gage height, 23.1 ft, from rating curve extended above 70,000 ft³/s, by velocity-area studies; maximum gage height, 25.5 ft, Mar. 8, 1904 (ice jam).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 47,400 ft³/s, Jan. 25, gage height, 10.86 ft; minimum, 933 ft³/s, Oct. 2, gage height, 1.80 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1410	1540	1420	e1100	e2900	3520	6540	2940	2420	1810	2150	1630
2	1370	1650	1270	e1000	4450	4580	6710	2460	2410	1650	2070	1690
3	1730	1640	1330	e1500	8510	4330	6130	2490	2320	1600	1930	1640
4	1690	1650	1360	e1700	8940	8630	5900	2760	2150	1570	1980	1760
5	1550	1660	1400	e1700	7530	13300	5730	2850	1800	1560	1890	1670
6	1740	1660	1440	e1900	6830	8850	5320	2690	1580	2240	1800	1580
7	1650	1640	1410	e1600	5860	7170	4840	2440	1550	2400	1860	1220
8	1900	1670	1450	e1200	5040	5900	4720	2420	2020	1830	1800	1260
9	2210	1740	1350	e1400	e4200	e5000	4390	2440	2040	1920	1780	1210
10	2890	1610	1620	e1500	e3700	e4200	4600	2720	1680	1800	1860	1440
11	1890	1660	1560	e1900	e3500	e3700	4570	2440	1550	1360	1810	1600
12	1630	1330	1530	e1700	e4100	e3300	4640	2320	1620	1520	1960	1510
13	1740	1670	1440	e1700	5960	e3000	5200	1920	1510	1550	2090	1500
14	1510	1780	1460	e1800	6120	e2800	5070	1770	1480	1790	2460	1450
15	1480	1580	1350	e1800	e4300	e2700	4160	1770	1590	1830	2270	1610
16	1730	1500	1460	e1900	e3800	e2600	3910	1580	1510	2030	2090	4130
17	1630	1530	1400	e2000	e3500	e2700	3970	1500	1580	2060	2050	16800
18	1340	1540	1550	e2200	e3200	e3600	3930	1460	1660	1750	1540	11200
19	1170	1550	1470	e9000	e3000	4990	4260	1830	1690	1900	1640	5060
20	1330	1570	1510	e8800	e2600	4650	4260	2980	1680	1740	1730	3260
21	1420	1650	1440	e5800	e2300	4360	4240	2950	1650	1850	1820	2920
22	1490	1750	1460	4920	e2000	9490	4200	2380	1860	2060	1840	2900
23	1560	1640	1800	5300	e1800	12600	3890	2030	1720	2060	1630	4460
24	1580	1490	2330	16600	e2300	9950	4690	2570	1530	1980	1740	3950
25	1760	1460	e1600	36000	3750	8810	4600	6490	1540	1960	1630	2980
26	1750	1570	e1400	16400	3630	8000	4360	6940	1660	1870	1660	2180
27	1740	1730	e1300	10900	2930	7210	4140	5130	1710	1930	1650	2030
28	1780	2170	e1600	8390	2720	6650	3830	3980	1640	2170	1830	2270
29	1610	1690	e1500	e6200	---	7330	3540	3290	1750	1990	1700	2130
30	1590	1400	e1300	e4600	---	7470	3270	2860	1560	1950	1540	2210
31	1570	---	e1200	e3600	---	7160	---	2460	---	2040	1580	---
TOTAL	51440	48720	45710	166110	119470	188550	139610	86860	52460	57770	57380	91250
MEAN	1659	1624	1475	5358	4267	6082	4654	2802	1749	1864	1851	3042
MAX	2890	2170	2330	36000	8940	13300	6710	6940	2420	2400	2460	16800
MIN	1170	1330	1200	1000	1800	2600	3270	1460	1480	1360	1540	1210

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1999, BY WATER YEAR (WY)

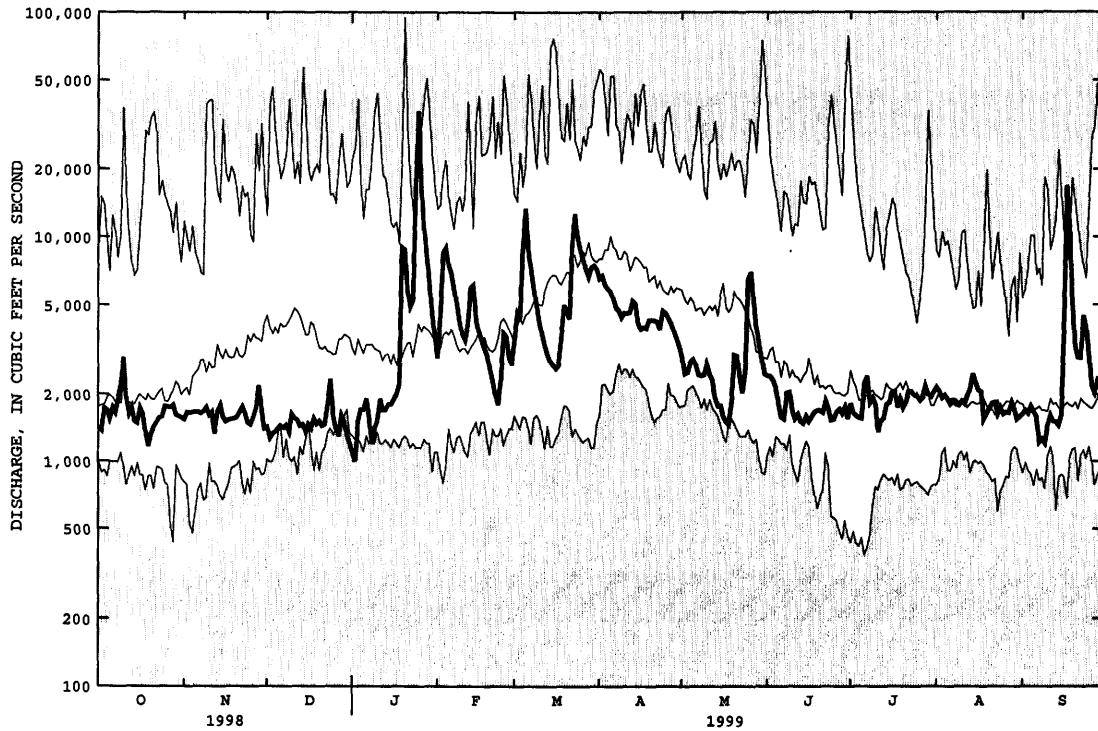
MEAN	2985	4140	5170	4917	5142	8006	9400	6087	3776	2714	2222	2414
MAX	10440	10310	17280	12980	13730	17520	23650	12670	12650	6680	4513	7928
(WY)	1978	1973	1997	1996	1976	1977	1993	1984	1972	1973	1969	1987
MIN	1001	884	1475	1216	1601	2583	2954	1890	993	699	963	1144
(WY)	1965	1965	1999	1981	1980	1981	1985	1995	1965	1965	1965	1965

e Estimated

DELAWARE RIVER BASIN

01434000 DELAWARE RIVER AT PORT JERVIS, NY--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1964 - 1999	
ANNUAL TOTAL	2003520		1105330		4743	
ANNUAL MEAN	5489		3028		7216	
HIGHEST ANNUAL MEAN					2028	
LOWEST ANNUAL MEAN					95200	
HIGHEST DAILY MEAN	36200	Jan 9	36000	Jan 25	385	Jul 6 1965
LOWEST DAILY MEAN	1160	Sep 10	1000	Jan 2	432	Jul 1 1965
ANNUAL SEVEN-DAY MINIMUM	1370	Nov 30	1290	Dec 27	10200	
10 PERCENT EXCEEDS	12300		5900		2830	
50 PERCENT EXCEEDS	2960		1890		1500	
90 PERCENT EXCEEDS	1490		1460			



CURRENT WATER YEAR DAILY DISCHARGE (BOLD) WITH DAILY MEDIAN FOR PERIOD OF RECORD.
 SHADED AREAS SHOW DAILY MAXIMUM AND MINIMUM FOR PERIOD OF RECORD THROUGH PREVIOUS WATER YEAR.

LOCATION.--Lat 41°26'28", long 74°36'08", Orange County, Hydrologic Unit 02040104, on right bank just upstream from highway bridge on Graham Road, 0.5 mi downstream from Basher Kill, 0.8 mi southeast of Godeffroy, 1.7 mi south of Cuddebackville, and 8.5 mi upstream from mouth.

PERIOD OF RECORD:--July 1937 to current year. Gage heights and discharge measurements, August to October 1903 and August 1909 to April 1914, and twice-daily figures of discharge for January 1911 to December 1912 (which do not represent daily mean discharges because of diurnal fluctuation) are published in WSP 97, 261, 321, 351, and 381. August to October 1903, published as "Navesink River at Godeffroy, NY."

GAGE.--Water-stage recorder. Datum of gage is 459.66 ft above sea level (levels by Corps of Engineers). Prior to Apr. 30, 1914, nonrecording gages at same site (August to October 1903 at datum 0.98 ft higher).

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Prior to 1949, diurnal fluctuation at low and medium flow caused by powerplant at Cuddebackville. Subsequent to June 1953, entire flow from 92.5 mi² of drainage area controlled by Neversink Reservoir (see Reservoirs in Delaware River Basin). Part of flow diverted for New York City municipal supply. Remainder of flow (except for conservation releases and spill), impounded for release during periods of low flow in the lower Delaware River basin, as directed by the Delaware River Master. Also published as a NAWQA water-quality miscellaneous site.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge prior to regulation, 24,500 ft³/s, Nov. 26, 1950, gage height, 11.79 ft; maximum discharge since regulation, 33,000 ft³/s, Aug. 19, 1955, gage height, 12.49 ft, from rating curve extended above 11,000 ft³/s, on basis of slope-area measurement of peak flow; minimum discharge observed, no flow July 21, 22, 28, 1911, result of regulation.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,150 ft³/s, Sept. 17, gage height, 9.28 ft; minimum recorded, 46 ft³/s, Dec. 26, gage height, 3.26 ft, but may have been less during period of ice effect Dec. 27 to Jan. 2; minimum gage height, 3.12 ft, Aug. 8.

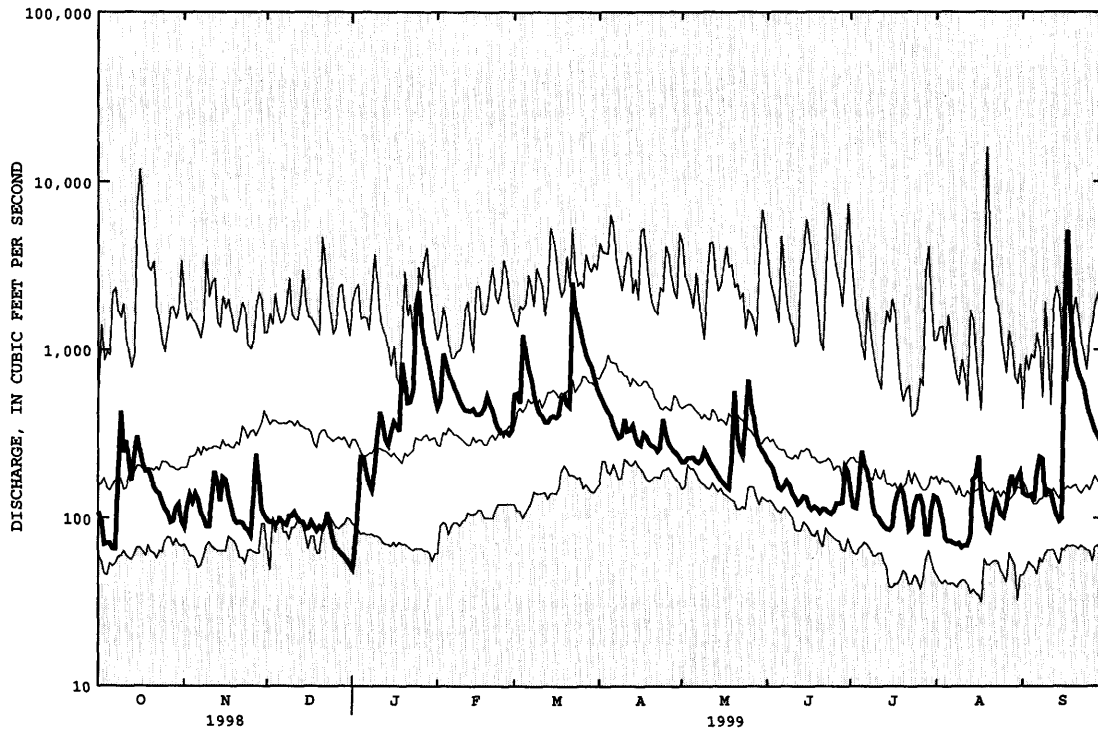
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	107	88	97	e50	e450	539	541	213	217	141	131	140
2	95	115	94	e71	e500	549	504	214	208	116	119	136
3	70	137	95	117	945	481	459	226	196	114	99	134
4	71	124	91	228	840	1230	430	226	172	157	76	137
5	71	139	95	227	721	962	400	227	152	248	73	125
6	66	129	97	189	659	781	350	216	147	204	73	183
7	66	108	93	161	594	685	323	212	155	189	71	228
8	169	99	91	146	551	e540	298	221	165	157	70	222
9	427	89	102	187	495	e470	305	251	155	117	71	134
10	243	89	103	299	463	e420	385	233	138	104	67	146
11	285	134	108	423	436	e400	326	213	131	101	69	142
12	213	187	100	357	434	e370	332	201	121	94	69	121
13	165	162	95	290	e430	e370	353	190	125	89	78	105
14	240	125	94	269	e440	395	305	178	134	86	168	96
15	303	173	86	321	e410	402	276	168	132	85	175	100
16	247	167	87	370	e410	394	268	161	117	89	232	1790
17	209	134	95	351	420	410	314	154	112	120	135	5100
18	189	117	89	327	448	506	302	149	116	141	110	1790
19	191	98	84	833	527	535	278	217	113	152	88	1110
20	176	93	89	644	475	474	267	566	107	140	84	831
21	151	94	86	479	437	458	262	320	113	112	104	730
22	143	93	93	485	e370	2520	248	251	112	85	130	660
23	139	87	107	576	e340	1800	260	232	108	89	119	580
24	124	85	87	1810	e320	1530	385	360	106	119	105	474
25	113	79	74	2240	322	1310	319	660	110	133	101	411
26	107	126	67	1390	324	1100	279	479	122	134	116	362
27	94	237	e64	1110	311	939	261	390	122	119	155	326
28	96	167	e61	940	328	855	248	311	123	80	178	305
29	114	113	e59	792	---	797	239	268	200	80	151	283
30	120	104	e56	655	---	699	226	250	186	110	169	344
31	95	---	e53	e520	---	589	---	237	---	134	184	---
TOTAL	4899	3692	2692	16857	13400	23510	9743	8194	4215	3839	3570	17245
MEAN	158	123	86.8	544	479	758	325	264	140	124	115	575
MAX	427	237	108	2240	945	2520	541	660	217	248	232	5100
MIN	66	79	53	50	311	370	226	149	106	80	67	90

MEAN	296	380	439	379	416	687	833	544	376	235	221	221
MAX	2033	1094	1227	1053	981	1370	2080	1392	1722	652	1327	705
(WY)	1956	1956	1974	1979	1976	1977	1993	1989	1972	1972	1955	1960
MIN	91.8	86.3	86.8	72.6	118	297	248	180	111	54.2	76.0	71.1
(WY)	1998	1966	1999	1981	1980	1981	1985	1962	1957	1966	1968	1972

e Estimated

01437500 NEVERSINK RIVER AT GODEFFROY, NY--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1954 - 1999	
ANNUAL TOTAL	178040		111856		419	
ANNUAL MEAN	488		306		704	
HIGHEST ANNUAL MEAN					215	
LOWEST ANNUAL MEAN					15900	
HIGHEST DAILY MEAN	5980	Jun 15	5100	Sep 17	32	Aug 19 1955
LOWEST DAILY MEAN	53	Dec 31	50	Jan 1	38	Aug 17 1965
ANNUAL SEVEN-DAY MINIMUM	62	Dec 25	59	Dec 26	871	Aug 11 1965
10 PERCENT EXCEEDS	895		584		270	
50 PERCENT EXCEEDS	308		178		106	
90 PERCENT EXCEEDS	89		87			



CURRENT WATER YEAR DAILY DISCHARGE (BOLD) WITH DAILY MEDIAN FOR PERIOD OF RECORD.
 SHADED AREAS SHOW DAILY MAXIMUM AND MINIMUM FOR PERIOD OF RECORD THROUGH PREVIOUS WATER YEAR.

01438500 DELAWARE RIVER AT MONTAGUE, NJ

LOCATION.--Lat 41°18'33", long 74°47'44", Pike County, PA, Hydrologic Unit 02040104, on right bank 1,500 ft upstream from toll bridge (on U.S. Route 206) between Montague, NJ and Milford, PA, 0.8 mi downstream from Sawkill Creek, and at river mile 246.3.

DRAINAGE AREA.--3,480 mi².

PERIOD OF RECORD.--March 1936 to September 1939 (gage heights only, published as "at Milford, PA"). October 1939 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WDR-NJ-81-2: 1980.

GAGE.--Water-stage recorder. Datum of gage is 369.93 ft above sea level. Prior to Feb. 9, 1940, nonrecording gage on upstream side of left span of subsequently dismantled bridge at present site at datum 70 ft lower.

REMARKS.--Records good except for estimated daily discharges which are fair. Diurnal fluctuation at medium and low flow caused by powerplants on tributary streams. Flow regulated by Lake Wallenpaupack, Cliff Lake, and by Pepacton, Cannonsville, Swinging Bridge, Toronto, and Neversink Reservoirs (see Delaware River basin, diversions). Several measurements of water temperature were made during the year. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1530	1690	1600	e1300	4900	4010	7330	3320	2830	1940	2180	1780
2	1420	1790	1440	e1100	5010	5250	7450	2800	2900	1820	2110	1870
3	1710	1820	1440	e1200	9410	5000	6890	2660	2700	1580	2020	1810
4	1770	1830	1490	e1400	10300	8890	6560	3130	2510	1780	1990	1880
5	1670	1830	1520	e1500	8640	14400	6260	3120	2160	1730	1890	1840
6	1810	1840	1620	e1600	7880	10100	5860	3040	1850	2400	1800	1880
7	1720	1820	1530	e1400	6800	8280	5310	2810	1770	2710	1820	1610
8	2000	1840	1600	e1350	5870	6980	5160	2750	2290	2030	1760	1570
9	2400	1880	1520	e1400	5390	6010	4800	2810	2340	2120	1750	1510
10	3220	1780	1700	e1550	5270	5810	5100	3070	1940	1950	1810	1620
11	2150	1900	1760	e1700	4750	5520	4980	2760	1750	1410	1780	1840
12	1830	1540	1680	e2200	5080	4920	5060	2600	1780	1590	1970	1740
13	1920	1730	1610	e2050	6420	4010	5650	2330	1690	1610	2130	1700
14	1680	2020	1580	e1900	6960	4120	5570	2060	1680	1750	2600	1650
15	1670	1780	1530	e1900	5640	4360	4600	2040	1740	1910	2550	1790
16	1910	1710	1560	e1800	5610	4720	4280	1850	1670	2070	2360	4840
17	1950	1680	1600	e1900	5960	4310	4400	1750	1650	2180	2270	23200
18	1610	1710	1650	e2300	6060	4930	4310	1680	1830	1860	1830	15400
19	1390	1710	1650	e4200	6190	5620	4550	2010	1810	1980	1720	7070
20	1520	1710	1630	e11000	5550	5340	4640	3550	1780	1900	1880	4640
21	1590	1780	1630	e8000	4970	4850	4570	3450	1720	1900	1990	4160
22	1640	1910	1570	e5800	4360	11600	4500	2820	2000	1970	2070	3830
23	1760	1830	1840	e6000	3860	14900	4260	2450	1890	2200	1870	5210
24	1800	1640	2590	e13000	3670	12000	5190	2840	1630	2000	1980	4930
25	1910	1610	1890	e42000	4060	10600	5120	6630	1610	1980	1800	3840
26	1950	1710	e1700	e21000	3980	9600	4700	7690	1760	1880	1880	2830
27	1920	1940	e1550	e13500	3440	8570	4540	5900	1740	1930	1880	2460
28	1980	2320	e1800	e10300	3090	7890	4180	4750	1740	2170	2070	2760
29	1810	1990	e2100	8260	---	8360	3830	3920	1860	2030	1950	2650
30	1760	1560	e1650	6830	---	8490	3620	3440	1850	1940	1760	2790
31	1740	---	e1600	5490	---	8140	---	2990	---	2080	1800	---
TOTAL	56740	53900	51630	184930	159120	227580	153270	99020	58470	60400	61270	116700
MEAN	1830	1797	1665	5965	5683	7341	5109	3194	1949	1948	1976	3890
MAX	3220	2320	2590	42000	10300	14900	7450	7690	2900	2710	2600	23200
MIN	1390	1540	1440	1100	3090	4010	3620	1680	1610	1410	1720	1510

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1999, BY WATER YEAR (WY)

	MEAN	3311	5113	6178	5915	5975	9954	11870	7381	4356	3067	2584	2657
MAX	15690	11760	18830	15600	15120	24480	31560	16090	15200	11220	14230	9167	
(WY)	1956	1952	1997	1996	1976	1945	1940	1943	1972	1945	1955	1960	
MIN	807	995	1665	1318	1748	3191	3322	2215	1214	864	715	892	
(WY)	1942	1965	1999	1981	1980	1981	1985	1965	1965	1954	1954	1941	

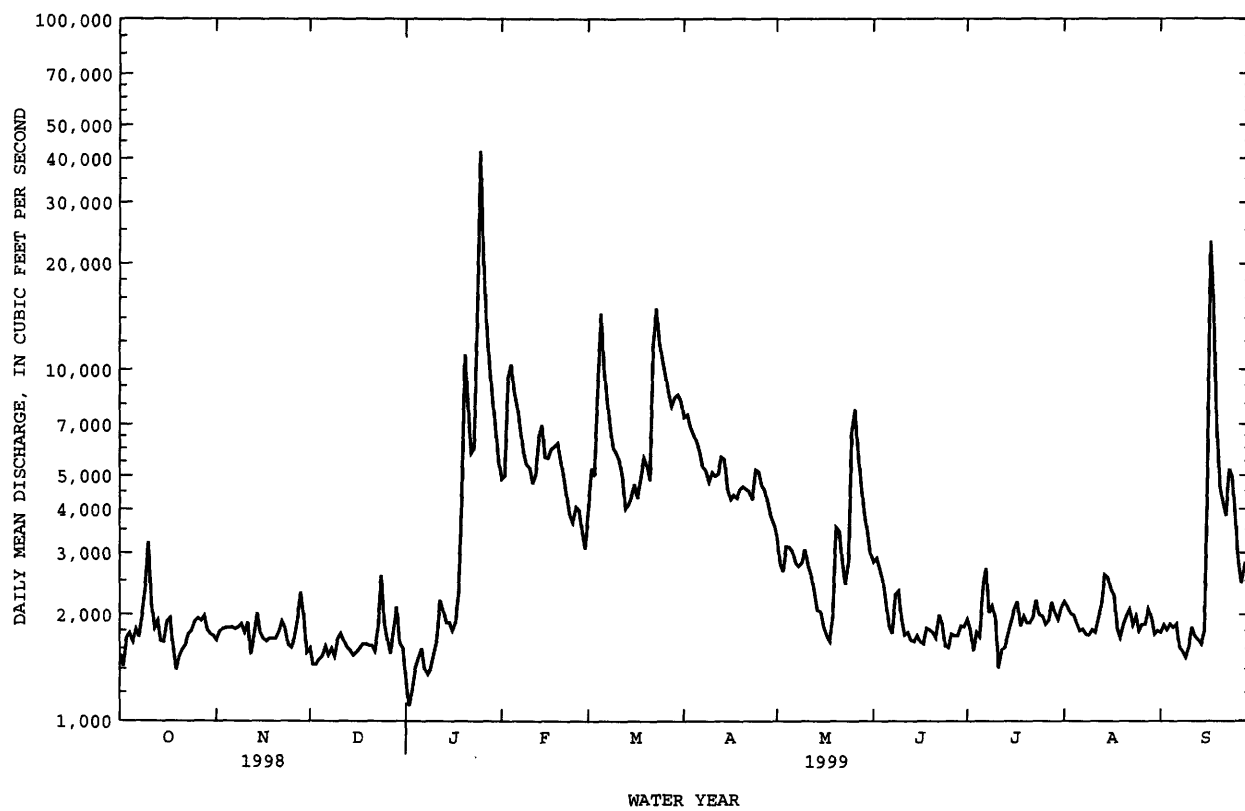
SUMMARY STATISTICS FOR 1998 CALENDAR YEAR FOR 1999 WATER YEAR WATER YEARS 1940 - 1999

ANNUAL TOTAL	2256690	1283030	
ANNUAL MEAN	6183	3515	5691
HIGHEST ANNUAL MEAN			8621
LOWEST ANNUAL MEAN			2309
HIGHEST DAILY MEAN	39100	Jan 9	187000
LOWEST DAILY MEAN	1370	Sep 10	412
ANNUAL SEVEN-DAY MINIMUM	1520	Dec 1	1360
INSTANTANEOUS PEAK FLOW			61900
INSTANTANEOUS PEAK STAGE			17.49
INSTANTANEOUS LOW FLOW			e1100
10 PERCENT EXCEEDS	13300		6810
50 PERCENT EXCEEDS	3570		2000
90 PERCENT EXCEEDS	1650		1600

a From rating curve extended above 90,000 ft³/s on basis of flood-routing study.

e Estimated.

01438500 DELAWARE RIVER AT MONTAGUE, NJ--Continued



01440000 FLAT BROOK NEAR FLATBROOKVILLE, NJ

LOCATION.--Lat 41°06'24", long 74°57'09", Sussex County, Hydrologic Unit 02040104, on right bank 1.0 mi upstream from Flatbrookville, and 1.5 mi upstream from mouth.

DRAINAGE AREA.--64.0 mi².

PERIOD OF RECORD.--July 1923 to current year

REVISED RECORDS.--WSP 1432: 1924(M), 1928(M), 1929, 1930(M), 1932, 1933(M), 1936, 1938(M), 1939-40, 1949(M), 1952-53(M).
WDR-NJ-80-2: 1970(M). WDR NJ-82-2: Drainage area.

GAGE.--Water-stage recorder. Concrete control since Aug. 19, 1929. Datum of gage is 347.73 ft above sea level. Prior to Jan. 6, 1926, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow occasionally regulated by ponds above station. Several measurements of water temperature were made during the year. Satellite telemetry at station.

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)
Sep 17	0545	*3,760	*8.26	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.0	9.2	21	e15	e85	132	141	79	55	17	7.1	9.8
2	5.6	8.8	19	e7.0	137	164	133	74	51	17	6.9	9.0
3	5.5	8.4	18	e6.0	196	163	127	71	48	17	6.6	8.5
4	5.5	8.4	17	e20	221	168	119	71	45	16	6.2	8.4
5	6.0	8.4	16	e35	209	196	112	77	43	15	6.0	8.1
6	6.0	8.4	17	e48	183	191	104	74	40	14	6.0	10
7	6.0	8.1	21	e45	159	181	100	71	37	13	6.0	14
8	11	7.7	18	e45	146	156	98	73	37	12	5.7	23
9	43	7.7	19	e60	138	142	94	90	36	12	5.5	19
10	26	7.7	19	e90	131	137	115	84	32	12	5.5	20
11	23	9.2	18	e75	126	131	124	73	31	12	5.5	21
12	24	15	18	e65	123	126	118	66	29	12	5.5	16
13	18	19	17	e50	131	120	122	62	29	11	5.5	14
14	15	17	16	e30	139	114	115	57	28	11	7.4	12
15	20	16	16	e35	134	115	102	53	29	10	10	11
16	19	14	16	e55	127	120	94	51	28	10	10	334
17	15	14	16	e50	123	122	106	48	27	9.7	9.5	2420
18	13	14	16	e100	122	130	113	47	28	9.9	8.7	533
19	11	13	16	e250	149	133	104	54	27	11	7.9	221
20	10	13	16	e170	158	127	97	128	25	9.8	7.4	146
21	11	13	15	e140	151	122	101	131	24	9.4	7.5	118
22	11	13	15	e130	137	214	101	95	24	9.0	9.2	105
23	9.8	13	16	e150	125	384	96	81	23	9.4	9.7	99
24	9.7	13	16	e300	119	382	124	93	21	9.5	9.7	81
25	9.1	13	18	e370	112	323	126	130	20	8.9	9.4	69
26	9.2	16	13	e250	108	263	106	123	20	8.4	11	59
27	8.5	48	15	e170	104	217	96	100	19	7.9	25	54
28	8.4	39	15	e160	100	193	92	87	18	7.6	e20	50
29	9.5	29	15	e150	---	192	87	76	18	7.1	e15	47
30	11	25	15	e140	---	177	84	68	17	7.1	e13	85
31	10	---	15	e100	---	156	---	61	---	7.1	e9.5	---
TOTAL	395.8	449.0	518	3311.0	3893	5491	3251	2448	909	342.8	277.9	4624.8
MEAN	12.8	15.0	16.7	107	139	177	108	79.0	30.3	11.1	8.96	154
MAX	43	48	21	370	221	384	141	131	55	17	25	2420
MIN	5.5	7.7	13	6.0	85	114	84	47	17	7.1	5.5	8.1
CFSM	.20	.23	.26	1.67	2.17	2.77	1.69	1.23	.47	.17	.14	2.41
IN.	.23	.26	.30	1.92	2.26	3.19	1.89	1.42	.53	.20	.16	2.69

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 1999, BY WATER YEAR (WY)

	MEAN	56.1	97.8	123	123	135	205	206	143	87.2	56.4	50.4	48.1
MAX	306	292	412	367	275	513	570	372	334	333	386	258	
(WY)	1956	1928	1997	1979	1951	1936	1983	1989	1972	1928	1955	1933	
MIN	9.57	12.2	16.7	24.5	37.3	82.0	65.9	44.0	23.7	11.1	8.96	7.01	
(WY)	1964	1965	1999	1981	1940	1985	1946	1941	1965	1999	1999	1964	

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

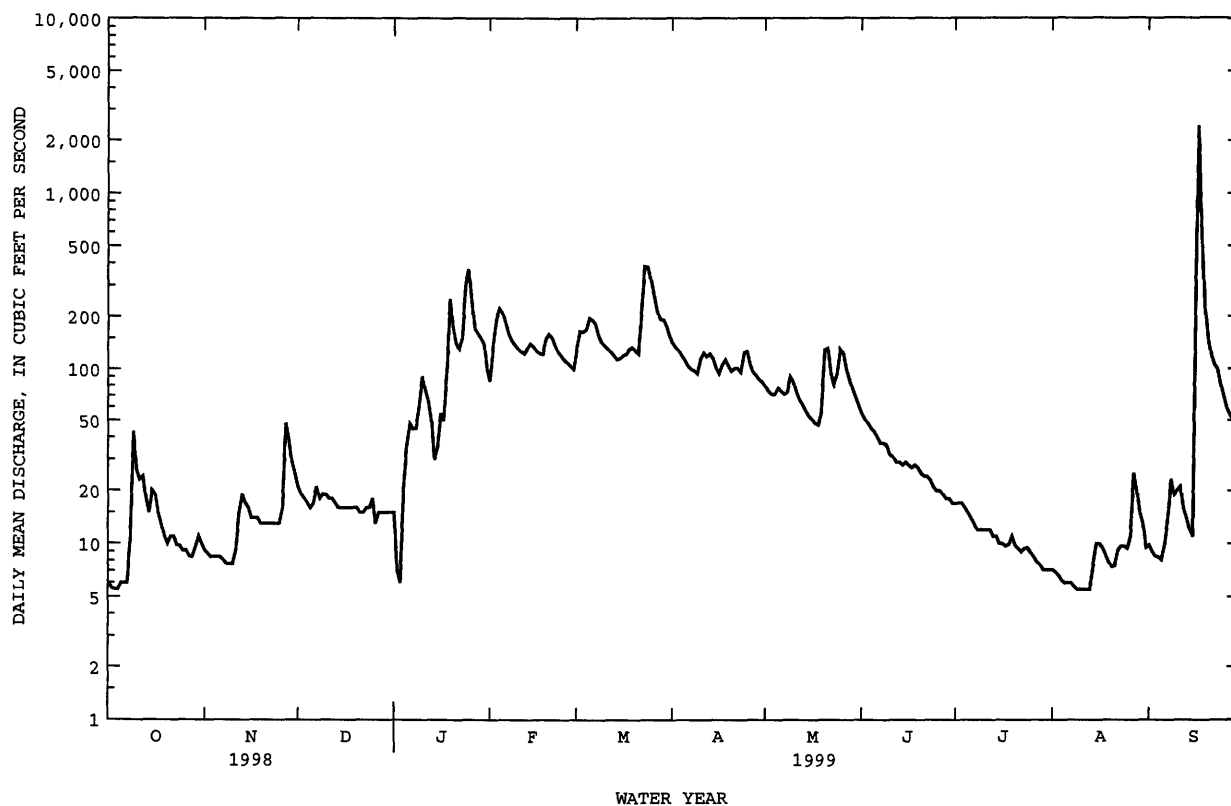
WATER YEARS 1924 - 1999

ANNUAL TOTAL	42296.7	25911.3	
ANNUAL MEAN	116	71.0	111
HIGHEST ANNUAL MEAN			210
LOWEST ANNUAL MEAN			43.4
HIGHEST DAILY MEAN	961	May 11	6310
LOWEST DAILY MEAN	5.5	Oct 3	4.1
ANNUAL SEVEN-DAY MINIMUM	5.8	Oct 1	5.3
INSTANTANEOUS PEAK FLOW			9560a
INSTANTANEOUS PEAK STAGE			12.58b
INSTANTANEOUS LOW FLOW			3.6
ANNUAL RUNOFF (CFSM)	1.81	1.11	1.73
ANNUAL RUNOFF (INCHES)	24.58	15.06	23.50
10 PERCENT EXCEEDS	282	150	237
50 PERCENT EXCEEDS	61	28	71
90 PERCENT EXCEEDS	10	8.3	17

DELAWARE RIVER BASIN

01440000 FLAT BROOK NEAR FLATBROOKVILLE, NJ--Continued

a from rating curve extended above 2,000 ft/s on basis of slope-area measurement of peak flow
b from high-water mark in gage house
e Estimated



01443280 EAST BRANCH PAULINS KILL NEAR LAFAYETTE, NJ

LOCATION.--Lat 41°04'34", long 74°41'45", Sussex County, Hydrologic Unit 02020007, on right downstream wingwall of bridge on Garrison Road, 0.8 mi upstream from mouth, and 1.6 mi south of Lafayette.

DRAINAGE AREA.--13.0 mi².

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

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 555.40 ft above sea level (levels from American Geodetic Survey Co. benchmark).

REMARKS.--Records fair except for estimated daily discharges, which are poor. Possible regulation from ponds and golf courses upstream. A significant portion of the base flow is the result of pumpage from a limestone quarry into a tributary approximately 1.5 mi upstream from gage.

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)
Jan 19	0315	138	4.48	Mar 22	1745	134	4.43
Jan 24	2315	85	3.82	Sep 17	0800	*223	*5.36

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	11	9.4	e14	18	33	25	16	9.2	7.9	6.2	5.9
2	9.0	11	9.0	e16	24	27	25	16	9.6	7.9	6.2	5.6
3	8.9	11	9.0	e17	31	23	26	16	9.4	7.8	5.8	5.4
4	9.4	11	8.9	e27	24	36	26	17	8.8	7.7	5.6	5.3
5	14	9.6	9.5	e16	21	31	22	17	8.7	7.5	5.5	6.0
6	12	11	12	e10	20	27	21	16	8.8	6.9	5.5	6.9
7	7.6	10	12	e9.5	19	29	20	15	8.7	6.8	5.5	9.7
8	14	13	5.3	e10	19	25	20	16	8.7	6.7	6.4	12
9	31	13	9.8	e15	17	23	22	18	8.0	6.4	6.6	8.3
10	21	4.3	11	e20	17	22	29	17	7.9	6.8	5.9	8.4
11	16	11	7.2	e35	17	21	24	15	7.8	7.1	5.5	7.9
12	14	11	7.9	e25	19	20	23	14	8.0	6.9	5.5	7.0
13	10	13	8.4	e20	26	19	22	13	8.3	6.5	5.5	6.6
14	14	14	8.5	e14	22	19	19	13	8.3	6.6	8.9	6.4
15	14	7.4	10	e15	19	21	18	14	7.9	6.6	9.2	7.1
16	12	10	8.9	e21	18	21	18	12	7.6	6.3	7.2	45
17	11	7.8	6.8	e20	17	23	22	11	8.2	6.3	6.4	196
18	10	8.8	8.0	41	24	24	20	11	8.8	7.1	6.1	103
19	12	9.9	7.7	100	29	22	18	16	8.2	6.9	5.7	48
20	15	9.6	8.2	41	23	21	19	23	8.2	6.5	6.1	29
21	13	9.6	8.1	26	20	22	20	16	8.9	6.4	7.8	26
22	12	10	8.4	27	19	97	19	14	8.1	6.3	6.9	26
23	12	9.2	7.1	29	17	97	20	14	7.6	5.9	6.5	21
24	11	8.4	7.8	57	16	59	24	16	7.5	6.2	5.7	19
25	11	9.1	7.5	65	16	46	21	17	7.4	6.1	5.3	17
26	11	13	7.8	35	15	38	19	15	7.4	6.4	13	16
27	11	16	7.8	27	15	34	18	13	7.5	6.4	12	15
28	11	14	7.5	25	17	37	17	12	7.4	6.5	9.0	14
29	12	8.0	8.0	24	---	37	18	11	8.5	6.0	7.6	14
30	11	8.2	8.9	21	---	31	16	11	8.8	5.8	6.9	21
31	11	---	8.6	19	---	27	---	11	---	5.8	6.1	---
TOTAL	392.9	312.9	265.0	841.5	559	1012	631	456	248.2	207.0	212.1	718.5
MEAN	12.7	10.4	8.55	27.1	20.0	32.6	21.0	14.7	8.27	6.68	6.84	24.0
MAX	31	16	12	100	31	97	29	23	9.6	7.9	13	196
MIN	7.6	4.3	5.3	9.5	15	19	16	11	7.4	5.8	5.3	5.3
CFSM	.98	.80	.66	2.09	1.54	2.51	1.62	1.13	.64	.51	.53	1.84
IN.	1.13	.90	.76	2.41	1.60	2.90	1.81	1.31	.71	.59	.61	2.06

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1999, BY WATER YEAR (WY)

	1992	1993	1994	1995	1996	1997	1998	1999
MEAN	15.6	19.1	25.2	27.6	24.8	39.5	38.9	26.0
MAX	33.2	34.3	63.4	41.1	32.5	58.5	64.3	48.8
(WY)	1997	1996	1997	1996	1996	1993	1993	1998
MIN	8.52	10.4	8.55	17.0	17.4	25.5	17.5	14.3
(WY)	1993	1999	1999	1994	1995	1997	1995	1995

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

FOR 1999 WATER YEAR

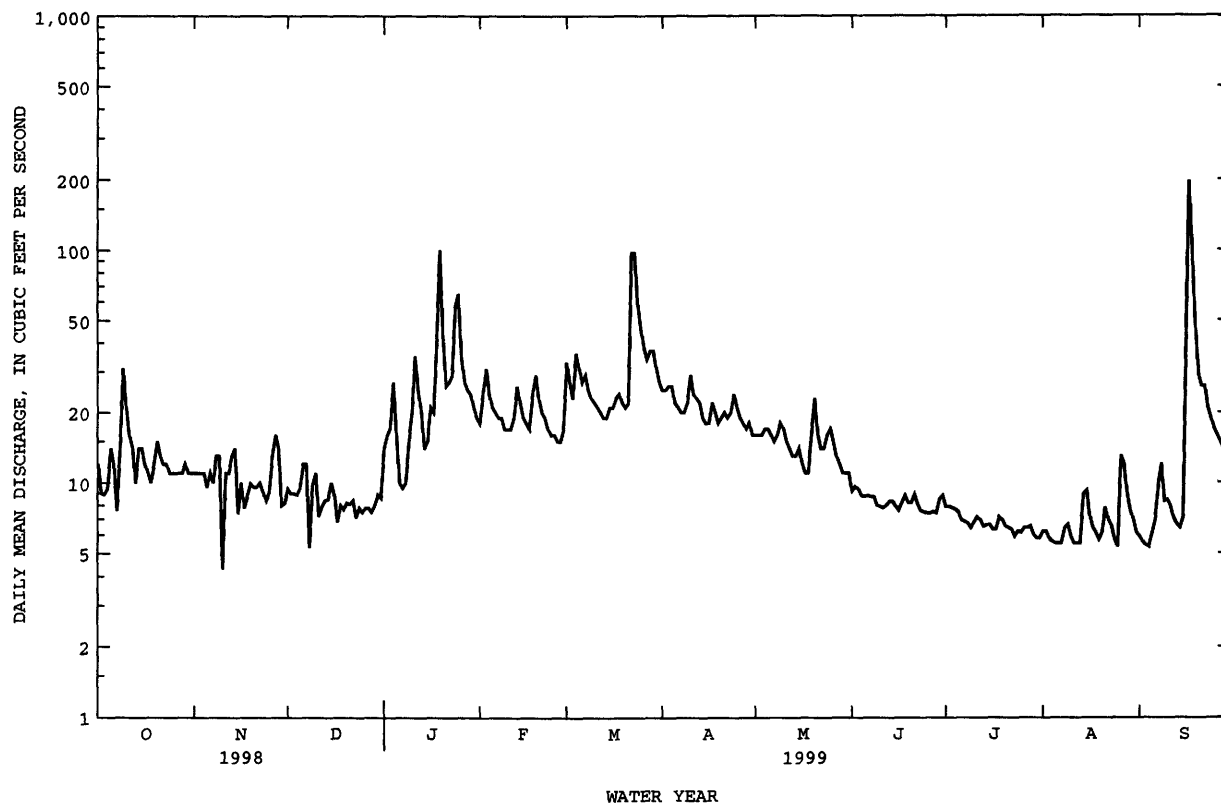
WATER YEARS 1992 - 1999

ANNUAL TOTAL	8482.0	5856.1	
ANNUAL MEAN	23.2	16.0	
HIGHEST ANNUAL MEAN			22.4
LOWEST ANNUAL MEAN			27.2
HIGHEST DAILY MEAN	138	May 11	196
LOWEST DAILY MEAN	4.3	Nov 10	4.3
ANNUAL SEVEN-DAY MINIMUM	7.6	Dec 23	5.8
INSTANTANEOUS PEAK FLOW			223
INSTANTANEOUS PEAK STAGE			5.36
INSTANTANEOUS LOW FLOW			3.2
ANNUAL RUNOFF (CFSM)	1.79		1.24
ANNUAL RUNOFF (INCHES)	24.29		16.77
10 PERCENT EXCEEDS	43		26
50 PERCENT EXCEEDS	18		12
90 PERCENT EXCEEDS	8.7		6.4

DELAWARE RIVER BASIN

01443280 EAST BRANCH PAULINS KILL NEAR LAFAYETTE, NJ--Continued

a From crest-stage gage.
e Estimated



01443500 PAULINS KILL AT BLAIRSTOWN, NJ

LOCATION.--Lat 40°58'44", long 74°57'15", Warren County, Hydrologic Unit 02040105, on right bank 1,200 ft upstream from bridge on State Highway 94 in Blairstown, 1,400 ft upstream from Blairs Creek, and 10 mi upstream from mouth

DRAINAGE AREA.--126 mi².

PERIOD OF RECORD.--October 1921 to September 1976, October 1977 to current year.

REVISED RECORDS.--WSP 971: 1942. WSP 1382: 1952-53 (M).

GAGE.--Water-stage recorder and concrete control (Aug. 1, 1931, to Aug. 3, 1941, concrete control at site 280 ft, downstream). Datum of gage is 335.86 ft above sea level. Prior to May 24, 1922, nonrecording gage and May 24, 1922 to July 31, 1931, water-stage recorder, at site of former highway bridge 1,300 ft downstream at different datum. Aug. 1, 1931 to July 28, 1939, water-stage recorder at site 100 ft downstream at present datum.

REMARKS.--Records fair except for those above 200 ft³/s and estimated daily discharges which are poor. Diurnal fluctuations caused by unknown source and flow regulated slightly by Swartswood Lake. Pumpage from limestone quarry enters tributary upstream from gage for long period of time. 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)
Jan 24	2300	1,170	4.55	Sep 17	0730	*2,400	*6.43
Mar 22	1715	1,160	3.92				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	41	46	e38	206	328	248	119	77	31	13	17
2	30	38	42	e40	300	314	239	112	72	29	13	17
3	28	37	40	e130	458	242	222	105	68	30	12	17
4	29	35	39	e145	339	374	214	111	65	27	11	16
5	28	34	39	e92	289	345	195	116	59	26	11	17
6	28	33	39	e52	258	293	172	108	54	24	11	22
7	30	32	40	e47	239	309	166	102	53	21	11	30
8	54	33	45	e46	231	258	153	110	54	19	11	34
9	116	31	42	e62	215	238	169	131	51	18	12	32
10	100	37	40	e96	206	228	223	119	47	19	13	39
11	77	39	41	167	202	216	194	105	44	20	12	36
12	66	42	37	140	199	203	184	95	42	18	12	27
13	67	40	35	108	262	182	170	86	41	19	11	23
14	137	38	36	62	239	183	149	78	41	20	25	20
15	135	39	34	71	212	210	134	72	44	19	41	23
16	126	34	34	116	201	203	137	70	40	19	28	568
17	109	34	36	109	195	220	167	65	38	20	21	2050
18	91	32	34	232	227	225	159	63	41	23	17	1190
19	80	31	33	565	279	208	142	133	38	22	15	683
20	70	32	33	385	249	186	145	257	37	22	15	426
21	66	33	33	272	223	186	156	186	38	21	20	332
22	61	34	32	271	196	865	154	140	39	20	22	290
23	55	33	35	314	153	899	156	133	36	20	19	241
24	50	38	34	731	148	653	213	169	33	19	17	202
25	47	37	29	896	138	525	190	210	31	16	16	173
26	45	48	28	530	136	444	160	166	31	16	48	147
27	43	72	29	386	130	378	149	137	29	15	55	127
28	47	66	e28	338	147	379	142	116	27	14	37	114
29	53	58	e28	308	---	359	139	102	27	18	28	104
30	49	50	e28	267	---	307	130	92	31	15	22	141
31	44	---	e30	232	---	268	---	83	---	14	19	---
TOTAL	1993	1181	1099	7248	6277	10228	5171	3691	1328	634	618	7158
MEAN	64.3	39.4	35.5	234	224	330	172	119	44.3	20.5	19.9	239
MAX	137	72	46	896	458	899	248	257	77	31	55	2050
MIN	28	31	28	38	130	182	130	63	27	14	11	16
CFSM	.51	.31	.28	1.86	1.78	2.62	1.37	.94	.35	.16	.16	1.89
IN.	.59	.35	.32	2.14	1.85	3.02	1.53	1.09	.39	.19	.18	2.11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1999, BY WATER YEAR (WY)

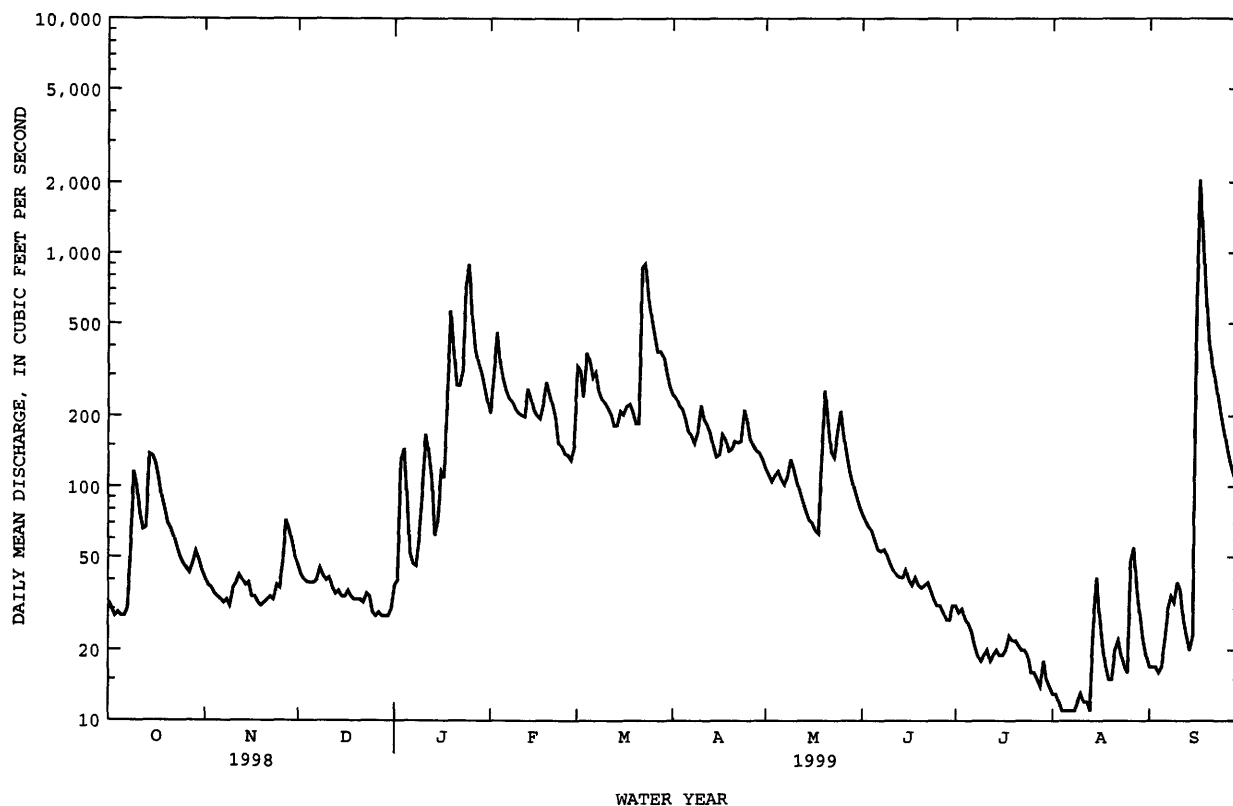
	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
MEAN	109	167	214	224	249	371	338	224	151	114	103	106
MAX	634	479	862	712	516	963	930	650	690	527	663	626
(WY)	1956	1933	1997	1979	1951	1936	1983	1989	1972	1945	1955	1933
MIN	20.5	22.1	35.5	50.5	67.4	139	106	54.6	41.0	19.4	19.6	18.2
(WY)	1964	1965	1999	1981	1940	1965	1985	1941	1965	1955	1932	1964

DELAWARE RIVER BASIN

01443500 PAULINS KILL AT BLAIRSTOWN, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1922 - 1999	
ANNUAL TOTAL	64119		46626		197	
ANNUAL MEAN	176		128		362	1952
HIGHEST ANNUAL MEAN					67.4	1965
LOWEST ANNUAL MEAN						
HIGHEST DAILY MEAN	1200	May 12	2050	Sep 17	5950	Aug 19 1955
LOWEST DAILY MEAN	24	Sep 30	11	Aug 4	5.0	Aug 13 1930
ANNUAL SEVEN-DAY MINIMUM	28	Sep 24	11	Aug 3	11	Aug 3 1999
INSTANTANEOUS PEAK FLOW			2400	Sep 17	8750	Aug 19 1955
INSTANTANEOUS PEAK STAGE			6.43	Sep 17	11.12	Aug 19 1955
INSTANTANEOUS LOW FLOW			11	Aug 4	2.8	Nov 1 1922
ANNUAL RUNOFF (CFSM)	1.39		1.01		1.56	
ANNUAL RUNOFF (INCHES)	18.93		13.77		21.26	
10 PERCENT EXCEEDS	391		275		413	
50 PERCENT EXCEEDS	106		58		132	
90 PERCENT EXCEEDS	31		19		35	

e Estimated



01443900 YARDS CREEK NEAR BLAIRSTOWN, NJ

LOCATION.--Lat 40°58'51", long 75°02'25", Warren County, Hydrologic Unit 02040105, on left bank 100 ft upstream from bridge on Hainesburg-Mount Vernon Road, 1.4 mi downstream from Yards Creek Reservoir, 2.2 mi northeast of Hainesburg, 4.2 mi west of Blairstown, and 2.4 mi upstream from mouth.

DRAINAGE AREA.--5.34 mi².

PERIOD OF RECORD.--October 1966 to current year.

REVISED RECORDS.--WDR NJ-77-2: 1976. WDR NJ-79-2: 1977(m). WDR NJ-82-2: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 606.8 ft above sea level.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Flow regulated by the GPU Generation Corp., at Yards Creek Reservoir 1.4 mi above station. Several measurements of water temperature were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.6	1.9	2.7	1.7	6.7	18	8.1	4.5	6.8	2.4	1.9	2.0
2	2.2	1.9	2.2	2.0	12	22	8.0	4.2	4.0	2.4	1.7	2.0
3	2.2	2.1	1.9	15	18	22	7.7	4.5	4.0	2.3	1.6	1.9
4	2.3	2.1	1.6	9.0	25	46	7.4	5.5	3.9	2.2	1.7	1.9
5	2.0	2.1	.93	4.5	21	37	7.2	5.2	3.8	2.3	1.6	2.1
6	2.2	2.1	.80	e2.8	23	12	6.4	5.1	3.3	2.3	1.5	2.2
7	2.2	2.0	.86	e2.0	21	11	5.6	5.1	3.2	2.2	1.5	2.3
8	6.5	1.9	2.3	e1.7	20	15	5.6	5.8	3.1	2.0	1.6	2.3
9	3.8	1.8	2.5	e1.8	21	13	6.3	4.9	2.8	2.1	1.5	2.4
10	5.1	2.1	2.5	e1.9	21	10	6.0	4.6	2.7	2.3	1.7	2.9
11	2.9	3.3	2.5	e2.0	16	11	5.5	4.7	2.6	2.1	1.7	2.3
12	2.4	2.3	2.5	2.8	11	10	5.6	4.6	2.7	2.0	1.8	2.3
13	2.5	2.0	2.2	5.5	11	11	5.5	4.7	2.7	1.7	1.7	2.3
14	4.0	1.9	2.1	2.3	9.8	9.1	5.4	4.7	2.9	1.9	2.6	2.4
15	2.9	1.8	2.5	1.1	9.7	15	4.9	4.7	2.9	1.8	2.3	2.8
16	2.7	1.9	2.4	3.4	9.8	20	5.2	4.4	2.7	2.0	1.7	38
17	2.5	2.5	2.3	4.7	9.6	18	4.9	4.4	2.9	2.0	1.6	14
18	2.4	3.2	2.1	32	18	17	4.4	4.6	2.9	1.8	1.8	6.1
19	2.2	2.9	2.1	17	23	13	4.3	9.1	2.7	1.6	1.8	4.9
20	2.5	2.8	1.9	8.4	e17	9.4	4.9	13	2.4	1.8	2.2	4.3
21	2.6	2.6	1.5	7.6	e14	12	4.7	15	2.6	2.0	1.2	4.4
22	2.4	1.3	1.9	8.4	e10	29	4.6	13	2.7	2.2	1.1	4.4
23	2.5	1.7	2.0	9.7	e7.5	39	5.1	13	2.6	1.9	1.1	4.0
24	2.4	2.4	2.1	19	e7.2	46	4.9	16	2.4	2.1	1.2	3.7
25	2.2	2.5	2.0	12	7.5	46	4.4	19	2.5	2.0	1.3	3.6
26	2.1	5.6	2.0	9.5	7.4	37	4.2	20	2.4	1.9	4.8	3.4
27	2.3	2.8	2.1	8.2	7.7	23	4.2	22	2.5	1.9	2.6	3.2
28	2.5	2.6	1.8	7.4	9.1	22	4.3	15	2.5	2.0	2.3	3.4
29	2.7	2.5	1.9	6.7	---	21	4.3	8.4	2.6	2.0	2.2	3.3
30	2.4	2.6	1.7	6.1	---	19	4.5	8.1	2.5	1.9	2.1	4.8
31	2.1	---	2.0	6.4	---	13	---	7.4	---	1.9	2.0	---
TOTAL	84.3	71.2	61.89	222.6	394.0	646.5	164.1	265.2	90.3	63.0	57.4	139.6
MEAN	2.72	2.37	2.00	7.18	14.1	20.9	5.47	8.55	3.01	2.03	1.85	4.65
MAX	6.5	5.6	2.7	32	25	46	8.1	22	6.8	2.4	4.8	38
MIN	2.0	1.3	.80	1.1	6.7	9.1	4.2	4.2	2.4	1.6	1.1	1.9

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1999, BY WATER YEAR (WY)

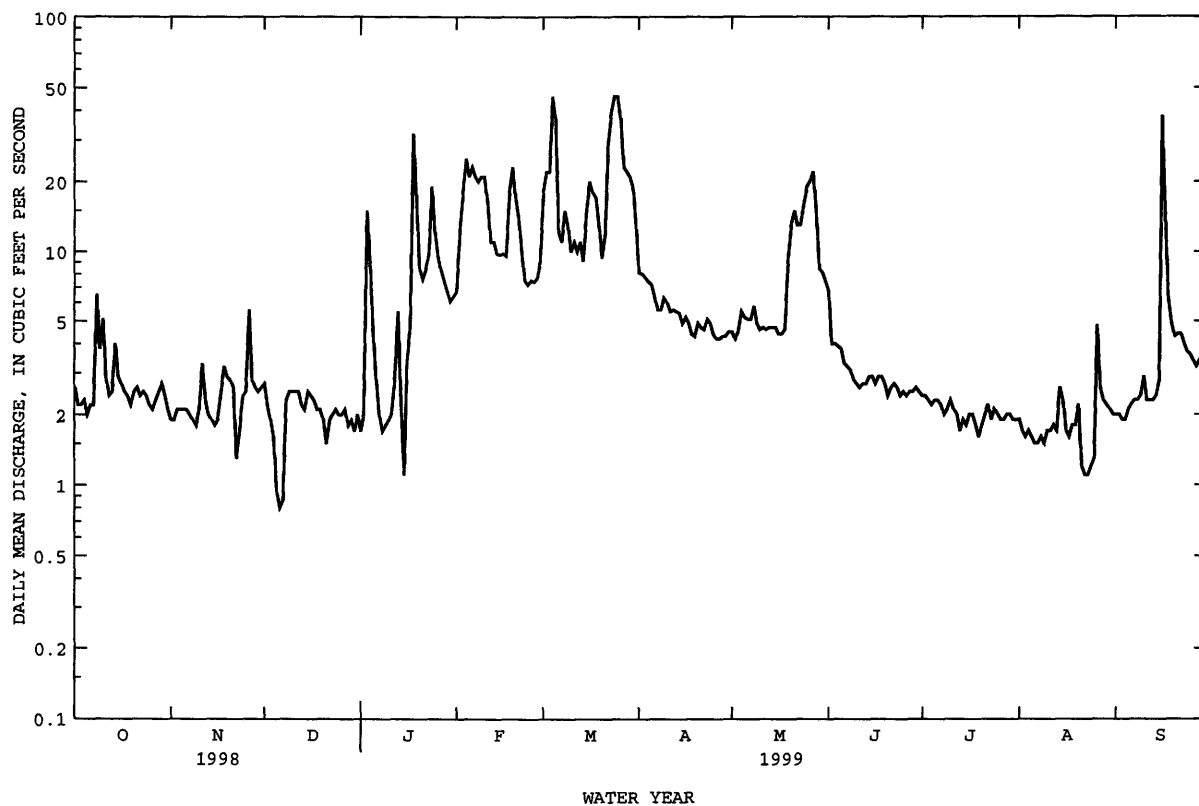
	MEAN	6.05	8.24	14.1	14.4	14.8	18.0	18.0	14.0	8.46	4.89	4.47	4.54
MAX	33.6	26.3	48.4	51.0	36.4	50.1	55.3	33.7	35.2	19.9	21.6	27.0	
(WY)	1990	1996	1997	1979	1979	1977	1983	1989	1972	1984	1969	1987	
MIN	.97	1.20	.91	1.66	2.24	6.99	4.43	1.58	1.00	.89	.65	.58	
(WY)	1981	1967	1981	1981	1985	1973	1981	1970	1980	1980	1980	1980	

SUMMARY STATISTICS FOR 1998 CALENDAR YEAR FOR 1999 WATER YEAR WATER YEARS 1967 - 1999

ANNUAL TOTAL	3510.05	2260.09		
ANNUAL MEAN	9.62	6.19		
HIGHEST ANNUAL MEAN			10.8	
LOWEST ANNUAL MEAN			16.1	1996
HIGHEST DAILY MEAN	133	May 12	3.17	1985
LOWEST DAILY MEAN	.23	Sep 6	225	Jan 18 1977
ANNUAL SEVEN-DAY MINIMUM	1.1	Sep 2	.02	Jun 19 1970
INSTANTANEOUS PEAK FLOW			.46	Oct 7 1980
INSTANTANEOUS PEAK STAGE			116	Sep 16
INSTANTANEOUS LOW FLOW			2.97	Sep 16
10 PERCENT EXCEEDS	23		.00	Jan 15
50 PERCENT EXCEEDS	3.5			
90 PERCENT EXCEEDS	1.9			

• Estimated

01443900 YARDS CREEK NEAR BLAIRSTOWN, NJ--Continued



01445500 PEQUEST RIVER AT PEQUEST, NJ

LOCATION.--Lat 40°49'50", long 74°58'43", Warren County, Hydrologic Unit 02040105, on right bank at Pequest, 100 ft upstream from abandoned Lehigh and Hudson River Railway bridge, and 300 ft downstream from Furnace Brook.

DRAINAGE AREA.--106 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1921 to current year. Monthly discharge only for October 1921, published in WSP 1302.

REVISED RECORDS.--WSP 1902: 1940(M), 1945, 1955(M), 1957, 1959(M).

GAGE.--Water-stage recorder. Concrete control since Sept. 29, 1929. Datum of gage is 398.78 ft above sea level. Prior to June 22, 1926, nonrecording gage at site 10 ft upstream at same datum.

REMARKS.--Records good. Several measurements of water temperature were made during the year. Some regulation from unknown sources upstream.

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)
Jan 18	2000	941	3.79	Mar 22	1115	973	3.86
Jan 24	1845	687	3.21	Sep 17	0100	*1,500	*4.91

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	36	35	39	125	211	196	111	70	36	20	22
2	31	34	34	32	199	194	192	109	69	36	20	22
3	30	31	34	123	274	163	181	104	66	35	20	21
4	30	34	36	149	214	283	174	112	65	32	19	21
5	30	31	34	76	182	230	165	119	61	31	19	21
6	30	32	34	56	160	205	155	115	57	29	19	23
7	28	32	34	51	149	224	149	116	55	27	19	32
8	73	32	34	44	148	186	143	125	55	26	19	35
9	131	32	36	72	139	167	147	133	51	24	20	27
10	93	31	35	115	136	161	186	115	47	24	19	28
11	67	38	34	76	134	149	171	101	47	29	19	26
12	52	44	36	59	132	138	187	93	45	27	19	23
13	49	41	34	56	225	129	168	88	46	24	19	20
14	57	36	35	51	183	126	148	85	46	23	28	19
15	61	35	34	54	155	139	135	81	46	22	50	22
16	52	36	36	76	148	149	137	78	43	22	36	546
17	47	34	35	68	147	171	192	74	43	22	25	1390
18	48	32	36	304	207	167	166	69	47	22	22	1010
19	46	31	35	627	242	148	145	134	44	22	21	629
20	41	32	36	300	191	134	151	240	41	21	23	293
21	40	34	35	187	166	137	172	152	44	21	26	211
22	43	37	35	193	148	825	155	124	44	22	24	182
23	42	40	36	209	130	603	162	121	41	21	23	157
24	42	33	35	453	127	474	197	135	37	21	21	131
25	42	31	31	440	122	396	161	142	36	21	21	114
26	39	41	34	312	121	332	144	116	35	21	43	103
27	35	49	35	248	119	288	136	107	34	20	46	95
28	34	43	35	209	123	291	128	98	33	20	34	86
29	37	38	35	190	---	273	120	85	34	20	29	80
30	36	37	37	165	---	239	115	72	34	20	26	127
31	36	---	28	144	---	212	---	73	---	20	23	---
TOTAL	1450	1067	1073	5178	4546	7544	4778	3427	1416	761	772	5516
MEAN	46.8	35.6	34.6	167	162	243	159	111	47.2	24.5	24.9	184
MAX	131	49	37	627	274	825	197	240	70	36	50	1390
MIN	28	31	28	32	119	126	115	69	33	20	19	19
CFSM	.44	.34	.33	1.58	1.53	2.30	1.50	1.04	.45	.23	.23	1.73
IN.	.51	.37	.38	1.82	1.60	2.65	1.68	1.20	.50	.27	.27	1.94

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1999, BY WATER YEAR (WY)

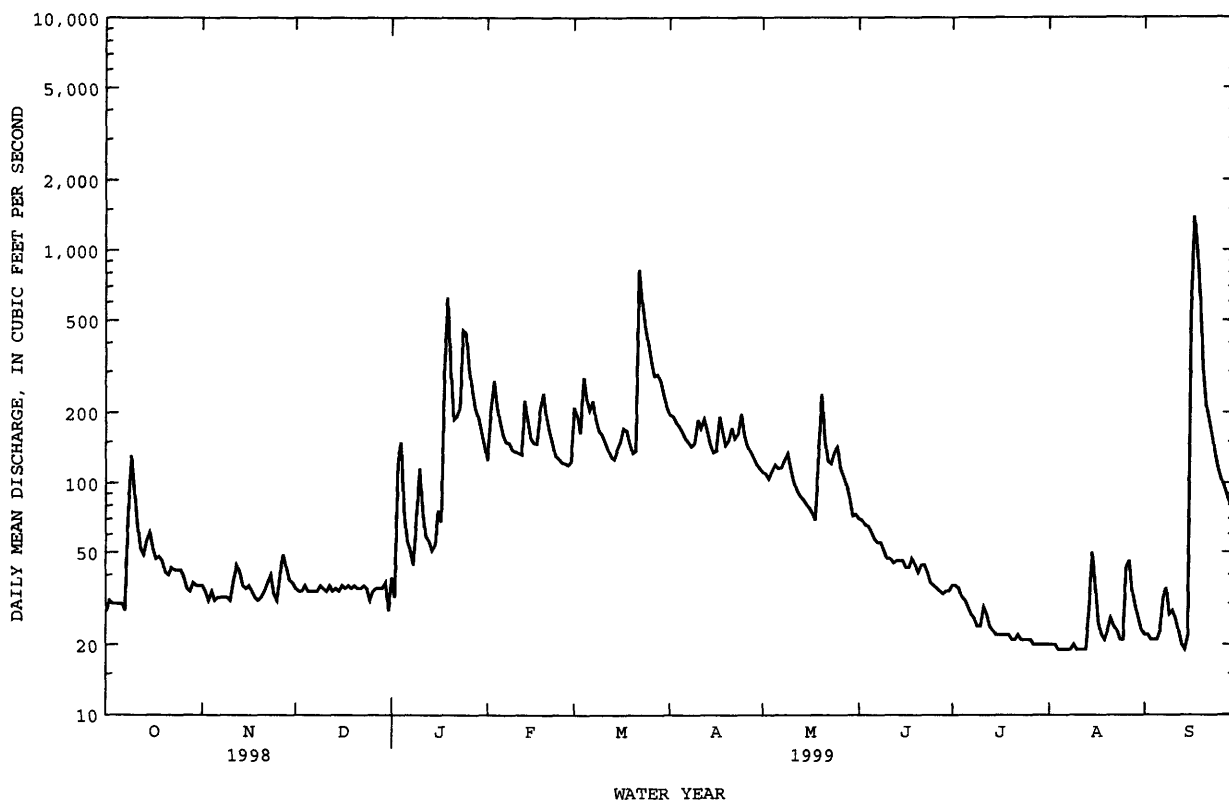
	MEAN	88.0	129	164	173	198	278	264	187	128	103	89.4	88.7
MAX	391	409	714	627	372	750	720	430	556	487	409	354	
(WY)	1990	1928	1997	1979	1939	1936	1983	1989	1972	1945	1928	1989	
MIN	18.0	21.4	27.0	33.9	60.8	93.8	76.9	55.7	35.0	19.0	15.1	16.6	
(WY)	1965	1966	1966	1966	1940	1965	1985	1965	1965	1965	1965	1964	

DELAWARE RIVER BASIN

01445500 PEQUEST RIVER AT PEQUEST, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1922 - 1999	
ANNUAL TOTAL	56510		37528		157	
ANNUAL MEAN	155		103		285	
HIGHEST ANNUAL MEAN					45.8	
LOWEST ANNUAL MEAN					2040	
HIGHEST DAILY MEAN	1120	May 12	1390	Sep 17	12	Jan 25 1979
LOWEST DAILY MEAN	27	Sep 29	19	Aug 4	13	Aug 18 1965
ANNUAL SEVEN-DAY MINIMUM	29	Sep 25	19	Aug 4	13	Aug 15 1965
INSTANTANEOUS PEAK FLOW			1500	Sep 17	2130	Jan 25 1979
INSTANTANEOUS PEAK STAGE			4.91	Sep 17	5.97a	Jan 25 1979
INSTANTANEOUS LOW FLOW			18	Aug 5	12	Aug 17 1965
ANNUAL RUNOFF (CFSM)	1.46		.97		1.48	
ANNUAL RUNOFF (INCHES)	19.83		13.17		20.16	
10 PERCENT EXCEEDS	348		201		329	
50 PERCENT EXCEEDS	101		49		112	
90 PERCENT EXCEEDS	32		22		36	

a From high-water mark



01446500 DELAWARE RIVER AT BELVIDERE, NJ

LOCATION.--Lat 40°49'36", long 75°05'02", Warren County, Hydrologic Unit 02040105, on left bank at Belvidere, 800 ft downstream from Pequest River, and at river mile 197.7.

DRAINAGE AREA.--4,535 mi².

PERIOD OF RECORD.--October 1922 to current year.

REVISED RECORDS.--WSP 781: 1933(M). WSP 951: 1940-41, Drainage area. WSP 1432: 1923, 1924(M).

GAGE.--Water-stage recorder. Datum of gage 226.43 ft above sea level. Prior to Jan. 1, 1929, nonrecording gage at site 200 ft upstream at same datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. Diurnal fluctuations at medium and low flow caused by powerplants on tributary streams. Flow regulated by Lake Wallenpaupack, and by Pepacton, Cannonsville, Swinging Bridge, Toronto, Cliff Lake, and Neversink Reservoirs (see Delaware River basin, reservoirs in) and smaller reservoirs. Diversions from Pepacton, Cannonsville, and Neversink Reservoirs (see Delaware River basin, diversions). Satellite telemeter and National Weather Service gage-height telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 10, 1903, reached a stage of 28.6 ft, from floodmark, discharge, 220,000 ft³/s, from rating curve extended above 170,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 58,700 ft³/s, Jan 25, gage height, 13.63 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2170	2000	1980	1370	7760	6520	10700	5090	4080	2250	2420	1910
2	1790	1950	e1970	1130	8920	7820	10200	4610	4010	2390	2500	1900
3	1650	2040	1790	1670	12900	7970	10200	4180	3820	2240	2420	1980
4	2050	2070	1780	2360	15700	9700	9350	4420	3600	2040	2280	1930
5	2080	2070	1830	2050	14000	19000	8820	4540	3340	2130	2270	2030
6	1940	2070	1880	1900	12500	16200	8580	4600	2890	2110	2160	2070
7	2090	2090	1950	e1900	11100	13400	7890	4360	2630	2850	2050	2120
8	2440	2070	1890	1820	10100	11000	7260	4300	2610	2860	2110	1910
9	3340	2090	1980	2060	8790	9610	7170	4430	3020	2330	2060	1850
10	4030	2170	1860	2840	8430	8780	7630	4380	2980	2400	2020	2080
11	3890	2190	2080	e2750	7850	8490	7570	4380	2600	2210	2090	2040
12	2810	2310	e2000	2680	7400	7750	7380	3990	2390	1660	2050	2170
13	2440	1890	e1900	3390	9250	6990	7590	3750	2450	1800	2230	2000
14	2680	2150	e1850	2920	10500	6250	7780	3300	2390	1830	2670	1930
15	2500	2320	e1800	2560	9250	6620	7250	3050	2410	2010	3200	1930
16	2390	2090	1810	2810	8130	6950	6400	2980	2420	2160	2860	6910
17	2510	2000	1880	2850	8360	7070	6610	2750	2300	2380	2630	35600
18	2400	1970	1890	3900	9050	6890	6470	2630	2430	2390	2500	28500
19	2000	1980	1950	7890	9780	7740	6360	2990	2430	2110	1990	14400
20	1730	1990	1930	e6500	9060	8020	6790	4990	2410	2270	1930	9060
21	1820	2020	1930	e7500	8100	7370	6720	5590	2410	2140	2130	7040
22	1900	2090	1920	e7000	7330	14200	6580	4870	2360	2200	2240	6190
23	1940	2220	1880	9580	6200	23200	6500	4240	2550	2380	2250	6160
24	2040	2100	2290	17000	5840	19600	6970	4420	2380	2420	2000	7100
25	2080	1900	2760	51500	5800	16300	7620	6690	2110	2310	2090	5910
26	2240	2130	1930	35200	6060	14800	6890	10400	2110	2280	2310	4670
27	2250	2520	1600	21300	5830	13400	6820	8990	2230	2170	2370	3800
28	2220	2570	1840	16400	5220	12200	6260	7340	2230	2220	2150	3580
29	2320	2890	e2100	13900	---	11800	5820	6050	2250	2500	2290	3670
30	2090	2380	2360	11700	---	12000	5480	5190	2370	2340	2080	4240
31	2030	---	1360	9660	---	11700	---	4610	---	2280	1880	---
TOTAL	71860	64330	59970	258090	249210	339340	223660	148110	80210	69660	70230	176680
MEAN	2318	2144	1935	8325	8900	10950	7455	4778	2674	2247	2265	5889
MAX	4030	2890	2760	51500	15700	23200	10700	10400	4080	2860	3200	35600
MIN	1650	1890	1360	1130	5220	6250	5480	2630	2110	1660	1880	1850

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1923 - 1999, BY WATER YEAR (WY)

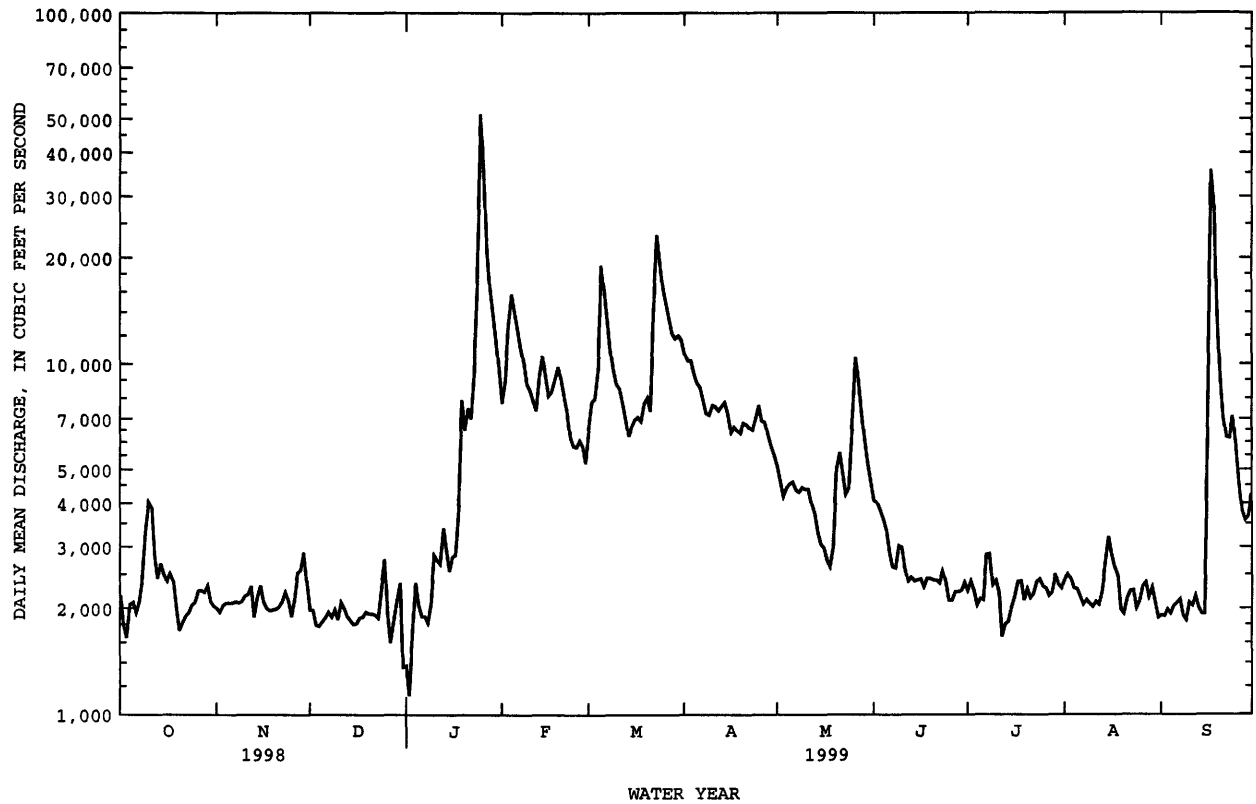
	MEAN	4614	7188	8443	8122	8386	13960	15810	9898	5897	4326	3626	3775
MAX	19570	21140	27730	21020	19930	42520	40720	21470	22280	16840	19260	13940	
(WY)	1956	1928	1997	1996	1976	1936	1940	1989	1972	1928	1955	1938	
MIN	1055	1226	1481	1683	2452	5243	4512	3261	1590	1017	881	1199	
(WY)	1942	1965	1923	1981	1980	1981	1985	1965	1965	1965	1954	1941	

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1923 - 1999
ANNUAL TOTAL	3095810	1811350	
ANNUAL MEAN	8482	4963	7829
HIGHEST ANNUAL MEAN			14130
LOWEST ANNUAL MEAN			2990
HIGHEST DAILY MEAN	49400	May 12	184000
LOWEST DAILY MEAN	1360	Dec 31	610
ANNUAL SEVEN-DAY MINIMUM	1870	Dec 13	782
INSTANTANEOUS PEAK FLOW			273000
INSTANTANEOUS PEAK STAGE		13.63	30.21
INSTANTANEOUS LOW FLOW		871	609
10 PERCENT EXCEEDS	17500	9730	16600
50 PERCENT EXCEEDS	5480	2550	5000
90 PERCENT EXCEEDS	1950	1910	1940

e Estimated

DELAWARE RIVER BASIN

01446500 DELAWARE RIVER AT BELVIDERE, NJ--Continued



01454700 LEHIGH RIVER AT GLENDON, PA
(National Water-Quality Assessment Station)

LOCATION.--Lat 40°40'09", long 75°14'12", Northampton County, PA, Hydrologic Unit 02040106, on right bank 140 ft upstream from highway bridge in Hugh Moore Parkway at Glendon, 2.3 mi upstream from mouth, and 2.0 mi southwest of Easton.

DRAINAGE AREA.--1,359 mi².

PERIOD OF RECORD.--October 1966 to current year.

REVISED RECORDS.--WDR PA-72-1: 1971(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 164.30 ft above sea level.

REMARKS.--No estimated daily discharges. Records fair. Flow regulated by Francis E. Walter Reservoir (station 01447780), Penn Forest Reservoir (station 01449400), Wild Creek Reservoir (station 01449700), and since February 1971, by Beltzville Lake (station 01449790) about 60 mi upstream. Flows above 10,000 ft³/s may be affected by backwater from the Delaware River. Several measurements of water temperature were made during the year. Satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

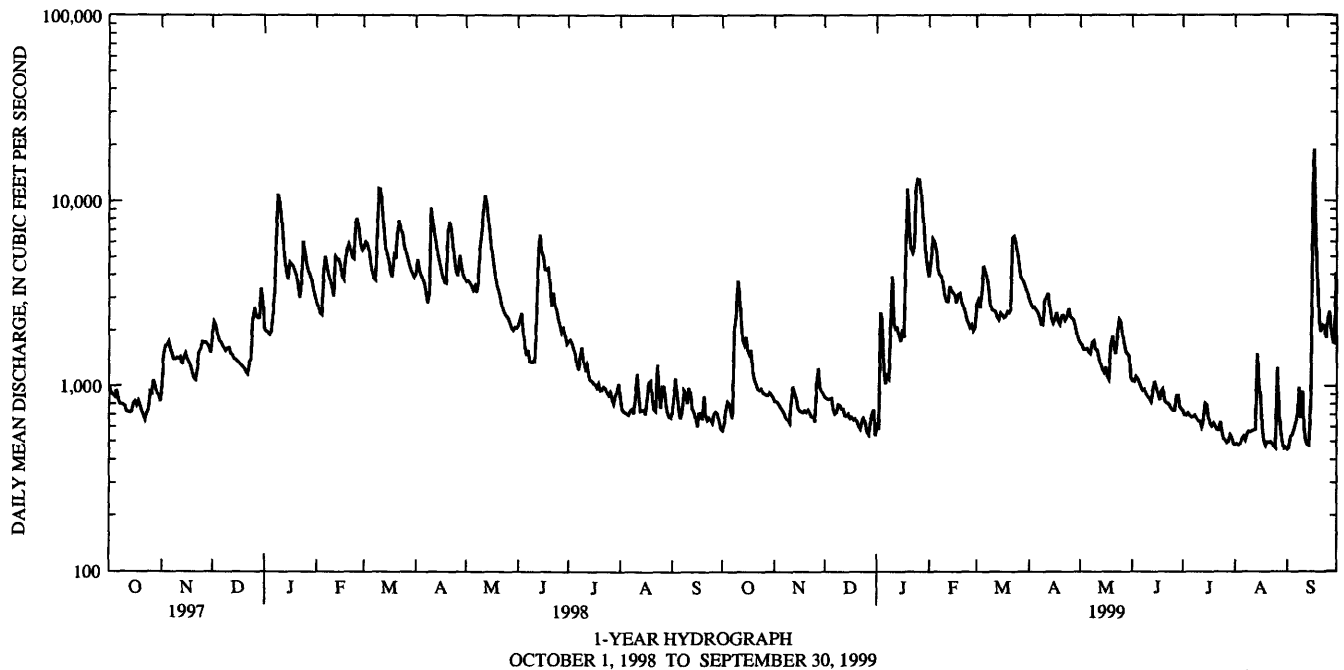
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	577	829	872	608	3890	2760	2970	1710	1070	733	483	456
2	628	826	859	583	4910	2920	2800	1670	1060	697	488	468
3	734	815	849	2500	6250	2660	2670	1580	1130	696	481	534
4	823	784	852	2270	6020	3180	2680	1580	1100	714	486	547
5	803	758	858	1250	5500	4450	2590	1600	1050	695	516	584
6	729	734	751	1030	4320	4160	2510	1530	991	679	535	636
7	670	709	709	1140	4010	3880	2350	1500	949	683	510	686
8	1960	667	722	1100	3930	3310	2160	1730	964	695	554	982
9	2380	658	795	2080	3550	2760	2140	1760	906	670	570	670
10	3730	631	785	3910	3090	2590	2890	1590	875	647	565	939
11	3310	827	753	2180	2880	2570	3010	1570	858	643	573	592
12	2370	992	752	2040	2870	2530	3180	1430	824	602	578	505
13	1780	902	696	2070	3470	2370	2710	1310	955	655	584	483
14	1680	846	689	1890	3300	2290	2330	1240	1060	808	1500	478
15	1850	759	706	1750	3200	2490	2190	1190	985	794	1010	852
16	1570	734	667	2020	3120	2430	2320	1270	912	686	866	9730
17	1490	728	678	1840	2820	2350	2510	1130	841	626	600	18900
18	1570	721	656	5490	3130	2390	2250	1090	938	608	509	6000
19	1210	736	665	11600	3170	2540	2160	1680	964	628	478	3430
20	1090	723	645	7010	2850	2500	2410	1870	830	608	496	2200
21	1030	744	610	5590	2700	2620	2420	1610	810	580	492	1970
22	968	719	588	5270	2530	6320	2280	1500	807	579	498	2130
23	952	685	653	5640	2290	6430	2380	1910	783	643	487	2100
24	969	685	670	11800	2190	5970	2630	2300	754	571	472	1820
25	923	642	634	13100	2080	5220	2390	2230	737	519	462	2290
26	908	1020	565	13000	2150	4500	2330	1920	739	512	1260	2530
27	894	1250	548	11000	1990	3880	2290	1710	889	493	739	2050
28	894	989	636	8460	2080	3760	2110	1540	890	500	586	1730
29	923	935	704	6590	---	3580	1930	1490	770	545	506	1710
30	898	903	746	4910	---	3330	1780	1460	754	526	462	4090
31	873	---	540	4280	---	3200	---	1110	---	486	466	---
TOTAL	41186	23951	21853	144001	94290	105940	73370	48810	27195	19521	18812	72092
MEAN	1329	798	705	4645	3368	3417	2446	1575	906	630	607	2403
MAX	3730	1250	872	13100	6250	6430	3180	2300	1130	808	1500	18900
MIN	577	631	540	583	1990	2290	1780	1090	737	486	462	456

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1999, BY WATER YEAR (WY)

MEAN	1963	2723	3447	3173	3301	4306	4494	3441	2506	1856	1466	1690
MAX	5272	5438	9593	8414	5385	8344	10810	8542	7607	4641	4179	7920
(WY)	1977	1971	1997	1996	1976	1977	1993	1989	1972	1984	1969	1987
MIN	771	798	633	405	1278	1805	1639	1502	906	630	607	660
(WY)	1981	1999	1981	1981	1980	1981	1985	1995	1999	1999	1999	1983

01454700 LEHIGH RIVER AT GLENDON, PA--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1967 - 1999	
ANNUAL TOTAL	980147		691021		2861	
ANNUAL MEAN	2685		1893		3997	
HIGHEST ANNUAL MEAN					1594	
LOWEST ANNUAL MEAN					1984	
HIGHEST DAILY MEAN	11700	Mar 10	18900	Sep 17	44300	Jun 23 1972
LOWEST DAILY MEAN	540	Dec 31	456	Sep 1	330	Jan 31 1981 ^a
ANNUAL SEVEN-DAY MINIMUM	610	Dec 21	484	Aug 19	349	Jan 26 1981
INSTANTANEOUS PEAK FLOW			26200	Sep 17	^b 60600	Jun 23 1972
INSTANTANEOUS PEAK STAGE			17.25	Sep 17	24.86	Jun 23 1972
10 PERCENT EXCEEDS	5830		3810		5680	
50 PERCENT EXCEEDS	1710		1060		2080	
90 PERCENT EXCEEDS	693		565		863	

^a Also Feb. 1, 1981.^b From rating curve extended above 36,000 ft³/s.

01457000 MUSCONETCONG RIVER NEAR BLOOMSBURY, NJ

LOCATION.--Lat 40°40'20", long 75°03'40", Warren County, Hydrologic Unit 02040105, on right bank just downstream from bridge on Limekiln Road (Person Road), 1.5 mi southwest of Bloomsbury, and 9.5 mi upstream from mouth.

DRAINAGE AREA.--141 mi².

PERIOD OF RECORD.--July 1903 to March 1907, July 1921 to current year.

REVISED RECORDS.--WSP 1051: 1944-45. WSP 1382: 1904-06, 1922, 1923-29(M), 1931(M), 1933-34(M), 1936(M), 1940, 1942(M), 1944-45(M), 1951-52(M). WDR NJ-82-2: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Concrete control since Sept. 29, 1932. Datum of gage is 274.83 ft above sea level. July 1903 to Mar. 31, 1907, nonrecording gage at bridge 15 ft upstream at different datum. July 26 to Sept. 12, 1921, nonrecording gage at bridge at present datum.

REMARKS.--Records fair except for estimated daily discharges which are poor. Flow occasionally regulated by Lake Hopatcong (see Delaware River basin, reservoirs in). 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)
Jan 18	1930	2,520	5.47	Sep 16	1900	*5,720	*7.70

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66	e70	87	67	216	216	e260	159	117	90	56	50
2	67	e65	82	63	330	225	e240	151	115	82	52	49
3	66	e60	82	342	409	194	e210	147	113	75	51	44
4	67	e65	84	267	328	298	e210	149	107	71	51	43
5	68	e60	83	156	276	267	e200	167	102	72	51	48
6	e65	e60	88	111	252	248	e195	160	98	69	50	60
7	e70	e60	90	109	240	231	e180	148	98	66	49	98
8	e190	e60	86	93	238	217	e170	162	95	65	50	96
9	e300	e60	95	159	228	217	e180	179	94	61	52	82
10	e220	e60	90	196	223	218	e240	165	92	61	52	90
11	e160	e70	85	138	215	218	e220	151	88	59	51	81
12	e130	e85	83	116	217	207	e240	140	79	58	52	74
13	e120	e75	76	109	277	197	e210	132	84	62	41	64
14	e130	e70	72	100	249	e218	e180	124	90	62	67	55
15	e140	e65	69	215	218	e200	e170	117	92	61	61	57
16	e130	e65	69	221	209	e240	e180	110	93	59	60	1740
17	e110	e65	69	162	210	e250	e250	105	92	58	50	2080
18	e120	64	66	906	287	e240	e220	100	96	60	58	774
19	e100	70	65	684	317	e210	e180	214	97	58	52	424
20	e90	78	67	349	273	e190	e190	269	89	59	60	297
21	e90	83	65	297	242	e300	e200	203	90	58	88	243
22	e95	81	68	304	227	e1300	e210	168	96	59	71	206
23	e100	84	66	294	212	e850	e234	161	90	58	60	181
24	e100	82	65	520	195	e700	247	182	83	59	62	160
25	e95	81	64	531	174	e530	231	200	79	58	51	141
26	e90	114	60	410	155	e450	206	175	79	53	110	130
27	e80	134	62	336	138	e380	192	157	77	52	135	123
28	e80	109	67	301	137	e400	181	144	73	53	108	117
29	e80	95	68	281	---	e380	173	137	81	58	76	111
30	e85	90	77	257	---	e350	166	124	93	57	60	197
31	e85	---	68	237	---	e300	---	115	---	57	58	---
TOTAL	3389	2280	2318	8331	6692	10441	6165	4815	2772	1930	1945	7915
MEAN	109	76.0	74.8	269	239	337	206	155	92.4	62.3	62.7	264
MAX	300	134	95	906	409	1300	260	269	117	90	135	2080
MIN	65	60	60	63	137	190	166	100	73	52	41	43

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1904 - 1999, BY WATER YEAR (WY)

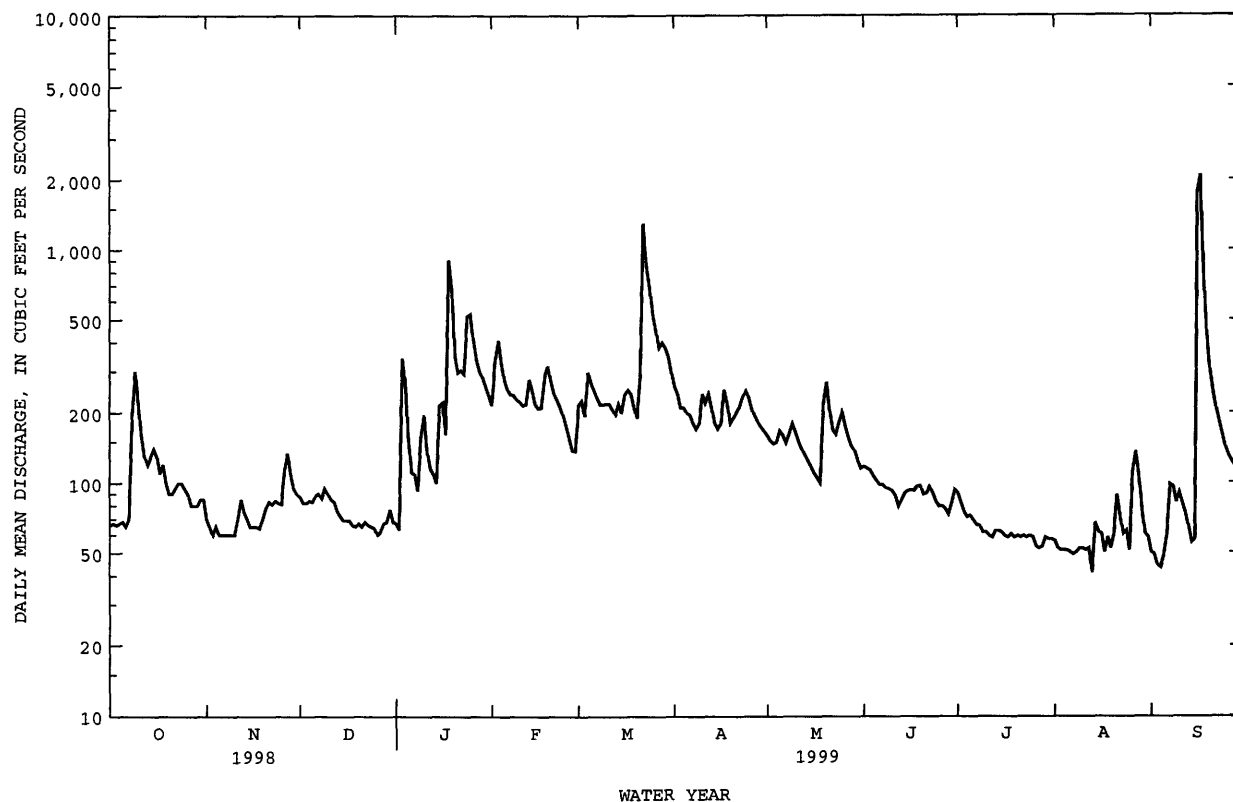
	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
MEAN	177	230	270	267	279	347	355	276	197	161	148	158
MAX	770	701	980	924	582	935	1027	680	843	659	583	454
(WY)	1904	1928	1997	1979	1973	1936	1983	1989	1972	1975	1928	1960
MIN	41.2	61.2	57.3	73.7	99.4	127	103	98.1	56.8	38.1	38.5	37.3
(WY)	1964	1966	1966	1977	1923	1965	1985	1965	1965	1965	1965	1965

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1904 - 1999	
ANNUAL TOTAL	81817		58993		239	
ANNUAL MEAN	224		162		425	
HIGHEST ANNUAL MEAN					82.6	
LOWEST ANNUAL MEAN					1928	
HIGHEST DAILY MEAN	1680	May 12	2080	Sep 17	5850	Oct 10 1903
LOWEST DAILY MEAN	60	Nov 3	41	Aug 13	27	Sep 8 1966
ANNUAL SEVEN-DAY MINIMUM	61	Nov 3	50	Aug 7	32	Aug 28 1966
INSTANTANEOUS PEAK FLOW			5720	Sep 16	7200a	Jan 25 1979
INSTANTANEOUS PEAK STAGE			7.70	Sep 16	8.50b	Jan 25 1979
INSTANTANEOUS LOW FLOW			48	Aug 6	8.1	Aug 2 1955
10 PERCENT EXCEEDS	452		279		460	
50 PERCENT EXCEEDS	166		102		181	
90 PERCENT EXCEEDS	69		58		77	

a from rating curve extended 1,800 ft³/s on basis of slope-area measurement at gage height 6.95 ft.

b from floodmark

e Estimated



01460440 DELAWARE AND RARITAN CANAL AT PORT MERCER, NJ

LOCATION.--Lat 40°18'16", long 74°41'08", Mercer County, Hydrologic Unit 02030105, on right bank, 300 ft upstream from bridge on Province Line (Quaker Bridge) Road at Port Mercer, 2.2 mi east of Lawrenceville, and 3.5 mi southwest of Princeton.

PERIOD OF RECORD.--August 1990 to current year. Miscellaneous measurements made 1923, 1937-38, 1942-43, 1945, 1981, 1987-90.

GAGE.--Water-stage recorder and ultrasonic velocity meter. Datum of gage is sea level.

REMARKS.--Records fair except for period of negative flow, which are poor. The canal diverts water from the Delaware River at Raven Rock and discharges into Raritan River at New Brunswick. Reverse flow (denoted by a negative symbol) can occur during periods of heavy precipitation due to waste gate operation upstream and inflow into canal downstream from gage. Gage is located at the drainage divide between the Delaware and Raritan River Basins. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	162	160	149	114	109	113	141	154	152	164	156	142
2	157	159	148	113	99	123	141	154	147	161	154	141
3	156	157	150	88	93	123	142	157	145	163	155	141
4	164	157	151	93	109	107	143	156	148	166	153	143
5	163	157	151	102	128	121	143	156	149	165	156	145
6	160	156	151	110	131	124	139	153	151	162	153	146
7	158	156	151	108	132	113	144	156	153	162	150	148
8	148	157	151	97	133	123	143	156	152	164	153	147
9	148	159	149	113	130	125	142	154	152	165	153	145
10	164	158	148	109	131	127	134	153	153	166	151	155
11	156	157	150	104	127	127	133	152	163	169	155	143
12	154	157	148	105	123	129	132	154	166	170	153	145
13	160	157	150	106	127	140	136	151	170	172	149	144
14	153	157	149	105	135	142	142	154	160	166	55	e144
15	151	157	137	95	134	139	143	152	160	167	139	e127
16	152	156	136	86	134	129	144	154	158	164	145	e-230
17	152	160	135	112	136	130	143	155	160	165	146	e-280
18	152	158	132	88	115	134	144	154	164	165	147	e80
19	153	157	132	85	117	140	146	154	164	168	148	e86
20	154	158	134	102	129	143	145	151	166	169	147	e127
21	160	157	133	107	130	137	146	151	170	166	142	e124
22	166	157	124	110	134	13	149	153	167	166	147	138
23	165	158	119	109	132	117	154	153	164	163	149	138
24	164	155	117	86	134	134	152	125	162	156	148	136
25	165	154	117	94	133	136	153	117	164	156	148	152
26	165	156	117	101	128	141	154	151	165	154	127	149
27	166	149	115	102	129	145	155	154	162	155	120	147
28	166	150	108	102	132	145	154	157	161	156	142	148
29	166	90	108	106	---	141	155	157	161	156	144	146
30	165	144	108	110	---	140	153	156	163	154	142	139
31	161	---	110	113	---	138	---	154	---	155	143	---
TOTAL	4926	4620	4178	3175	3524	3939	4345	4708	4772	5050	4470	3356
MEAN	159	154	135	102	126	127	145	152	159	163	144	112
MAX	166	160	151	114	136	145	155	157	170	172	156	155
MIN	148	90	108	85	93	13	132	117	145	154	55	-280

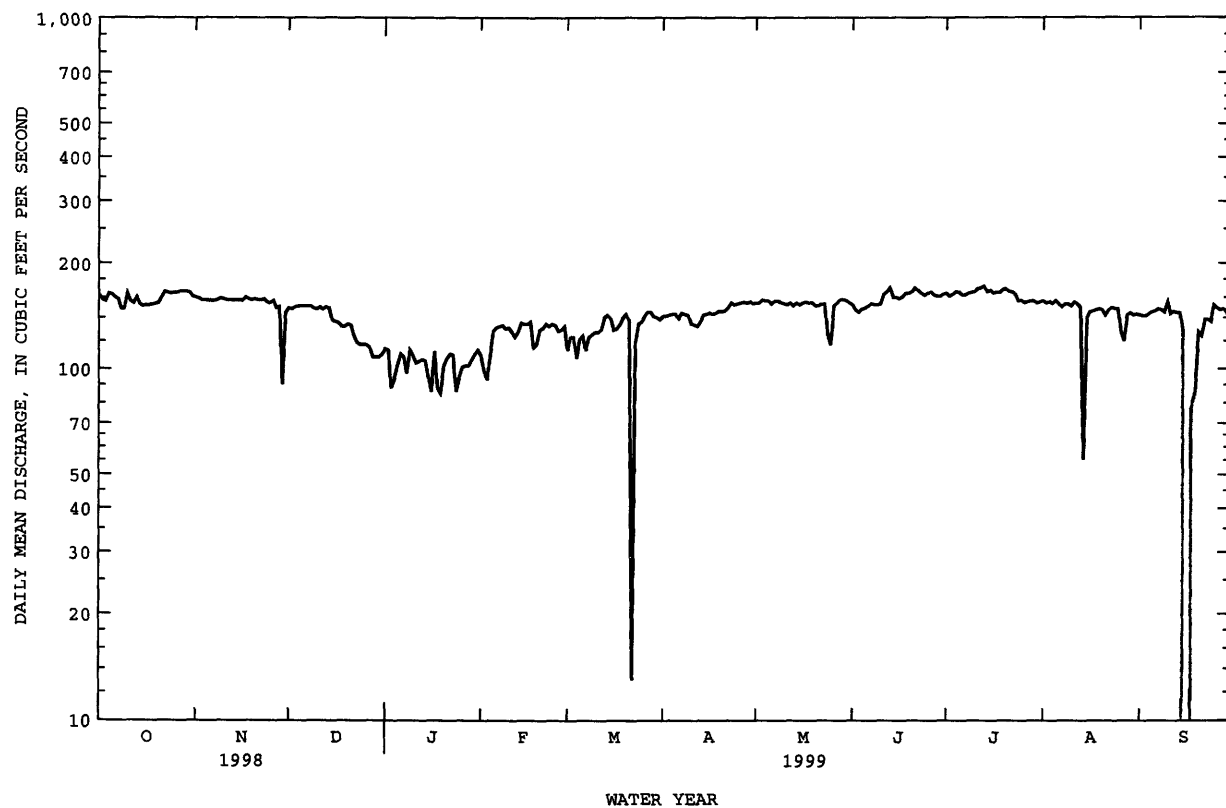
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1999, BY WATER YEAR (WY)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
MEAN	136	133	127	124	130	123	131	142	143	147
MAX	159	154	143	143	143	148	147	152	159	163
(WY)	1999	1999	1996	1997	1995	1997	1997	1999	1999	1999
MIN	115	108	103	102	99.5	91.4	95.8	127	120	123
(WY)	1992	1992	1992	1999	1992	1992	1992	1998	1996	1996

SUMMARY STATISTICS FOR 1998 CALENDAR YEAR FOR 1999 WATER YEAR WATER YEARS 1990 - 1999

	1998 CALENDAR YEAR	1999 WATER YEAR	1990 - 1999
ANNUAL TOTAL	50654	51063	
ANNUAL MEAN	139	140	135
HIGHEST ANNUAL MEAN			143
LOWEST ANNUAL MEAN			120
HIGHEST DAILY MEAN	166	172	222
LOWEST DAILY MEAN	31	-280	-280
ANNUAL SEVEN-DAY MINIMUM	78	4.9	4.9
INSTANTANEOUS PEAK STAGE		61.19	61.19
10 PERCENT EXCEEDS	157	164	155
50 PERCENT EXCEEDS	142	148	141
90 PERCENT EXCEEDS	117	109	106

e Estimated



01463500 DELAWARE RIVER AT TRENTON, NJ

LOCATION.--Lat 40°13'18", long 74°46'42", Mercer County, Hydrologic Unit 02040105, on left bank 450 ft upstream from Calhoun Street Bridge at Trenton, 0.5 mi upstream from Assumpink Creek, and at river mile 134.5.

DRAINAGE AREA.--6,780 mi².

PERIOD OF RECORD.--February 1913 to current year. October 1912 to February 1913 monthly discharge only, published in WSP 1302. Gage- height records collected in this vicinity since 1904 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 951: Drainage area. WSP 1302: 1913-20. WSP 1382: 1924, 1928.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Sept. 30, 1965, at datum 7.77 ft higher. Feb. 24, 1913 to Oct. 2, 1928, nonrecording gage on downstream side of highway bridge at site 450 ft downstream.

REMARKS.--Records good. Diurnal fluctuations at medium and low flow caused by powerplants on tributary streams. Flow regulated by Lakes Wallenpaupack and Hopatcong, and by Pepacton, Cannonsville, Swinging Bridge, Toronto, Cliff Lake, Neversink, Wild Creek, and Merrill Creek Reservoirs (see Delaware River basin, reservoirs in) and smaller reservoirs. Diversion from Pepacton, Cannonsville, and Neversink Reservoirs. Diversion to Bradshaw and Merrill Creek Reservoirs and to Delaware and Raritan Canal (see Delaware River basin, diversions). Water diverted just above station by borough of Morrisville, PA, and city of Trenton for municipal supply (see Delaware River basin, diversions). Satellite gage height and water-quality parameter telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 11, 1903, reached an elevation of about 28.5 ft above sea level, discharge estimated, 295,000 ft³/s. Maximum elevation known, 30.6 ft above sea level, Mar. 8, 1904, from floodmark, due to ice jam.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 25	2145	70,400	15.74	Sep 16	2045	*112,000	*18.53

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3040	3000	3480	2420	13800	10000	15300	7880	5930	2960	2560	2510
2	2880	2930	2980	2490	13800	11500	14200	7430	5360	3010	2670	2450
3	2480	2840	2940	5330	20300	12200	13800	6730	5290	3040	2750	2420
4	2510	2880	2790	8990	22300	13600	13400	6350	5080	2870	2700	2590
5	2890	2900	2730	5850	22100	19300	12800	6780	4790	2590	2650	2600
6	2960	2880	2790	e4010	18700	24600	12000	6740	4460	2690	2650	2760
7	2760	2960	2730	e3500	16800	20400	11600	6690	3980	2550	2570	3010
8	3100	3260	2830	e3810	15600	16900	10800	6390	3650	3120	2540	3180
9	6800	3090	2790	e3930	14300	14500	10200	6950	3560	3400	2580	3330
10	7130	2830	2880	e8450	12900	12900	11600	6570	3850	2840	2570	3250
11	8970	2980	2800	7090	12300	12200	12100	6520	3790	2900	2530	3450
12	7140	3250	2830	5910	11400	11800	12300	6320	3450	2660	2580	2830
13	5340	3370	2960	5580	12700	10800	11700	5820	3200	2260	2570	2820
14	4510	2920	2790	6430	14300	9790	11300	5390	3420	2300	4840	2610
15	4810	2990	2720	6680	14500	9770	10800	4860	3590	2530	4530	2610
16	4510	3180	2680	7620	12900	10300	10200	4530	3400	2580	4330	33900
17	4150	2940	2650	6420	12200	11100	10800	4460	3340	2650	3850	75300
18	4220	2830	2650	9440	14100	11300	10300	4100	3200	2770	3340	48600
19	4080	2750	2720	28500	15700	11000	9660	4090	3360	2840	3070	28100
20	3330	2810	2700	18100	14400	11500	9590	6080	3400	2610	2780	16300
21	3020	2830	2750	19400	12900	11400	10700	7560	3240	2630	2560	12000
22	2920	2830	2680	17700	11500	29100	10100	7490	3180	2630	2750	10500
23	2930	2840	2680	16700	10500	33100	9940	6780	3130	2610	2790	9490
24	2980	2950	2640	23100	9210	30900	10900	7730	3290	2710	2780	9420
25	3090	2890	2960	57300	8740	25600	11200	8580	3100	2850	2620	9820
26	3120	2810	3520	58600	8790	21900	11000	10700	2800	2630	3300	9000
27	3180	3550	2700	37900	8780	19500	9920	12500	2760	2570	4940	7660
28	3230	3950	2300	28400	8590	17700	9840	10500	3020	2480	3620	6270
29	3210	3720	2550	23000	---	16700	8990	8970	2940	2480	3050	5950
30	3290	3930	3050	18800	---	16300	8360	7800	2930	2820	2920	6660
31	3130	---	3250	15900	---	15900	---	6760	---	2730	2720	---
TOTAL	121710	91890	87520	467350	384110	503560	335400	216050	110490	84310	94710	331390
MEAN	3926	3063	2823	15080	13720	16240	11180	6969	3683	2720	3055	11050
MAX	8970	3950	3520	58600	22300	33100	15300	12500	5930	3400	4940	75300
MIN	2480	2750	2300	2420	8590	9770	8360	4090	2760	2260	2530	2420

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1913 - 1999, BY WATER YEAR (WY)

	MEAN	6845	10490	12630	12570	12870	20610	22290	14150	8994	7039	5870	5777
MAX	28710	27340	42860	34950	27550	60840	52680	31690	33460	25720	30290	22490	
(WY)	1956	1928	1997	1979	1951	1936	1940	1989	1972	1928	1955	1933	
MIN	1632	1868	2037	2539	3500	7715	6828	5074	2572	1548	1808	1762	
(WY)	1942	1915	1923	1981	1920	1981	1985	1995	1965	1965	1965	1932	

DELAWARE RIVER BASIN

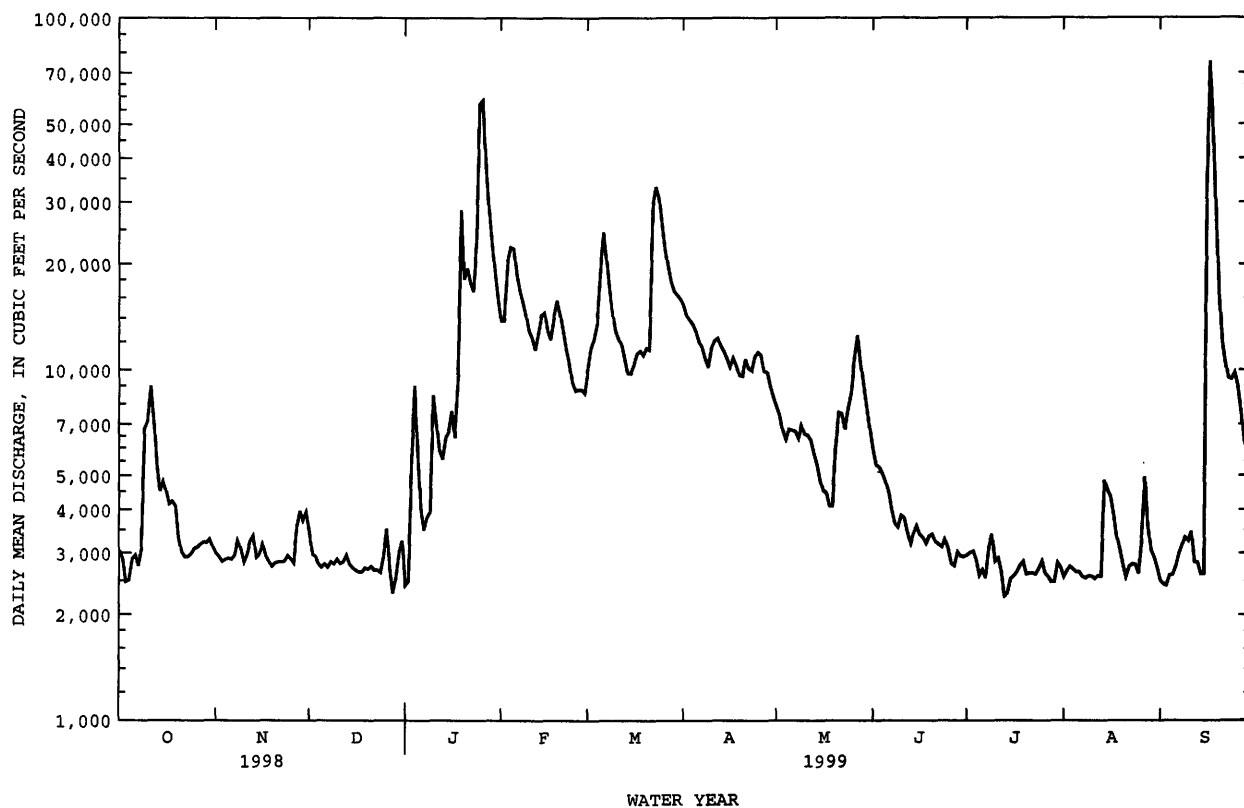
01463500 DELAWARE RIVER AT TRENTON, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1913 - 1999	
ANNUAL TOTAL	4494380		2828490		11670	
ANNUAL MEAN	12310		7749		19810	
HIGHEST ANNUAL MEAN					4708	
LOWEST ANNUAL MEAN					279000	
HIGHEST DAILY MEAN	66800	May 12	75300	Sep 17	1928	1965
LOWEST DAILY MEAN	2300	Dec 28	2260	Jul 13	1240	Oct 31 1914
ANNUAL SEVEN-DAY MINIMUM	2690	Dec 18	2540	Jul 12	1310	Oct 31 1914
INSTANTANEOUS PEAK FLOW			112000	Sep 16	329000a	Aug 20 1955
INSTANTANEOUS PEAK STAGE			18.53	Sep 16	28.60b	Aug 20 1955
INSTANTANEOUS LOW FLOW			1940	Jan 1	1180	Oct 31 1963
10 PERCENT EXCEEDS	26200		15900		24600	
50 PERCENT EXCEEDS	8550		3980		7890	
90 PERCENT EXCEEDS	2830		2630		3000	

a From rating curve extended above 230,000 ft³/s, maximum flow since 1692.

b From high-water mark in gage house, current datum.

e Estimated



01463620 ASSUNPINK CREEK NEAR CLARKSVILLE, NJ

LOCATION.--Lat 40°16'11", long 74°40'20", Mercer County, Hydrologic Unit 02040105, on left bank 250 ft upstream from bridge on Quaker Bridge Road, 0.7 mi downstream from dam at Lake Mercer, 1.9 mi south of Clarksville, 2.0 mi upstream from Shipetaukin Creek, and 7.6 mi upstream from mouth.

DRAINAGE AREA.--34.3 mi².

PERIOD OF RECORD.--Occasional low-flow measurements water years 1963-67. October 1972 to September 1981, March 1992 to September 1995, growing season, April to October, only 1996-current year.

GAGE.--Water-stage recorder. Datum of gage is 49.28 ft above sea level.

REMARKS.--Records fair. Regulation from flood-control dams and ponds upstream. Diversions for irrigation upstream from station. Several measurements of water temperature made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 28, 1971, reached a stage of 10.9 ft, discharge, 1,500 ft³/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.0	---	---	---	---	---	43	22	24	6.9	1.1	17
2	6.3	---	---	---	---	---	41	21	21	13	1.2	12
3	6.0	---	---	---	---	---	39	19	18	17	1.2	11
4	6.8	---	---	---	---	---	38	19	16	17	1.2	10
5	7.0	---	---	---	---	---	35	19	14	14	1.2	9.9
6	7.0	---	---	---	---	---	32	19	12	11	1.2	9.7
7	7.0	---	---	---	---	---	30	19	11	8.6	1.3	9.5
8	9.1	---	---	---	---	---	29	21	9.7	6.6	1.3	9.0
9	15	---	---	---	---	---	29	21	9.0	5.2	1.2	7.9
10	15	---	---	---	---	---	42	20	8.1	4.3	1.2	8.7
11	15	---	---	---	---	---	49	19	7.2	3.4	1.2	9.1
12	14	---	---	---	---	---	66	18	6.8	2.8	1.2	9.7
13	14	---	---	---	---	---	68	17	6.6	2.5	1.2	10
14	14	---	---	---	---	---	58	16	6.7	1.9	25	10
15	14	---	---	---	---	---	49	14	7.1	1.5	42	10
16	13	---	---	---	---	---	44	13	7.2	1.5	33	252
17	13	---	---	---	---	---	41	12	7.0	1.4	24	627
18	12	---	---	---	---	---	39	12	6.9	1.4	17	527
19	12	---	---	---	---	---	36	16	6.7	1.3	10	407
20	11	---	---	---	---	---	34	24	6.5	1.3	9.2	341
21	10	---	---	---	---	---	33	23	7.1	1.3	9.1	330
22	9.8	---	---	---	---	---	31	21	7.5	1.3	8.9	314
23	8.6	---	---	---	---	---	31	20	7.5	1.3	7.7	292
24	8.3	---	---	---	---	---	32	45	7.3	1.3	7.2	193
25	8.3	---	---	---	---	---	32	146	6.9	1.2	6.8	104
26	8.3	---	---	---	---	---	29	129	6.6	1.2	18	71
27	8.3	---	---	---	---	---	28	95	6.5	1.2	37	51
28	8.3	---	---	---	---	---	26	67	5.8	1.2	48	41
29	8.6	---	---	---	---	---	24	47	5.4	1.2	42	35
30	8.4	---	---	---	---	---	23	36	5.0	1.2	32	34
31	8.1	---	---	---	---	---	---	29	---	1.1	24	---
TOTAL	313.2	---	---	---	---	---	1131	1019	277.1	136.1	416.6	3772.5
MEAN	10.1	---	---	---	---	---	37.7	32.9	9.24	4.39	13.4	126
MAX	15	---	---	---	---	---	68	146	24	17	48	627
MIN	6.0	---	---	---	---	---	23	12	5.0	1.1	1.1	7.9

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 1999, BY WATER YEAR (WY)

	MEAN	36.1	43.2a	80.0a	78.6a	70.8a	83.9a	66.0	47.9	39.6	30.3	27.8	34.1
MAX	93.8	112a	151a	151a	136a	204a	115	115	90.9	142	77.4	126	126
(WY)	1997	1973	1997	1979	1994	1994	1973	1998	1996	1975	1994	1999	1999
MIN	9.70	19.2a	20.9a	12.9a	30.7a	33.8a	23.7	16.0	9.24	4.39	11.0	8.08	8.08
(WY)	1998	1995	1981	1981	1980	1981	1995	1992	1999	1999	1995	1992	1992

SUMMARY STATISTICS

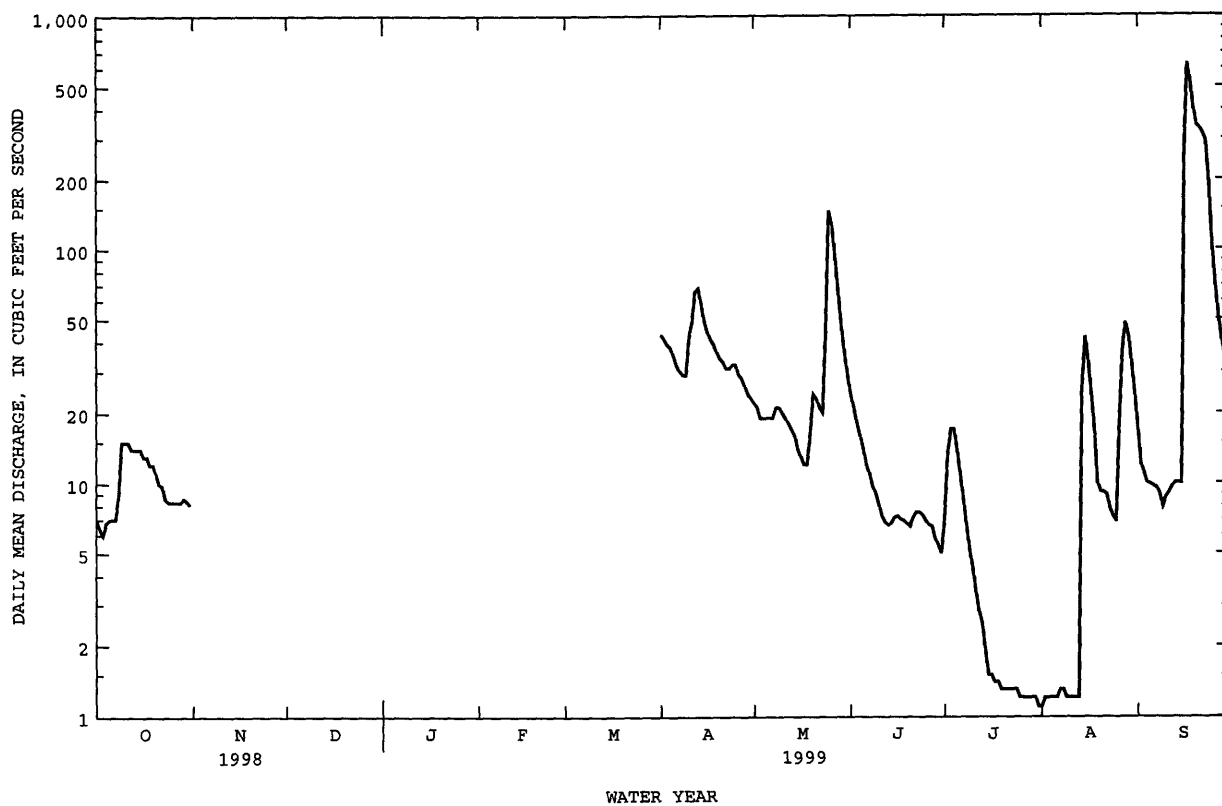
Oct 1998 and Apr to Sept19

WATER YEARS 1973 - 1999

ANNUAL MEAN		51.3a	
HIGHEST ANNUAL MEAN		74.7a	1994
LOWEST ANNUAL MEAN		24.6a	1995
HIGHEST DAILY MEAN	627	Sep 17	832a Feb 26 1979
LOWEST DAILY MEAN	1.1	Jul 31	1.0a Sep 6 1995
INSTANTANEOUS PEAK FLOW	662	Sep 17	1050a Jul 21 1975
INSTANTANEOUS PEAK STAGE	8.00	Sep 17	9.36 Jul 21 1975
INSTANTANEOUS LOW FLOW			1.0a Sep 6 1995

a Water year 1975 - 1995

01463620 ASSUNPINK CREEK NEAR CLARKSVILLE, NJ--Continued



01464000 ASSUNPINK CREEK AT TRENTON, NJ

LOCATION.--Lat 40°13'27", long 74°44'58", Mercer County, Hydrologic Unit 02040105, on left bank 20 ft upstream from bridge on Chambers Street (Lincoln Avenue) in Trenton, and 1.5 mi upstream from mouth.

DRAINAGE AREA.--90.6 mi².

PERIOD OF RECORD.--August 1923 to current year.

REVISED RECORDS.--WDR NJ-82-2: Drainage area.

GAGE.--Water-stage recorder. Concrete control since July 10, 1932. Datum of gage is 24.76 ft above sea level (levels from New Jersey Geological Survey bench mark).

REMARKS.--Records good. Records include water diverted from outside the basin since February 1954 for municipal supply which returns to Assunpink Creek through Ewing-Lawrence Sewerage Authority Treatment Plant, 2.4 mi above station (records given herein). In addition there is an average inflow of about 2.0 ft³/s from industrial use of water that originates outside the basin. Some diversion for irrigation in headwater area during summer months. Flow regulated by several flood-control reservoirs upstream from gage since mid-1970's. Several measurements of water temperature were made during the year. National Weather Service gage-height telemeter at 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)
Oct 8	2100	902	5.73	Mar 22	0630	1,630	7.62
Jan 3	1430	1,040	6.11	May 24	1730	1,380	7.02
Jan 15	1345	1,000	6.01	Aug 14	0645	2,080	8.75
Jan 18	2030	1,030	6.10	Sep 17	0130	*4,510	*14.01

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	23	33	33	58	248	109	55	56	77	11	39
2	19	23	29	29	221	184	111	52	50	43	11	34
3	19	23	28	453	257	135	100	56	46	41	9.9	31
4	23	23	28	383	193	216	95	52	42	36	10	29
5	24	22	27	245	123	175	87	53	38	32	10	30
6	23	23	27	170	87	152	79	46	34	27	9.7	38
7	22	22	27	111	73	246	75	46	34	24	9.6	50
8	219	22	29	74	99	172	71	54	32	21	13	39
9	185	23	36	137	81	125	103	47	30	19	12	36
10	67	22	28	154	69	106	268	44	29	18	10	177
11	43	49	28	94	62	89	217	41	28	17	10	58
12	36	36	28	74	58	77	293	39	27	17	10	38
13	46	26	27	72	81	61	220	37	52	17	9.9	34
14	72	24	26	70	57	70	160	35	38	15	1020	32
15	49	25	27	521	54	161	123	33	35	14	242	33
16	35	27	30	415	53	194	119	32	26	14	120	2080
17	32	30	29	282	53	235	134	32	24	14	69	3830
18	30	32	29	538	328	212	108	33	25	13	49	1440
19	29	29	31	496	319	148	94	166	23	15	38	743
20	29	29	29	280	204	109	88	133	22	15	107	561
21	28	33	29	171	140	192	86	67	43	14	82	551
22	27	28	32	139	102	1110	86	52	32	13	39	445
23	26	27	39	117	79	648	105	65	28	13	32	381
24	25	29	42	385	70	506	124	614	25	12	31	327
25	24	28	38	357	63	360	95	631	24	11	29	208
26	23	68	38	244	62	266	86	392	23	11	278	140
27	23	47	37	169	60	216	72	246	23	11	412	108
28	25	34	33	118	105	202	65	154	22	11	171	91
29	29	35	39	95	---	164	63	106	21	11	93	79
30	28	33	53	77	---	137	59	79	20	11	63	174
31	26	---	36	66	---	116	---	65	---	11	47	---
TOTAL	1307	895	992	6569	3211	7032	3495	3557	952	618	3058.1	11856
MEAN	42.2	29.8	32.0	212	115	227	116	115	31.7	19.9	98.6	395
MAX	219	68	53	538	328	1110	293	631	56	77	1020	3830
MIN	19	22	26	29	53	61	59	32	20	11	9.6	29
(I)	17.1	11.2	11.1	16.6	16.6	19.7	16.7	14.6	13.7	11.8	12.3	17.6

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 1999, BY WATER YEAR (WY)

	MEAN	80.5	114	147	169	185	212	181	132	99.8	99.9	91.7	93.0
MAX	328	331	501	498	395	554	494	340	371	545	355	395	395
(WY)	1997	1973	1997	1979	1939	1994	1983	1989	1996	1975	1971	1999	1999
MIN	19.1	27.6	32.0	44.2	52.0	76.7	65.2	40.0	25.9	17.2	17.3	15.8	15.8
(WY)	1931	1932	1999	1981	1934	1985	1963	1941	1942	1955	1966	1943	1943

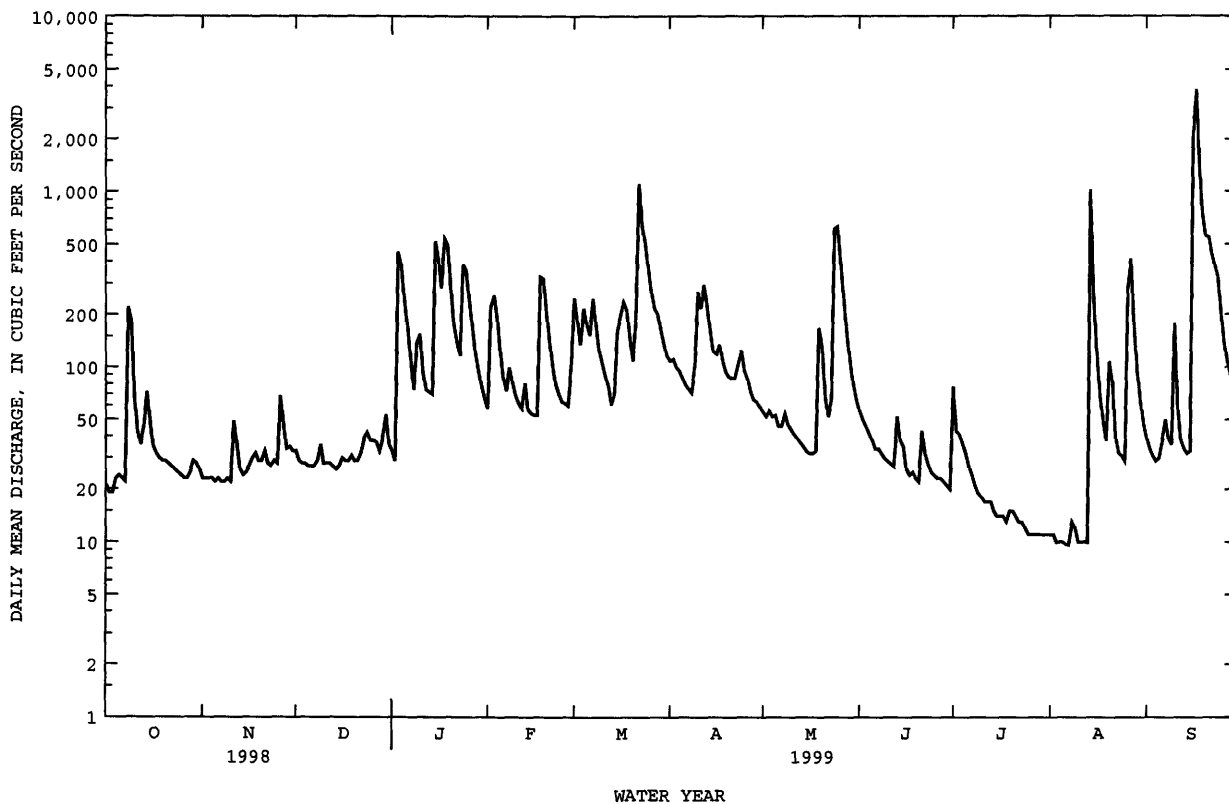
DELAWARE RIVER BASIN

01464000 ASSUNPINK CREEK AT TRENTON, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1924 - 1999	
ANNUAL TOTAL	55272		43542.1		134	
ANNUAL MEAN	151		119		233	
HIGHEST ANNUAL MEAN					69.2	
LOWEST ANNUAL MEAN					4050	
HIGHEST DAILY MEAN	935	May 12	3830	Sep 17	4050	Jul 21 1975
LOWEST DAILY MEAN	19	Oct 2	9.6	Aug 7	4.0	Jul 21 1929
ANNUAL SEVEN-DAY MINIMUM	21	Sep 28	10	Aug 1	9.6	Aug 25 1944
INSTANTANEOUS PEAK FLOW			4510	Sep 17	5450	Jul 21 1975
INSTANTANEOUS PEAK STAGE			14.01	Sep 17	14.61a	Jul 21 1975
INSTANTANEOUS LOW FLOW			7.4	Aug 7	1.0	Aug 21 1931
10 PERCENT EXCEEDS	350		247		274	
50 PERCENT EXCEEDS	84		46		87	
90 PERCENT EXCEEDS	25		19		32	

a From high-water mark in gage house.

(I) Inflow from outside basin, equivalent in cubic feet per second, 2.4 mi. upstream of station through plant of Ewing-Lawrence Sewerage Authority.



01464500 CROSSWICKS CREEK AT EXTONVILLE, NJ

LOCATION.--Lat 40°08'15", long 74°36'02", Mercer County, Hydrologic Unit 02040201, on right bank upstream from highway bridge in Extonville, 0.5 mi upstream from Pleasant Run, and 0.7 mi downstream from Mercer-Monmouth County line.

DRAINAGE AREA.--81.5 mi².

PERIOD OF RECORD.--August 1940 to October 1951, October 1952 to current year.

REVISED RECORDS.--WDR NJ-79-2: 1971(M). WDR NJ-82-2: Drainage area.

GAGE.--Water-stage recorder, crest-stage gage, and concrete control. Datum of gage is 24.94 ft above sea level.

REMARKS.--Records good except for estimated daily discharges, which are poor. Flow regulated occasionally by lakes above station. 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)
Jan 4	1100	1,060	8.18	Aug 15	0445	929	7.72
Jan 16	0900	997	7.99	Sep 17	0315	*3,570	*12.54
Mar 23	0015	865	7.46				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	32	78	e43	78	210	83	59	34	34	11	41
2	36	32	32	e39	130	171	93	57	35	38	11	38
3	28	34	26	257	248	120	84	59	32	50	9.7	35
4	31	33	26	892	162	185	81	72	31	40	8.7	33
5	40	31	31	342	136	146	78	66	29	30	9.5	35
6	34	33	38	178	108	109	73	62	28	25	10	40
7	31	34	38	112	94	160	72	61	28	22	9.9	38
8	36	33	42	88	115	131	69	62	27	19	11	38
9	96	34	46	107	124	101	72	59	24	18	19	35
10	64	34	48	194	99	94	257	54	24	19	17	67
11	46	42	42	107	88	86	209	50	23	19	12	78
12	37	71	40	e82	84	79	358	47	24	17	12	71
13	37	53	41	78	103	74	247	46	31	19	13	61
14	46	47	43	75	90	75	162	49	41	21	395	49
15	56	41	41	415	79	176	127	45	52	19	626	54
16	47	41	40	838	76	324	112	44	45	e18	109	1060
17	33	37	41	286	74	294	130	51	35	e18	67	2850
18	37	37	43	244	200	222	106	49	34	e17	47	985
19	36	37	41	405	373	162	90	58	32	e16	37	329
20	33	36	40	245	194	127	86	84	31	e18	31	182
21	32	39	40	171	144	118	87	58	63	e18	59	156
22	30	40	41	152	110	601	83	46	73	17	55	166
23	32	63	43	133	88	621	82	49	51	22	41	122
24	31	37	41	262	81	269	103	142	43	19	35	95
25	32	24	41	578	79	195	87	224	36	15	28	82
26	30	34	e44	278	78	150	77	105	34	13	74	74
27	31	77	e43	183	75	122	70	76	33	12	420	67
28	30	52	40	146	80	121	67	63	36	11	300	64
29	32	44	44	118	---	123	64	54	33	9.9	102	62
30	33	54	71	98	---	101	61	48	30	10	68	89
31	33	---	57	86	---	88	---	42	---	10	51	---
TOTAL	1184	1236	1322	7232	3390	5555	3370	2041	1072	633.9	2698.8	7096
MEAN	38.2	41.2	42.6	233	121	179	112	65.8	35.7	20.4	87.1	237
MAX	96	77	78	892	373	621	358	224	73	50	626	2850
MIN	28	24	26	39	74	74	61	42	23	9.9	8.7	33
CFSM	.47	.51	.52	2.86	1.49	2.20	1.38	.81	.44	.25	1.07	2.90
IN.	.54	.56	.60	3.30	1.55	2.54	1.54	.93	.49	.29	1.23	3.24

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1999, BY WATER YEAR (WY)

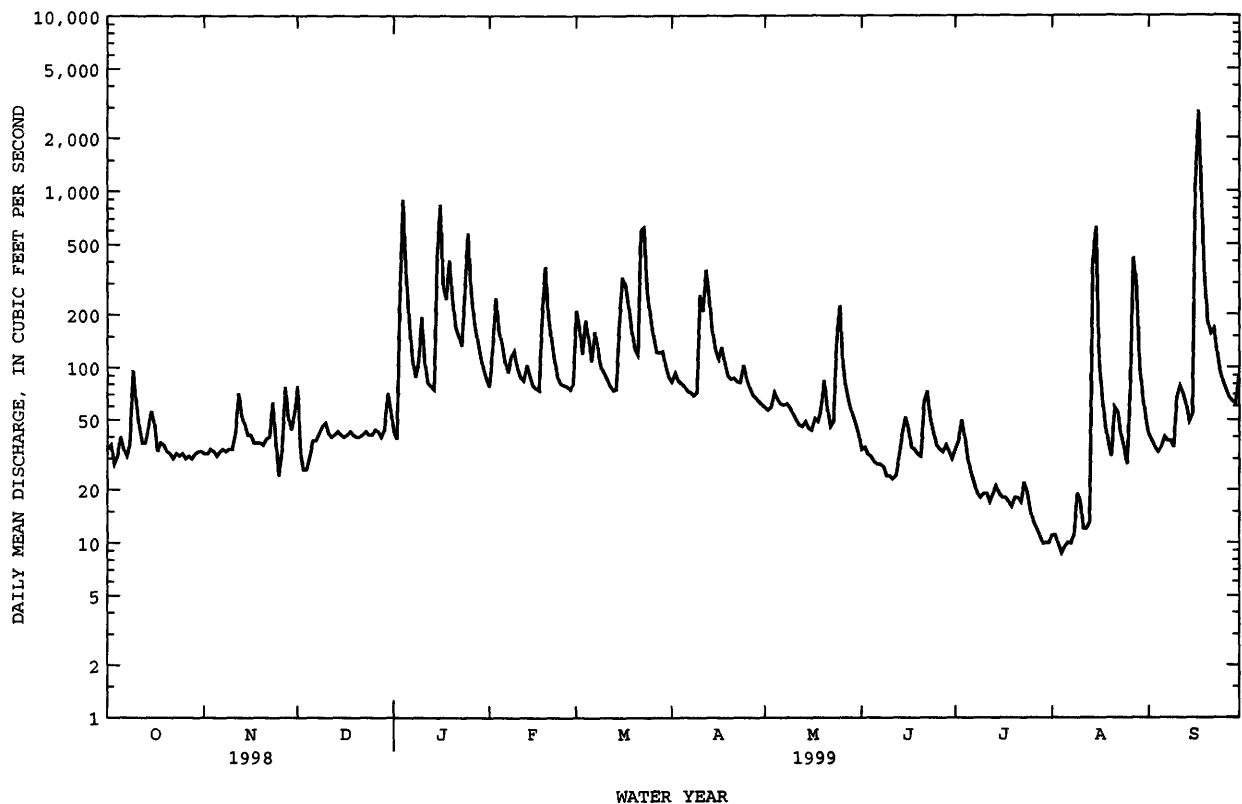
	MEAN	MAX	(WY)	MIN	(WY)
1940	88.5	127	160	178	180
1941	231	406	392	452	416
1942	1973	1973	1977	1978	1979
1943	32.9	36.7	42.6	62.1	82.9
1944	1966	1966	1999	1981	1992
1945	174	202	174	133	96.5
1946	388	476	388	325	251
1947	1983	1994	1983	1998	1968
1948	68.4	86.1	68.4	60.8	35.7
1949	1955	1985	1985	1955	1999
1950	93.4	299	93.4	299	1966
1951	89.9	284	89.9	284	1995
1952	1971	1971	1971	1971	1971
1953	28.3	28.3	28.3	28.3	28.3

DELAWARE RIVER BASIN

01464500 CROSSWICKS CREEK AT EXTONVILLE, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1940 - 1999	
ANNUAL TOTAL	51658		36830.7		135	
ANNUAL MEAN	142		101		225	
HIGHEST ANNUAL MEAN					69.9	
LOWEST ANNUAL MEAN					1978	
HIGHEST DAILY MEAN	1750	May 10	2850	Sep 17	3930	Aug 28 1971
LOWEST DAILY MEAN	21	Sep 29	8.7	Aug 4	8.7	Aug 4 1999
ANNUAL SEVEN-DAY MINIMUM	24	Sep 24	10	Aug 1	10	Aug 1 1999
INSTANTANEOUS PEAK FLOW			3570	Sep 17	4860	Sep 1 1978
INSTANTANEOUS PEAK STAGE			12.54	Sep 17	14.18	Sep 1 1978
INSTANTANEOUS LOW FLOW			7.3	Aug 4	7.3	Aug 4 1999
ANNUAL RUNOFF (CFSM)	1.74		1.24		1.65	
ANNUAL RUNOFF (INCHES)	23.58		16.81		22.47	
10 PERCENT EXCEEDS	263		194		250	
50 PERCENT EXCEEDS	77		52		93	
90 PERCENT EXCEEDS	28		22		40	

e Estimated



01464598 DELAWARE RIVER AT BURLINGTON, NJ

LOCATION.--Lat 40°04'42", long 74°52'28", Burlington County, Hydrologic Unit 02040201, on left bank at the intake canal of the Public Service Electric and Gas Company, 0.3 mi downstream from Burlington-Bristol Bridge, 1.4 mi downstream from Assiscunk Creek, and at river mile 117.54.

DRAINAGE AREA.--7,160 mi².

PERIOD OF RECORD.--July 1964 to current year. March 1921 to July 1926, January 1931 to November 1939, August 1951 to June 1954, July 1957 to June 1964, in files of Philadelphia District Corps of Engineers.

REVISED RECORDS.--WDR NJ-76-1: 1973(m).

GAGE.--Water-stage recorder. Datum of gage is 12.90 ft below sea level. Prior to May 20, 1971, water-stage recorder at site 0.7 mi upstream at same datum. Gage-height record converted to elevation above or below (-) sea level for publication.

REMARKS.--Summaries for months with short periods of no gage-height record have been estimated with little or no loss of accuracy unless otherwise noted. Some periods cannot be estimated and are noted by dash (---) lines. Satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation recorded, 8.78 ft, Dec. 11, 1992; minimum recorded, -6.86 ft, Nov. 21, 1989.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum elevation known, 10.8 ft, Aug. 20, 1955, from high-water mark at site 1.4 mi upstream; minimum, -9.1 ft, Dec. 31, 1962, at present site.

EXTREMES FOR CURRENT YEAR.--Maximum elevation recorded, 8.53 ft, Sept. 16; minimum recorded, -4.73 ft, Dec. 23.

Summaries of tide elevations during current year are as follows:

TIDE ELEVATIONS, IN FEET, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
Maximum	Elevation	6.33	5.62	5.74	7.41	6.25	6.89	6.44	6.38	6.68	6.68	6.39	8.53
high tide	Date	13	4	30	3	3	4	17	15	14	14	14	16
Minimum	Elevation	-3.32	-3.23	-4.73	-4.33	-3.63	-4.32	-2.96	-3.01	-3.21	-3.25	-3.09	-2.82
low tide	Date	3	28	23	2	14	7	21	20	4	11	9	25
Mean high tide		4.81	---	---	4.80	5.20	4.94	5.23	5.35	5.19	5.25	5.35	5.62
Mean water level		---	---	---	1.38	1.79	1.48	1.72	1.77	1.56	1.57	1.75	2.04
Mean low tide		-2.41	---	---	-2.19	-1.98	-2.25	-2.00	-2.18	-2.41	-2.47	-2.25	-1.97

01466500 MCDONALDS BRANCH IN LEBANON STATE FOREST, NJ
(Hydrologic bench-mark station)

LOCATION.--Lat 39°53'05", long 74°30'20", Burlington County, Hydrologic Unit 02040202, on right bank, 25 ft upstream from Butterworth Road Bridge in Lebanon State Forest, 3.4 mi upstream from confluence with Cooper Branch, and 7.0 mi southeast of Browns Mills.

DRAINAGE AREA.--2.35 mi².

PERIOD OF RECORD.--October 1953 to current year. Prior to October 1962, published as "McDonald Branch in Lebanon State Forest".

REVISED RECORDS.--WDR NJ-82-2: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 117.73 ft above sea level (levels from New Jersey Geological Survey bench mark).

REMARKS.--Records fair, except for estimated daily discharges, which are poor. Gage-height record is collected above concrete control and discharge record, which includes leakage around control, is measured at site 785 ft downstream. Several measurements of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 7.0 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
No peak greater than base discharge.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT
1	1.2	1.0	.99	.96	1.5	1.9	2.1	1.8	1.5	1.2	.95	e1.1
2	1.1	1.0	.99	e1.9	1.7	1.7	2.2	1.8	1.5	1.2	.93	e1.1
3	1.1	1.0	.99	e3.6	1.8	1.7	2.1	1.8	1.4	1.2	.92	e1.0
4	1.3	1.0	.99	2.2	1.7	1.7	2.1	1.8	1.4	1.1	.92	e1.0
5	1.2	1.0	.99	1.6	1.6	1.7	2.0	1.8	1.4	1.1	.92	e1.1
6	1.2	1.0	.99	e1.4	1.6	1.7	2.0	1.8	1.4	1.1	.90	e1.1
7	1.2	1.0	.99	e1.3	1.6	1.8	2.0	1.8	1.3	1.1	.89	e1.1
8	1.2	1.0	.99	e1.4	1.7	1.7	1.9	1.8	1.3	1.1	.93	1.1
9	1.2	1.0	1.0	e1.5	1.7	1.7	2.0	1.8	1.3	1.1	.92	1.1
10	1.2	1.0	.99	e1.2	1.6	1.7	2.4	1.7	1.3	1.1	.91	1.4
11	1.2	1.2	.98	e1.1	1.6	1.7	2.3	1.7	1.3	1.1	.91	1.3
12	1.1	1.1	.96	e1.0	1.6	1.6	2.6	1.7	1.3	1.1	.91	1.2
13	1.1	1.1	.98	e1.0	1.6	1.6	2.6	1.7	1.3	1.1	.90	1.2
14	1.2	1.0	.99	e1.1	1.6	1.6	2.5	1.7	1.3	1.1	2.3	1.1
15	1.2	1.0	.97	1.9	1.6	2.3	2.3	1.6	1.3	1.1	1.5	1.2
16	1.1	1.0	.96	1.7	1.5	2.4	2.2	1.6	1.3	1.1	1.3	3.7
17	1.1	1.0	.96	1.5	1.5	3.0	2.2	1.6	1.3	1.1	1.2	3.5
18	1.1	1.0	.96	1.7	1.8	2.7	2.1	1.6	1.3	1.0	e1.1	3.0
19	1.1	1.0	.96	1.8	1.8	2.3	2.0	1.6	1.2	1.1	e1.1	2.4
20	1.1	1.0	.96	1.6	1.7	2.1	2.0	1.7	1.3	1.1	e1.1	2.1
21	1.1	1.0	.96	1.6	1.8	2.1	1.9	1.6	1.6	1.1	e1.2	2.0
22	1.1	1.0	.96	1.7	1.8	3.1	1.9	1.6	1.4	1.0	e1.2	1.9
23	1.1	1.0	.96	1.6	1.6	3.5	2.0	1.6	1.3	1.0	e1.1	1.8
24	1.1	1.0	.96	2.0	1.6	3.0	2.0	1.9	1.3	1.0	e1.1	1.7
25	1.1	.99	.96	2.0	1.6	2.6	1.9	2.0	1.2	1.0	e1.1	1.6
26	1.0	1.1	.96	1.8	1.6	2.4	1.9	1.8	1.2	1.0	e1.4	1.5
27	1.0	1.0	.96	1.8	1.6	2.3	1.9	1.7	1.2	.99	e2.0	1.5
28	1.1	1.0	.97	1.8	1.6	2.3	1.8	1.6	1.2	.97	e1.6	1.5
29	1.0	1.0	1.0	1.7	---	2.2	1.8	1.6	1.2	.97	e1.4	1.4
30	1.0	.99	1.0	1.6	---	2.1	1.8	1.5	1.2	.96	e1.3	1.6
31	1.0	---	.98	1.6	---	2.1	---	1.5	---	.96	e1.2	---
TOTAL	34.8	30.48	30.26	50.66	46.0	66.3	62.5	52.8	39.5	33.15	36.11	48.3
MEAN	1.12	1.02	.98	1.63	1.64	2.14	2.08	1.70	1.32	1.07	1.16	1.61
MAX	1.3	1.2	1.0	3.6	1.8	3.5	2.6	2.0	1.6	1.2	2.3	3.7
MIN	1.0	.99	.96	.96	1.5	1.6	1.8	1.5	1.2	.96	.89	1.0
CFSM	.48	.43	.42	.70	.70	.91	.89	.72	.56	.46	.50	.69
IN.	.55	.48	.48	.80	.73	1.05	.99	.84	.63	.57	.57	.76

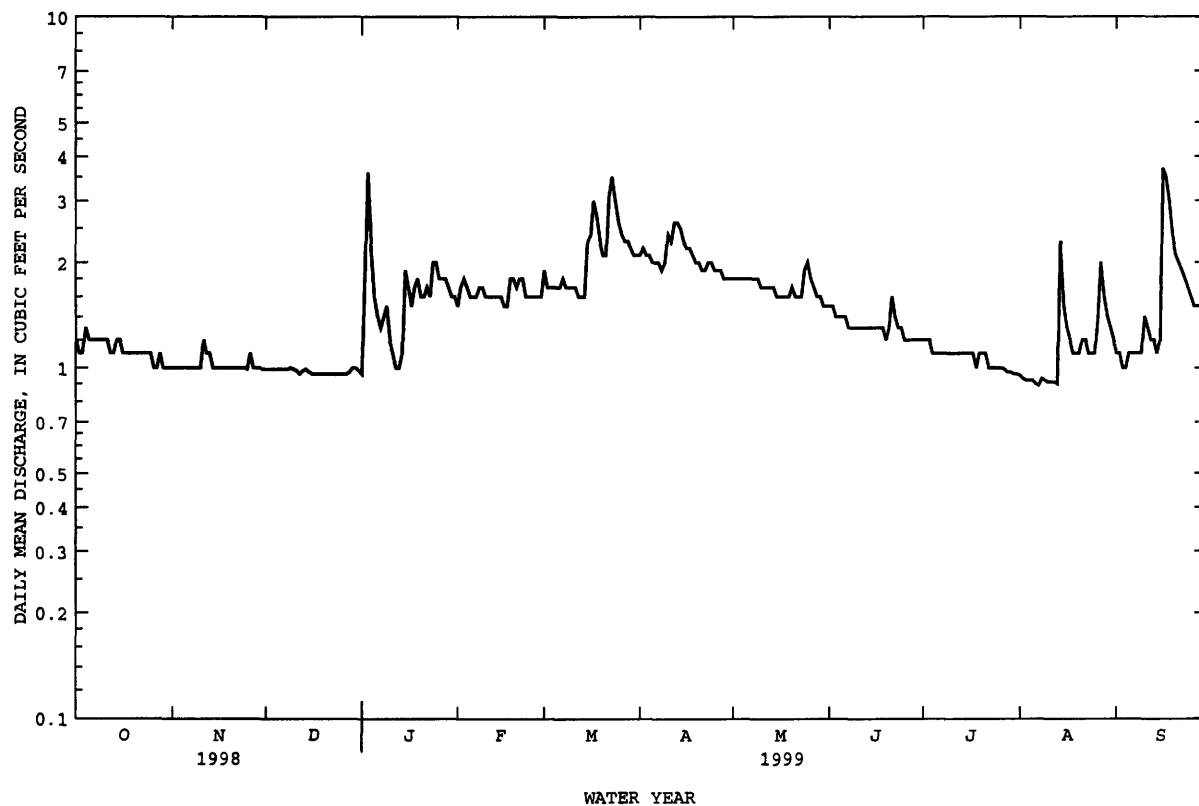
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 1999, BY WATER YEAR (WY)

MEAN	1.57	1.72	2.05	2.29	2.41	2.90	2.93	2.69	2.19	1.86	1.83	1.65
MAX	4.45	4.82	5.75	4.78	5.69	5.67	5.74	6.86	5.35	4.15	5.65	4.31
(WY)	1959	1973	1973	1973	1973	1979	1984	1998	1979	1958	1958	1958
MIN	.80	.95	.98	.98	1.13	1.25	1.24	1.17	1.05	1.00	.91	.71
(WY)	1996	1986	1999	1981	1989	1966	1985	1995	1995	1977	1995	1995

01466500 MCDONALDS BRANCH IN LEBANON STATE FOREST, NJ--Continued
(Hydrologic bench-mark station)

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1954 - 1999
ANNUAL TOTAL	907.24	530.86	
ANNUAL MEAN	2.49	1.45	2.17
HIGHEST ANNUAL MEAN			3.85 1973
LOWEST ANNUAL MEAN			1.17 1995
HIGHEST DAILY MEAN	18 May 10	3.7 Sep 16	20 Feb 28 1958
LOWEST DAILY MEAN	.96 Dec 12	.89 Aug 7	.50 Oct 13 1995
ANNUAL SEVEN-DAY MINIMUM	.96 Dec 16	.91 Aug 6	.58 Oct 8 1995
INSTANTANEOUS PEAK FLOW		6.0 Sep 16	35 Aug 25 1958
INSTANTANEOUS PEAK STAGE		1.65 Sep 16	2.33 Aug 25 1958
INSTANTANEOUS LOW FLOW		.83 Aug 7	.49 Oct 13 1995
ANNUAL RUNOFF (CFSM)	1.06	.62	.92
ANNUAL RUNOFF (INCHES)	14.36	8.40	12.57
10 PERCENT EXCEEDS	4.3	2.1	3.6
50 PERCENT EXCEEDS	1.9	1.3	1.8
90 PERCENT EXCEEDS	1.0	.99	1.1

e Estimated



01466900 GREENWOOD BRANCH AT NEW LISBON, NJ

LOCATION.--Lat 39°57'22", long 74°37'41", Burlington County, Hydrologic Unit 02040202, at bridge on Fourmile Road (State Route 646) in New Lisbon, 0.5 mi. upstream from mouth, and 0.7 mi south of State Route 530.

DRAINAGE AREA.--77.9 mi².

PERIOD OF RECORD.--Occasional miscellaneous discharge measurements, water years 1954, 1973. May 1998 to current year.

GAGE.--Water-stage recorder. Datum of gage is 50 ft above sea level (from topographic map).

REMARKS.--Records good except for estimated daily discharges, which are fair. Water diverted for water supply to Fort Dix Army Base just upstream from gage. Several measurements of water temperature (see diversions in Delaware River basin) were made during the year. Satellite rain-gage and gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	30	33	30	91	94	132	70	50	37	23	62
2	28	32	31	28	90	105	121	67	48	41	22	53
3	29	48	31	55	100	108	113	66	45	38	19	49
4	33	46	30	89	114	112	104	69	42	37	17	47
5	36	38	29	115	118	113	99	72	40	36	17	46
6	32	37	29	128	108	108	93	73	38	34	18	46
7	30	33	28	103	106	104	89	73	37	32	19	45
8	31	33	29	90	114	103	85	75	35	31	21	46
9	35	33	32	89	115	104	81	75	34	30	21	45
10	37	33	31	91	109	99	90	75	34	30	17	53
11	34	37	29	89	103	95	101	75	34	29	18	73
12	33	39	29	83	94	92	125	89	32	28	20	77
13	49	38	30	75	88	89	132	79	34	33	20	68
14	49	37	31	73	86	87	128	67	36	28	54	59
15	43	37	29	91	85	98	120	63	40	27	66	59
16	48	36	29	125	87	121	109	59	38	27	52	131
17	42	33	29	151	84	142	103	57	37	27	42	586
18	37	31	29	144	93	142	95	56	37	28	37	585
19	34	31	28	144	111	133	89	59	36	28	e35	369
20	30	31	28	157	122	123	85	69	36	32	33	175
21	29	31	28	144	122	116	82	65	51	29	57	140
22	29	30	27	132	109	129	78	62	54	30	66	127
23	29	31	27	125	97	161	81	61	50	32	69	118
24	29	30	28	125	94	168	87	67	47	29	59	102
25	37	30	28	137	98	148	89	88	40	27	50	88
26	45	36	27	144	96	135	87	96	37	24	58	82
27	38	37	27	136	91	129	81	90	32	23	113	80
28	34	34	28	125	86	121	78	76	30	22	201	77
29	34	33	30	115	---	123	76	69	31	21	144	72
30	31	33	34	109	---	130	74	61	35	22	110	74
31	32	---	31	101	---	143	---	54	---	24	83	---
TOTAL	1087	1038	909	3343	2811	3675	2907	2177	1170	916	1581	3634
MEAN	35.1	34.6	29.3	108	100	119	96.9	70.2	39.0	29.5	51.0	121
MAX	49	48	34	157	122	168	132	96	54	41	201	586
MIN	28	30	27	28	84	87	74	54	30	21	17	45

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 1999, BY WATER YEAR (WY)

	1998	1999	1998	1999	1998	1999	1998	1999	1998	1999	1998	1999
MEAN	35.1	34.6	29.3	108	100	119	96.9	70.2	67.8	39.1	45.2	76.2
MAX	35.1	34.6	29.3	108	100	119	96.9	70.2	96.6	48.7	51.0	121
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1998	1998	1999	1999
MIN	35.1	34.6	29.3	108	100	119	96.9	70.2	39.0	29.5	39.3	31.3
(WY)	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1998	1998

SUMMARY STATISTICS

FOR 1999 WATER YEAR

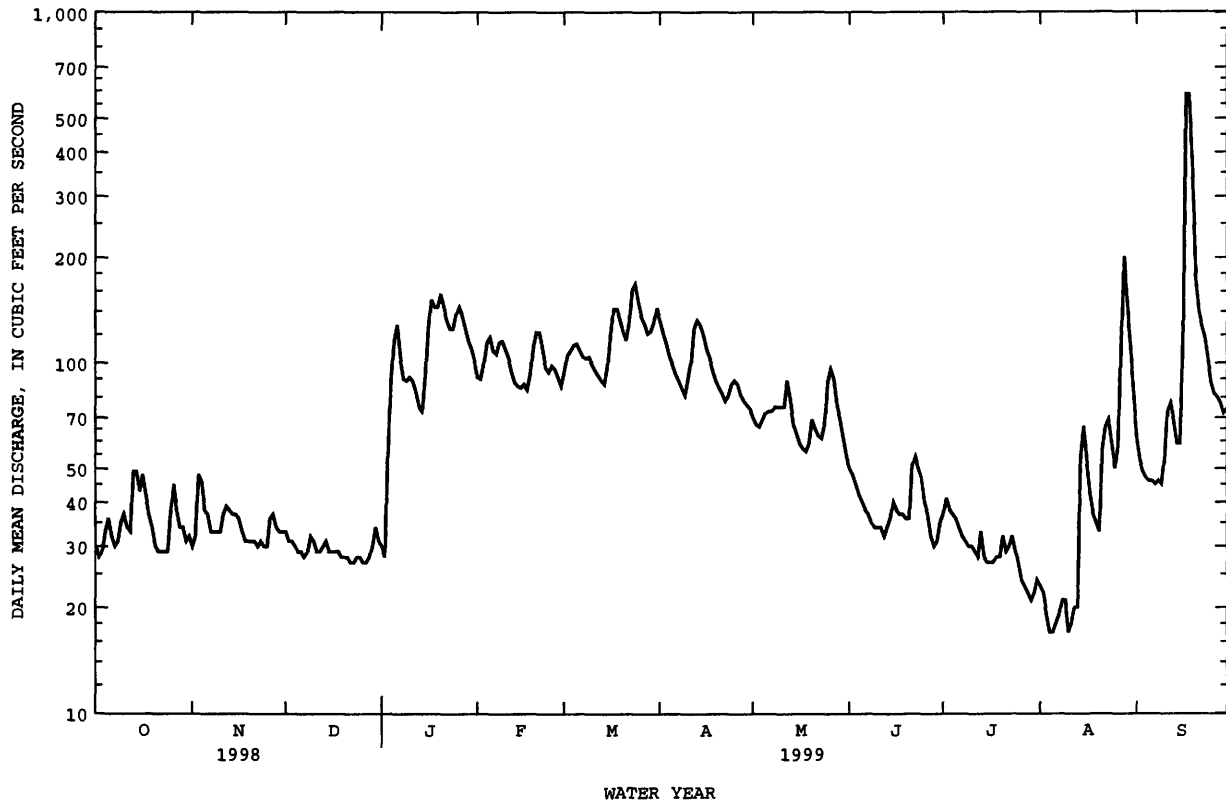
WATER YEARS 1998 - 1999

ANNUAL TOTAL	25248		
ANNUAL MEAN	69.2	69.2	
HIGHEST ANNUAL MEAN		69.2	1999
LOWEST ANNUAL MEAN		69.2	1999
HIGHEST DAILY MEAN	586	Sep 17	1999
LOWEST DAILY MEAN	17	Aug 4	1999
ANNUAL SEVEN-DAY MINIMUM	19	Aug 4	1999
INSTANTANEOUS PEAK FLOW	663	Sep 17	1998
INSTANTANEOUS PEAK STAGE	7.11	Sep 17	1998
INSTANTANEOUS LOW FLOW	17	Aug 4	1999
10 PERCENT EXCEEDS	125	121	
50 PERCENT EXCEEDS	54	48	
90 PERCENT EXCEEDS	28	29	

a Observed by field personnel before gage established.

e Estimated

01466900 GREENWOOD BRANCH AT NEW LISBON, NJ--Continued



01467000 NORTH BRANCH RANCOCAS CREEK AT PEMBERTON, NJ

LOCATION.--Lat 39°58'10", long 74°41'05", Burlington County, Hydrologic Unit 02040202, on right bank at downstream side of bridge on Hanover Street in Pemberton, 12 mi upstream from confluence with South Branch Rancocas Creek.

DRAINAGE AREA.--118 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1921 to current year.

REVISED RECORDS.--WSP 1302: 1922-23. WSP 1382: 1933. WDR NJ-82-2: Drainage area.

GAGE.--Water-stage recorder above concrete dams. Datum of gage is 31.19 ft above sea level. Prior to June 9, 1923, nonrecording gage and June 9, 1923 to Aug. 9, 1951, water-stage recorder at site 600 ft downstream at datum 6.54 ft lower.

REMARKS.--Records good. Flow regulated occasionally by cranberry bogs and ponds above station. Water diverted for water supply at Fort Dix army base upstream from gage. Several measurements of water temperature, other than those published, were made during the year. Gage- height telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sep 17	1915	*1,180	*3.23	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	52	58	45	150	181	239	109	80	49	28	108
2	44	51	57	40	158	199	216	107	76	52	28	96
3	44	64	53	130	193	204	197	104	72	51	25	82
4	49	67	46	242	211	222	176	109	70	50	28	70
5	55	59	46	211	215	196	164	111	66	46	27	88
6	50	58	46	190	189	181	152	111	64	43	26	86
7	47	53	46	142	171	199	145	111	64	40	26	77
8	51	52	50	115	193	191	137	114	62	37	27	62
9	58	52	57	115	198	184	135	114	58	36	31	61
10	60	52	54	122	191	172	185	110	57	36	28	78
11	56	63	49	114	189	158	203	115	54	36	28	112
12	54	75	46	101	175	148	275	144	52	36	28	119
13	61	68	48	92	158	140	281	121	54	40	28	110
14	69	64	52	91	126	137	252	103	57	38	115	101
15	62	61	48	184	120	213	224	94	68	35	135	105
16	61	61	47	268	122	274	201	91	62	34	98	432
17	57	58	46	293	125	319	188	87	58	33	70	1020
18	53	55	46	281	176	318	170	84	57	32	55	1030
19	51	55	42	298	237	284	155	126	55	32	48	718
20	47	55	41	326	244	244	148	137	55	35	60	435
21	46	57	41	309	234	222	145	115	86	34	94	334
22	46	55	43	263	198	360	139	104	94	34	93	296
23	46	55	42	237	165	422	145	104	84	37	90	251
24	46	55	45	260	154	411	162	133	75	36	78	201
25	50	55	44	322	157	342	157	183	65	36	76	168
26	61	69	41	330	143	286	145	174	61	31	105	149
27	58	80	39	289	142	256	135	152	56	28	324	141
28	53	67	41	246	139	234	124	122	53	27	451	137
29	52	62	44	208	---	228	121	108	50	26	321	132
30	52	61	54	181	---	237	116	96	47	27	205	143
31	52	---	49	166	---	257	---	86	---	28	144	---
TOTAL	1636	1791	1461	6211	4873	7419	5232	3579	1912	1135	2920	6942
MEAN	52.8	59.7	47.1	200	174	239	174	115	63.7	36.6	94.2	231
MAX	69	80	58	330	244	422	281	183	94	52	451	1030
MIN	44	51	39	40	120	137	116	84	47	26	25	61
CFSM	.45	.51	.40	1.70	1.47	2.03	1.48	.98	.54	.31	.80	1.96
IN.	.52	.56	.46	1.96	1.54	2.34	1.65	1.13	.60	.36	.92	2.19

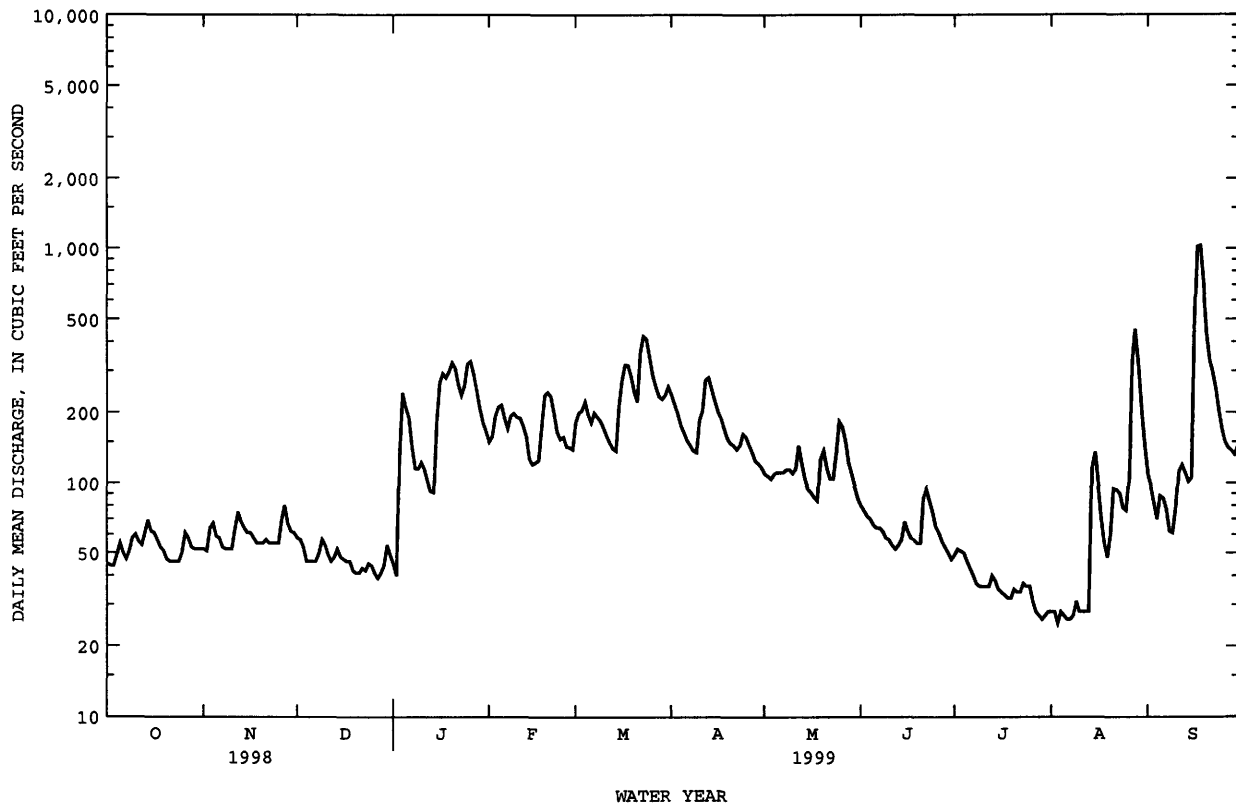
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1999, BY WATER YEAR (WY)

	118	150	172	200	215	249	238	197	142	122	131	117
MEAN	118	150	172	200	215	249	238	197	142	122	131	117
MAX	365	430	434	479	445	472	475	475	297	401	426	341
(WY)	1928	1973	1973	1979	1939	1994	1984	1998	1968	1938	1958	1971
MIN	38.7	45.7	47.1	62.1	92.2	105	85.4	72.0	54.1	36.6	35.6	36.5
(WY)	1923	1923	1999	1981	1931	1985	1985	1992	1995	1999	1995	1995

01467000 NORTH BRANCH RANCOCAS CREEK AT PEMBERTON, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1922 - 1999	
ANNUAL TOTAL	67088		45111		171	
ANNUAL MEAN	184		124		286	
HIGHEST ANNUAL MEAN					92.3	
LOWEST ANNUAL MEAN					1690	
HIGHEST DAILY MEAN	1460	May 11	1030	Sep 18	1690	Aug 21 1939
LOWEST DAILY MEAN	39	Dec 27	25	Aug 3	9.0	Sep 29 1932
ANNUAL SEVEN-DAY MINIMUM	42	Dec 21	27	Aug 2	27	Oct 2 1922
INSTANTANEOUS PEAK FLOW			1180	Sep 17	1730	Aug 21 1939
INSTANTANEOUS PEAK STAGE			3.23	Sep 17	10.77a	Aug 21 1939
INSTANTANEOUS LOW FLOW			24	Aug 3	9.0	Sep 29 1932
ANNUAL RUNOFF (CFSM)	1.56		1.05		1.45	
ANNUAL RUNOFF (INCHES)	21.15		14.22		19.65	
10 PERCENT EXCEEDS	355		248		312	
50 PERCENT EXCEEDS	138		87		140	
90 PERCENT EXCEEDS	48		39		61	

a From high-water mark, site and datum then in use.



DELAWARE RIVER BASIN

01467081 SOUTH BRANCH PENNSAUKEN CREEK AT CHERRY HILL, NJ

LOCATION.--Lat 39°56'30", long 75°00'05", Camden County, Hydrologic Unit 02040202, on left bank on downstream wingwall of bridge on Mill Road in Cherry Hill, 1.1 mi south of Maple Shade and 3.8 mi upstream from confluence with the North Branch Pennsauken Creek.

DRAINAGE AREA.--8.98 mi².

PERIOD OF RECORD.--October 1967 to September 1976, October 1977 to current year.

REVISED RECORDS.--WDR NJ-82-2: Drainage area. WDR NJ-90-1: 1968 (P), 1970 (P), 1971 (P).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 8.12 ft above sea level.

REMARKS.--Records fair expect for estimated daily discharges, which are poor. Diurnal fluctuations from unknown source. 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)
Mar 22	0445	325	7.45	Sep 16	1815	*1,020	*10.51

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.0	3.5	4.4	5.2	4.9	44	8.6	6.3	e4.6	34	5.0	3.6
2	5.5	3.5	7.5	5.1	61	11	10	6.2	e5.0	8.2	3.0	3.7
3	6.1	3.9	7.8	136	21	15	7.6	6.9	e4.8	4.8	2.5	3.4
4	23	e4.3	8.2	27	8.8	50	7.4	7.8	e4.8	3.7	2.4	4.4
5	13	e4.0	8.2	8.4	7.1	9.6	8.0	6.3	e4.8	3.2	2.5	6.5
6	7.5	e4.1	8.0	6.4	6.2	21	7.0	6.1	e5.2	3.2	2.5	7.9
7	7.6	e3.9	7.5	5.8	8.0	34	7.0	6.3	e5.0	3.1	2.2	26
8	27	e4.3	9.3	6.0	30	8.6	8.7	6.0	e5.2	3.1	3.8	7.2
9	28	e4.7	14	31	8.5	6.5	16	5.8	e4.8	3.3	3.0	10
10	19	e4.7	4.7	17	6.4	5.9	61	5.8	e4.9	2.9	2.4	41
11	7.8	23	3.9	6.2	5.5	5.5	40	5.4	e5.0	2.8	2.4	14
12	6.9	4.7	3.9	5.5	9.4	5.0	51	5.0	e5.2	2.8	2.2	7.1
13	6.3	2.4	5.3	5.1	27	4.7	15	12	e10	3.1	2.3	5.1
14	28	2.2	6.0	5.3	7.2	13	10	6.2	e11	2.9	61	3.9
15	8.7	2.4	4.2	142	5.9	92	9.5	e6.1	e12	2.9	54	7.3
16	7.3	2.7	3.9	25	5.5	35	19	e5.8	e4.4	2.7	19	464
17	6.2	2.9	4.3	10	5.2	16	23	e5.7	e4.3	2.7	7.7	163
18	5.2	3.3	4.3	66	97	9.4	9.3	e6.0	e4.5	2.6	4.6	18
19	e3.6	4.5	3.8	34	24	7.3	8.1	e25	e4.4	28	3.6	12
20	e3.7	6.0	3.8	11	11	6.1	8.6	e16	e5.6	39	5.6	10
21	e3.5	14	4.0	8.8	8.0	51	7.6	e6.3	e4.6	5.6	15	65
22	e3.4	e4.0	5.6	8.6	6.7	206	12	e5.7	e8.4	4.1	6.7	25
23	e3.4	e4.0	6.5	6.7	6.1	26	19	e13	e5.7	3.7	4.4	12
24	3.8	e4.6	6.6	90	5.8	15	26	e174	e5.3	3.4	3.5	8.9
25	3.7	e4.4	7.2	29	6.1	12	9.0	e27	e5.0	3.1	3.2	7.8
26	3.6	31	5.5	10	5.7	9.9	7.9	e9.8	e4.9	3.0	77	7.3
27	3.1	10	5.8	7.3	5.8	9.2	7.0	e6.9	e4.7	2.8	64	6.9
28	2.8	5.8	5.9	6.3	28	13	6.6	e5.6	e5.1	2.7	6.9	6.8
29	3.2	4.3	9.4	5.8	---	9.5	6.4	e5.2	e5.1	2.8	4.6	6.4
30	3.0	3.3	12	5.3	---	8.0	6.3	e5.3	e3.3	2.8	4.0	49
31	3.3	---	6.3	4.8	---	7.3	---	e5.1	---	2.4	3.5	---
TOTAL	262.2	180.4	197.8	740.6	431.8	766.5	442.6	420.6	209.0	195.4	384.5	1013.2
MEAN	8.46	6.01	6.38	23.9	15.4	24.7	14.8	13.6	6.97	6.30	12.4	33.8
MAX	28	31	14	142	97	206	61	174	46	39	77	464
MIN	2.8	2.2	3.8	4.8	4.9	4.7	6.3	5.0	3.3	2.4	2.2	3.4
CFSM	.94	.67	.71	2.66	1.72	2.75	1.64	1.51	.78	.70	1.38	3.76
IN.	1.09	.75	.82	3.07	1.79	3.18	1.83	1.74	.87	.81	1.59	4.20

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1999, BY WATER YEAR (WY)

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
MEAN	13.4	17.0	22.2	22.9	20.0	23.9	21.8	19.2	14.8	17.4	16.1	14.2																				
MAX	26.0	48.8	60.4	50.5	44.7	46.5	49.8	47.0	33.4	46.5	58.2	38.8																				
(WY)	1990	1973	1997	1979	1994	1983	1989	1989	1989	1989	1978	1975																				
MIN	5.83	6.01	6.38	6.55	9.19	9.29	8.08	8.24	6.50	6.30	4.17	4.71																				
(WY)	1995	1999	1999	1981	1968	1985	1985	1993	1995	1999	1995	1968																				

SUMMARY STATISTICS

FOR 1998 CALENDAR YEAR

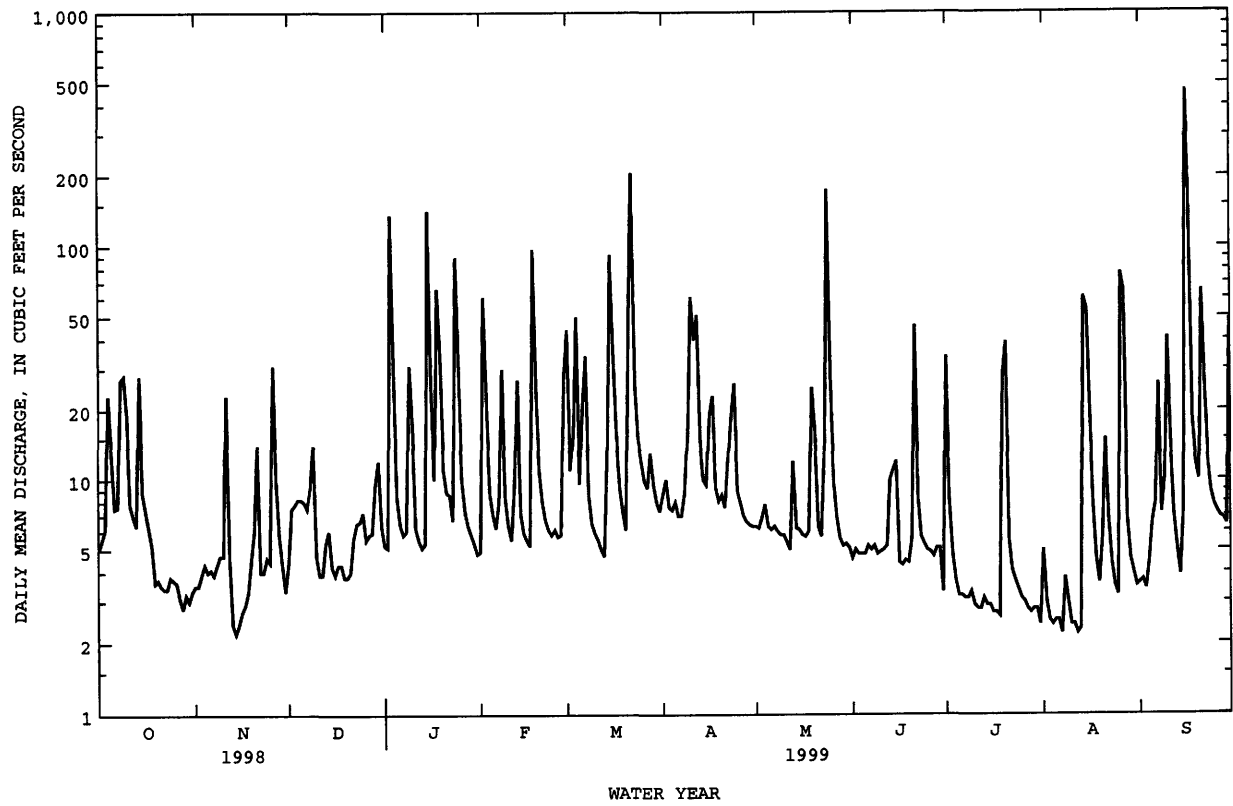
FOR 1999 WATER YEAR

WATER YEARS 1968 - 1999

ANNUAL TOTAL	5245.2	5244.6	
ANNUAL MEAN	14.4	14.4	18.6
HIGHEST ANNUAL MEAN			27.3
LOWEST ANNUAL MEAN			11.6
HIGHEST DAILY MEAN	135	Mar 9	464
LOWEST DAILY MEAN	2.2	Nov 14	2.2
ANNUAL SEVEN-DAY MINIMUM	2.9	Nov 13	2.6
INSTANTANEOUS PEAK FLOW			1020
INSTANTANEOUS PEAK STAGE			10.51
INSTANTANEOUS LOW FLOW			1.1
ANNUAL RUNOFF (CFSM)	1.60		1.60
ANNUAL RUNOFF (INCHES)	21.73		21.73
10 PERCENT EXCEEDS	31		28
50 PERCENT EXCEEDS	7.9		6.2
90 PERCENT EXCEEDS	3.9		3.1

e Estimated

01467081 SOUTH BRANCH PENNSAUKEN CREEK AT CHERRY HILL, NJ--Continued



01467150 COOPER RIVER AT HADDONFIELD, NJ

LOCATION.--Lat 39°54'11", long 75°01'18" (revised), Camden County, Hydrologic Unit 02040202, on right bank of Wallworth Lake in Pennypacker Park, 200 ft upstream from bridge on State Highway 41 (Kings Highway) in Haddonfield, 0.6 mi upstream from North Branch Cooper River, and 7.7 mi upstream from mouth.

DRAINAGE AREA.--17.0 mi².

PERIOD OF RECORD.--October 1963 to current year.

REVISED RECORDS.--WRD-NJ 1969: 1967(M). WDR NJ-82-2: Drainage area.

GAGE.--Water-stage recorder above concrete dam. Datum of gage is 9.29 ft above sea level.

REMARKS.--Records good, except for estimated daily discharges, which are poor. Bypass gates were installed on both ends of the dam in August 1987. No gate openings this year. Occasional regulation at low flow from Kirkwood Lake, other small lakes and wastewater treatment plants (prior to summer 1987). Several measurements of water temperature were made during the year. Gage-height telemeter at 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)
Jan 3	1445	504	2.72	Sep 16	1715	*1,400	*3.86
Mar 22	0500	522	2.75				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.3	6.2	8.3	6.2	12	63	22	12	8.9	41	7.5	6.8
2	7.0	6.2	7.5	5.7	81	23	26	12	9.4	15	4.2	6.8
3	7.0	6.0	7.6	207	38	23	22	13	9.0	12	3.9	6.7
4	22	6.2	7.6	53	21	76	22	14	8.8	10	3.9	7.1
5	13	5.7	8.0	19	15	23	27	13	8.9	8.9	4.1	15
6	9.4	5.7	9.6	13	14	29	20	13	9.5	7.6	4.2	12
7	9.2	5.6	8.9	11	16	46	20	13	9.2	6.5	3.8	31
8	20	5.9	11	10	42	20	20	13	9.3	5.4	4.7	12
9	49	6.3	17	39	18	17	26	12	8.7	4.9	4.5	23
10	63	6.3	7.4	28	14	16	87	11	8.7	4.7	3.5	52
11	11	29	6.2	13	15	15	57	12	9.0	4.6	3.5	15
12	7.6	13	6.0	12	19	14	64	10	9.1	4.0	3.7	9.8
13	7.0	9.1	7.3	13	47	14	28	25	16	4.9	4.0	8.6
14	27	7.7	7.2	13	18	25	20	13	18	4.6	e56	8.0
15	9.4	7.0	6.1	231	14	126	19	12	22	4.4	e21	16
16	7.3	6.7	5.9	58	13	56	30	12	9.0	3.9	6.0	717
17	7.1	6.9	6.4	25	13	34	28	11	8.4	3.7	4.6	282
18	6.3	6.5	6.3	88	141	24	19	11	8.2	3.7	4.6	30
19	6.0	6.8	6.1	52	46	19	18	33	7.8	e74	4.4	16
20	6.0	7.0	6.0	26	24	17	18	27	9.5	44	5.1	14
21	5.7	9.8	6.4	20	17	78	18	13	63	6.5	11	72
22	5.6	7.0	11	20	14	312	27	11	17	6.2	3.9	39
23	5.6	6.8	8.4	16	13	55	36	23	11	6.0	3.7	18
24	6.0	7.4	8.5	131	13	32	35	e188	9.9	5.2	3.5	13
25	6.2	7.3	8.4	55	13	26	20	42	9.1	5.2	3.6	12
26	6.1	34	7.3	25	13	21	17	17	8.6	4.8	51	11
27	6.4	13	6.7	17	12	20	16	13	8.3	4.6	156	10
28	6.2	8.8	7.2	14	35	25	15	11	8.8	4.5	19	9.8
29	6.5	8.2	11	13	---	21	14	10	8.9	4.5	11	11
30	5.9	7.8	15	12	---	19	13	9.9	7.9	4.7	8.0	60
31	6.2	---	8.1	13	---	19	---	9.5	---	5.0	7.3	---
TOTAL	368.0	269.9	254.4	1258.9	751	1308	804	639.4	359.9	325.0	435.2	1544.6
MEAN	11.9	9.00	8.21	40.6	26.8	42.2	26.8	20.6	12.0	10.5	14.0	51.5
MAX	63	34	17	231	141	312	87	188	63	74	156	717
MIN	5.6	5.6	5.9	5.7	12	14	13	9.5	7.8	3.7	3.5	6.7
CFSM	.70	.53	.48	2.39	1.58	2.48	1.58	1.21	.71	.62	.83	3.03
IN.	.81	.59	.56	2.75	1.64	2.86	1.76	1.40	.79	.71	.95	3.38

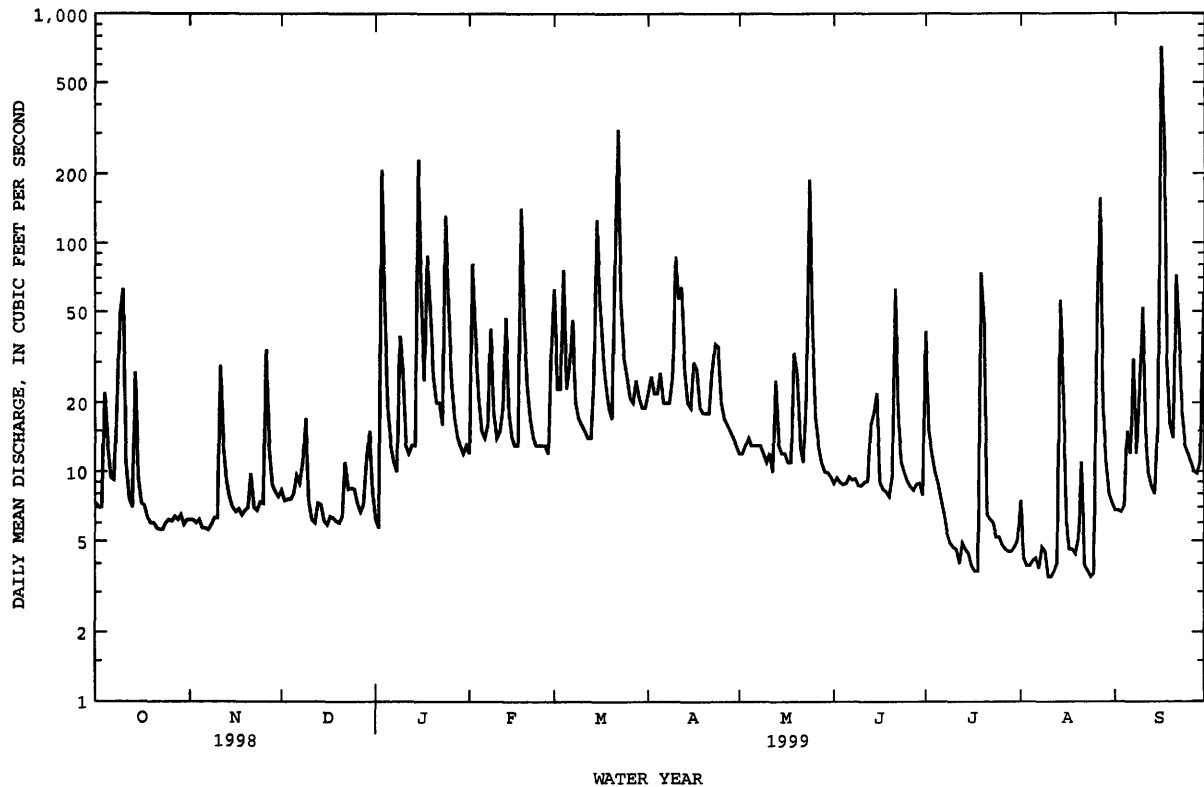
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1999, BY WATER YEAR (WY)

MEAN	26.2	30.6	37.6	39.2	36.8	42.3	40.6	36.0	28.4	30.9	28.7	26.3
MAX	46.8	79.6	85.3	97.8	76.1	78.9	99.4	66.7	54.9	66.8	97.6	65.8
(WY)	1976	1973	1997	1978	1979	1984	1983	1983	1972	1975	1971	1975
MIN	9.26	9.00	8.21	14.6	18.9	23.2	15.1	14.2	10.9	10.5	7.79	7.97
(WY)	1966	1999	1999	1992	1992	1981	1992	1965	1988	1999	1966	1997

01467150 COOPER RIVER AT HADDONFIELD, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR	FOR 1999 WATER YEAR	WATER YEARS 1964 - 1999
ANNUAL TOTAL	8362.1	8318.3	
ANNUAL MEAN	22.9	22.8	33.6
HIGHEST ANNUAL MEAN			50.6
LOWEST ANNUAL MEAN			19.2
HIGHEST DAILY MEAN	240 Mar 9	717 Sep 16	1510 Aug 28 1971
LOWEST DAILY MEAN	5.6 Oct 22	3.5 Aug 10	1.2 Jun 27 1964
ANNUAL SEVEN-DAY MINIMUM	5.9 Oct 19	4.0 Aug 7	4.0 Aug 7 1999
INSTANTANEOUS PEAK FLOW		1400 Sep 16	3300 Aug 28 1971
INSTANTANEOUS PEAK STAGE		3.86 Sep 16	5.46 Aug 28 1971
INSTANTANEOUS LOW FLOW		3.5 Aug 4	.80a Nov 13 1972
ANNUAL RUNOFF (CFSM)	1.35	1.34	1.98
ANNUAL RUNOFF (INCHES)	18.30	18.20	26.88
10 PERCENT EXCEEDS	46	45	58
50 PERCENT EXCEEDS	14	12	22
90 PERCENT EXCEEDS	6.8	5.2	11

a Regulation from unknown source.
e Estimated



SCHUYLKILL RIVER BASIN

01474500 SCHUYLKILL RIVER AT PHILADELPHIA, PA
(National Water-Quality Assessment Station)

LOCATION.--Lat 39°58'04", long 75°11'20", Philadelphia County, Hydrologic Unit 02040203, on right bank 150 ft upstream from Fairmount Dam, 1,500 ft upstream from bridge on Spring Garden Street in Philadelphia, and 8.7 mi upstream from mouth.

DRAINAGE AREA.--1,893 mi².

PERIOD OF RECORD.--October 1931 to current year. Records for January 1898 to December 1912, published in WSP 35, 48, 65, 82, 97, 125, 166, 202, 214, 261, 301, and 381 have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 756: Drainage area. WSP 1302: 1936(M). WSP 1432: 1945. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder, crest-stage gage, and concrete control. Datum of gage is 5.74 ft above sea level. Prior to Nov. 25, 1956, water-stage recorder at site on right bank just upstream from Fairmount Dam at same datum. Nov. 26, 1956, to Oct. 6, 1966, water-stage recorder at site on left bank 40 ft upstream from Fairmount Dam at same datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Still Creek Reservoir (station 01469200) since February 1933, Blue Marsh Lake (station 01470870) since April 1979, Green Lane Reservoir (station 01472200) since December 1956 and to some extent by Lake Ontelaunee. Daily mean discharges do not include diversion above station by city of Philadelphia for municipal water supply. Satellite and landline telemetry at station.

COOPERATION.--Records of diversion provided by Philadelphia Water Department.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 4, 1869 reached a stage of 17.0 ft, discharge, about 135,000 ft³/s. Flood of Mar. 1, 1902 reached a stage of 14.8 ft, discharge, about 98,000 ft³/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 18,000 ft³/s and maximum (*):

Date	Time	Discharge ft ³ /s	Gage Height (ft)	Date	Time	Discharge ft ³ /s	Gage Height (ft)
Jan. 19	0500	20,300	8.88	Mar. 22	0800	22,000	9.07
Jan. 25	2400	18,100	8.62	Sept. 17	0030	*92,500	*14.10

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	558	835	806	727	2850	3560	2450	1720	929	624	294	458
2	457	831	795	626	3770	3480	2520	1670	844	623	269	447
3	534	722	808	4590	7390	2810	2320	1590	878	802	173	453
4	757	725	782	5670	5430	3940	1970	1530	950	568	165	429
5	836	726	809	2290	4630	3830	1960	1530	878	498	217	486
6	749	705	815	1530	3760	3310	1950	1730	825	515	245	1260
7	649	784	830	1250	3210	3650	2000	1600	806	445	251	1820
8	1270	904	832	1180	3250	3160	1940	1450	726	443	337	2410
9	3660	933	900	1380	3340	2710	2000	1740	701	386	435	1820
10	3890	879	838	4570	3130	2660	4540	1510	670	374	441	2890
11	3630	905	787	4050	2800	2510	3660	1310	645	413	355	1470
12	2580	886	775	2900	2540	2310	4050	1290	671	445	359	949
13	1960	863	769	2390	3560	2200	3460	1470	733	454	326	780
14	1830	728	788	2210	3320	2100	2930	1400	850	522	2770	658
15	1780	760	745	3880	2760	2320	2660	1180	891	668	1880	708
16	1820	700	744	4320	2480	3030	2640	1120	929	596	1270	30800
17	1530	677	723	3100	2530	3560	3140	1110	875	481	828	56100
18	1130	733	760	6370	4910	3580	2730	1060	724	456	625	14500
19	1030	767	740	17400	5510	2990	2210	1410	844	517	485	6950
20	973	739	712	9370	3430	2590	2050	1640	973	489	668	4950
21	1100	834	703	6460	2890	2810	2260	1300	920	463	637	4490
22	898	829	722	5230	2560	16800	2390	1130	860	454	494	4560
23	814	830	688	5500	2230	8520	2470	1200	725	468	487	4200
24	833	792	693	9620	2140	6130	3100	2270	644	395	429	3080
25	814	707	686	15800	2110	5010	2700	2670	565	335	410	2430
26	779	929	615	9950	1970	4240	2160	1740	551	353	2230	2070
27	776	1410	649	6890	1690	3720	2060	1380	529	283	4430	1910
28	1010	1220	632	5080	1780	3420	2110	1190	569	237	998	1720
29	867	948	675	4210	---	3350	2070	1060	520	250	679	1560
30	696	856	775	3610	---	2970	1910	1010	515	258	552	2630
31	809	---	707	3150	---	2630	---	930	---	268	480	---
TOTAL	41019	25157	23303	155303	91970	119900	76410	44940	22740	14083	24219	158988
MEAN	1323	839	752	5010	3285	3868	2547	1450	758	454	781	5300
MAX	3890	1410	900	17400	7390	16800	4540	2670	973	802	4430	56100
MIN	457	677	615	626	1690	2100	1910	930	515	237	165	429
(†)	200	220	169	183	181	181	175	192	226	241	213	188

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 1999, BY WATER YEAR (WY)

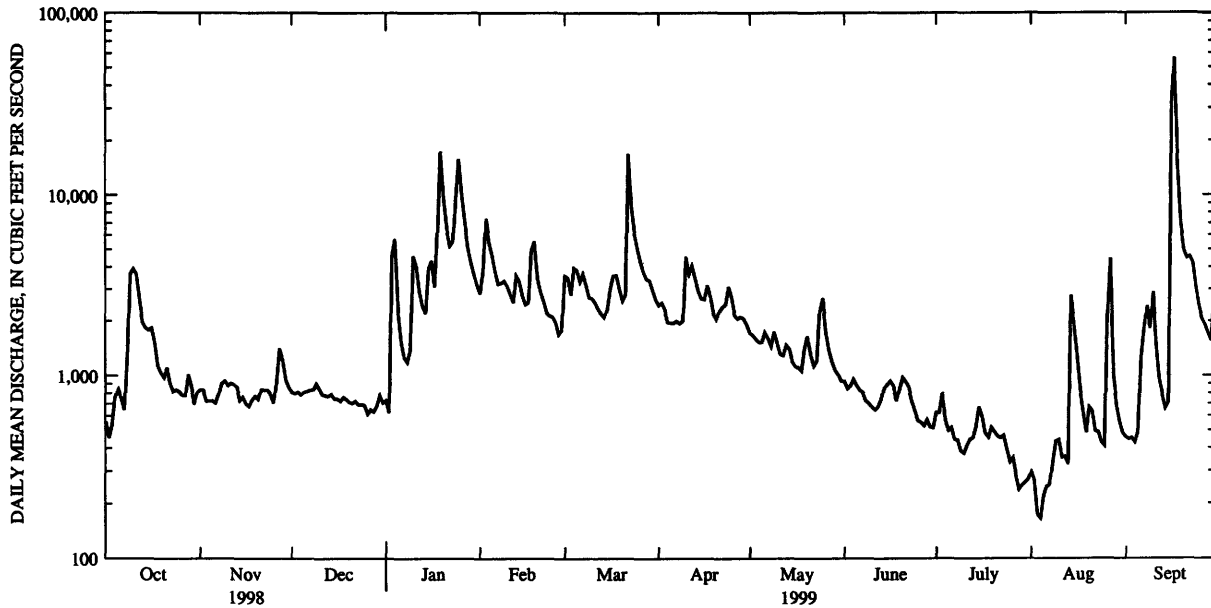
	MEAN	1389	2330	3170	3401	3642	4850	4262	3120	2098	1627	1376	1440
MAX	5624	6272	11150	11400	8136	13320	11620	9943	11640	6434	7980	5300	
(WY)	1997	1973	1997	1979	1939	1936	1983	1989	1972	1984	1933	1999	
MIN	89.4	223	444	340	647	1552	1237	693	261	116	140	117	
(WY)	1942	1932	1981	1981	1934	1981	1985	1965	1965	1966	1966	1932	

† Diversion for municipal supply of City of Philadelphia, equivalent in cubic feet per second.

01474500 SCHUYLKILL RIVER AT PHILADELPHIA, PA--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1932 - 1999	
ANNUAL TOTAL	1101077		798032		2721	
ANNUAL MEAN	3017		2186		4791	1984
HIGHEST ANNUAL MEAN					1014	1965
LOWEST ANNUAL MEAN					93400	Jun 23 1972
HIGHEST DAILY MEAN	17000	May 12	56100	Sep 17	.60	Sep 2 1966
LOWEST DAILY MEAN	457	Oct 2	165	Aug 4	24	Sep 28 1941
ANNUAL SEVEN-DAY MINIMUM	548	Sep 27	231	Aug 1	a103000	Jun 23 1972
INSTANTANEOUS PEAK FLOW			a92500	Sep 17	14.65	Jun 23 1972
INSTANTANEOUS PEAK STAGE			14.10	Sep 17	.00	Sep 2 1966
INSTANTANEOUS LOW FLOW			27	Aug 3, 4		
10 PERCENT EXCEEDS	6430		4110		5850	
50 PERCENT EXCEEDS	1980		1120		1670	
90 PERCENT EXCEEDS	723		458		430	

a From rating curve extended above 92,000 ft³/s.



1-YEAR HYDROGRAPH
OCTOBER 1, 1998 TO SEPTEMBER 30, 1999

01477120 RACCOON CREEK NEAR SWEDESBORO, NJ

LOCATION.--Lat 39°44'26", long 75°15'34" (revised), Gloucester County, Hydrologic Unit 02040202, on right bank 25 ft downstream from County Bridge Route 607 on Gibbstown-Harrisonville Road (Tomlin Station Road), 1.8 mi west of Mullica Hill, and 2.8 mi east of Swedesboro.

DRAINAGE AREA.--26.9 mi².

PERIOD OF RECORD.--May 1966 to current year.

REVISED RECORDS.--WDR NJ-82-2: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is sea level. Prior to July 28, 1969, at datum 7.96 ft higher. July 28, 1969 to Sept. 30, 1969, at datum 5.96 ft higher.

REMARKS.--Records fair except for estimated daily discharges, 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 300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar 22	0915	581	12.41	Sep 16	2045	*1,720	*15.28
May 24	1815	334	11.30				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	12	16	15	e18	54	30	23	17	15	7.9	9.9
2	11	12	15	14	e33	32	33	22	16	17	7.3	12
3	11	12	15	60	e40	27	30	23	15	36	6.9	14
4	15	12	15	66	e28	36	30	25	15	16	6.6	14
5	14	12	16	29	26	28	35	23	15	13	7.1	23
6	12	12	16	22	24	30	30	22	15	11	7.3	31
7	11	12	16	21	24	52	28	22	14	11	7.3	45
8	16	13	16	20	39	30	27	25	14	10	7.4	22
9	21	13	22	27	29	26	30	24	13	10	8.1	16
10	21	13	18	30	25	26	96	21	13	10	7.7	38
11	15	25	16	23	23	24	57	20	13	9.9	7.4	22
12	13	20	16	23	23	23	86	20	13	9.8	7.5	16
13	13	16	17	26	38	22	48	36	17	10	7.6	13
14	19	15	17	25	27	26	36	24	19	10	14	12
15	15	14	16	74	23	108	33	21	18	9.7	16	16
16	13	14	15	74	22	81	33	20	15	8.9	9.7	667
17	13	13	16	35	22	44	32	19	14	8.3	9.0	543
18	12	13	15	71	97	34	29	19	14	8.1	8.5	72
19	12	14	15	e66	61	29	28	30	13	8.3	8.1	38
20	12	14	15	e35	38	27	28	36	15	8.6	9.4	27
21	12	16	15	e28	34	56	28	23	42	8.5	13	46
22	12	14	16	e25	33	387	34	20	22	9.2	10	47
23	12	14	15	e29	26	84	34	21	17	9.2	9.3	34
24	12	14	16	e80	23	53	35	141	14	8.7	8.7	27
25	12	14	16	e92	23	43	29	98	13	8.4	8.6	24
26	12	30	15	e54	22	37	27	34	13	7.9	15	22
27	12	24	15	e33	21	35	25	25	12	7.8	65	21
28	12	18	15	e27	30	33	24	22	12	7.8	18	21
29	13	17	20	e20	---	29	24	21	12	7.6	12	21
30	12	16	22	e17	---	28	23	19	11	7.4	10	31
31	12	---	17	e14	---	29	---	18	---	7.2	9.6	---
TOTAL	413	458	505	1175	872	1573	1062	917	466	330.3	350.0	1944.9
MEAN	13.3	15.3	16.3	37.9	31.1	50.7	35.4	29.6	15.5	10.7	11.3	64.8
MAX	21	30	22	92	97	387	96	141	42	36	65	667
MIN	11	12	15	14	18	22	23	18	11	7.2	6.6	9.9
CFSM	.50	.57	.61	1.41	1.16	1.89	1.32	1.10	.58	.40	.42	2.41
IN.	.57	.63	.70	1.62	1.21	2.18	1.47	1.27	.64	.46	.48	2.66

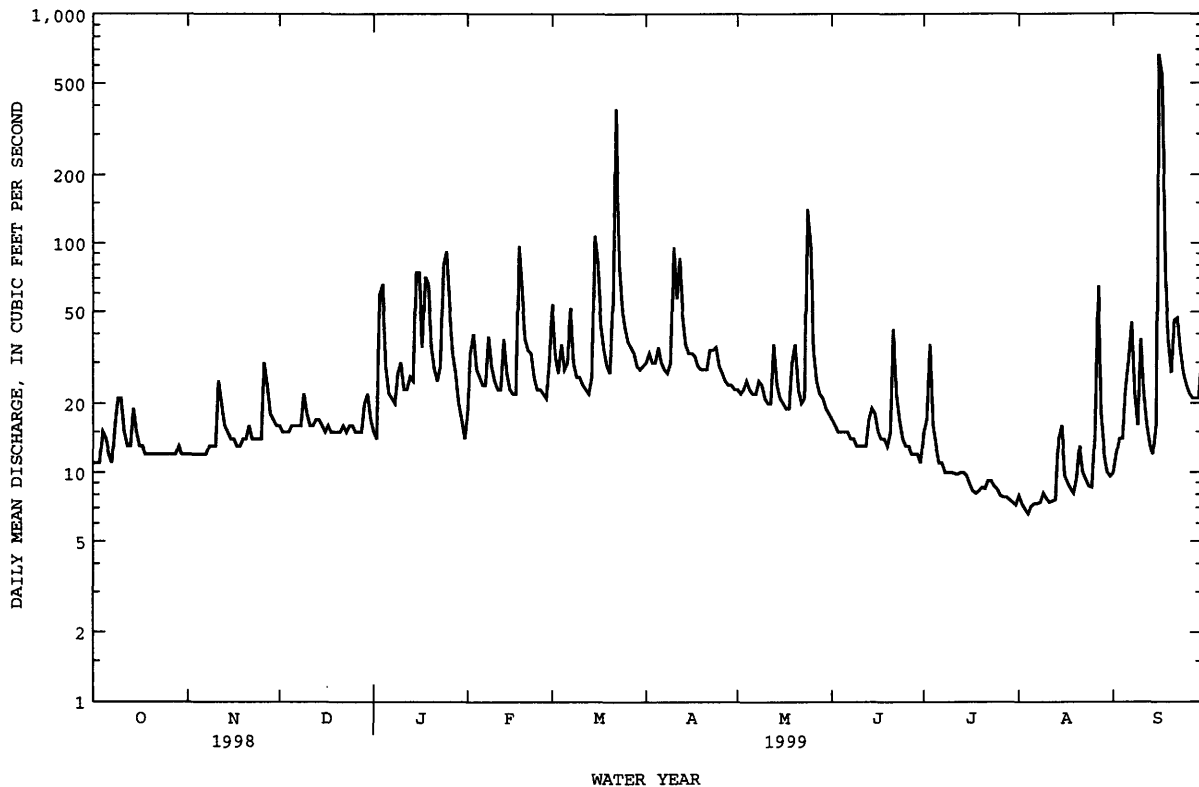
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1999, BY WATER YEAR (WY)

MEAN	28.0	34.1	45.9	51.1	49.2	55.2	52.9	41.7	33.4	31.1	28.8	26.0
MAX	65.2	93.9	144	123	115	132	134	72.6	77.7	112	121	71.9
(WY)	1990	1973	1997	1978	1979	1994	1983	1989	1975	1975	1967	1971
MIN	13.0	15.3	16.3	20.7	23.6	22.7	21.3	15.9	10.7	6.01	5.89	11.7
(WY)	1993	1999	1999	1981	1992	1981	1985	1977	1966	1966	1966	1968

01477120 RACCOON CREEK NEAR SWEDESBORO, NJ--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1966 - 1999	
ANNUAL TOTAL	10706		10066.2		39.9	
ANNUAL MEAN	29.3		27.6		64.7	
HIGHEST ANNUAL MEAN					22.5	
LOWEST ANNUAL MEAN					1260	
HIGHEST DAILY MEAN	269	Jan 24	667	Sep 16	1260	Aug 28 1971
LOWEST DAILY MEAN	11	Sep 11	6.6	Aug 4	2.9	Jul 14 1966
ANNUAL SEVEN-DAY MINIMUM	11	Sep 27	7.1	Aug 2	3.3	Aug 25 1966
INSTANTANEOUS PEAK FLOW			1800	Sep 16	3530	Aug 10 1967
INSTANTANEOUS PEAK STAGE			15.28	Sep 16	17.44a	Aug 10 1967
INSTANTANEOUS LOW FLOW			5.7	Aug 4	2.9	Jul 14 1966
ANNUAL RUNOFF (CFSM)	1.09		1.03		1.48	
ANNUAL RUNOFF (INCHES)	14.81		13.92		20.17	
10 PERCENT EXCEEDS	51		39		66	
50 PERCENT EXCEEDS	21		18		29	
90 PERCENT EXCEEDS	12		9.5		14	

a Present datum
e Estimated



RESERVOIRS IN DELAWARE RIVER BASIN

- 01416900 PEPACTON RESERVOIR.--Lat 42°04'38", long 74°58'04", Delaware County, Hydrologic Unit 02040102, near release chamber at Downsview Dam on East Branch Delaware River, and 1.6 mi east of Downsview. DRAINAGE AREA, 372 mi². PERIOD OF RECORD, September 1954 to current year. REVISED RECORDS, WDR NY-90-1: Drainage area. GAGE, water-stage recorder. Datum of gage is sea level (levels by Board of Water Supply, City of New York). Reservoir is formed by an earthfill rockfaced dam. Storage began Sept. 15, 1954. Usable capacity 140,190 mil gal between minimum operating level, elevation, 1,152.0 ft and crest of spillway, elevation, 1,280.0 ft. Capacity: at crest of spillway 149,799 mil gal; at minimum operating level, 9,609 mil gal; at sill of diversion tunnel, elevation, 1,143.0 ft, 6,098 mil gal; in dead storage below release outlet, elevation, 1,126.50 ft, 1,898 mil gal. Figures given herein represent total contents. Reservoir impounds water for diversion through East Delaware Tunnel to Rondout Reservoir on Rondout Creek, in Hudson River basin (see elsewhere in this section), for water supply to City of New York; for release during periods of low flow in the lower Delaware River basin, as directed by the Delaware River Master; and for conservation release. No diversion prior to Jan. 6, 1955. Records provided by New York City Department of Environmental Protection.
- EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 154,027 mil gal, Apr. 5, 1960, elevation, 1,282.27 ft; minimum observed (after first filling), 9,575 mil gal, Dec. 26, 1964, elevation, 1,151.92 ft.
- EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 140,261 mil gal, June 2, elevation, 1,274.73 ft; minimum observed, 79,334 mil gal, Jan. 8, elevation, 1,234.74 ft.
- 01424997 CANNONVILLE RESERVOIR.--Lat 42°03'46", long 75°22'29", Delaware County, Hydrologic Unit 02040101, in emergency gate tower at Cannonville Dam on West Branch Delaware River, and 1.8 mi southeast of Stilesville. DRAINAGE AREA, 454 mi². PERIOD OF RECORD, October 1963 to current year. REVISED RECORDS, WDR NY-71-1: 1966. GAGE, water-stage recorder. Datum of gage is sea level (levels by Board of Water Supply, City of New York). Reservoir is formed by an earthfill rockfaced dam. Storage began Sept. 30, 1963. Usable capacity 95,706 mil gal between minimum operating level, elevation, 1,040.0 ft and crest of spillway, elevation, 1,150.0 ft. Capacity, at crest of spillway, 98,618 mil gal; at minimum operating level, 2,912 mil gal; at mouth of inlet channel to diversion tunnel, elevation, 1,035.0 ft, 1,892 mil gal; in dead storage below release outlet elevation, 1,020.5 ft, 328 mil gal. Figures given herein represent total contents. Impounded water is diverted for New York City water supply via West Delaware Tunnel to Rondout Reservoir in Hudson River basin (see elsewhere in this section); is released in Delaware River for downstream low flow augmentation, as directed by the Delaware River Master; and is released for conservation flow in the Delaware River. No diversion prior to January 29, 1964. Records provided by New York City Department of Environmental Protection.
- EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 109,617 mil gal, Mar. 16, 1986, elevation, 1,156.73 ft; minimum observed (after first filling), 11,901 mil gal, Nov. 7, 1968, elevation, 1,066.24 ft.
- EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 93,294 mil gal, May 1, elevation, 1,146.50 ft; minimum observed, 19,560 mil gal, Dec. 22, elevation, 1,079.46 ft.
- 01428900 PROMPTON RESERVOIR.--Lat 41°35'18", long 75°19'39", Wayne County, Hydrologic Unit 02040103, at dam on West Branch Lackawaxen River, 0.3 mi north of Prompton, 0.4 mi upstream from highway bridge, and 0.5 mi upstream from Van Auken Creek. DRAINAGE AREA, 59.6 mi². PERIOD OF RECORD, December 1960 to current year. GAGE, data collection platform (U.S. Army Corps of Engineers datum). REMARKS.--Reservoir formed by an earth and rockfill dam with ungated bedrock spillway at elevation 1,205.00 ft. Storage began July 1960. Capacity at elevation 1,205.00 ft is 51,700 acre-ft. Ordinary minimum (conservation) pool is 1,125.00 ft, capacity, 3,420 acre-ft. Reservoir is used for flood control and recreation. Figures given herein represent total contents. Regulation is accomplished by discharge through an ungated tunnel.
- EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 8,170 acre-ft, June 29, 1973, elevation, 1,138.40 ft; minimum (after first filling), 2,500 acre-ft, June 5, 1991, elevation, 1,121.46 ft.
- EXTREMES FOR CURRENT YEAR.--Maximum contents, 4,660 acre-ft, Jan. 24, elevation, 1,129.13 ft; minimum contents, 2,900 acre-ft, Aug. 13, elevation, 1,122.86 ft.
- 01429400 GENERAL EDGAR JADWIN RESERVOIR.--Lat 41°36'44", long 75°15'55", Wayne County, Hydrologic Unit 02040103, at dam on Dyberry Creek, 0.4 mi upstream from unnamed tributary, 2.4 mi north of Honesdale, and 2.9 mi upstream from mouth. DRAINAGE AREA, 64.5 mi². PERIOD OF RECORD, October 1959 to current year. GAGE, data collection platform (U.S. Army Corps of Engineers datum). REMARKS.--Reservoir formed by an earth and rockfill dam with ungated concrete spillway at elevation 1,053.00 ft. Storage began October 1959. Capacity at elevation of 1,053.00 ft is 24,500 acre-ft. Reservoir is used for flood control. Figures given herein represent total contents. Regulation is accomplished by discharge through an ungated tunnel. Since Oct. 1, 1996, pool elevations below 990 ft NGVD are not recorded.
- EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 6,520 acre-ft, June 19, 1973, elevation, 1,017.40 ft; minimum contents, no storage many times.
- EXTREMES FOR CURRENT YEAR.--Maximum contents, 940 acre-ft, Jan. 24, elevation, 993.31 ft; minimum contents, no storage many times.
- 01431700 LAKE WALLENPAUPACK.--Lat 41°27'35", long 75°11'10", Wayne County, Hydrologic Unit 02040103, at dam on Wallenpaupack Creek at Wilsonville, 1.2 mi south of Hawley, and 1.5 mi upstream from mouth. DRAINAGE AREA, 228 mi². PERIOD OF RECORD, January 1926 to current year. GAGE, vertical staff. Datum of gage is sea level (levels by Pennsylvania Power and Light Co.). REMARKS.--Lake formed by concrete gravity-type and earthfill dam, with concrete spillway in two sections at elevation 1,176.00 ft. Spillway equipped with 14 ft high roller gate on each section. Storage began Nov. 3, 1925; water in reservoir first reached minimum pool elevation January 1926. Total capacity at elevation 1,190.00 ft (top of gates), is 209,300 acre-ft, of which 108,900 acre-ft, above elevation 1,170.00 ft (minimum pool), is controlled storage. Prior to 1984, minimum pool elevation was 1,160.00 ft. Reservoir is used for generation of hydroelectric power. Figures given herein represent usable contents. Records prior to 1984 included additional usable contents of 48,900 acre-ft.
- COOPERATION.--Records provided by Pennsylvania Power and Light Co.
- EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 129,300 acre-ft, Aug. 19-21, 1955, elevation, 1,193.45 ft; minimum (after first filling), 12,280 acre-ft (old minimum pool), Mar. 28, 1958, elevation, 1,162.60 ft.
- EXTREMES FOR CURRENT YEAR.--Maximum contents, 86,400 acre-ft, May 31, June 1, 6, elevation, 1,186.2 ft; minimum contents, 46,370 acre-ft, Oct. 16-Nov. 6, elevation 1,179.1 ft.
- 01433000 SWINGING BRIDGE RESERVOIR.--Lat 41°34'21", long 74°47'00", Sullivan County, Hydrologic Unit 02040104, at dam on Mongaup River, and 1.8 mi northwest of Fowlersville. DRAINAGE AREA, 116 mi², excluding Cliff Lake, Lebanon Lake, and Toronto Reservoir. PERIOD OF RECORD, January 1930 to current year. REVISED RECORDS, WSP 1552: 1951-54. WDR NY-86-1: 1985. WDR NY-90-1: Drainage area. GAGE, nonrecording gage, daily readings at 0900. Datum of gage is sea level (levels by Orange and Rockland Utilities, Inc.). All capacity figures given herein are based on zero storage at minimum operating pool level, 1,010 ft.
- Reservoir is formed by an earthfill dam. Storage began Jan. 19, 1930. Usable capacity, 1,436.6 mil ft³ between elevations 1,010.0 ft, minimum operating pool, and 1,071.2 ft, top of flashboards. Capacity below elevation 1,010.0 ft, minimum operating pool, about 212.7 mil ft³. Reservoir is used for storage of water for power. Figures given herein represent contents above 1,010.0 ft. Water is received from Cliff Lake, Lebanon Lake, and Toronto Reservoir. Records provided by Orange and Rockland Utilities, Inc.
- EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 1,461.6 mil ft³, Mar. 14, 1977, elevation, 1,071.8 ft; minimum observed (after first filling), -141.4 mil ft³, Dec. 2, 1938, elevation, 987.5 ft.
- EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 1,233.2 mil ft³, Feb. 5, elevation, 1,066.1 ft; minimum observed, 702.0 mil ft³, Sept. 15, elevation, 1,050.3 ft.

RESERVOIRS IN DELAWARE RIVER BASIN--Continued

01433100 TORONTO RESERVOIR.--Lat 41°37'15", long 74°49'55", Sullivan County, Hydrologic Unit 02040104, at dam on Black Lake Creek, and 2.5 mi southeast of village of Black Lake. DRAINAGE AREA, 22.9 mi². PERIOD OF RECORD, January 1926 to current year. REVISED RECORDS, WSP 1552: 1951-54. WSP 1702: 1959 (M). WDR NY-85-1: 1984. WDR NY-86-1: 1985. WDR NY-90-1: Drainage area. GAGE, nonrecording gage, daily readings at 0900. Datum of gage is sea level (levels by Orange and Rockland Utilities, Inc.). All capacity figures given herein are based on zero storage at minimum operating pool level, 1,165.0 ft.

Reservoir is formed by an earthfill dam completed July 24, 1926. Storage began Jan. 13, 1926. Usable capacity 1,098.2 mil ft³ between elevations 1,165.0 ft, minimum operating pool, and 1,220.0 ft, top of permanent flashboards. Capacity below elevation 1,165.0 ft, minimum operating pool, about 26.8 mil ft³. Reservoir is used for storage of water for power. Figures given herein represent contents above 1,165.0 ft. Records provided by Orange and Rockland Utilities, Inc.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 1,171.2 mil ft³, July 20, 1945, elevation, 1,222.0 ft; minimum observed (after first filling), -26.8 mil ft³, Nov. 15, 1928, elevation, 1,144.5 ft.

EXTREMES OF CURRENT YEAR.--Maximum contents observed, 422.2 mil ft³, June 5, elevation, 1,196.0 ft; minimum observed, 10.1 mil ft³, Sept. 13, elevation, 1,167.4 ft.

01433200 CLIFF LAKE.--Lat 41°35'00", long 74°47'40", Sullivan County Hydrologic Unit 02040104, at dam on Black Lake Creek, and 2.5 mi northwest of Fowlersville. DRAINAGE AREA, 6.46 mi², excluding area above Toronto Reservoir. PERIOD OF RECORD, January 1939 to current year. REVISED RECORDS, WSP 1552: 1951-54. WDR NY-75-1: 1974(m). WDR NY-86-1: 1985. GAGE, nonrecording gage, daily readings at 0900. Datum of gage is sea level (levels by Orange and Rockland Utilities, Inc.). All capacity figures given herein are based on zero storage at minimum operating pool level, 1,043.3 ft.

Reservoir is formed by a concrete gravity-type dam. Storage began Jan. 6, 1939. Usable capacity, 136.06 mil ft³ between elevations 1,043.3 ft, minimum operating pool, and 1,072.0 ft, top of permanent flashboards. Capacity below elevation 1,043.3 ft, minimum operating pool, about 6.54 mil ft³. Reservoir is used for storage of water for power. Water is received from Toronto and Lebanon Lake reservoirs and is discharged through a tunnel into Swinging Bridge Reservoir. Figures given herein represent contents above 1,043.3 ft. Records provided by Orange and Rockland Utilities, Inc.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 145.44 mil ft³, July 30, 31, 1945, elevation, 1,073.1 ft; minimum observed (after first filling), about -6.54 mil ft³, Mar. 16, 1963, elevation, 1,038.0 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 90.95 mil ft³, Feb. 5, Mar. 8, elevation, 1,066.1 ft; minimum observed, 15.76 mil ft³, Sept. 13, elevation, 1,050.2 ft.

01435900 NEVERSINK RESERVOIR.--Lat 41°49'27", long 74°38'20", Sullivan County, Hydrologic Unit 02040104, at a gatehouse at Neversink Dam on Neversink River, and 2 mi southwest of Neversink. DRAINAGE AREA, 92.5 mi². PERIOD OF RECORD, June 1953 to current year. REVISED RECORDS, WDR NY-85-1: Drainage area. GAGE, nonrecording gage read daily at 0900. Datum of gage is sea level (levels by Board of Water Supply, City of New York).

Reservoir is formed by an earthfill rockfaced dam. Storage began June 2, 1953. Usable capacity 34,941 mil gal between minimum operating level, elevation, 1,319.0 ft and crest of spillway, elevation, 1,440.0 ft. Capacity at crest of spillway 37,146 mil gal; at minimum operating level, 2,205 mil gal; dead storage below diversion sill and outlet sill, elevation 1,314.0 ft, 1,680 mil gal. Figures given herein represent total contents. Reservoir impounds water for diversion through Neversink-Grahamsville Tunnel to Rondout Reservoir on Rondout Creek, in Hudson River basin, for water supply of City of New York (see elsewhere in this section); for release during periods of low flow in the lower Delaware River basin, as directed by the Delaware River Master; and for conservation release. No diversion prior to Dec. 3, 1953. Records provided by New York City Department of Environmental Protection.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 37,983 mil gal, Apr. 17, 1993, elevation, 1,441.68 ft; minimum observed (after first filling), 1,985 mil gal, Nov. 25, 1964, elevation, 1,316.98 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 33,844 mil gal, June 1, elevation, 1,433.13 ft; minimum observed, 11,300 mil gal, Dec. 23, elevation, 1,369.72 ft.

01447780 FRANCIS E. WALTER RESERVOIR (formerly published as Bear Creek Reservoir).--Lat 41°06'45", long 75°43'15", Luzerne County, Hydrologic Unit 02040106, at dam on Lehigh River, 2,200 ft downstream from Bear Creek, and 5.0 mi northeast of White Haven. DRAINAGE AREA, 289 mi². PERIOD OF RECORD, February 1961 to current year. GAGE, water-stage recorder (U.S. Army Corps of Engineers datum).

REMARKS.--Reservoir formed by an earthfill embankment covered with a rock shell, with concrete spillway at elevation 1,450.0 ft. Storage began Feb. 17, 1961; reservoir first reached conservation pool in June 1961. Total capacity (elevation 1,450.0 ft) is 110,700 acre-ft of which 108,700 acre-ft is controlled storage above elevation 1,300.0 ft, (conservation pool). Dead storage is 2,000 acre-ft. Flow regulated by three gates and low-flow by-pass system. Reservoir is used for flood control and recreation. Satellite telemetry at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 62,100 acre-ft, Sept. 28, 1985, elevation, 1,417.08 ft; minimum contents (after establishment of conservation pool), 980 acre-ft, July 6, 1982, elevation, 1,287.70 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 29,720 acre-ft, Sept. 24, elevation, 1,383.34 ft; minimum contents, 1,420 acre-ft, Mar. 8, elevation, 1,295.03 ft.

01449400 PENN FOREST RESERVOIR.--Lat 40°55'45", long 75°33'45", Carbon County, Hydrologic Unit 02040106, at dam on Wild Creek, 0.7 mi upstream from hatchery, 2.6 mi upstream from Wild Creek Dam, 4.4 mi upstream from mouth, and 10.0 mi northeast of Palmerton. DRAINAGE AREA, 16.5 mi². PERIOD OF RECORD, October 1958 to current year. GAGE, water-stage recorder. Datum of gage is sea level (levels by city of Bethlehem).

REMARKS.--Reservoir formed by an earthfill dam with ungated concrete spillway at elevation 1,000.00 ft (capacity, 19,980 acre-ft). Storage began October 1958. Reservoir is used for municipal water supply. Regulation by valves on pipe through dam. Figures given herein represent total contents and include diversion since October 1969 from Tunkhannock Creek Basin to Wild Creek Basin. Reservoir out of service all year.

COOPERATION.--Records provided by city of Bethlehem.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 20,800 acre-ft, Apr. 16, 1983, elevation, 1,001.69 ft; minimum contents, 0 acre-ft, many days during 1996, 1997, and 1998 water years, elevation, 890.60 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 12,890 acre-ft, June 7, elevation, 982.63 ft; minimum contents, 0 acre-ft, Oct. 1 to Jan. 25.

01449700 WILD CREEK RESERVOIR.--Lat 40°53'50", long 75°33'50", Carbon County, Hydrologic Unit 02040106, at dam on Wild Creek, 1.6 mi upstream from mouth, 2.4 mi south of hatchery, and 7.5 mi northeast of Palmerton. DRAINAGE AREA, 22.2 mi². PERIOD OF RECORD, January 1941 to current year. GAGE, nonrecording gage. Datum of gage is sea level (levels by city of Bethlehem).

REMARKS.--Reservoir formed by earthfill dam with concrete ungated spillway at elevation 820.00 ft. Storage began January 27, 1941; reservoir first reached minimum contents pool elevation in February 1941. Total capacity at elevation 820.00 ft is 12,500 acre-ft of which 12,000 acre-ft is controlled storage. Reservoir is used for municipal water supply. Regulation by valves on pipe through dam. Figures given herein represent usable contents and include diversion since October 1969 from Tunkhannock Creek Basin to Wild Creek Basin.

COOPERATION.--Records provided by city of Bethlehem.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 12,880 acre-ft, May 23, 1942, elevation, 822.93 ft; minimum contents (after first filling), 2,680 acre-ft, Nov. 15, 1966, elevation, 774.10 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 9,650 acre-ft, Oct. 1, elevation, 811.20 ft; minimum contents 7,150 acre-ft, Jan. 14, elevation 800.58 ft.

RESERVOIRS IN DELAWARE RIVER BASIN--Continued

01449790 BELTZVILLE LAKE.--Lat 40°50'56", long 75°38'19", Carbon County, Hydrologic Unit 02040106, at dam on Pohopoco Creek, 0.4 mi upstream from gaging station on Pohopoco Creek, 0.6 mi upstream from Sawmill Run, and 2.3 mi northeast of Parryville. DRAINAGE AREA, 96.3 mi². PERIOD OF RECORD, February 1971 to current year. GAGE, water-stage recorder (U.S. Army Corps of Engineers datum).

REMARKS.--Lake formed by an earth and rockfill dam with ungated, partially lined spillway at an elevation of 651.00 ft. Storage began Feb. 8, 1971. Capacity at elevation 651.00 ft is 68,300 acre-ft. Ordinary minimum contents (conservation) pool elevation is 628.00 ft, capacity, 41,250 acre-ft. Dead storage is 1,390 acre-ft. Lake is used for recreation, flood control, low-flow augmentation, and water supply. Figures given herein represent total contents. Regulation is accomplished by a multi-level water-quality outlet system, and two flood-control gates.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 49,730 acre-ft, Jan. 29, 1976, elevation, 636.30 ft; minimum contents, 15,110 acre-ft, Mar. 31, 1983, elevation, 588.79 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 44,320 acre-ft, Jan. 25, elevation, 631.12 ft; minimum contents, 31,790 acre-ft, Sept. 15, elevation, 616.92 ft.

01455221 MERRILL CREEK RESERVOIR.--Lat 40°43'42", long 75°06'11", Warren County, Hydrologic Unit 02040105, at dam on Merrill Creek in Harmony Township, 4.5 mi northeast of Phillipsburg, and 2.8 mi upstream from mouth. DRAINAGE AREA, 3.13 mi². PERIOD OF RECORD, March 1988 to current year. GAGE, measurement from reference point. Datum of gage is sea level.

REMARKS.--Reservoir formed by zoned, compacted, earth-rockfill dam constructed in November 1987. Storage began March 1988. Total capacity at spillway elevation, 16,617,000,000 gal, elevation 929.0 ft. Usable capacity, 15,6654,000,000 gal. Reservoir used for storage of water pumped from the Delaware River through a 57-inch diameter pipe 17,000 ft long. Releases are made into the Delaware River through the same pipe. Reservoir is used to augment low flow in the Delaware River. Conservation release of 3 ft³/s made to Merrill Creek.

COOPERATION.--Records provided by the Merrill Creek Reservoir Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 16,710,000,000 gal, Jan. 15, 1990, elevation, 923.3 ft; minimum (after first filling), 14,076,000,000 gal, Jan. 23, 1992, elevation 910.40 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 15,600,000,000 gal, Apr. 24, elevation 922.57 ft; minimum, 14,367,000,000 gal, Jan. 8, elevation 916.41 ft.

01455400 LAKE HOPATCONG.--Lat 40°55'00", long 74°39'50", Morris County, Hydrologic Unit 02040105, in gatehouse of Lake Hopatcong Dam on Musconetcong River at Landing. DRAINAGE AREA, 25.3 mi². PERIOD OF RECORD, February 1887 to current year. Monthend contents only prior to October 1950, published in WSP 1302. REVISED RECORDS, WDR NJ-82-2: Drainage area; WDR NJ-83-2: Corrections 1981 (m/m). GAGE, staff gage. Prior to June 24, 1928, daily readings obtained by measuring from high-water mark to water surface converted to gage height, present datum. Datum of gage is 914.57 ft sea level.

REMARKS.--Lake is formed by concrete spillway and earthfill dam completed about 1828. Crest of spillway was lowered 0.11 ft in 1925. Usable capacity, 7,459,000,000 gal between (gage height -2.6 ft, sills of gates and 9.00 ft, crest of spillway). Flow regulated by four gates (3 by 5 ft), also by one 24-inch pipe with gate valve to recreation fountain 250 ft downstream from dam. Dead storage, about 8,117,000,000 gal. Figures given herein represent usable capacity. Lake used for recreation.

COOPERATION.--Records provided by New Jersey Department of Environmental Protection.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 8,777,000,000 gal, August 19, 1955, gage height, 10.55 ft; minimum, 1,525,000,000 gal, Dec. 29, 1960, gage height, 0.65 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 7,711,000,000 gal, Mar. 30-31, and Apr. 5, 12, 13, 24, gage height, 9.30 ft; minimum, 5,583,000,000 gal, Dec. 29 and Jan. 1, 2, gage height, 6.68 ft.

01459350 NOCKAMIXON RESERVOIR.--Lat 40°28'13", long 75°11'10", Bucks County, Hydrologic Unit 02040105, at dam on Tohickon Creek, 6.2 mi upstream from gaging station on Tohickon Creek, 1.3 mi east of Ottsville, and 2.9 mi upstream from Mink Run. DRAINAGE AREA.--73.3 mi². PERIOD OF RECORD.--December 1973 to current year. GAGE.--Water stage recorder. Datum of gage is sea level (levels by Pennsylvania Department of Environmental Protection).

REMARKS.--Reservoir formed by earthfill dam with concrete spillway at elevation 395.0 ft. Storage began December 1973. Total capacity is 66,500 acre-ft at elevation 410 ft. Reservoir is used primarily for recreation, but can be used for water supply and flood control.

COOPERATION.--Records furnished by Pennsylvania Department of Environmental Protection.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 45,390 acre-ft, Sept. 17, 1999, elevation, 398.50 ft; minimum contents (after first filling), 15,900 acre-ft, around Dec. 31, 1975, elevation, 372.78 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents 45,390 acre-ft, Sept. 17, elevation, 398.50 ft; minimum contents, 38,520 acre-ft, Oct. 1-Dec. 21, elevation, 393.80 ft.

01469200 STILL CREEK RESERVOIR.--Lat 40°51'25", long 75°59'30", Schuylkill County, Hydrologic Unit 02040106, at dam on Still Creek, 1.0 mi upstream from mouth, and 2.3 mi north of Hometown. DRAINAGE AREA, 7.19 mi². PERIOD OF RECORD, January 1933 to current year. GAGE, nonrecording gage. Datum of gage is sea level (levels by Panther Valley Water Co.).

REMARKS.--Reservoir formed by earthfill dam with ungated concrete spillway at elevation 1,182.00 ft. Storage began February 1933. Capacity at elevation 1,182.00 ft is 8,290 acre-ft. Reservoir is used for municipal water supply. Figures given herein represent total contents. Regulation by valves on pipe through dam.

COOPERATION.--Records provided by the borough of Tamaqua.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 8,570 acre-ft, Oct. 15, 1955, elevation, 1,182.92 ft, but may have been greater during 1950 or 1951 water years; minimum contents (after first filling), 588 acre-ft, Dec. 8, 1944, elevation, 1,136.70 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 8,340 acre-ft, Feb. 28, elevation, 1,182.2 ft; minimum contents, 7,520 acre-ft, Dec. 31, elevation, 1,179.2 ft.

01470870 BLUE MARSH LAKE.--Lat 40°22'45", long 76°01'59", Berks County, Hydrologic Unit 02040203, at dam on Tulpehocken Creek, 0.8 mi upstream from gaging station on Tulpehocken Creek (station 01470960), 1.0 mi northeast of Blue Marsh, 1.9 mi upstream from Rebers Bridge, and 5.1 mi southeast of Bernville. DRAINAGE AREA, 175 mi². PERIOD OF RECORD, April 1979 to current year. GAGE, water-stage recorder (U.S. Army Corps of Engineers datum).

REMARKS.--Lake formed by earthfill dam with ungated concrete spillway at elevation 307.00 ft. Storage began April 23, 1979. Capacity at elevation 307.00 ft is 50,000 acre-ft. Dead storage is 3,000 acre-ft. Lake is used for flood control, water supply, and recreation. Figures herein represent total contents. Satellite telemetry at station.

COOPERATION.--Records provided by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 39,480 acre-ft, Apr. 17, 1983, elevation, 301.65 ft; minimum contents (after first filling), 13,150 acre-ft, Mar. 18, 1994, elevation, 279.88 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 29,150 acre-ft, Sept. 18, elevation, 295.00 ft; minimum contents, 15,930 acre-ft, Sept. 5, elevation, 283.18 ft.

RESERVOIRS IN DELAWARE RIVER BASIN--Continued

01472200 GREEN LANE RESERVOIR.--Lat 40°20'30", long 75°28'45", Montgomery County, Hydrologic Unit 02040203, at dam on Perkiomen Creek, 0.4 mi west of Green Lane, and 2.1 mi upstream from Unami Creek. DRAINAGE AREA, 70.9 mi². PERIOD OF RECORD, December 1956 to current year. GAGE, water-stage recorder. Datum of gage is sea level (levels by Philadelphia Suburban Water Co.).

REMARKS.--Reservoir formed by concrete, gravity-type dam with ungated spillway at elevation 286.00 ft. Storage began December 21, 1956. Capacity at elevation 286.00 ft is 13,430 acre-ft. Reservoir is used for municipal water supply. Figures given herein represent total contents. Regulation by valves on pipe through dam.

COOPERATION.--Records provided by Philadelphia Suburban Water Co.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 17,030 acre-ft, June 23, 1972, elevation, 290.05 ft; minimum contents (after first filling), 1,270 acre-ft, Aug. 25, 1957, elevation, 251.60 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 14,120 acre-ft, March 22, elevation, 286.77 ft; minimum contents, 9,240 acre-ft, Sept. 15, elevation, 280.11 ft.

01472618 DISTRIBUTARY FROM BRADSHAW RESERVOIR.--Lat 40°24'50", long 75°13'13", Bucks County, Hydrologic Unit 02040203, about 0.5 mi upstream from station 01472620, East Branch Perkiomen Creek near Dublin, Pa.

REMARKS.--Water from the Delaware River near Point Pleasant is diverted to Bradshaw Reservoir located in Geddes Run Basin on Tohickon Creek, a tributary to the Delaware River, for consumptive use by the Philadelphia Electric Company. Figures in this table represent the equivalent monthly mean streamflow, in cubic feet per second, diverted from Bradshaw Reservoir to the East Branch Perkiomen Creek. COOPERATION.--Records provided by Philadelphia Electric Company.

01480399 CHAMBERS LAKE RESERVOIR.--40°01'40", long 75°51'03", Chester County, Hydrologic Unit 02040205, at Hibernia Dam on Birch Run, 0.6 mi upstream from gaging station on Birch Run (station 01480400), 0.9 mi upstream from mouth, and 1.4 mi northwest of Wagontown. DRAINAGE AREA, 4.5 mi². PERIOD OF RECORD, May 1998 to current year. GAGE, non-recording gage. Manual measurement from top of concrete riser at upstream flank of Hibernia Dam. Datum of gage is sea level (levels by Chester County Water Resources Authority, Chester County Parks and Recreation Department).

REMARKS.--Reservoir formed by earthfill dam with principle spillway at elevation 587.5 ft and dam crest at elevation 596.5 ft. Normal elevation 580 ft, capacity 1,226 acre feet. Reservoir is used for water supply, flood control, and recreation. Figures given herein represent total contents.

COOPERATION.--Records provided by Chester County Water Resources Authority, in cooperation with City of Coatesville Authority and Chester County Parks and Recreation Department.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,240 acre-ft, Mar. 9, 1998, elevation, 580.67 ft; minimum contents, 659 acre-ft, Dec. 28, 1998, elevation, 572.42 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,199 acre-ft, Mar. 16, elevation, 580.25 ft; minimum contents, 659 acre-ft, Dec. 28 elevation, 572.42 ft.

01480684 MARSH CREEK RESERVOIR.--Lat 40°03'24", long 75°43'06", Chester County, Hydrologic Unit 02040205, on right bank at dam on Marsh Creek, 0.3 mi upstream from mouth, and 3.2 mi north of Downingtown. DRAINAGE AREA, 20.1 mi². PERIOD OF RECORD, November 1973 to current year. GAGE, Water-stage recorder. Datum of gage is sea level (levels by Pennsylvania Department of Environmental Protection).

REMARKS.--Reservoir formed by earthfill dam with concrete spillway at elevation 359.5 ft. Storage began November 1973. Total capacity, 22,190 acre-ft, elevation 373 ft. Reservoir is used for water supply, flood control, and recreation. Figures given herein represent contents above lowest gate sill at elevation 289.5 ft.

COOPERATION.--Records provided by Pennsylvania Department of Environmental Protection.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 16,500 acre-ft, Sept. 18, 1999, elevation, 363.49 ft; minimum contents (after first filling), 10,410 acre-ft, Mar. 3, 1976, elevation, 351.75 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 16,500 acre-ft, Sept. 18, elevation, 363.71 ft; minimum contents, 13,120 acre-ft, Jan. 10, elevation, 357.43 ft.

MONTH-END ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

Date	Elevation (feet)††	Contents (million gallons)	Change in contents (equiv- alent in ft ³ /s)	Elevation (feet)††	Contents (million gallons)	Change in contents (equiv- alent in ft ³ /s)	Elevation (feet)†	Contents (acre- feet)	Change in contents (equiv- alent in ft ³ /s)
01416900 Pepacton Reservoir				01424997 Cannonsville Reservoir			01428900 Prompton Reservoir		
Sept. 30.....	1,261.03	117,101	--	1,115.94	53,046	--	1,123.47	3,070	--
Oct. 31.....	1,254.03	106,161	-546	1,103.68	39,827	-660	1,123.66	3,120	+0.8
Nov. 30.....	1,246.23	94,725	-590	1,087.23	25,149	-757	1,123.47	3,070	-0.8
Dec. 31.....	1,236.81	81,977	-636	1,080.09	19,971	-258	1,123.60	3,110	+0.7
CAL YR 1998			+12.6			-100			-0.7
Jan. 31.....	1,253.62	105,541	+1,176	1,116.15	53,291	+1,663	1,125.48	3,630	+8.5
Feb. 28.....	1,258.89	113,691	+450	1,123.94	62,594	+514	1,125.41	3,620	-0.2
Mar. 31.....	1,267.80	128,256	+727	1,138.31	81,452	+941	1,126.30	3,860	+3.9
Apr. 30.....	1,274.19	139,304	+570	1,146.50	93,294	+611	1,125.23	3,560	-5.0
May 31.....	1,274.67	140,155	+42.5	1,145.28	91,438	-92.6	1,125.10	3,530	-0.5
June 30.....	1,270.11	132,193	-411	1,136.65	79,158	-633	1,123.53	3,090	-7.4
July 31.....	1,266.00	125,234	-347	1,126.90	66,308	-641	1,123.01	2,940	-2.4
Aug. 31.....	1,256.30	109,641	-778	1,105.23	41,377	-1,244	1,123.02	2,940	0
Sept. 30.....	1,257.73	111,867	+115	1,107.84	44,119	+141	1,124.81	3,450	+8.6
WTR YR 1999			-22.2			-37.8			+0.5

DELAWARE RIVER BASIN

RESERVOIRS IN DELAWARE RIVER BASIN--Continued

MONTH-END ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

Date	Elevation (feet) †	Contents (acre- feet)	Change in contents (equiv- alent in ft ³ /s)	Elevation (feet) †	Contents (acre- feet)	Change in contents (equiv- alent in ft ³ /s)	Elevation (feet) *	Contents (million ft ³)	Change in contents (equiv- alent in ft ³ /s)
01429400 General Edgar Jadwin Reservoir				01431700 Lake Wallenpaupack			01433000 Swinging Bridge Reservoir		
Sept. 30.....	--	0	--	1,180.0	52,700	--	1,058.3	952.2	--
Oct. 31.....	--	0	0	1,179.1	46,370	-103	1,060.9	1,041.8	+33.5
Nov. 30.....	--	0	0	1,179.6	49,780	+57.3	1,057.5	925.5	-44.9
Dec. 31.....	--	0	0	1,180.2	53,600	+62.1	1,053.0	782.1	-53.5
CAL YR 1998			0			-18.1			-12.1
Jan. 31.....	--	0	0	1,185.5	82,790	+475	1,065.3	1,202.7	+157
Feb. 28.....	--	0	0	1,184.0	73,830	-161	1,062.1	1,084.5	-48.9
Mar. 31.....	--	0	0	1,185.7	83,810	+162	1,064.8	1,183.8	+37.1
Apr. 30.....	--	0	0	1,185.1	80,790	-50.8	1,061.7	1,070.2	-43.8
May 31.....	--	0	0	1,186.2	86,400	+91.2	1,060.0	1,010.3	-22.4
June 30.....	--	0	0	1,185.1	80,790	-94.3	1,054.9	841.2	-65.2
July 31.....	--	0	0	1,182.6	65,620	-247	1,052.0	751.9	-33.4
Aug. 31.....	--	0	0	1,181.4	59,310	-103	1,051.3	731.2	-7.7
Sept. 30.....	--	0	0	1,182.7	66,180	+115	1,058.8	969.1	+91.8
WTR YR 1999			0			+18.6			+0.5
Date	Elevation (feet) *	Contents (million ft ³)	Change in contents (equiv- alent in ft ³ /s)	Elevation (feet) *	Contents (million ft ³)	Change in contents (equiv- alent in ft ³ /s)	Elevation (feet) ††	Contents (million gallons)	Change in contents (equiv- alent in ft ³ /s)
01433100 Toronto Reservoir				01433200 Cliff Lake			01435900 Neversink Reservoir		
Sept. 30.....	1,190.0	298.5	--	1,060.1	54.50	--	1,403.03	21,422	
Oct. 31.....	1,178.9	117.5	-67.6	1,061.9	64.49	+3.7	1,389.08	16,722	-235
Nov. 30.....	1,176.1	81.3	-14.0	1,057.4	41.52	-8.9	1,381.78	14,534	-113
Dec. 31.....	1,174.4	62.3	-7.1	1,053.0	24.56	-6.3	1,371.31	11,703	-141
CAL YR 1998			-1.7			-1.7			-32.1
Jan. 31.....	1,182.6	172.8	+41.3	1,064.2	78.54	+20.2	1,397.44	19,456	+387
Feb. 28.....	1,187.0	245.0	+29.9	1,062.4	67.46	-4.6	1,399.97	20,331	+48.4
Mar. 31.....	1,193.4	365.7	+45.1	1,065.0	83.66	+6.0	1,417.37	26,953	+331
Apr. 30.....	1,195.0	400.0	+13.2	1,061.8	63.92	-7.6	1,426.34	30,762	+196
May 31.....	1,195.9	420.0	+7.5	1,060.0	53.96	-3.7	1,433.13	33,844	+154
June 30.....	1,192.7	351.2	-26.5	1,056.3	36.89	-6.6	1,428.09	31,538	-119
July 31.....	1,181.8	160.3	-71.3	1,052.4	22.58	-5.4	1,400.59	20,550	-548
Aug. 31.....	1,168.9	17.7	-53.2	1,051.2	18.78	-1.4	1,383.33	14,983	-278
Sept. 30.....	1,170.6	28.4	+4.1	1,058.8	47.92	+11.2	1,384.80	15,417	+22.4
WTR YR 1999			-8.6			-0.2			-25.5
Date	Elevation (feet) †	Contents (acre- feet)	Change in contents (equiv- alent in ft ³ /s)	Elevation (feet) †	Contents (acre- feet)	Change in contents (equiv- alent in ft ³ /s)	Elevation (feet) †	Contents (acre- feet)	Change in contents (equiv- alent in ft ³ /s)
01447780 Francis E. Walter Lake				01449400 Penn Forest Reservoir			01449700 Wild Creek Reservoir		
Sept. 30.....	1,300.54	1,840	--	--	0	--	811.33	9,690	--
Oct. 31.....	1,301.06	1,890	+0.8	--	0	0	808.88	9,060	-10.2
Nov. 30.....	1,304.67	2,210	+5.4	--	0	0	805.04	8,180	-14.8
Dec. 31.....	1,300.24	1,820	-6.3	--	0	0	801.04	7,260	-15.0
CAL YR 1998			+0.1			0			-0.4
Jan. 31.....	1,302.33	2,000	+2.9	933.20	1,990	+32.4	808.48	8,970	+27.8
Feb. 28.....	1,301.96	1,970	-0.5	957.03	5,780	+68.2	808.05	8,870	-1.8
Mar. 31.....	1,301.05	1,890	-1.3	971.90	9,440	+59.5	806.96	8,620	-4.1
Apr. 30.....	1,300.69	1,860	-0.5	980.28	12,060	+44.0	805.50	8,280	-5.7
May 31.....	1,303.94	2,150	+4.7	982.52	12,850	+12.8	805.65	8,320	+0.7
June 30.....	1,298.71	1,700	-7.6	980.88	12,270	-9.7	805.76	8,340	+0.3
July 31.....	1,301.74	1,950	+4.1	976.72	10,900	-22.3	805.88	8,370	+0.5
Aug. 31.....	1,311.42	2,980	+16.8	973.18	9,810	-17.7	805.21	8,220	-2.4
Sept. 30.....	1,377.83	25,830	+384	972.93	9,740	-1.2	805.36	8,250	+0.5
WTR YR 1999			+33.1			+13.5			-2.0

RESERVOIRS IN DELAWARE RIVER BASIN--Continued

MONTH-END ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

Date	Eleva- tion (feet)†	Contents (acre- feet)	Change in contents (equiv- alent in ft ³ /s)	Eleva- tion (feet)†	Contents (million gallons)	Change in contents (equiv- alent in ft ³ /s)	Eleva- tion (feet)†	Contents (million gallons)	Change in contents (equiv- alent in ft ³ /s)
01449790 Beltzville Lake				01455221 Merrill Creek Reservoir			01455400 Lake Hopatcong		
Sept. 30.....	623.49	37,120	--	920.87	16,191	--	7.88	6,539	--
Oct. 31.....	622.31	36,110	-16.4	920.58	15,196	-49.7	7.72	6,409	-6.5
Nov. 30.....	621.92	35,780	-5.5	920.07	15,094	-5.3	7.10	5,913	-25.6
Dec. 31.....	621.77	35,650	-2.1	916.80	14,444	-32.4	6.70	5,599	-15.7
CAL YR 1998			-7.6			-7.0			+6.1
Jan. 31.....	627.84	41,100	+88.6	916.91	14,465	+1.0	7.56	6,280	+34.0
Feb. 28.....	628.07	41,320	+4.0	916.92	14,467	+1	6.96	5,803	-26.4
Mar. 31.....	627.99	41,240	-1.3	921.14	15,309	+42.0	9.30	7,711	+95.2
Apr. 30.....	627.98	41,230	-0.2	922.50	15,586	+14.3	9.22	7,644	-3.5
May 31.....	628.35	41,580	+5.7	922.35	15,555	-1.5	9.12	7,560	-4.2
June 30.....	628.28	41,520	-1.0	921.83	15,449	-5.5	8.64	7,161	-20.6
July 31.....	622.38	36,170	-87.0	920.95	15,271	-8.9	7.92	6,571	-29.4
Aug. 31.....	618.02	32,620	-57.7	920.34	15,148	-6.1	7.52	6,248	-16.1
Sept. 30.....	619.85	34,080	+24.5	921.09	15,299	+7.8	9.26	7,677	+73.7
WTR YR 1999			-4.2			-3.8			+4.8
Date	Eleva- tion (feet)†	Contents (acre- feet)	Change in contents (equiv- alent in ft ³ /s)	Eleva- tion (feet)†	Contents (acre- feet)	Change in contents (equiv- alent in ft ³ /s)	Eleva- tion (feet)†	Contents (acre- feet)	Change in contents (equiv- alent in ft ³ /s)
01459350 Nockamixon Reservoir				01469200 Still Creek Reservoir			01470870 Blue Marsh Lake		
Sept. 30.....	393.30	37,820	--	1,180.3	7,820	--	285.47	18,080	--
Oct. 31.....	393.80	38,520	0	1,180.2	7,800	-0.3	285.00	17,620	-7.5
Nov. 30.....	393.80	38,520	0	1,179.5	7,600	-3.4	284.26	16,920	-11.8
Dec. 31.....	394.65	39,700	+19.2	1,179.2	7,520	-1.3	284.89	17,520	+9.8
CAL YR 1998			+0.9			-0.6			-0.2
Jan. 31.....	395.65	41,100	+22.8	1,182.1	8,320	+13.0	284.73	17,360	-2.6
Feb. 28.....	395.75	41,250	+2.7	1,182.2	8,340	+0.4	285.43	18,040	+12.2
Mar. 31.....	396.15	41,820	+9.3	1,182.2	8,340	0	285.27	17,880	-2.6
Apr. 30.....	395.05	40,270	-26.0	1,182.1	8,320	-0.3	290.13	23,050	+86.9
May 31.....	394.50	39,490	-12.7	1,182.1	8,320	0	290.04	22,940	-1.8
June 30.....	394.30	39,220	-4.5	1,181.8	8,230	-1.5	289.86	22,740	-3.4
July 31.....	394.35	39,280	+1.0	1,181.3	8,100	-2.1	285.05	17,670	-82.5
Aug. 31.....	395.15	40,410	+18.4	1,180.7	7,930	-2.8	283.34	16,070	-26.0
Sept. 30.....	397.80	44,300	+65.4	1,181.3	8,100	+2.9	290.01	22,910	+115
WTR YR 1999			+9.0			+0.4			+6.7
Date	Eleva- tion (feet)†	Contents (acre- feet)	Change in contents (equiv- alent in ft ³ /s)	Eleva- tion (feet)†	Contents (acre- feet)	Change in contents (equiv- alent in ft ³ /s)	Eleva- tion (feet)†	Contents (acre- feet)	Change in contents (equiv- alent in ft ³ /s)
01472200 Green Lane Reservoir				01480399 Chambers Lake Reser- voir			01480684 Marsh Creek Reservoir		
Sept. 30.....	283.15	11,140	--	575.92	884	--	359.28	14,060	--
Oct. 31.....	284.78	12,370	+20.0	574.79	805	-1.3	359.65	14,270	+3.4
Nov. 30.....	283.13	11,130	-20.8	573.67	729	-1.3	358.95	13,880	-6.6
Dec. 31.....	281.31	9,950	-19.2	572.42	659	-1.2	358.26	13,540	-5.5
CAL YR 1998			-4.7			-3.35			+0.5
Jan. 31.....	285.96	13,400	+56.1	578.50	1,075	+6.8	357.58	13,200	-5.5
Feb. 28.....	285.95	13,390	-0.2	580.20	1,194	+2.1	358.35	13,580	+6.8
Mar. 31.....	285.99	13,420	+0.5	580.20	1,194	0	360.15	14,540	+15.6
Apr. 30.....	285.96	13,400	-0.3	580.10	1,184	-1.7	360.15	14,540	0
May 31.....	285.90	13,340	-1.0	580.10	1,184	0	360.42	14,690	+2.4
June 30.....	285.12	12,650	-11.6	579.30	1,129	-92	360.07	14,500	-3.2
July 31.....	282.80	10,900	-28.5	577.40	992	-2.2	359.25	14,050	-7.3
Aug. 31.....	281.25	9,910	-16.1	573.40	711	-4.6	358.61	13,710	-5.5
Sept. 30.....	286.10	13,520	+60.7	580.20	1,194	+8.1	360.37	14,660	+16.0
WTR YR 1999			+3.3			+4.3			+0.8

* Elevation at 0900 on the first day of the following month.

† Elevation at 2400 on the last day of each month.

†† Elevation at daily reading on the first day of the following month.

DELAWARE RIVER BASIN

DIVERSIONS AND WITHDRAWALS

WITHDRAWALS FROM THE DELAWARE RIVER BASIN

01415200 Diversion from Pepacton Reservoir (see preceding pages) on East Branch Delaware River to Rondout Reservoir on Rondout Creek, in Hudson River basin, for municipal supply of City of New York. No diversion prior to Jan. 6, 1955. Records provided by Bureau of Water Resources Development and Department of Environmental Protection, City of New York.

REVISED RECORDS, WDR NY-71-1: 1970. WDR NY-81-1: 1980.

014239000 Diversion from Cannonsville Reservoir (see preceding pages) on West Branch Delaware River to Rondout Reservoir on Rondout Creek, in Hudson River basin, for municipal supply of City of New York. No diversion prior to Jan. 29, 1964. Records provided by Bureau of Water Resources Development and Department of Environmental Protection, City of New York.

REVISED RECORDS, WDR NY-81-1: 1980.

01435800 Diversion from Neversink Reservoir (see preceding pages) on Neversink River to Rondout Reservoir on Rondout Creek, in Hudson River basin, for municipal supply of City of New York. No diversion prior to Dec. 3, 1953. Records provided by Bureau of Water Resources Development and Department of Environmental Protection, City of New York.

REVISED RECORDS, WDR NY-82-1: 1976, 1977.

01436520 Village of Woodridge, NY, diverts water from East Pond Reservoir, tributary to Neversink River, for municipal supply outside of basin. Village of Woodridge has estimated that this year virtually all the withdrawal from East Pond Reservoir was returned to the Neversink River.

01437360 Diversion from Bear Swamp Reservoir, NY, tributary to Neversink River, by the New York State Training School, Otisville, NY, for water supply outside of basin. Records provided by Delaware River Basin Commission. No more diversion as of June 10, 1999; plant closed down.

01447750 Diversion from Bear Creek, PA, tributary to Lehigh River, by Pennsylvania American Water Company for water supply outside of basin. Records provided by Delaware River Basin Commission.

01448830 Diversion from Hazle Creek Watershed by Hazleton Joint Sewerage Authority for municipal water supply. Waste effluent from the municipal water system is released to the Susquehanna River. Records provided by Delaware River Basin Commission.

01460440 Diversion by Delaware and Raritan Canal from Delaware River at Raven Rock, for municipal and industrial use. Water is discharged into the Raritan River at New Brunswick. Records of discharge are collected on the Delaware and Raritan Canal at Port Mercer since Aug. 1, 1990 (see station 01460440). Prior to Aug. 1, 1990, records of discharge were collected at Kingston.

DIVERSION, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

MONTH	WITHDRAWALS BY CITY OF NEW YORK		
	01415200 Pepacton Reservoir	01423900 Cannonsville Reservoir	01435800 Neversink Reservoir
October	620	163	293
November	654	54.9	168
December	798	0.0	210
CAL YR 1998	486	118	228
January	290	0.0	62.8
February	233	290	244
March	300	314	0.0
April	225	386	40.8
May	405	462	0.0
June	509	363	127
July	689	29.9	531
August	764	120	251
September	582	0.0	217
WTR YR 1999	508	181	179

MISCELLANEOUS WITHDRAWALS FROM BASIN, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

MONTH	01460440 Delaware and Raritan Canal			
	01437360 Bear Swamp Reservoir	01447750 Bear Creek	01448830 Hazle Creek	01460440 Delaware and Raritan Canal
October	0	0	8.69	155
November	0	0	8.44	152
December	0	0	9.16	135
CAL YR 1998	.17	0	7.18	137
January	0	0	8.63	102
February	0	0	6.02	126
March	0	0	5.06	127
April	0	0	5.47	145
May	0	0	7.64	151
June	0	0	8.98	155
July	0	0	9.49	159
August	0	0	8.99	144
September	0	2.05	7.49	139
WTR YR 1999	0	.17	7.86	141

DIVERSIONS WITHIN THE DELAWARE RIVER BASIN

0146572 Diversion from Delaware River at Brainards, NJ to Merrill Creek Reservoir for storage to augment low flow in the Delaware River. There is a conservation release of 3 ft³/s to lower Merrill Creek, which eventually reaches the Delaware River. Releases other than the conservation release are designated by a minus (-) sign. Records provided by Merrill Creek Reservoir Project.

01459005 Diversion from the Delaware River at Point Pleasant, PA by Philadelphia Electric Company to Bradshaw Reservoir on the East Branch Perkiomen Creek, tributary to Schuylkill River, to supplement flow to Limerick Power Station. Diversion began August 1989. Records provided by the Delaware River Basin Commission.

01463480 Diversion from the Delaware River at the Morrisville Filtration Plant, by the Borough of Morrisville, PA for municipal supply. The water withdrawn at this site is returned to the basin after treatment, only slightly diminished by consumptive uses and losses in transmission. Records provided by the Borough of Morrisville, PA.

01463490 Diversion from the Delaware River just above the Trenton gaging station by the city of Trenton, NJ for municipal supply. The water being withdrawn is returned to the basin after treatment only slightly diminished by consumptive uses and losses in transmission. Records provided by the City of Trenton. REVISED RECORDS.--WDR NJ-82-2: Station number.

01466899 Diversion from the Delaware River just above New Lisbon gaging station by Fort Dix, NJ, for municipal supply. The water being withdrawn at this intake is returned to the basin after treatment only slightly diminished by consumptive uses and losses in transmission. Records provided by the Fort Dix Directorate of Public Works. Diversions started in 1935.

01467030 Diversion from the Delaware River at the Torresdale Intake, by the City of Philadelphia, PA for municipal supply. The water being withdrawn at this intake is returned to the basin after treatment only slightly diminished by consumptive uses and losses in transmission. Records provided by the Delaware River Basin Commission.

01474500 Diversion from the Schuylkill River at the Belmont and Queen Lane Intakes, by the City of Philadelphia, PA for municipal supply. The water being withdrawn at these intakes is returned after treatment within the Delaware River basin only slightly diminished by consumptive uses and losses in transmission. Records provided by the Delaware River Basin Commission.

WITHDRAWALS, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

MONTH	0146572 Merrill Creek Reservoir	01459005 Point Pleasant	01463480 Borough of Morrisville	01463490 City of Trenton
October	0	61.8	3.77	43.3
November	0	62.6	3.68	41.8
December	28.9	60.2	3.63	41.4
CAL YR 1998	2.24	51.0	3.77	42.8
January	4.39	23.9	3.88	40.7
February	0	11.9	3.60	38.3
March	0	12.4	3.87	38.8
April	0	37.7	4.38	38.8
May	0	50.4	4.56	42.0
June	0	63.2	4.77	48.7
July	0	63.0	4.87	52.8
August .....	.24	63.0	4.33	44.1
September	0	59.7	3.97	42.2
WTR YR 1999	2.8	47.7	4.11	42.8

WITHDRAWALS, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999--Continued

City of Philadelphia

MONTH	01466899 Greenwood Branch	01467030 Delaware River Torresdale	01474500 Schuylkill River Belmont	Queen Lane
October	1.77	262	71.4	138
November	1.88	278	74.2	133
December	1.50	284	68.4	96.7
CAL YR 1998	1.74	280	71.4	124
January	1.82	287	71.8	97.5
February	1.78	348	85.0	117
March	1.76	265	64.0	99.8
April	1.62	299	74.2	113
May	2.02	279	70.5	99.3
June	2.54	289	76.4	122
July	2.65	275	72.4	146
August	1.99	307	87.1	154
September	1.45	284	84.9	135
WTR YR 1999	1.90	288	74.9	121

DELAWARE RIVER BASIN

DIVERSIONS AND WITHDRAWALS--Continued

DIVERSIONS IMPORTED INTO BASIN

01367630 Water diverted from Morris Lake, tributary to the Wallkill River (Hudson River basin), by the Newton Water and Sewer Authority for municipal use. After use the water is released into the Paulins Kill (Delaware River basin). Records provided by the Delaware River Basin Commission.

01578420 Water diverted from West Branch Octoraro Creek (Susquehanna River basin) at the McCray Plant of the Coatesville Water Authority (formerly Octoraro Water Co.) for municipal use. After use the water is released into the Delaware River basin. Records provided by the Delaware River Basin Commission.

01578450 Water diverted from Octoraro Lake (Susquehanna River basin) by Chester Water Authority for municipal use. After use the water is released into the Delaware River basin. Records provided by the Delaware River Basin Commission.

DIVERSIONS, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999--Continued			
MONTH	OCTORARO CREEK		
	01367630 Morris Lake	01578420 Coatesville Water Authority	01578450 Chester Water Authority
October	1.40	1.91	54.6
November	1.41	1.82	53.5
December	1.39	1.89	53.2
CAL YR 1998	1.41	1.71	53.1
January	1.55	1.19	56.0
February	1.55	1.43	50.3
March	1.33	1.44	50.5
April	1.12	1.63	50.0
May	1.22	1.83	53.0
June	1.34	2.10	61.1
July	1.17	2.01	66.6
August	1.12	1.26	56.6
September	1.47	1.20	52.8
WTR YR 1999	1.34	1.65	54.9

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at partial-record stations are presented in two tables. The first is a table of annual maximum stage and discharge at crest-stage stations, and the second is a table of discharge measurements at low-flow partial-record stations.

CREST-STAGE PARTIAL-RECORD STATIONS

The following table contains annual maximum discharges for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower stages may have been obtained, and discharge measurements may have been made for purposes of establishing the stage-discharge relation, but these are not published herein. The years given in the period of record represent water years for which the annual maximum has been determined. The gage heights are heights on the upstream side of the bridge, above the dam or at the discontinued continuous-record gaging station unless otherwise noted.

Maximum discharge at crest-stage partial-record stations

Station name and number	Location and drainage area	Period of record	Water year 1999 maximum			Period of record maximum		
			Date	Gage height (ft)	Discharge (ft ³ /s)	Date	Gage height (ft)	Discharge (ft ³ /s)
HACKENSACK RIVER BASIN								
Pascack Brook at Montvale, NJ (01377360)	Lat 40°02'24", long 74°01'58"(revised), Bergen County, Hydrologic Unit 02030103, 250 ft upstream from bridge on Grand Avenue at entrance to fire station, 800 ft west of Montvale Memorial School, and 1,300 ft upstream from Silver Lake. Drainage area is 13.2 mi ² .	1998-99	9-16-99@ 1945 hrs	9.39	5,660	9-16-99	9.39	5,660
Bear Brook at Park Ridge, NJ (01377440)	Lat 41°01'40", long 74°02'49", Bergen County, Hydrologic Unit 02030103, 0.2 mi upstream from mouth, 0.8 mi southwest of Silver Lake, and 0.8 mi south of Park Ridge. Drainage area is 2.38 mi ² .	1998-99	5-10-98 9-16-99	<5.25h 11.05	<210i a	9-16-99	11.05	a
Woodcliff Lake at Hillsdale, NJ (01377450)	Lat 41°00'46", long 74°02'58", Bergen County, Hydrologic Unit 02030103, at dam on Pascack Brook, 0.7 mi north of Hillsdale, and 1.5 mi north of Westwood. Datum of gage is 0.00 ft above sea level. Drainage area is 19.4 mi ² .	1998-99	9-16-99@ 1840 hrs	96.54	a	9-16-99	96.54	a
Pascack Brook at Woodcliff Lake outlet, at Hillsdale, NJ (01377451)	Lat 41°00'41", long 74°02'54", Bergen County, Hydrologic Unit 02030103, 700 ft downstream from spillway of Woodcliff Lake, 0.7 mi north of Hillsdale, and 1.5 mi northwest of Westwood. Drainage area is 19.4 mi ² .	1998-99	9-16-99@ 2015 hrs	11.25	a	9-16-99	11.25	a
Pascack Brook at Hillsdale, NJ (01377460)	Lat 41°00'06", long 74°02'36", Bergen County, Hydrologic Unit 02030103, at bridge on Patterson Street, 0.5 mi north of Westwood, and 1.1 mi downstream from Woodcliff Lake. Drainage area is 20.7 mi ² .	1998-99	9-16-99	15.48	7,610	9-16-99	15.48	7,610

CREST-STAGE PARTIAL-RECORD STATIONS

Maximum discharge at crest-stage partial-record stations (Continued)

Station name and number	Location and drainage area	Period of record	Water year 1999 maximum			Period of record maximum		
			Date	Gage height (ft)	Discharge (ft ³ /s)	Date	Gage height (ft)	Discharge (ft ³ /s)
HACKENSACK RIVER BASIN--Continued								
Musquapsink Brook near Westwood, NJ (01377475)	Lat 40°59'41", long 74°03'42", Bergen County, Hydrologic Unit 02030103, at bridge on Pascack Road in Washington Borough, 1.5 mi west of Westwood, and 5.3 mi above mouth. Datum of gage before 1973 was 69.67 ft, datum since is 68.07 ft above sea level. Drainage area is 2.12 mi ² .	1965-86, 1999	9-16-99	7.20b	940	11-08-77	7.85b	1,060
Musquapsink Brook at Westwood, NJ (01377490)	Lat 40°59'11", long 74°01'51, Bergen County, Hydrologic Unit 02030103, at Westwood, at downstream side of Pros- pect Avenue bridge (left bank), 330 ft upstream from the railroad bridge, and 1 mi upstream from mouth. Drainage area is 6.59 mi ² .	1966-86, 1998-99	9-16-99	7.83	465	9-16-99	7.83	750
Tenakill Brook at Cresskill, NJ (01378350)	Lat 40°56'30", long 74°57'52", Bergen County, Hydrologic Unit 02030103, at bridge on Madison Avenue in Cresskill, 0.15 mi west of Erie Lackawanna Rail- road station above Oradell Reservoir. Drainage area is 3.01 mi ² .	1965-78, 1999	9-16-99	9.70	a	9-16-99	9.70	a
Tenakill Brook at Closter, NJ *(01378385)	Lat 40°58'29", long 73°58'06, Bergen County, Hydrologic Unit 02030103, at bridge on High Street in Closter, 0.7 mi upstream from mouth. Datum of gage is 23.85 ft above sea level. Drainage area is 8.56 mi ² .	1965-99	9-16-99	6.30b	1,650	9-16-99	6.30b	1,650
Metzler Brook at Engle- wood, NJ (01378590)	Lat 40°54'29", long 73°59'13", Bergen County, Hydrologic Unit 02030103, at bridge on Lantana Avenue in Engle- wood, and 1.6 mi upstream from mouth. Datum of gage is 43.10 ft above sea level. Drainage area is 1.54 mi ² .	1965-99	9-16-99	2.91b	534	9-16-99	2.91bd	534
Wolf Creek at Ridgefield, NJ (01378615)	Lat 40°49'45", long 74°00'14", Bergen County, Hydrologic Unit 02030103, at bridge on Clark Avenue in Ridgefield and 0.9 mi upstream from mouth. Datum of gage is 12.1 ft above sea level. Drain- age area is 1.18 mi ² .	1965-86, 1999	9-17-76 9-16-99	5.22 7.56	435r 750r	9-16-99	7.56	750
PASSAIC RIVER BASIN								
Passaic River near Bernards- ville, NJ (01378690)	Lat 40°44'03", long 74°32'26", Somerset County, Hydrologic Unit 02030103, at bridge on U.S. Route 202, 1.8 mi north- east of Bernardsville, and 3.0 mi upstream from Great Brook. Datum of gage is 238.07 ft above sea level. Drain- age area is 8.83 mi ² .	1968-76†, 1977-99	9-16-99	17.58b	1,340	8-28-71	18.56b	3,850
Penns Brook tributary at Basking Ridge, NJ (01378708)	Lat 40°42'30", long 74°32'53", Somerset County, Hydrologic Unit 02030103, at culvert on North Maple Avenue in Bask- ing Ridge, 0.3 mi upstream of mouth, and 1.2 mi west of the Passaic River. Datum of gage is 270 ft above sea level, from topographic map. Drainage area is 0.19 mi ² .	1999	9-16-99	6.82	115	9-16-99	6.82	115

Maximum discharge at crest-stage partial-record stations (Continued)

Station name and number	Location and drainage area	Period of record	Water year 1999 maximum			Period of record maximum		
			Date	Gage height (ft)	Discharge (ft ³ /s)	Date	Gage height (ft)	Discharge (ft ³ /s)
PASSAIC RIVER BASIN--Continued								
Passaic River tributary at Summit, NJ (01379490)	Lat 40°42'59", long 74°23'03", Union County, Hydrologic Unit 02030103, at bridge on Passaic Avenue in Summit, 0.3 mi north of intersection of Passaic Avenue and Springfield Avenue, and 0.4 mi upstream of mouth. Datum of gage is 260 ft above sea level, from topographic map. Drainage area is 0.27 mi ² .	1999	9-16-99	7.75	300	9-16-99	7.75	300
Cub Brook at Northfield, NJ (01379520)	Lat 40°46'16", long 74°18'39", Essex County, Hydrologic Unit 02030103, at bridge on Chestnut Street in Northfield, 230 ft from intersection of Chestnut Street and Northfield Road, and 280 ft upstream of confluence with Bear Brook. Datum of gage is 280 ft above sea level from topographic map. Drainage area is 0.48 mi ² .	1999	9-16-99	11.77	610	9-16-99	11.77	610
North Branch Foulerton Brook at Roseland, NJ (01379590)	Lat 40°49'11", long 74°17'22", Essex County, Hydrologic Unit 02030103, at bridge on Harrison Avenue in Roseland, 300 ft southeast of intersection of Harrison Avenue and Eagle Rock Avenue, and 0.5 mi downstream of unnamed pond. Datum of gage is 375 ft above sea level, from topographic map. Drainage area is 0.42 mi ² .	1999	9-16-99	6.11	130	9-16-99	6.11	130
Rockaway River at Warren Street, at Dover, NJ (01379845)	Lat 40°53'08", long 74°33'36", Morris County, Hydrologic Unit 02030103, on left bank, 100 ft upstream from bridge on Warren Street in Dover, 4.0 mi west of Denville, and 6 mi southeast of Lake Hopatcong. Datum of gage is 561.83 ft above sea level. Drainage area is 52.1 mi ² .	1981-94, 1999	9-16-99	8.91	3,400	9-16-99	8.91	3,400
Whippany River tributary no. 5, at Boulevard Road, at Cedar Knolls, NJ (01381510)	Lat 40°49'07", long 74°26'54", Morris County, Hydrologic Unit 02030103, at culvert on Boulevard Road, in Cedar Knoll, just north of intersection with Cedar Knolls Road, 0.2 mi upstream from mouth, and 3.8 mi northeast of Morristown. Datum of gage is 266 feet above sea level, from topographic map. Drainage area is 0.06 mi ² .	1999	9-16-99	7.60	63	9-16-99	7.60	63
Mahwah River near Suffern, NY (01387450)	Lat 41°08'27", long 74°07'01", Rockland County, NY, Hydrologic Unit 02030103, on left bank 13 ft upstream from bridge on U.S. Route 202, 4.8 mi upstream from mouth, and 2.5 mi northeast of Suffern. Datum of gage is 321.57 ft above sea level. Drainage area is 12.3 mi ² . Stage telemetry at station.	1959-95†, 1996-99	9-16-99	9.67	a	11-08-77	9.91	1,840
Pond Brook at Oakland, NJ *(01387880)	Lat 41°01'36", long 74°14'04", Bergen County, Hydrologic Unit 02030103, at bridge on Interstate 287 State Route 208 in Oakland, 0.2 mi upstream from former site at Franklin Avenue (prior to October 1975), 0.6 mi upstream from mouth, and 1.5 mi northwest of Franklin Lakes. Datum of gage is 276.97 ft above sea level. Drainage area is 6.76 mi ² .	1968-71, 1976-99	9-16-99	7.83	1,680	9-16-99	7.83	1,680

CREST-STAGE PARTIAL-RECORD STATIONS

Maximum discharge at crest-stage partial-record stations (Continued)

Station name and number	Location and drainage area	Period of record	Water year 1999 maximum			Period of record maximum		
			Date	Gage height (ft)	Discharge (ft ³ /s)	Date	Gage height (ft)	Discharge (ft ³ /s)
PASSAIC RIVER BASIN--Continued								
Passaic River below Pompton River, at Two Bridges, NJ (01389005)	Lat40°53'47", long 74°16'10", Passaic County, Hydrologic Unit 02030103, on right bank, in Two Bridges and 400 ft downstream from the Pompton River. Datum of gage is 155.00 ft above sea level. Drainage area is 734 mi ² . Stage telemetry at station.	1989-99	9-18-99@ 0700 hrs	12.71	a	9-18-99	12.71	a
Preakness (Singac) Brook near Preakness, NJ (01389030)	Lat 40°56'55", long 74°13'25", Passaic County, Hydrologic Unit 02030103, at bridge on Ratzer Road, 1.0 mi north of Preakness, and 2.0 mi upstream from Naachpunkt Brook. Datum of gage is 230.8 ft above sea level. Drainage area is 3.24 mi ² .	1979-99	9-16-99	7.91b	1,920	9-16-99	7.91b	1,920
Passaic River above Beat- ties Dam, at Little Falls, NJ (01389492)	Lat 40°53'04", long 74°14'05", Passaic County, Hydrologic Unit 02030103, at Little Falls, 100 ft upstream of Beatties Dam, 600 ft upstream from bridge on Union Boulevard and 1.5 mi upstream from Peckman River. Datum of gage is 150.00 ft above sea level. Drainage area is 762 mi ² .	1984, 1991-99†	9-18-99@ 0845 hrs	12.13	a	4-07-84	14.0	a
Peckman River at Ozone Avenue, at Verona, NJ (01389534)	Lat 40°50'42", long 74°14'09", Passaic County, Hydrologic Unit 02030103, at bridge on Ozone Avenue in Verona, 4.0 mi west of Clifton and 1.0 mi southwest of Cedar Grove Reservoir. Datum of gage is 300.08 ft above sea level. Drain- age area is 4.45 mi ² . Stage telemetry at station.	1945, 1979-99	9-06-79 7-21-81 1-04-82 9-27-85 9-13-87 9-20-89 5-16-90 3-03-91 6-05-92 11-28-93 7-17-95 10-19-96 9-16-99	5.09b 4.52b 4.20b 4.05b 6.14b 4.95b 4.68b 4.14b 4.10b 5.13b 4.11b 5.00b 6.57b	1,610r 1,250r 1,070r 993r 2,400r 1,520r 1,350r 1,040r 1,020r 1,640r 1,020r 1,550r 2,770	7-23-45	---	3,800s
Molly Ann Brook at North Hale- don, NJ (01389765)	Lat 40°57'11", long 74°11'07", Passaic County, Hydrologic Unit 02030103, at bridge on Overlook Avenue in North Haledon, 1.5 mi west of Hawthorne and 0.5 mi upstream from Oldham Pond Dam. Datum of gage is 209.68 ft above sea level. Drainage area is 3.89 mi ² . Stage telemetry at station.	1945, 1979-99	9-16-99	10.74	964	7-23-45	---	3,100f
Fleischer Brook at Market Street, at Elmwood Park, NJ (01389900)	Lat 40°53'57", long 74°06'54", Bergen County, Hydrologic Unit 02030103, at culvert on Market Street in Elmwood Park (formerly East Paterson), and 2.0 mi upstream from mouth. Datum of gage is 33.83 ft above sea level. (Prior to 1995 at datum 1.48 ft higher.) Drainage area is 1.37 mi ² .	1967-99	9-16-99	5.66	a	9-16-99	5.66	a
Saddle River at Upper Saddle River, NJ *(01390450)	Lat 41°03'32", long 74°05'44", Bergen County, Hydrologic Unit 02030103, at culvert on Lake Street in Upper Saddle River, and 1.3 mi downstream from Pine Brook. Datum of gage is 186.11 ft above sea level. Drainage area is 10.9 mi ² .	1966-99	9-16-99	5.64b	6,290	9-16-99	564b	6,290

CREST-STAGE PARTIAL-RECORD STATIONS

251

Maximum discharge at crest-stage partial-record stations (Continued)

Station name and number	Location and drainage area	Period of record	Water year 1999 maximum			Period of record maximum		
			Date	Gage height (ft)	Discharge (ft ³ /s)	Date	Gage height (ft)	Discharge (ft ³ /s)
PASSAIC RIVER BASIN--Continued								
Hohokus Brook at Allendale, NJ (01390810)	Lat 41°01'37", long 74°08'44", Bergen County, Hydrologic Unit 02030103, at bridge on Brookside Avenue in Allen- dale and 0.2 mi downstream from Valen- tine Brook. Datum of gage is 277.46 ft above sea level. Drainage area is 9.11 mi ² .	1969-99	9-16-99	12.15	3,010	9-16-99	12.15	3,010
Ramsey Brook at Allendale, NJ (01390900)	Lat 41°01'44", long 74°08'07", Bergen County, Hydrologic Unit 02030103, at bridge on Brookside Avenue in Allen- dale and 0.6 mi upstream from Hohokus Brook. Datum of gage is 270.79 ft above sea level. Drainage area is 2.55 mi ² .	1975-99	9-16-99	5.41b	987	9-16-99	5.41b	987
Hohokus Brook at Ho- Ho-Kus, NJ (01391000)	Lat 40°59'52", long 74°06'44" (revised), Bergen County, Hydrologic Unit 02030103, on left bank 500 ft upstream from bridge on Maple Avenue in Ho-Ho- Kus, and 3.5 mi upstream from mouth. Datum of gage is 120.09 ft above sea level. Drainage area is 16.4 mi ² . Stage telemetry at station.	1954-73†, 1977-96†, 1997-99	12-02-96 9-16-99	3.14 7.32	1,180 4,670	9-16-99	7.32	4,670
Weasel Brook at Clifton, NJ (01392000)	Lat 40°52'12", long 74°08'47", Passaic County, Hydrologic Unit 02030103, at upstream side of bridge on Jewett Street, at Clifton, 1.3 mi downstream of bridge on US Route 46, and 1.3 mi northwest of Passaic. Datum of gage is 68.52 ft above sea level. Drainage area is 4.45 mi ² .	1937-62†, 1963-78, 1989-90, 1999	9-16-99	7.70	2,400	9-16-99	7.70	2,400
Third River at Bloomfield, NJ (01392170)	Lat 40°47'59", long 74°11'18", Essex County, Hydrologic Unit 02030103, on downstream left wingwall of bridge on entrance ramp at Interchange 148 to the Garden State Parkway in Bloomfield 0.6 mi west of Nutley, and 5.1 mi upstream from Passaic River. Drainage area is 7.71 mi ² . Stage telemetry at station.	1988-99	7-05-89 5-16-90 3-03-91 6-05-92 8-16-93 11-28-93 7-17-95 10-28-95 10-19-96 6-14-98 9-16-99	6.08 6.18 6.52 6.58 5.75 5.38 4.99 5.35 7.34 4.47 9.97	941r 975r 1,100r 1,120r 831r 716r 604r 708r 1,410r 467r 2,670	9-16-99	9.97b	2,670
Second River at Belleville, NJ (01392500)	Lat 40°47'17", long 74°10'19", Essex County, Hydrologic Unit 02030103, on Mill Street in Branch Brook Park at Belleville, 300 ft downstream from Fran- klin Avenue, and 1,100 ft downstream from Hendricks Pond dam. Datum of gage is 62.6 ft above sea level. Drainage area is 11.6 mi ² .	1937-64†, 1963-95, 1999	9-16-99	9.09	5,510	8-28-71	9.80	6,500
RAHWAY RIVER BASIN								
East Branch Rahway River at Maplewood, NJ (01393890)	Lat 40°44'06", long 74°16'14". Essex County, Hydrologic Unit 02030104, on bridge on Jefferson Avenue in Maple- wood, 1,100 ft west of Fielding School, and 2.5 mi upstream of confluence of West Branch River and East Branch Rah- way River. Drainage area is 5.11 mi ² . Stage telemetry at station.	1998-99	9-16-99	14.58	3,470	9-16-99	14.58	3,470

CREST-STAGE PARTIAL-RECORD STATIONS

Maximum discharge at crest-stage partial-record stations (Continued)

Station name and number	Location and drainage area	Period of record	Water year 1999 maximum			Period of record maximum		
			Date	Gage height (ft)	Discharge (ft ³ /s)	Date	Gage height (ft)	Discharge (ft ³ /s)
RAHWAY RIVER BASIN--Continued								
East Branch Rahway River at Millburn Avenue, at Millburn, NJ (01393895)	Lat 40°22'11", Essex County Hydrologic Unit 02030104, at bridge on Millburn Avenue at Millburn, 0.9 mi east of Millburn, and 1.5 mi upstream of confluence with West Branch Rahway River. Drainage area is 7.09 mi ² . Stage telemetry at station.	1998-99	9-16-99@ 2130 hrs	11.36	a	9-16-99	11.36	a
West Branch Rahway River at Millburn, NJ (01394000)	Lat 40°43'51", long 74°18'26", Essex County, Hydrologic Unit 02030104, on left bank 100 ft upstream from Diamond Mill Pond dam, 1,000 ft upstream from Glen Avenue in Millburn, and 1.9 mi upstream from confluence with East Branch. Drainage area is 7.10 mi ² . Stage telemetry at station.	1940-50†, 1973, 1998-99	9-16-99@ 2015 hrs	5.05	2,840	9-16-99	5.05	2,840
West Branch Rahway River at Millburn Avenue, at Millburn, NJ (01394100)	Lat 40°53'27", long 74°41'22", Essex County, Hydrologic Unit 02030104, on bridge on Millburn Avenue, in Millburn, just upstream of Taylor Park, 0.6 mi downstream of Diamond Mill Pond, and 0.9 mi east of Short Hills. Datum of gage is 111.87 ft above mean sea level (levels by Killam Associates). Drainage area is 7.74 mi ² .	1999	9-16-99	19.6b	a	9-16-99	19.6b	a
Rahway River at Morris Avenue, at Springfield, NJ (01394200)	Lat 40°42'28", long 74°18'08", Union County, Hydrologic Unit 02030104, on upstream right bank of Morris Avenue Bridge (Route 82), 0.7 mi east of Springfield Municipal building, 1.4 mi west of Hamilton School, and 0.7 mi upstream of unnamed tributary. Datum of gage is 66.17 ft above sea level. Drainage area is 25.5 mi ² .	1999	9-17-99	16.60	a	9-17-99	16.6	a
Rahway River at Kenilworth, NJ (01394620)	Lat 40°40'59", long 74°22'23", Union County, Hydrologic Unit 02030104, on right wingwall of bridge on Kenilworth Boulevard at Kenilworth, 0.9 mi west of Harding School, 1.7 mi west of Kenilworth Municipal building, and 4.7 mi northwest of confluence of Rahway River and Robinsons Branch. Drainage area is 32.0 mi ² . Stage telemetry at station.	1999	9-17-99@ 0300 hrs	13.31	a	9-17-99	13.3	a
Robinsons Branch at Rahway, NJ (01396000)	Lat 40°36'20", long 74°17'57", Union County, Hydrologic Unit 02030104, on right bank of Milton Lake, 0.4 mi upstream from Maple Avenue at Milton Lake in Rahway, 0.6 mi downstream from Middlesex Reservoir Dam, and 1.6 mi upstream from mouth. Datum of gage is 19.99 ft above sea level. Drainage area is 21.6 mi ² . Stage telemetry at station.	1937-96†, 1999	9-16-99	6.48	4,800	9-16-99	6.48	4,800

CREST-STAGE PARTIAL-RECORD STATIONS

253

Maximum discharge at crest-stage partial-record stations (Continued)

Station name and number	Location and drainage area	Period of record	Water year 1999 maximum			Period of record maximum		
			Date	Gage height (ft)	Discharge (ft ³ /s)	Date	Gage height (ft)	Discharge (ft ³ /s)
RARITAN RIVER BASIN								
Alpaugh Brook at Hampton, NJ (01396570)	Lat 40°42'13", long 74°56'52", Hunterdon County, Hydrologic Unit 02030105, at culvert on State Route 31 at Hampton, 0.1 mi upstream of mouth, 0.6 mi north of Glen Gardner. Drainage area is 0.41 mi ² .	1995-99	9-16-99	2.03	74	10-19-96	2.83	105
Walnut Brook near Flemington, NJ (01397500)	Lat 40°30'55", long 74°52'52", Hunterdon County, Hydrologic Unit 02030105, 1.2 mi northwest of Flemington, and 2.3 mi upstream from mouth. Datum of gage is 267.33 ft above sea level. Drainage area is 2.24 mi ² .	1936-61†, 1963-99	9-16-99	5.50	2,870	9-16-99	5.50	2,870
Back Brook tributary near Ringoes, NJ (01398045)	Lat 40°25'41", long 74°49'52", Hunterdon County, Hydrologic Unit 02030105, at right upstream wingwall of bridge on Wertsville Road, 2.1 mi east of Ringoes, 1.3 mi upstream from Back Brook, and 2.3 mi southwest of Wertsville. Datum of gage is 161.6 ft above sea level. Drainage area is 1.98 mi ² .	1978-88†, 1989-99	9-16-99	5.95	1,580	9-16-99	5.95	1,580
South Branch River near Neshanic Station, NJ (01398095)	Lat 40°31'40", long 74°43'18", Somerset County, Hydrologic Unit 02030105, at bridge Opie (River) Road, 0.6 mi downstream of Pleasant Run, 1.0 mi northeast of Neshanic Station, and 2.3 mi southwest of South Branch. Drainage area is 260 mi ² . Stage telemetry at station.	1998-99	9-16-99@ 2030 hrs	21.06	a	9-16-99	21.06	a
South Branch Raritan River at South Branch, NJ (01398102)	Lat 40°32'48", long 74°41'48", Somerset County, Hydrologic Unit 02030105, at bridge on Studdiford Drive (South Branch Road) in South Branch, and 2.0 mi north of Flagtown. Drainage area is 265 mi ² . Stage telemetry at station.	1998-99	4-10-98r 9-16-99@ 2300 hrs	10.24 20.29	a a	9-16-99	20.29	a
Holland Brook at Readington, NJ (01398107)	Lat 40°33'30", long 74°43'50", Somerset County, Hydrologic Unit 02030105, on right bank 15 ft downstream from bridge on Old York Road, 0.9 mi southeast of Readington, and 2.5 mi upstream from mouth. Drainage area is 9.00 mi ² .	1978-96†, 1999	9-16-99	10.67	a	9-16-99	10.67	a
Axle Brook near Pottersville, NJ (01399525)	Lat 40°41'40", long 74°43'05", Somerset County, Hydrologic Unit 02030105, on right upstream wingwall of bridge on Black River Road, 1.3 mi, south of Pottersville, and 0.3 mi upstream from mouth. Datum of gage is 172.74 ft above sea level. Drainage area is 1.22 mi ² .	1977-88†, 1989-99	9-16-99	6.32	960	9-16-99	6.32	960
Lamington River at Burnt Mills, NJ (01399780)	Lat 40°38'04", long 74°41'13", Somerset County, Hydrologic Unit 02030105, at bridge on Walsh Road at Burnt Mills, 0.2 mi upstream of North Branch Raritan River, and 4.4 mi southwest of Far Hills. Drainage area is 100 mi ² . Stage telemetry at station.	1997-99	9-16-99@ 2015 hrs	16.28	a	7-07-84	90.0p	a

CREST-STAGE PARTIAL-RECORD STATIONS

Maximum discharge at crest-stage partial-record stations (Continued)

Station name and number	Location and drainage area	Period of record	Water year 1999 maximum			Period of record maximum		
			Date	Gage height (ft)	Discharge (ft ³ /s)	Date	Gage height (ft)	Discharge (ft ³ /s)
RARITAN RIVER BASIN--Continued								
North Branch Raritan River at North Branch, NJ (01399830)	Lat 40°36'00", long 74°40'27", Somerset County, Hydrologic Unit 02030105, on right bank 5 ft upstream from bridge on State Highway 28 in North Branch, 0.1 mi south of River Brook, and 3.6 mi upstream from confluence with South Branch Raritan River. Datum of gage is 56.94 ft above sea level. Drainage area is 174 mi ² . Stage telemetry at station.	1977-81†, 1982-95, 1997-99	9-16-99	21.53	27,800	9-16-99	21.53	27,800
North Branch Raritan River at South Branch, NJ (01400010)	Lat 40°33'24", long 74°41'19", Somerset County, Hydrologic Unit 02030105, at bridge on Old York Road, 0.8 mi north-east of South Branch, and 500 ft upstream from confluence with South Branch Raritan River. Datum of gage is 46.03 ft above sea level. Drainage area is 190 mi ² . Stage telemetry at station.	1993-99	4-10-98r 9-16-99	8.55 18.98	a a	9-16-99	18.98	a
Peters Brook near Raritan, NJ (01400300)	Lat 40°35'37", long 74°37'51", Somerset County, Hydrologic Unit 02030105, on upstream left bank side of bridge on Garrettson Road, 1.5 miles north of Raritan, and 2.5 miles from mouth. Datum of gage is 68.71 ft above sea level. Drainage area is 4.19 mi ² .	1978-95, 1999	9-16-99	11.85	3,400	9-16-99	11.85	3,400
Peters Brook at Mercer Street, at Somerville, NJ (01400360)	Lat 40°34'30", long 74°37'07", Somerset County, Hydrologic Unit 02030105, on the left bank on the downstream side of the bridge on Mercer Street in Somerville, 0.4 mi downstream from Macs Brook and 0.6 mi upstream from Ross Brook. Datum of gage is 42.51 ft above sea level. Drainage area is 7.37 mi ² . Stage and rainfall telemetry at station.	1991-99	9-16-99@ 1715 hrs	13.97	a	9-16-99	13.97	a
Millstone River at Southfield Road, near Grovers Mill, NJ (01400630)	Lat 40°18'12", long 74°34'33", Mercer County, Hydrologic Unit 02030105, at bridge on Southfield Road, 0.2 mi south-east at Grovers Mill, 3.5 mi southwest of Cranbury, and 3.0 mi upstream of Bear Brook. Datum of gage is 62.63 ft above sea level. Drainage area is 41.0 mi ² .	1971, 1975, 1979-99	9-16-99	7.37b	1,470	9-16-99	7.37b	1,470
Millstone River at Plainsboro, NJ (01400730)	Lat 40°19'27", long 74°36'51", Mercer County, Hydrologic Unit 02030105, on left bank 30 ft upstream from railroad bridge on AMTRAK (former Penn Central) mainline, 100 ft downstream from Cranbury Brook, 0.2 mi upstream from Bear Brook, and 0.9 mi southwest of Plainsboro. Datum of gage is 53.41 ft above sea level. Drainage area is 65.8 mi ² .	1965-75†, 1976-87, 1987-89†, 1990-99	9-16-99	8.13	3,390	7-21-75	8.96	3,970
Bear Brook at Route 535, near Locust Corner, NJ (01400775)	Lat 40°16'41", long 74°34'39", Mercer County, Hydrologic Unit 02030105, at bridge on State Route 535, 0.9 mi southwest of Locust Corner, 2.0 mi east of Hightstown, and 4.2 mi above mouth. Datum of gage is 73.75 ft above sea level. Drainage area is 6.69 mi ² .	1971, 1975, 1979-99	9-16-99	7.00b	869	6-10-89	7.95bd	1,550

CREST-STAGE PARTIAL-RECORD STATIONS

255

Maximum discharge at crest-stage partial-record stations (Continued)

Station name and number	Location and drainage area	Period of record	Water year 1999 maximum			Period of record maximum		
			Date	Gage height (ft)	Discharge (ft ³ /s)	Date	Gage height (ft)	Discharge (ft ³ /s)
RARITAN RIVER BASIN--Continued								
Bear Brook at Route 571, near Grovers Mill, NJ (01400795)	Lat 40°17'41", long 74°35'34", Mercer County, Hydrologic Unit 02030105, at bridge on State Route 571 (Princeton- Hightstown Road), 1.2 mi upstream of Grovers Mill Pond, 1.4 mi east of Prince- ton Junction, and 2.9 mi west of U.S. Route 130 and Hightstown. Datum of gage is 62.48 ft above sea level. Drain- age area is 9.28 mi ² .	1986-99	9-16-99	11.54	1,120	6-10-89	11.90	1,320
Stony Brook at Glenmoore, NJ (01400900)	Lat 40°21'55", long 74°47'14", Mercer County, Hydrologic Unit 02030105, at highway bridge on Spur State Route 518, 200 ft east of tracks of CONRAIL at Glenmoore, and 2.0 mi southwest of Hopewell. Datum of gage is 159.1 ft above sea level. Drainage area is 17.0 mi ² .	1957-95, 1999	9-16-99	9.79b	4,800	8-28-71	11.02b	6,100
Baldwins Creek at Pen- nington, NJ *(01400930)	Lat 40°20'18", long 74°47'50", Mercer County, Hydrologic Unit 02030105, at bridge on State Route 31, 0.8 mi north of Pennington, and 0.9 mi upstream from Baldwin Lake dam. Datum of gage is 161.69 ft above sea level. Drainage area is 1.99 mi ² .	1960-99	9-16-99	8.95	1,430	9-16-99	8.95	1,430
Hart Brook near Pen- nington, NJ (01400950)	Lat 40°19'17", long 74°45'38", Mercer County, Hydrologic Unit 02030105, at culvert on Federal City Road, 1.6 mi upstream of mouth, and 1.7 mi southeast of Pennington. Datum of gage after July 1, 1975 is 163.32 ft above sea level. Drainage area is 0.57 mi ² .	1968-99	9-16-99	4.86	237	7-14-87	5.27d	470
Duck Pond Run near Princeton Junction, NJ (01401160)	Lat 40°17'47", long 74°38'47", Mercer County, Hydrologic Unit 02030105, on right bank upstream from bridge on Clarksville Road, 1.5 mi southwest of Princeton Junction, and 4.0 mi south of Princeton. Datum of gage is 72.50 ft above sea level. Drainage area is 1.81 mi ² .	1980-99	9-16-99	6.81	292	9-16-99	6.81	292
Millstone River at Car- negie Lake, at Princeton, NJ (01401301)	Lat 40°22'11", long 74°37'15", Middlesex County, Hydrologic Unit 02030105, at right end of Carnegie Lake dam, 2.5 mi northeast of Princeton. Datum of gage is 50.00 ft above sea level. Drainage area is 159 mi ² .	1971, 1973-74†, 1977-87, 1988-89†, 1990-99	9-16-99	6.80	12,400	8-28-71	7.09	13,000
Rock Brook near Blawen- burg, NJ (01401595)	Lat 40°25'47", long 74°41'05", Somerset County, Hydrologic Unit 02030105, at bridge on Burnt Hill Road, 0.7 mi upstream from mouth, 1.0 mi northeast of Blawenburg, and 2.8 mi northwest of Rocky Hill. Datum of gage is 63.45 ft above sea level. Drainage area is 9.03 mi ² .	1967-99	9-16-99	9.20b	3,890	8-28-71	10.00b	4,530

CREST-STAGE PARTIAL-RECORD STATIONS

Maximum discharge at crest-stage partial-record stations (Continued)

Station name and number	Location and drainage area	Period of record	Water year 1999 maximum			Period of record maximum		
			Date	Gage height (ft)	Discharge (ft ³ /s)	Date	Gage height (ft)	Discharge (ft ³ /s)
RARITAN RIVER BASIN--Continued								
Beden Brook near Rocky Hill, NJ (01401600)	Lat 40°24'52", long 74°39'02", Somerset County, Hydrologic Unit 02030105, at bridge on U.S. Route 206, 0.7 mi upstream from Pike Run, 1.2 mi north- west of Rocky Hill, and 4.6 mi north of Princeton. Datum of gage is 38.09 ft above sea level. Drainage area is 27.0 mi ² , revised.	1967-99	9-16-99	18.61b	15,300	9-16-99	18.61b	15,300
Millstone River at Griggstown, NJ (01401750)	Lat 40°26'20", long 47°37'06", Somerset County, at bridge at Griggstown, 100 ft east of State Route 533, and 200 ft upstream from Simonson Brook. Datum of gage is 26.52 ft above sea level. Drainage area is 229 mi ² . Stage teleme- try at station.	1938, 1960-61, 1971, 1997, 1999	7-23-38 9-22-38 9-13-60 3-24-61 4-14-61 8-28-71 10-19-96 9-16-99	16.0 19.0 14.9 12.7 12.7 22.7 18.0 23.2	a a a a a a a a	9-16-99	23.2	a
Six Mile Run near Middle- bush, NJ (01401870)	Lat 40°28'12", long 74°32'42", Somerset County, Hydrologic Unit 02030105, at bridge on South Middlebush Road, 1.6 mi upstream from mouth, and 2.1 mi south of Middlebush. Datum of gage is 39.91 ft above sea level. Drainage area is 10.7 mi ² .	1966-99	9-16-99	11.17	7,740	7-14-75	11.77	10,200
Millstone River at Millstone, NJ (01402500)	Lat 40°30'10", long 74°35'15", Somerset County, Hydrologic Unit 02030105, on left bank at downstream side of bridge on State Route 514 (Amwell Road), in Millstone Borough, 2.7 mi south of Man- ville, and 4.4 mi upstream from mouth. Datum of gage is 24.4 ft above sea level. Drainage area is 264 mi ² .	1903-04†, 1999	9-17-99	22.30	a	9-17-99	22.30	a
Millstone River at Weston, NJ (01402540)	Lat 40°31'47", long 74°35'19", Somerset County, Hydrologic Unit 02030105, at downstream right bank side of Wilhouski Street bridge over bypass channel in Weston, 0.8 mi southwest of Alma White College, and 1.9 miles north of Mill- stone. Datum of gage is 21.9 ft above sea level. Drainage area is 271 mi ² . Stage telemetry at station.	1999	7-23-38 9-22-38 8-19-55 9-13-60 9-17-99	14.7 16.3 16.1 11.9 23.21	a a a a a	9-17-99	23.21	a
Royce Brook tributary near Belle Mead, NJ (01402600)	Lat 40°29'56", long 74°39'05", Somerset County, Hydrologic Unit 02030105, on right bank 25 ft upstream from bridge on State Route 514 (Amwell Road), 1,200 ft upstream from the mouth, and 2.0 miles north of Belle Mead. Datum of gage is 66.98 ft above sea level. Drainage area is 1.2 mi ² .	1964-74†, 1980-95†, 1999	9-16-99	7.96	2,850n	9-16-99	7.96	2,850n
Cuckels Brook at US Route 22, near Somerville, NJ (01403010)	Lat 40°34'43", long 74°35'12", Somerset County, Hydrologic Unit 02030105, at culvert on Route 22 in Somerville, 2.7 mi upstream of mouth, 0.7 mi northwest of Adamsville School, and 3.0 mi west of Bound Brook. Datum of gage is 95 ft above sea level, from topographic map. Drainage area is 0.32 mi ² .	1999	9-16-99	10.1	a	9-16-99	10.1	a

CREST-STAGE PARTIAL-RECORD STATIONS

257

Maximum discharge at crest-stage partial-record stations (Continued)

Station name and number	Location and drainage area	Period of record	Water year 1999 maximum			Period of record maximum		
			Date	Gage height (ft)	Discharge (ft ³ /s)	Date	Gage height (ft)	Discharge (ft ³ /s)
RARITAN RIVER BASIN--Continued								
Middle Brook at Bound Brook, NJ (01403200)	Lat 40°33'38", long 74°32'56", Middlesex County, Hydrologic Unit 02030105, at bridge on Talmadge Avenue at Bound Brook, 0.6 mi downstream from bridge on State Route 28, and 0.5 mi upstream from mouth. Datum of gage is 21.53 ft above sea level. Drainage area is 17.2 mi ² . Stage and rainfall telemetry at station.	1993-99	9-17-99@ 0700 hrs	19.76m	a	9-17-99	19.76m	a
Blue Brook at Seeleys Pond Dam, near Berke- ley Heights, NJ (01403395)	Lat 40°40'02", long 74°24'13", Union County, Hydrologic Unit 02030105, on wall on right bank, upstream from Seeleys Pond dam, 300 ft from mouth, 1.0 mi north of Scotch Plains, 1.0 mi west of Mountainside, and 4.5 mi southeast of Berkeley Heights. Datum of gage is 202.05 ft above sea level. Drainage area is 3.59 mi ² .	1927, 1969, 1973, 1981-99	9-16-99	7.06	1,600	8-02-73	7.55	2,080
Green Brook at Plainfield, NJ (01403500)	Lat 40°36'53", Long 74°25'55", Union County, Hydrologic Unit 02030105, on left bank at bridge on Sycamore Avenue in Plainfield and 1.0 mi upstream from Stony Brook. Datum of gage is 70.37 ft above sea level. Drainage area is 9.75 mi ² .	1938-84†, 1985-99	9-16-99	6.47b	2,590	7-23-38	5.82b	2,890
Stony Brook at North Plainfield, NJ (01403570)	Lat 40°37'19", long 74°26'11", Somerset County, Hydrologic Unit 02030105, at bridge on Green Brook Road, in North Plainfield, 100 ft downstream of Crab Brook, and 1.4 mi upstream of mouth. Datum of gage is 71.59 ft above sea level. Drainage area is 6.88 mi ² . Stage and rainfall telemetry at station.	1938, 1975-83, 1991-99	9-16-99@ 1800 hrs	8.36	a	7-23-38 11-28-93	10.00 6.10	a 1,620
Green Brook at Rock Ave- nue, at Plain- field, NJ (01403600)	Lat 40°36'07", long 74°27'28", Somerset County, Hydrologic Unit 02030105, at bridge on Rock Avenue in Plainfield, 0.3 mi north of West Front Street, and 0.6 mi south of U.S. Route 22. Datum of gage is 45.70 ft above sea level. Drainage area is 18.2 mi ² . Stage and rainfall telemetry at station.	1972-79, 1992-99	9-16-99	12.17	a	8-02-73 10-19-96 9-16-99	10.65b 11.40b 12.17b	10,400 a a
Bound Brook at Middlesex, NJ (01403900)	Lat 40°35'06", long 74°30'29", Somerset County, Hydrologic Unit 02030105, at bridge on Sebrings Mill Road, 0.4 mi downstream of mouth of Green Brook, and 2.3 mi upstream of mouth. Datum of gage is 26.52 ft above sea level. Drainage area is 48.4 mi ² . Stage and rainfall telemetry at station.	1972-77†, 1992-95, 1996-99†	9-16-99@ 0445 hrs	13.54	7,840	9-16-99	13.54	7,840
Sawmill Brook at South River, NJ 01405010)	Lat 40°26'02", long 74°24'02", Middlesex County, Hydrologic Unit 02030105, at intersection of State Route 535 and Merrill Road at entrance to East Brunswick High School, 0.2 mi north of St. Mary Cemetery, and 1.3 mi northwest of Duhernal Lake.	1998-99	9-16-99	2.15	130	9-16-99	2.15	130

CREST-STAGE PARTIAL-RECORD STATIONS

Maximum discharge at crest-stage partial-record stations (Continued)

Station name and number	Location and drainage area	Period of record	Water year 1999 maximum			Period of record maximum		
			Date	Gage height (ft)	Discharge (ft ³ /s)	Date	Gage height (ft)	Discharge (ft ³ /s)
RARITAN RIVER BASIN--Continued								
Manalapan Brook tributary at Smithburg, NJ (01405304)	Lat 40°12'37", long 74°21'17", Monmouth County, Hydrologic Unit 02030105, at bridge on Woodville Road at Smithburg, 0.1 mi north of intersection of Woodville Road and Freehold-Mt. Holly Road, and 0.7 mi south of Pasture Pond. Datum of gage is 190 ft above sea level, from topographic map. Drainage area is 0.47 mi ² .	1999	9-16-99	2.54	45	9-16-99	2.54	45
EAST CREEK BASIN								
East Creek at NJ Route 35 at South River, NJ (01407051)	Lat40°25'00", long 74°10'09", Monmouth County, Hydrologic Unit 02030104, at bridge on State Route 35, 0.5 mi east of Bethany Road and Route 35, and 2.1 mi south of Raritan Bay. Datum of gage is 79 ft above sea level, from topographic map. Drainage area is 0.59 mi ² .	1999	9-16-99	5.23	a	9-16-99	5.23	a
MANY MIND CREEK BASIN								
Many Mind Creek at Atlantic Highlands, NJ (01407130)	Lat40°24'12", long 74°01'49", Monmouth County, Hydrologic Unit 02030104, upstream side of culvert on State Route 36 at Atlantic Highlands, 190 ft east of intersection of State Route 36 and Valley Drive, and 1.0 mi south-east of mouth. Datum of gage is 29.54 ft above sea level. Drainage area is 0.26 mi ² .	1999	1-03-99	5.86	a	9-16-99	5.86	a
			9-16-99	5.86	a	9-16-99	5.86	a
SHREWSBURY RIVER BASIN								
Big Brook near Marlboro, NJ (01407290)	Lat 40°19'10", long 74°12'52", Monmouth County, Hydrologic Unit 02030104, downstream side of bridge on Hillsdale Road, 1.7 mi east of Marlboro, and 3.0 mi northwest of Colts Neck. Drainage area is 6.42 mi ² .	1980-99	9-16-99	7.76b	941	09-20-89	10.16b	1,370
MANASQUAN RIVER BASIN								
Mingamahone Brook at Farmingdale, NJ (01408015)	Lat 40°11'38", long 74°09'42", Monmouth County, Hydrologic Unit 02040301, at bridge on Belmar Road in Farmingdale, and 3.0 mi upstream from mouth. Datum of gage is 48.64 ft above sea level. Drainage area is 6.20 mi ² .	1969-99	1-03-99	5.07	170	7-21-75	7.31	425
METEDECONK RIVER BASIN								
North Branch Metedeconk River at Smithburg, NJ (01408052)	Lat 40°12'04", long 74°21'57", Monmouth County, Hydrologic Unit 02030104, at bridge on Monmouth Road (State Route 537), at Charleston Springs, 0.8 mi southwest of Smithburg, and just downstream of unnamed pond. Datum of gage is 188 ft above sea level, from topographic map. Drainage area is 0.10 mi ² .	1999	9-16-99	6.43	3.2	9-16-99	6.43	3.2

Maximum discharge at crest-stage partial-record stations (Continued)

Station name and number	Location and drainage area	Period of record	Water year 1999 maximum			Period of record maximum		
			Date	Gage height (ft)	Discharge (ft ³ /s)	Date	Gage height (ft)	Discharge (ft ³ /s)
TOMS RIVER BASIN								
Michaels Branch tributary at Keswick Grove, NJ (01408582)	Lat 39°56'48", long 74°20'15", Ocean County, Hydrologic Unit 02040301, at bridge on Pinewald Road, 1.5 mi east of intersection of Pinewald Road and Whiting Lacey Road, and 0.1 mi south of Keswick Lake. Datum of gage is 98 ft above sea level, from topographic map. Drainage area is 0.67 mi ² .	1999	9-16-99	3.65	a	9-16-99	3.65	a
Wrangel Brook at Bimini Drive, near Toms River, NJ (01408590)	Lat 39°58'16", long 74°15'58", Ocean County, Hydrologic Unit 02040301, at bridge on Bimini Drive 1.0 mi south of intersection of Bimini Drive and State Route 37, 3.3 mi upstream of confluence with Toms River. Datum of gage is 30 ft above sea level, from topographic map. Drainage area is 13.6 mi ² .	1998-99	9-16-99	3.50b	98	5-10-98	3.58b	100
Wrangel Brook at Mule Road, near Toms River, NJ (01408592)	Lat 39°57'39", long 74°13'42", Ocean County, Hydrologic Unit 02040301, at bridge on Mule Road in Berkeley Township, 0.5 mi upstream from mouth, and 1.7 mi west of Toms River. Datum of gage is 11 ft above sea level, from topographic map. Drainage area is 19.5 mi ² .	1999	1-05-99	7.13b	a	1-05-99	7.13b	a
OYSTER CREEK BASIN								
Oyster Creek tributary at Brookville, NJ (01409088)	Lat 39°46'56", long 74°18'58", Ocean County, Hydrologic Unit 02040301, at bridge on Brookville Road, 0.9 mi south of intersection of Brookville Road, and Wells Mills Road, and 1.2 mi southwest of Wells Mills Lake. Datum of gage is 107 ft above sea level, from topographic map. Drainage area is 0.25 mi ² .	1999	9-16-99	4.92	10	9-16-99	4.92	10
WESTECUNK CREEK BASIN								
Westecunk Creek at Stafford Forge, NJ (01409280)	Lat 39°40'00", long 74°19'12", Ocean County, Hydrologic Unit 02040301, 75 ft downstream from dam, 0.2 mi south of Stafford Forge, 1.2 mi downstream from Log Swamp Branch, and 2.0 mi west of Staffordville. Datum of gage is 6.36 ft above sea level. Drainage area is 15.8 mi ² .	1973-88†, 1991, 1999	9-16-99	12.35	170	7-04-78	13.12	256
MULLICA CREEK BASIN								
Mullica River near Atco, NJ (01409375)	Lat 39°47'08", long 74°51'38", Burlington County, Hydrologic Unit 02040301, on left bank of small lake 5 ft downstream from bridge on Jackson-Medford Road, 0.7 mi north of intersection of State Route 534 with Jackson-Medford Road, and 1.6 mi east of Atco. Datum of gage is 102.90 ft above sea level. Drainage area is 3.22 mi ² .	1974-87, 1991-94, 1999	9-16-99	6.10b	74	9-16-99	6.10b	74

CREST-STAGE PARTIAL-RECORD STATIONS

Maximum discharge at crest-stage partial-record stations (Continued)

Station name and number	Location and drainage area	Period of record	Water year 1999 maximum			Period of record maximum		
			Date	Gage height (ft)	Discharge (ft ³ /s)	Date	Gage height (ft)	Discharge (ft ³ /s)
GREAT EGG HARBOR RIVER BASIN								
Deep Run at U.S. Route 40, at Landisville, NJ (01411120)	Lat 39°30'41", long 74°55'15", Atlantic County, Hydrologic Unit 02040302, downstream left bank of culvert on U.S. Route 40, 0.2 mi upstream of Pennsylva- nia-Reading-Seashore railroad tracks, 0.3 mi southeast of Buena, and 1.1 mi northwest of Pancoast Lake. Drainage area is 0.33 mi ² .	1997-99	3-09-98 9-16-99	2.12b 2.39b	9r 13	8-23-97	2.83	20
Deep Run trib- utary at NJ Route 54, at Landisville, NJ (01411122)	Lat 39°31'20", long 74°55'13", Atlantic County, Hydrologic Unit 02040302, upstream right bank of culvert on State Route 54, 0.4 mi southwest of Pancoast Road, 0.6 mi southeast of Landisville, and 1.0 mi northeast of Pancoast Lake. Drainage area is 1.18 mi ² .	1997-99	1-16-99	3.27	64	8-23-97	4.18	140
MAURICE RIVER BASIN								
Maurice River at Brotman- ville, NJ (01411485)	Lat 39°31'19", long 75°04'25", Salem County, Hydrologic Unit 02040206, on right bank at downstream side of bridge on Garden Road, 1.3 mi upstream from Blackwater Branch, 2.1 mi downstream from Willow Grove Lake, and 0.5 mi east of Brotmanville. Datum of gage is 51.98 ft above sea level. Drainage area is 88.1 mi ² .	1992-94†, 1999	9-16-99	7.37b	442	2-26-94	7.68b	567
Blackwater Branch at Norma, NJ (01411495)	Lat 39°30'20", long 75°04'22", Salem County, Hydrologic Unit 02040206, on right bank 25 ft upstream from bridge on Maurice River Parkway, 0.7 mi northeast of Norma, and 0.4 mi from mouth. Datum of gage is 51.58 ft above sea level. Drainage area is 12.5 mi ² .	1992-94†, 1999	9-16-99	5.09	36	8-06-93	6.2	71
COHANSEY RIVER BASIN								
West Branch Cohansey River at See- ley, NJ (01412500)	Lat 39°29'06", long 75°15'33", Cumber- land County, Hydrologic Unit 02040206, on right bank 15 ft upstream from county bridge on County Highway 31 at Seeley, 450 ft upstream from mouth, and 4.1 mi northwest of Bridgeton. Datum of gage is 42.23 ft above sea level. Drainage area is 2.58 mi ² .	1952-67†, 1968-99	9-16-99	2.98	108	6-20-83	11.17	885
DELAWARE RIVER BASIN								
White Brook tributary at Montague, NJ (01438520)	Lat 41°18'05", long 74°47'41", Sussex County, Hydrologic Unit 02040104, at culvert on State Route 521 just north of U.S. Route 206, 0.2 mi south of Mont- ague, 0.4 mi east of Milford Toll Bridge, and 0.5 mi upstream of mouth. Datum of gage is 515 ft above sea level, from topo- graphic map. Drainage area is 0.23 mi ² .	1999	9-16-99	1.35	10.8	9-16-99	1.35	11

Maximum discharge at crest-stage partial-record stations (Continued)

Station name and number	Location and drainage area	Period of record	Water year 1999 maximum			Period of record maximum		
			Date	Gage height (ft)	Discharge (ft ³ /s)	Date	Gage height (ft)	Discharge (ft ³ /s)
DELAWARE RIVER BASIN--Continued								
Paulins Kill tributary at Ross Corner, NJ (01443305)	Lat 41°07'02", long 74°42'39", Sussex County, Hydrologic Unit 02040105, at culvert on State Route 15 at Ross Corner, 2.0 mi northwest of Lafayette, and 0.2 mi upstream of mouth. Datum of gage is 500 ft above sea level, from topographic map. Drainage area is 0.35 mi ² .	1999	9-16-99	8.40	16	9-16-99	8.40	16
Lapahannock Creek at Ridge Road, at Roxburg, NJ (01446564)	Lat 40°46'06", long 75°06'11", Warren County, Hydrologic Unit 02040105, at bridge on Ridge Road, 0.2 mi south of unnamed pond and 0.8 mi east of State Route 519 at Roxburg. Drainage area is 0.86 mi ² .	1995-99	9-16-99	7.05	219	1-19-96	8.10	285
Pohatcong Creek tribu- tary near Washington, NJ (01455130)	Lat 40°46'47", long 75°58'33", Warren County, Hydrologic Unit 02040105, at culvert on County Route 628 1.0 mi southwest of Karrsville, 0.3 mi upstream of Pohatcong Creek, and 0.5 mi upstream of Willever Lake. Datum of gage is 530 ft above sea level, from topo- graphic map. Drainage area is 0.55 mi ² .	1999	9-16-99	3.32	a	9-16-99	3.32	a
Delaware River at Rie- gelsville, NJ (01457500)	Lat 40°35'36", long 75°11'17", Warren County, Hydrologic Unit 02040105, just upstream of suspension bridge at Rie- gelsville, 600 ft upstream from Mus- conetcong River (flow of which is included in the records for this station since Oct. 1, 1931). Datum of gage is 125.12 ft above sea level. Drainage area is 6,328 mi ² . Stage telemetry at station.	1906-71†, 1972-99	1-25-99	15.62	64,500	8-19-55	38.85	340,000
Delaware River tribu- tary at Byram, NJ (01459010)	Lat 40°25'23", long 75°03'42", Hunterdon County, Hydrologic Unit 02040105, at culvert on State Route 29, south of Byram, 0.1 mi east of the Delaware River, and 0.9 mi north of Bulls Island. Datum of gage is 69.7 ft above sea level. Drainage area is 1.23 mi ² .	1945, 1955, 1995-99	9-16-99	8.66b	239	7-09-45 8-20-55	18.4 28.37k	2,900 a
Moore's Creek tributary at Valley Road, near Lam- bertville, NJ (01462197)	Lat 40°20'12", long 74°54'59", Mercer County, Hydrologic Unit 02040105, at culvert on Valley Road, 2.3 mi south of Lambertville, 0.3 mi east of Belle Moun- tain, and 0.7 mi upstream of mouth. Drainage area is 0.73 mi ² .	1989, 1995-99	9-16-99	3.86	473	8-15-89	--	1,150j
Shabakunk Creek tribu- tary at Texas Avenue, near Lawrence- ville, NJ (01463812)	Lat 40°15'36", long 74°43'38", Mercer County, Hydrologic Unit 02040105, at bridge on Texas Avenue, just upstream of Lawrence Shopping Center, in Lawrenceville, 600 ft west of Brunswick Pike, and 0.2 mi north of Colonial Lake. Drainage area is 0.27 mi ² .	1995-99	1-20-95 6-12-96 10-19-96 8-26-98 9-16-99	3.15b 4.45b 4.07b 3.97b 5.13b	54r 507r 289r 247r 1,780	9-16-99	5.13b	1,780
Stony Ford Brook at New Egypt, NJ (01464405)	Lat 40°04'21", long 74°31'00", Ocean County, Hydrologic Unit 02040201, at bridge on Lakewood Road, 0.7 mi north- west of New Egypt, and 0.9 mi upstream from mouth. Drainage area is 0.99 mi ² .	1979, 1995-99	9-16-99	7.44	117	8-31-79	--	340

CREST-STAGE PARTIAL-RECORD STATIONS

Maximum discharge at crest-stage partial-record stations (Continued)

Station name and number	Location and drainage area	Period of record	Water year 1999 maximum			Period of record maximum		
			Date	Gage height (ft)	Discharge (ft ³ /s)	Date	Gage height (ft)	Discharge (ft ³ /s)
DELAWARE RIVER BASIN--Continued								
Doctors Creek at Clarksburg, NJ (01464510)	Lat 40°11'37", long 74°26'43", Monmouth County, Hydrologic Unit 02030105, at bridge on Coach Road just east of Assunpink Wildlife Management Area, 0.1 mi east of intersection of Coach Road and State Route 571, and 2.2 mi upstream of Red Valley Lake. Datum of gage is 194 ft above sea level. Drainage area is 0.25 mi ² .	1999	9-16-99	2.02	53	9-16-99	2.02	53
Crosswicks Creek tributary at U.S. Route 206, near Bordentown, NJ (01464524)	Lat 40°10'15", long 74°41'59", Burlington County, Hydrologic Unit 02040201, at culvert on U.S. Route 206, 0.4 mi south of Sylvan Glen, and 1.9 mi northeast of Bordentown. Drainage area is 0.43 mi ² .	1995-99	9-16-99	3.64	90	9-16-99	3.64	90
Thorton Creek at Bordentown, NJ (01464525)	Lat 40°08'50", long 74°41'46", Burlington County, Hydrologic Unit 02040201, upstream side of abandoned dam, 50 ft upstream of Thorton Lane, 0.4 mi upstream of unnamed pond, 0.9 mi east of Bordentown post office, and 2.5 mi west of Crosswicks. Drainage area is 0.84 mi ² .	1976-77†, 1995-99	9-16-99	4.21	213	9-16-99	4.21	213
Crafts Creek at Route 68, at Georgetown, NJ (01464533)	Lat 40°04'37", long 74°39'48", Burlington County, Hydrologic Unit 02040201, at culvert on State Route 68, 0.5 mi west of Georgetown, 0.7 mi downstream of unnamed pond, and 3.1 mi east of Columbus. Drainage area is 0.58 mi ² .	1995-99	9-16-99	4.57	43	9-16-99	4.57	43
Crafts Creek at Columbus, NJ (01464538)	Lat 40°04'44", long 74°43'07", Burlington County, Hydrologic Unit 02040201, at bridge on Columbus-Mansfield Road, 0.4 mi north of Columbus, and 6.0 mi northeast of Mount Holly. Datum of gage is 33.71 ft above sea level. Drainage area is 5.38 mi ² .	1978-99	9-16-99	8.98	672	7-06-89	10.25b	880
Newton Creek at Collingswood, NJ (01467305)	Lat 39°54'30", long 75°03'13", Camden County, Hydrologic Unit 02040202, at bridge on Park Avenue in Collingswood, 0.3 mi east of Cuthbert Avenue. Datum of gage is 18.74 ft above sea level. Drainage area is 1.33 mi ² .	1964-99	8-26-99	3.90	194	7-14-94	6.82	328
South Branch Newton Creek at Haddon Heights, NJ (01467317)	Lat 39°52'45", long 75°04'26", Camden County, Hydrologic Unit 02040202, at bridge on 13th Avenue in Haddon Heights, and 2.6 mi south of Collingswood. Datum of gage is 23.34 ft above sea level. Drainage area is 0.63 mi ² .	1964-99	8-26-99	2.92	115	9-01-78	4.62	295
Gravelly Run at Somerdale, NJ (01467357)	Lat 39°46'17", long 75°01'49", Camden County, Hydrologic Unit 02040202, upstream left bank at culvert, on Warwick Road in Somerdale 0.8 mi south of Evesham Road, 0.8 mi north of Sterling High School, and 1.2 mi upstream of mouth, where it feeds Otter Brook. Drainage area is 0.35 mi ² .	1997-99	7-31-98 9-16-99	3.84 3.35	125r 97	7-31-98	3.84	125

Maximum discharge at crest-stage partial-record stations (Continued)

Station name and number	Location and drainage area	Period of record	Water year 1999 maximum			Period of record maximum		
			Date	Gage height (ft)	Discharge (ft ³ /s)	Date	Gage height (ft)	Discharge (ft ³ /s)
DELAWARE RIVER BASIN--Continued								
Bees Branch at Hurffville, NJ (01475017)	Lat 39°46'17", long 75°06'21", Gloucester County, Hydrologic Unit 02040202, upstream right bank at culvert, on State Route 47, 0.4 mi south of Barnsboro Road, 0.6 mi north of Hurffville, and 0.8 mi southwest of headwater at unnamed lake. Drainage area is 0.43 mi ² .	1997-99	9-16-99	5.99	100	9-16-99	5.99	100
Plank Run at Glassboro, NJ (01475033)	Lat 39°42'54", long 75°08'25", Gloucester County, Hydrologic Unit 02040202, upstream right bank at culvert, on U.S. Route 322. 0.4 mi southwest of intersection with State Route 55, 0.6 mi west of Glassboro, and 0.7 mi south of Alcyon Lake. Drainage area is 0.71 mi ² .	1997-99	9-16-99	2.60	47	9-16-99	2.60	47
Miery Run near Ewan, NJ (01477102)	Lat 39°42'52", Long 75°11'41", Gloucester County, Hydrologic Unit 02040202, downstream left bank at culvert on County Route 623, 0.3 mi southeast of mouth of Raccoon Creek, 1.2 mi northwest of Ewan, and 1.5 mi southeast of intersection with U.S. Route 322. Drainage area is 0.73 mi ² .	1997-99	9-16-99	2.44b	91	9-16-99	2.44b	91
Raccoon Creek at Mullica Hill, NJ (01477110)	Lat 39°44'10", long 75°13'30", Gloucester County, Hydrologic Unit 02040202, at bridge on State Routes 45 and 77 in Mullica Hill, 1,200 ft downstream from Mullica Hill Pond, and 5.5 mi west of Pitman. Datum of gage is 21.91 ft above sea level. Drainage area is 15.6 mi ² .	1940, 1978-95, 1999	9-16-99	7.21	2,500	9-01-40	---	2,900
Raccoon Creek tributary no. 3 near Mullica Hill, NJ (01477123)	Lat 39°44'47", long 75°16'05", Gloucester County, Hydrologic Unit 02040202, downstream left bank of culvert, on Mullica Hill Road, 0.3 mi upstream of mouth, 2.0 mi east of Swedesboro, and 2.3 mi northwest of Mullica Hill. Drainage area is 0.47 mi ² .	1997-99	5-24-99	1.33b	46	5-24-99	1.33b	46

^a Also a low-flow partial-record station.

^c Operated as a continuous-record gaging station.

^d Discharge not determined.

^e Downstream side of bridge.

^f Recorded at previous site.

^g Not the maximum gage height for period of record.

^h Determined at Squaw Lake Dam, 0.2 mi upstream of gage.

ⁱ Gage height (NGVD 1929) from previous site location approximately 150 ft upstream of current site.

^j Peak gage height for the period was less than minimum recordable gage height indicated.

^k Peak discharge for the period was less than the minimum recordable discharge.

^l Determined at site 0.1 mi downstream (USGS station number 01462198, drainage area 0.80 mi²), adjusted for change in drainage area.

^m Due to backwater from Delaware River.

ⁿ Due to backwater from Raritan River.

^o Estimated.

^p Elevation above mean sea level.

^q Revised.

^r Determined at Bradford Avenue, 0.2 mi downstream of gage, adjusted for change in drainage area.

Low-flow partial-record stations

Measurements of streamflow in New Jersey made at low-flow partial-record stations are given in the following table. Most of 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 where 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 1999

Station No.	Station Name	Location	Drainage area (mi ²)	Period of record	Measurements	
					Date	Discharge (ft ³ /s)
HUDSON RIVER BASIN						
01367700	Wallkill River at Franklin, NJ	Lat 41°06'43", long 74°35'21", Sussex County, Hydrologic Unit 02020007, at bridge on Franklin Avenue (Route 631) at Franklin, 100 feet downstream of Franklin Pond and 0.5 miles northeast of State Route 23.	29.4	1959-64, 1982-83, 1895, 1987-90, 1999	7-13-99	2.3
01367770	Wallkill River near Sussex, NJ	Lat 41°11'38", long 74°34'32", Sussex County, Hydrologic Unit 02020007, at bridge on Glenwood Road, 0.6 mi upstream from Papakating Creek, 1.7 mi southwest of Independence Corner, and 2.0 mi southeast of Sussex.	60.8	1977-82, 1985, 1987-98	11-05-98 5-13-99 7-14-99 8-12-99	9.4 43 9.0 6.8
01367800	Papakating Creek at Pelletstown, NJ	Lat 41°09'45", long 74°40'31", Sussex County, Hydrologic Unit 02020007, at bridge on State Route 565 in Pelletstown, and 4.5 miles above West Branch.	15.8	1959-64, 1999	1-28-99 5-13-99 8-12-99	40 7.2 7.4
HACKENSACK RIVER BASIN						
01378350	Tenakill Brook at Cresskill, NJ	Lat 40°56'30", long 74°57'52", Bergen County, Hydrologic Unit 02030103, at bridge on Madison Avenue in Cresskill, 0.15 miles west of NJ Transit Railroad station and 3.3 miles upstream from mouth.	3.01	1964-73, 1975, 1999	6-10-99	2.7
01378410	Dwars Kill at Norwood, NJ	Lat 40°59'01", long 73°57'35", Bergen County, Hydrologic Unit 02030103, at Blanche Avenue at Norwood, 1.0 mile east of Harrington Park, 1.5 miles upstream from Oradell Reservoir.	4.23	1973-80, 1999	6-10-99	.69
01378560	Coles Brook at Hackensack, NJ	Lat 40°44'55", long 74°20'14", Bergen County, Hydrologic Unit 02030103, at bridge on Main Street in Hackensack, 0.8 miles upstream from mouth and 1.9 miles northwest of Teaneck.	7.00	1965-72, 1999	1-25-99 5-05-99 7-16-99 8-04-99	4.5 3.2 1.3 .75
PASSAIC RIVER BASIN						
01379200	Dead River near Millington, NJ	Lat 40°56', long 74°31'26", Morris County, Hydrologic Unit 02030103, at bridge on King George Road (Spur State Route 527), 100 feet upstream from mouth, 2.0 miles south of Millington, and 4.2 miles south of Basking Ridge.	20.8	1961-67, 1973-75, 1986-89, 1999	11-04-98 5-12-99 6-29-99 8-04-99	6.0 14 5.9 4.4
01379525	Canoe Brook near Millburn, NJ	Lat 40°44'55", long 74°20'14", Essex County, Hydrologic Unit 02030103, at bridge on Parsonage Hill Road, 0.2 mi downstream from Taylor Lake, 1.0 mi upstream from New Jersey-American Water Company pumping station, and 1.4 mi northwest of Millburn.	10.2	1989-99	12-07-98 8-04-99	1.3 .14
01381550	Malapardis Brook at Whippany, NJ	Lat 40°49'22", long 74°25'08", Morris County, Hydrologic Unit 02030103, at bridge on Parsippany Road at Whippany, 400 ft upstream from mouth, and 2.2 mi south of Parsippany.	5.07	1989-99	12-07-98 8-04-99	2.0 .38

Discharge measurements made at low-flow partial-record stations during water year 1999 (Continued)

Station No.	Station Name	Location	Drainage area (mi ²)	Period of record	Measurements	
					Date	Discharge (ft ³ /s)
PASSAIC RIVER BASIN--Continued						
01382450	Macopin River at Macopin Reservoir, NJ	Lat 41°01'33", long 74°24'31", Passaic County, Hydrologic Unit 02030103, at bridge on northbound lane of State Route 23, 4.0 miles northwest of its intersection with State Route 511 at west edge of Butler.	5.25	1970-73, 1999	11-09-98	.23
					1-27-99	14
					5-11-99	3.4
01382550	Pequannock River tributary at Kinnelon, NJ	Lat 41°00'12", long 74°22'08", Morris County, Hydrologic Unit 02030103, at culvert on Kinnelon Road, at Kinnelon, 300 ft upstream from Maple Lake and 1.0 mi west of Butler.	1.18	1992-99	12-07-98	.10
					5-10-99	.75
					8-06-99	.10
01387490	Masonicus Brook at West Mahwah, NJ	Lat 41°05'53", long 74°08'57", Bergen County, Hydrologic Unit 02030103, at bridge on Eastview Avenue, at West Mahwah, 0.3 mi downstream from Winters Pond and 0.4 mi upstream from mouth.	3.84	1982-83, 1992-99	10-20-98	1.3
					12-07-98	1.1
					5-10-99	4.9
					8-06-99	.86
01387670	Ramapo River near Darlington, NJ	Lat 41°03'57", long 74°12'31", Bergen County, Hydrologic Unit 02030103, at bridge on Bear Swamp Road, 250 feet upstream from Bear Swamp Brook, 1.6 miles southwest of Darlington, and 3.0 miles northeast of Oakland	131	1963-66, 1982-83, 1999	10-20-98	24
01388700	Beaver Dam Brook at Lincoln Park, NJ	Lat 40°55'29", long 74°18'10", Morris County, Hydrologic Unit 02030103, at bridge on Park Avenue, at Lincoln Park, 0.6 mi downstream from East Ditch and 0.7 mi upstream from mouth.	12.3	1992-99	12-07-98	1.2
					5-10-99	8.8
					8-05-99	.10
01389100	Singac Brook at Singac, NJ	Lat 40°53'57", long 74°15'57", Passaic County, Hydrologic Unit 02030103, at bridge on Fairfield Road, between Interstate 80 and U.S. Route 46, 60 ft upstream from mouth, 1.2 mi northwest of Singac, and 1.8 mi northwest of Little Falls.	11.1	1963-67, 1983-84, 1986-99	5-11-99	21
					5-27-99	18
					8-05-99	12
01389140	Deerpavaal Brook at Two Bridges, NJ	Lat 40°53'14", long 74°16'00", Essex County, Hydrologic Unit 02030103, at bridge on Little Falls Road, 400 ft upstream from Passaic River, and 0.8 mi southeast of Two Bridges.	7.59	1970, 1983-84, 1988-99	12-07-98	1.0
					5-11-99	4.7
					8-05-99	0
01389534	Peckman River at Ozone Avenue at Verona, NJ	Lat 40°50'42", long 74°14'09", Passaic County, Hydrologic Unit 02030103, at bridge on Ozone Avenue in Verona, 4.0 mi west of Clifton and 1.0 mi southwest of Cedar Grove Reservoir.	4.45	1998-1999	5-11-99	5.4
					8-05-99	3.1
01389765	Molly Ann Brook at North Haledon, NJ	Lat 40°57'11", long 74°11'07", Passaic County, Hydrologic Unit 02030103, Overlook Avenue in North Haledon, 1.5 mi west of Hawthorne and 0.5 mi upstream from Oldham Pond Dam	3.89	1998-1999	5-11-99	2.0
					8-06-99	.37
01390900	Ramsey Brook at Allendale, NJ	Lat 41°01'44", long 74°08'07", Bergen County, Hydrologic Unit 02030103, at bridge on Brookside Avenue in Allendale and 0.6 mi upstream from Hohokus Brook.	2.55	1998-1999	12-07-98	.09
					5-10-99	1.3
					8-06-99	.15
RAHWAY RIVER BASIN						
01393890	East Branch Rahway River at Maplewood, NJ	Lat 41°44'06", long 74°16'14", Essex County, Hydrologic Unit 02030104, on bridge on Jefferson Avenue in Maplewood, 1,100 ft west of Fielding School, and 2.5 mi upstream of confluence of West Branch River and East Branch Rahway River.	5.11	1998	8-04-99 9-16-99	3.8 690

Discharge measurements made at low-flow partial-record stations during water year 1999 (Continued)

Station No.	Station Name	Location	Drainage area (mi ²)	Period of record	Measurements	
					Date	Discharge (ft ³ /s)
RAHWAY RIVER BASIN--Continued						
01394000	West Branch Rahway River at Millburn, NJ	Lat 40°43'51", long 74°18'26", Essex County, Hydrologic Unit 02030104, on left bank 100 ft upstream from Diamond Mill Pond Dam, 1,000 ft upstream from Glen Avenue in Millburn, and 1.9 mi upstream from confluence with East Branch.	7.10	1939-50a, 1998-1999	12-07-98	.73
					8-04-99	.72
					9-16-99	17.4
01394400	Van Winkle Brook at Springfield, NJ	Lat 40°42'12", long 74°18'15", Union County, Hydrologic Unit 02030104, at railroad bridge in Springfield, 0.4 mi upstream from bridge on Mountain Avenue, and 2.3 mi west of Union.	4.85	1989-99	12-07-98 8-04-99	.49 .36
01394600	Nomahegan Brook near Mountainside, NJ	Lat 40°40'42", long 74°19'54", Union County, Hydrologic Unit 02030104, at bridge on Springfield Avenue, 0.2 mi downstream from Echo Lake, 1.1 mi upstream from mouth, and 1.4 mi northeast of Mountainside.	3.76	1989-99	12-07-98 8-04-99	1.7 .65
RARITAN RIVER BASIN						
01396240	Electric Brook at Long Valley, NJ	Lat 40°47'23", long 74°46'36", Morris County, Hydrologic Unit 02030105, at bridge on Fairview Avenue at Long Valley, 0.3 mi upstream from mouth, and 0.8 mi downstream from Camp Washington Pond	3.17	1991-99	12-07-98 8-04-99	.71 .08
01396280	South Branch Raritan River at Middle Valley, NJ	Lat 40°45'40", long 74°49'18", Morris County, Hydrologic Unit 02030105, at bridge on Middle Valley Road, at Middle Valley, 200 feet northwest of West Mill Road (State Route 513), and 0.2 miles upstream of abandoned railroad bridge.	47.7	1963-67, 1973, 1975, 1982-92, 1999	4-28-99	66
01396865	Sidney Brook at Grandin, NJ	Lat 40°37'10", long 74°56'15", Hunterdon County, Hydrologic Unit 02030105, at bridge on State Route 513 (Grandin Road) in Grandin, 1.3 mi upstream from mouth, 1.8 mi southwest of Clinton, and 2.7 mi northeast of Pittstown.	4.71	1997-99	5-12-99 8-05-99	2.3 .72
01399190	Lamington (Black) River at Succasunna, NJ	Lat 40°51'03", long 74°38'02", Morris County, Hydrologic Unit 02030105, bridge on Righter Road, 0.7 mi south of Succasunna, and 0.4 mi upstream from Succasunna Brook.	7.37	1977-87a, 1988-99	11-30-98 5-12-99 6-02-99 7-16-99 8-05-99	1.9 5.9 3.7 .69 .54
01399200	Lamington (Black) River near Ironia, NJ	Lat 40°50'07", long 74°38'40", Morris County, Hydrologic Unit 02030105, at bridge on Ironia Road, 1.0 mi downstream from Succasunna Brook, and 1.3 mi northwest of Ironia.	10.9	1964-72, 1976-87a, 1988-99	11-30-98 5-12-99 6-02-99 7-16-99 8-05-99	5.4 7.7 4.3 1.5 1.0
01399295	Tanners Brook near Milltown, NJ	Lat 40°47'17", long 74°43'33", Morris County, Hydrologic Unit 02030105, at bridge on Tanners Brook Road, 0.2 mi upstream from mouth, 0.6 mi north of Milltown, and 1.5 mi west of Chester.	2.78	1991-99	5-12-99 8-05-99	2.4 .24
01399300	Lamington River at Milltown, NJ	Lat 40°47'13", long 74°43'13", Morris County, Hydrologic Unit 02030105, at bridge on New Furnace Road, 0.1 mi downstream from Tanners Brook, and 0.6 mi north of Milltown.	23.2	1988-99	12-02-98 5-12-99 8-05-99	14 27 .95
01399700	Rockaway Creek at Whitehouse, NJ	Lat 40°37'49", long 74°44'11", Hunterdon County, Hydrologic Unit 02030105, at bridge on Lamington Road, 1.4 miles northeast of Whitehouse, and 0.8 miles upstream from mouth.	37.1	1959-62, 1964-65, 1973 1999	4-07-99	40

Discharge measurements made at low-flow partial-record stations during water year 1999 (Continued)

Station No.	Station Name	Location	Drainage area (mi ²)	Period of record	Measurements	
					Date	Discharge (ft ³ /s)
RARITAN RIVER BASIN--Continued						
01400593	Rocky Brook at Hightstown, NJ	Lat 40°15'40", long 74°30'52", Mercer County, Hydrologic Unit 02030105, at bridge on ward Street, downstream from New Jersey Turnpike, 0.8 miles southeast of Hightstown and 2.7 miles upstream from mouth.	9.58	1965-72, 1999	3-11-99	4.7
01400596	Peddie Brook at Hightstown, NJ	Lat 40°15'36", long 74°31'08", Mercer County, Hydrologic Unit 02030105, at bridge on Etra Road, 0.2 miles upstream from mouth and 0.7 miles southeast of Hightstown.	3.07	1965-72, 1999	3-11-99	2.3
01400640	Millstone River near Grovers Mill, NJ	Lat 40°18'48", long 74°35'22", Mercer County, Hydrologic Unit 02030105, at bridge on Cranbury Neck Road, 1.0 mi east of Grovers Mill, 1.8 mi upstream from Cranbury Brook, and 1.8 mi east of Princeton Junction.	42.6	1959-65, 1971, 1986-87, 1992-93, 1995, 1998	11-18-98 2-02-99 5-19-99 8-18-99	19 39 24 20
01400900	Stony Brook at Glenmoore, NJ	Lat 40°21'55", long 74°47'14", Mercer County, Hydrologic Unit 02030105, at highway bridge on Spur State Route 518, 200 ft east of tracks of Conrail, at Glenmoore, and 2.0 mi southwest of Hopewell.	17.0	1957-95	3-11-99	14
01401400	Heathcote Brook at Kingston, NJ	Lat 40°22'10", long 74°36'59", Middlesex County, Hydrologic Unit 02030105, at bridge on Mapleton Road, at abandoned railroad bridge, 0.3 mi south of Kingston, and 0.4 mi upstream from mouth.	9.00	1971-72, 1979-84, 1989-92, 1998	1-26-99 5-26-99 8-18-99	22 27 1.2
01401520	Beden Brook near Hopewell, NJ	Lat 40°23'02", long 74°44'28", Mercer County, Hydrologic Unit 02030105, at bridge on Aunt Molly Road, 1.1 miles southeast of Hopewell and 2.6 miles southwest of Blawenburg.	6.67	1965-72, 1999	2-11-99	4.7
01402700	Royce Brook at Manville, NJ	Lat 40°31'30", long 74°36'44", Somerset County, Hydrologic Unit 02030105, at bridge on secondary road 1.6 miles southwest of Manville and 2.1 miles above mouth.	11.7	1960-64, 1999	3-11-99	14
SHARK RIVER BASIN						
01407755	Jumping Brook above reservoir, near Neptune City, NJ	Lat 40°12'30", long 74°04'12", Monmouth County, Hydrologic Unit 02030104, at bridge on State Route 33, 0.25 mi upstream from Jumping Brook Reservoir, and 2.3 mi west of Neptune City.	5.58	1989-99	12-07-98 5-13-99 8-05-99	2.3 3.4 .56
POLLY POND BROOK BASIN						
01407780	Polly Pond Brook at South Belmar, NJ	Lat 40°10'00", long 74°01'41", Monmouth County, Hydrologic Unit 02030104, at culvert on F Street at South Belmar, 50 ft upstream from Lake Como, and 0.6 mi upstream from mouth.	.99	1989-99	12-07-98 5-13-99 8-05-99	.44 .95 .23
WRECK POND BROOK BASIN						
01407806	Hannabrand Brook at Old Mill Road, near Spring Lake Heights, NJ	Lat 40°06'35", long 74°13'10", at highway bridge on U.S. Route 9, 0.3 mile north of County Line Road in Lakewood, and 3.6 miles above Muddy Ford Brook.	3.13	1989-99	12-07-98 5-13-99 8-05-99	3.9 3.9 1.7
METEDECONK RIVER BASIN						
01408100	North Branch Metedeconk River at Lakewood, NJ	Lat 40°06'35", long 74°13'10", Ocean County, Hydrologic Unit 02040301, at highway bridge on U.S. Route 9, 0.3 mi north of County Line Road in Lakewood, and 3.6 mi upstream from Muddy Ford Brook.	19.4	1959-63, 1966, 1999	11-23-98 2-04-99 5-17-99 8-09-99	10 52 14 6.2

Discharge measurements made at low-flow partial-record stations during water year 1999 (Continued)

Station No.	Station Name	Location	Drainage area (mi ²)	Period of record	Measurements	
					Date	Discharge (ft ³ /s)
TOMS RIVER BASIN						
01408592	Wrangel Brook at Mule Road near Toms River, NJ	Lat 39°57'39", long 74°13'42", Ocean County, Hydrologic Unit 02040301, at bridge on Mule Road in Berkeley Township, 0.5 mi upstream from mouth, and 1.7 mi west of Toms River.	19.5	1993-99	12-07-98	18
					5-13-99	27
					5-24-99	34
					8-05-99	14
01408620	Davenport Branch near Dover Forge, NJ	Lat 39°56'29", long 74°17'49", Ocean County, Hydrologic Unit 02040301, at bridge on Pinewald Road (State Route 530), 2.2 mi north of Dover Forge, 2.3 mi east of Keswick Grove, and 3.0 mi northeast of Cedar Crest.	7.41	1977 1999	10-23-98	9.0
					12-07-98	5.6
					1-22-99	11
					5-13-99	10
					8-05-99	7.1
MULLICA RIVER BASIN						
01409375	Mullica River near Atco, NJ	Lat 39°47'08", long 74°51'38", Camden County, Hydrologic Unit 02040301, on left bank of small lake 50 ft downstream from bridge on Jackson-Medford Road, 0.7 mi north of intersection of State Route 534 with Jackson-Medford Road, and 1.6 mi east of Atco.	3.22	1974-85b, 1991-99	2-11-99	4.0
					3-31-99	3.9
					6-08-99	.21
					8-31-99	.02
01409401	Hays Mill Creek at Atco, NJ	Lat 39°45'32", long 74°53'02", Camden County, Hydrologic Unit 02040301, at bridge on U.S. Route 30, at outlet of Atco Lake in Atco, and 3.3 mi southeast of Berlin.	3.80	1979, 1991-99	2-11-99	2.9
					3-31-99	3.2
					6-08-99	.94
					8-31-99	.78
01409402	Hays Mill Creek near Chesilhurst, NJ	Lat 39°45'02", long 74°50'28", Camden County, Hydrologic Unit 02040301, at bridge on Tremont Avenue in Wharton State Forest, 0.3 mi northeast of Burnt Mill Road and 2.0 mi northeast of Chesilhurst.	7.13	1974-77b, 1991-99	2-11-99	9.4
					3-31-99	10
					6-08-99	6.7
					8-31-99	7.2
0140940250	Cooper Branch near Chesilhurst, NJ	Lat 39°44'44", long 74°50'25", Camden County, Hydrologic Unit 02040301, at bridge on Burnt Mill Road, 700 ft upstream from mouth, 1.6 mi northeast of Waterford Works, and 2.8 mi southeast of Atco.	1.93	1991-99	2-11-99	2.2
					3-31-99	2.6
					8-31-99	.77
0140940310	Wildcat Branch near Chesilhurst, NJ	Lat 39°44'20", long 74°49'58", Camden County, Hydrologic Unit 02040301, at bridge on Burnt Mill Road, 0.1 mi downstream from outlet of Beaverdam Lake, 1.4 mi northeast of Waterford Works, and 1.9 mi east of Chesilhurst.	2.27	1991-99	2-11-99	2.7
					3-31-99	3.3
					6-08-99	1.4
					8-31-99	1.5
0140940365	Sleeper Branch Diversion (Saltars Ditch) near Atsion, NJ	Lat 39°43'48", long 74°46'09", Camden County, Hydrologic Unit 02040301, at bridge on Burnt House Road, 600 ft downstream from Sleeper Branch, and 2.3 mi west of Atsion.	---	1991-99	2-11-99	2.1
					3-31-99	3.5
					6-08-99	0
					8-31-99	0
0140940370	Sleeper Branch near Atsion, NJ	Lat 39°43'42", long 74°46'12", Camden County, Hydrologic Unit 02040301, at bridge on Burnt House Road, 500 ft downstream from Sleeper Branch Diversion (Saltars Ditch) and 2.3 mi west of Atsion.	16.1	1991-99	2-11-99	19
					3-31-99	24
					6-08-99	1.2
					8-31-99	13
0140940480	Clark Branch near Atsion, NJ	Lat 39°42'53", long 74°46'25", Camden County, Hydrologic Unit 02040301, at abandoned railroad bridge, 0.2 mi downstream from Price Branch and 2.8 mi west of Atsion.	6.42	1991-99	2-11-99	3.4
					3-31-99	6.4
					6-08-99	.67
					8-31-99	1.3
01409408	Pump Branch near Waterford Works, NJ	Lat 39°41'59", long 74°50'40", Camden County, Hydrologic Unit 02040301, at bridge on Old Whitehorse Pike, 0.5 mi downstream from lake at Camp Ha-Lu-Wa-Sa, and 1.6 mi south of Waterford Works.	9.78	1991-99	2-11-99	7.6
					3-31-99	6.8
					6-08-99	7.4
					8-31-99	11

Discharge measurements made at low-flow partial-record stations during water year 1999 (Continued)

Station No.	Station Name	Location	Drainage area (mi ²)	Period of record	Measurements	
					Date	Discharge (ft ³ /s)
MULLICA RIVER BASIN--Continued						
0140940950	Blue Anchor Brook at Elm, NJ	Lat 39°40'11", long 74°50'06", Camden County, Hydrologic Unit 02040301, at bridge on U.S. Route 30 (Whitehorse Pike) at Elm, at outlet of unnamed lake, and 1.4 mi upstream from confluence with Pump Branch.	4.86	1991-99	11-24-98	2.2
					2-09-99	2.6
					2-11-99	3.9
					3-31-99	4.3
					5-11-99	2.0
					6-08-99	1.5
					8-19-99	.93
8-31-99	1.6					
0140940970	Albertson Branch near Elm, NJ	Lat 39°41'34", long 74°48'24", Camden County, Hydrologic Unit 02040301, at bridge on Fleming Pike, 0.4 mi downstream from confluence of Blue Anchor Brook and Pump Branch, and 1.6 mi northeast of Elm.	17.1	1991-99	2-11-99	16
					3-31-99	22
					6-08-99	10
					8-31-99	19
0140941050	Great Swamp Branch at Elm, NJ	Lat 39°40'18", long 74°49'33", Camden County, Hydrologic Unit 02040301, at bridge on U.S. Route 30, 0.5 mi southeast of Elm, 1.5 mi north of Rosedale, and 2.4 mi northeast of Winslow.	2.83	1991-99	1-11-99	.34
					3-31-99	1.6
					6-08-99	.06
					8-31-99	.56
GREAT EGG HARBOR RIVER BASIN						
01411220	South River near Belcoville, NJ	Lat 39°26'25", long 74°45'21" Atlantic County, Hydrologic Unit 02040302, at bridge on Walkers Forge Road, 1.1 mi west of Belcoville, and 3.7 mi upstream from mouth.	20.4	1994-99	12-07-98	9.4
					8-04-99	.24
FISHING CREEK BASIN						
01411400	Fishing Creek at Rio Grande, NJ	Lat 39°01'39", long 74°53'48" Cape May County, Hydrologic Unit 02040206, at bridge on State Route 47, at Wildwood pumping station and 1.4 miles northwest of Rio Grande.	2.29	1965-72, 1990-92, 1999	12-09-98	.86
					2-18-99	2.0
					6-02-99	.36
					8-19-99	0
					8-24-99	0
					9-28-99	.47
MAURICE RIVER BASIN						
01411650	Muddy Run near Elmer, NJ	Lat 39°36'48", long 75°11'21" Salem County, Hydrologic Unit 02040206, at bridge on Friendship Church Road, 1.6 mi north of Elmer and 1.8 mi upstream from Elmer Lake.	4.94	1994-99	12-07-98	1.2
					5-12-99	3.5
					8-04-99	.11
01411680	Palatine Branch at Palatine, NJ	Lat 39°33'25", long 75°10'28" Salem County, Hydrologic Unit 02040206, at bridge on Elmer-Palatine Road at Palatine, 0.6 mi upstream from Palatine Lake and 2.5 mi south of Elmer.	5.39	1994-99	12-07-98	2.1
					8-04-99	0
DELAWARE RIVER BASIN						
01445520	Mountain Lake Brook near Pequest, NJ	Lat 40°51'11", long 74°59'09", Warren County, Hydrologic Unit 02040105, at bridge on Lake Drive South, at outlet of Mountain Lake, 1.5 mi north of Pequest and 1.7 mi upstream from mouth.	4.35	1991-99	12-07-98	.26
					5-12-99	4.2
					8-04-99	0
01455100	Lopatcong Creek at Phillipsburg, NJ	Lat 40°40'38", long 75°10'13", Warren County, Hydrologic Unit 02040105, at bridge on Alternate U.S. Route 22 in Phillipsburg, 100 ft upstream from railroad bridge of CONRAIL, and 3,000 ft above mouth.	14.2	1958-64, 1991-99	12-07-98	8.1
					5-12-99	13
					8-04-99	6.7
01456080	Mine Brook near Hackettstown, NJ	Lat 40°49'58", long 74°49'23", Morris County, Hydrologic Unit 02040105, at bridge on State Route 517 (Schooleys Mountain Road), 600 ft upstream from mouth, and 1.0 mi south of Hackettstown.	4.96	1991-99	12-07-98	.04
					5-12-99	.68
					8-04-99	0

Discharge measurements made at low-flow partial-record stations during water year 1999 (Continued)

Station No.	Station Name	Location	Drainage area (mi ²)	Period of record	Measurements	
					Date	Discharge (ft ³ /s)
DELAWARE RIVER BASIN--Continued						
01456210	Hances Brook near Beattystown, NJ	Lat 40°48'17", long 74°51'38", Warren County, Hydrologic Unit 02040105, at bridge on State Route 57, 600 ft upstream from mouth, and 1.1 mi southwest of Beattystown.	4.13	1991-99	12-07-98	1.1
					5-12-99	2.5
					8-04-99	.62
01464515	Doctors Creek at Allentown, NJ	Lat 40°10'37", long 74°35'57", Monmouth County, Hydrologic Unit 02040201, at bridge on Breza Road, 0.8 miles west of Allentown and 0.8 miles downstream from Conines Mill Pond.	17.2	1966, 1968-72, 1991-92, 1999	11-16-98	8.0
					2-03-99	47
					5-18-99	6.0
					8-05-99	1.7
01465900	Southwest Branch Rancocas Creek at Eayrestown, NJ	Lat 39°56'49", long 74°47'58", Burlington County, Hydrologic Unit 02040202, at highway bridge 0.3 miles above mouth, and 0.5 miles west of Eayrestown.	76.0	1959-61, 1999	8-04-99	.56
01467330	South Branch Big Timber Creek at Blackwood, NJ	Lat 39°48'17", long 75°04'33" Camden County, Hydrologic Unit 02040202, at bridge on Lower Landing Road at Blackwood, 3.1 mi southwest of Lindenwold and 3.0 mi from mouth.	19.1	1964-72, 1994-99	5-14-99	27
					7-12-99	11
					8-04-99	9.7
01475020	Mantua Creek at Sewell, NJ	Lat 39°46'22", long 75°08'10", Gloucester County, Hydrologic Unit 02040202, at bridge on Wenonah-Pitman Road, 0.5 mi below Bees Branch, and 0.6 mi east of Sewell.	14.7	1966-72, 1994-99	5-14-99	16
					7-12-99	6.5
					8-04-99	5.1
01477130	Basgalore Creek at Russell Mill Road, near Swedesboro, NJ	Lat 39°44'14", long 75°17'00" Gloucester County, Hydrologic Unit 02040202, at bridge on Russell Mill Road, 0.8 mi above mouth, and 1.7 mi east-southeast of Swedesboro.	3.30	1957c, 1966c, 1994-99	5-14-99	3.6
					7-12-99	1.3
					8-04-99	.29
01482510	Nichomus Run near Woodstown, NJ	Lat 39°38'22", long 75°20'59" Salem County, Hydrologic Unit 02040206, at bridge on State Route 45, 1.4 mi southwest of Woodstown, and 1.7 mi above mouth.	3.76	1966-74, 1994-99	5-14-99	1.4
					7-12-99	.21
					8-04-99	.12
01482900	Cool Run near Alloway, NJ	Lat 39°34'43", long 75°18'36" Salem County, Hydrologic Unit 02040206, at highway bridge on Stockton-Pleasant Hill Road, 0.5 mi above mouth, 3.0 mi northeast of Alloway, and 3.3 mi southwest of Daretown.	4.92	1959-63, 1994-99	5-14-99	4.0
					7-12-99	2.2
					8-04-99	.53
01482950	Cedar Brook near Alloway, NJ	Lat 39°33'31", long 75°20'22" Salem County, Hydrologic Unit 02040206, at highway bridge on secondary road, 400 ft downstream from outlet of Sycamore Lake (at Remsterville), 1.3 mi east of Alloway, and 5.3 mi southwest of Daretown.	3.76	1959-63, 1994-99	5-14-99	2.4
					7-12-99	.77
					8-04-99	.17

* Active crest-stage partial-record station.

a Operated as a continuous-record gaging station by U.S. Geological Survey.

b Operated as a crest-stage partial-record station.

c Published as Raccoon Creek tributary.

d Not previously published.

e Estimated.

DISCHARGE MEASUREMENTS AT MISCELLANEOUS SITES

Measurements of streamflow at points other than gaging stations are given in the following table.

Discharge measurements made at miscellaneous sites during water year 1999

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
HUDSON RIVER BASIN						
01367625 Wallkill River	Rondout Creek	Lat 41°02'20", long 74°37'48", Sussex County, Hydrologic Unit 02020007, 0.4 mi north- east of Sparta, 1.2 mi downstream from out- let of Lake Mohawk, and 1.8 mi east of Fox Hollow Lake.	5.88	1998	1-28-99	19
					5-13-99	2.6
					8-12-99	1.4
01367715 Wallkill River	Rondout Creek	Lat 41°08'00", long 74°34'44", Sussex County, Hydrologic Unit 02020007, at bridge on Scott Road, 0.4 mi north of Franklin, and 3.0 mi downstream from Franklin Pond out- let.	40.6	---	7-13-99	4.4
01367729 Wallkill River	Rondout Creek	Lat 41°09'09", long 74°34'56", Sussex County, Hydrologic Unit 02020007, at bridge on State Route bridge, 0.5 mi southwest of Hamburg, and 4.5 mi upstream from the mouth of Papakating Creek.	46.8	---	7-13-99	5.8
01367910 Papakating Creek	Wallkill River	Lat 41°12'02", long 74°35'59", Sussex County, Hydrologic Unit 02020007, at bridge on State Route 23, 2.6 mi southwest of Inde- pendence Corner, and 3.4 mi northeast of McAfee.	59.4	1977-80, 1982, 1985, 1989-95	7-14-99	2.2
01368000 Wallkill River	Rondout Creek	Lat 41°15'36", long 74°32'56", Sussex County, Hydrologic Unit 02020007, at bridge on the Bassets Bridge Road, 0.6 miles upstream from small tributary, 2.0 miles south of the New York-New Jersey state line and 3.0 miles south of Unionville.	140	1938-81a, 1991-97	7-14-99	11
01368820 Double Kill	Wawayanda Creek	Lat 41°11'13", long 74°25'13", Sussex County, Hydrologic Unit 02020007, 0.4 mi down- stream from Wawayanda Lake, 3.5 mi east of Vernon, and 4.6 mi upstream from Wawayanda Creek.	6.46	1998	11-05-98	.39
					1-28-99	32
					5-13-99	5.4
					8-12-99	1.0
HACKENSACK RIVER BASIN						
01378387 Tenakill Brook	Hackensack River	Lat 40°58'43", long 73°58'02", Bergen County, Hydrologic Unit 02030103, at bridge on Cedar Lane, 0.4 mi upstream from mouth (at Oradell Reservoir), and 0.5 mi north of Closter.	8.69	---	06-10-99	7.1
01378450 Dorotockeys Run	Hackensack River	Lat 41°01'03", long 73°58'37", Bergen County, Hydrologic Unit 02030103, at bridge on Old Tappan Road, 0.6 mi east of Old Tap- pan, and 1.2 mi east of Lake Tappan outlet.	1.64	---	06-10-99	.49
PASSAIC RIVER BASIN						
01378780 Primrose Brook	Great Brook	Lat 40°45'54", long 74°31'48", Morris County, Hydrologic Unit 02030103, at bridge on Camp Trail Road in Morristown National Historic Park, 20 ft downstream from unnamed tributary, 500 ft west of Mount Kemble, and 2.4 mi northeast of Bernards- ville.	1.07	1998	11-12-98	.38
					2-03-99	1.6
					5-19-99	1.2
					6-24-99	.15
					8-18-99	.20

Discharge measurements made at miscellaneous sites during water year 1999

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
PASSAIC RIVER BASIN--Continued						
01379530 Canoe Brook	Passaic River	Lat 40°45'21", long 74°21'43", Essex County, Hydrologic Unit 02030103, just down- stream from New Jersey-American Water Company pumping station, 0.5 mi upstream from mouth, and 2.0 mi north of Summit.	11.0	1933-60b, 1961-98	10-07-98	7.8
					12-07-98	1.4
					1-07-99	1.8
					3-04-99	31
					4-28-99	5.3
					6-10-98	1.4
					8-04-99	.15
					9-14-99	1.2
01379700 Rockaway River	Passaic River	Lat 40°55'51", long 74°35'42", Morris County, Hydrologic Unit 02030103, on left bank, 60 ft downstream from bridge on Berkshire Valley Road in Berkshire Valley, 2.7 mi upstream from Stephens Brook, and 3.8 mi northwest of Dover.	24.4	1960-72, 1981, 1984-96a, 1998	10-07-97	11g
01379740 Rockaway River	Passaic River	Lat 40°54'13", long 74°35'25", Morris County, Hydrologic Unit 02030103, at bridge on West Central Avenue, 0.2 mi upstream from Washington Pond, and 2.1 mi northwest of Dover.	30.3	1986-87	10-07-97	14g
01379750 Rockaway River	Passaic River	Lat 40°54'12", long 74°34'36", Morris County, Hydrologic Unit 02030103, 500 ft down- stream from Main Street, at Carpenter Plant, 0.5 mi upstream from Green Pond Brook, and 1.4 mi northwest of Dover.	30.8	1963-66, 1983-86	10-07-97	17g
01379800 Green Pond Brook	Rockaway River	Lat 40°54'15", long 74°34'06", Morris County, Hydrologic Unit 02030103, at bridge on State Route 15, 50 ft west of Mount Pleas- ant Avenue at Dover, and 2.0 mi from mouth.	15.1	1963-64, 1984-86	10-07-97	2.6g
01379805 Rockaway River	Passaic River	Lat 40°53'29", long 74°34'10", Morris County, Hydrologic Unit 02030103, 0.5 mi upstream from Jackson Brook, 0.7 mi downstream from Green Pond Brook, and 2.0 mi east of Roxbury.	46.3	1983-86	10-07-97	21g
01379808 Rockaway River	Passaic River	Lat 40°53'17", long 74°34'09", Morris County, Hydrologic Unit 02030103, 0.2 mi upstream from Jackson Brook, 1.0 mi downstream from Green Pond Brook, and 2.1 mi east of Roxbury.	47.1	1983-86	10-07-97	21g
01379820 Jackson Brook	Rockaway River	Lat 40°53'09", long 74°34'07", Morris County, Hydrologic Unit 02030103, in Dover at mouth, 400 ft downstream from Spring Brook.	4.87	1985-86	10-07-97	2.9g
01379855 Rockaway River	Passaic River	Lat 40°52'47", long 74°32'03", Morris County, Hydrologic Unit 02030103, at bridge on Dover-Rockaway Road, 800 ft north of Franklin Road, 0.8 mi downstream from bridge at East Blackwell Street, and 1.3 mi southeast of Dover.	56.1	1985-86	10-07-97	24g
01379880 Rockaway River	Rockaway River	Lat 40°54'04", long 74°30'32", Morris County, Hydrologic Unit 02030103, at Conrail rail- road bridge at Rockaway, 0.2 mi upstream from bridge at Beach Street and 0.4 mi downstream of Foxs Pond outlet stream.	64.3	1985-86	10-07-97	28g
01380100 Beaver Brook	Rockaway River	Lat 40°54'08", long 74°30'06", Morris County, Hydrologic Unit 02030103, at bridge on Gill Avenue at Rockaway, and 0.2 mi upstream from mouth.	22.7	1963, 1985-86	10-07-97	4.2g

Discharge measurements made at miscellaneous sites during water year 1999

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
PASSAIC RIVER BASIN--Continued						
01380110 Rockaway River	Passaic River	Lat 40°53'57", long 74°29'11", Morris County, Hydrologic Unit 02030103, at bridge on Savage Avenue, 0.2 mi north of Route 46, 0.2 mi downstream from bridge on I-80, and 1.6 mi northwest of Denville.	87.6	1985-86	10-07-97	32g
01380135 Rockaway River	Passaic River	Lat 40°53'38", long 74°28'19", Morris County, Hydrologic Unit 02030103, at bridge on Pocono Road, 0.8 mi east of Denville, and 1.0 mi downstream from bridge on Savage Avenue.	96.7	1985-86	10-07-97	33g
01380145 Rockaway River	Passaic River	Lat 40°54'38", long 74°27'11", Morris County, Hydrologic Unit 02030103, at bridge on Bush Road, 0.2 mi east of Diamond Spring Road, 1.4 mi downstream of bridge at Pocono Road, and 1.8 mi northeast of Den- ville.	99.5	1985-86	10-07-97	36g
01380335 Rockaway River	Passaic River	Lat 40°54'53", long 74°25'40", Morris County, Hydrologic Unit 02030103, at bridge on North Main Street, 0.4 mi downstream from bridge on Powerville Road, and 0.4 mi south of Powerville.	115	1985-86	10-07-97	48g
01380100 Beaver Brook	Rockaway River	Lat 40°54'08", long 74°30'06", Morris County, Hydrologic Unit 02030103, at bridge on Gill Road in Rockaway, 0.2 mi upstream from mouth.	22.2	1963-64, 1984-86, 1997-98	11-09-98 1-27-99 5-10-99 8-03-99 8-19-99 8-25-99	11 69 20 0 0 .86
01387250 Ramapo River	Pompton River	Lat 41°10'08", long 74°11'27", Rockland County, NY, Hydrologic Unit 02030103, on left bank 300 ft upstream from Washington Avenue bridge, 600 ft downstream from unnamed tributary, at Sloatsburg, and 0.6 mi upstream from Stony Brook.	60.1	1960-63a	10-20-98 3-19-99 4-13-99 6-18-99 8-02-99	17 150 123 16 9.8
01387300 Stony Brook	Ramapo River	Lat 41°09'44", long 74°11'10", Rockland County, NY, Hydrologic Unit 02030103, on left bank at downstream side of bridge on Waldron Terrace, at Sloatsburg, 900 ft upstream from mouth, and 1.5 mi down- stream from Spring Brook.	18.3	1956-58, 1960-62a	10-20-98	.81
01387315 Ramapo River	Pompton River	Lat 41°08'56", long 74°11'22", Rockland County, NY, Hydrologic Unit 02030103, 100 ft upstream of Nakoma Brook, 0.7 mi south of Sloatsburg, and 1.0 mi downstream from mouth of Stony Brook.	79.3	---	10-20-98	18
01387350 Nakoma Brook	Ramapo River	Lat 41°09'14", long 74°11'38", Rockland County, NY, Hydrologic Unit 02030103, 50 ft downstream from tributary, 100 ft upstream from State Highway 17, 0.5 mi upstream from mouth, and 1.1 mi down- stream from Cranberry Pond Outlet, at Sloatsburg.	5.44	1960-77	10-20-98	.03
0138742503 Ramapo River	Pompton River	Lat 41°06'15", long 74°09'24", Bergen County, Hydrologic Unit 02030103, upstream of mouth of Mahwah River, 0.5 mi southeast of New York State line, and 0.6 mi upstream of bridge on State Route 17.	93.8	1982-83	10-20-98	17

Discharge measurements made at miscellaneous sites during water year 1999

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
PASSAIC RIVER BASIN--Continued						
01387450 Mahwah River	Ramapo River	Lat 41°08'27", long 74°07'01", Rockland County, NY, Hydrologic Unit 02030103, at bridge on U.S. Highway 202, 2.5 mi north- east of Suffern, and 4.8 mi upstream from mouth.	12.3	1958-95a	10-20-98	.56
01387465 Mahwah River	Ramapo River	Lat 41°07'27", long 74°08'10", Rockland County, NY, Hydrologic Unit 02030103, at bridge on Montebello Road, 0.5 mi north of Suffern, and 2.5 mi upstream from mouth.	19.9	----	10-20-98	1.2
01387480 Mahwah River	Ramapo River	Lat 41°06'54", long 74°08'46", Rockland County, NY, Hydrologic Unit 02030103, on right bank at bridge on State Highway 59 (Lafayette Boulevard) at Suffern, 1 mi upstream from mouth.	20.8	1961-62a, 1982	10-20-98 7-07-99	.82 1.4
01387483 Mahwah River	Ramapo River	Lat 41°06'19", long 74°08'59", Bergen County, Hydrologic Unit 02030103, at Con- rail railroad bridge in West Mahwah, 2,640 ft upstream of mouth, and 0.1 mi southwest of New York State line.	21.3	1982-83	10-20-98	1.0
01387488 Masonicus Brook	Mahwah River	Lat 41°04'28", long 74°08'10", Bergen County, Hydrologic Unit 02030103, at bridge on Myrtle Avenue, 1,400 ft from mouth, 1.1 mi southwest of Mahwah, and 1.3 mi northeast of Darlington Lake.	2.89	1982-83	10-20-98	.53
0138749205 Mahwah River	Ramapo River	Lat 41°06'15", long 74°09'22", Bergen County, Hydrologic Unit 02030103, at site at mouth of Mahwah River in West Mah- wah, and 1,800 ft downstream from unnamed tributary.	25.7	1982-83	10-20-98	2.9
01387525 Ramapo River	Pompton River	Lat 41°05'37", long 74°10'21", Bergen County, Hydrologic Unit 02030103, 800 ft below Stag Brook, at north end of island, and 1.2 mi west of Mahwah.	117	1963-64, 1982-83	10-20-98	21
01387530 Ramapo River	Pompton River	Lat 41°05'26", long 74°10'22", Bergen County, Hydrologic Unit 02030103, 0.1 mi upstream of bridge at gravel road, 0.4 mi downstream of former mouth of Stag Brook (Clove Brook) and 1.0 mi north of Darling- ton.	117	1985	10-20-98	16
01387536 Ramapo River	Pompton River	Lat 41°05'15", long 74°10'33", Bergen County, Hydrologic Unit 02030103, 800 ft west of Ramapo Valley Road (U.S. Route 202), 0.3 mi downstream of bridge on gravel road and 0.7 mi northeast of Darling- ton.	117	1985	10-20-98	17
01387570 Ramapo River	Pompton River	Lat 41°05'05", long 74°11'04", Bergen County, Hydrologic Unit 02030103, in Dar- lington, 0.6 mi upstream of mouth of Dar- lington Brook, 1.0 mi east of MacMillan Reservoir, and 2.4 mi downstream from State Route 17 bridge.	119	---	10-20-98	19
01387600 Darlington Brook	Ramapo River	Lat 41°04'46", long 74°11'02", Bergen County, Hydrologic Unit 02030103, at bridge on Valley Road (U.S. Route 202), at Darlington, 0.3 mi upstream from mouth, and 2.6 mi northwest of Ramsey.	3.57	1963-67, 1981-82	10-20-98	.61

Discharge measurements made at miscellaneous sites during water year 1999

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
PASSAIC RIVER BASIN--Continued						
01387610 Ramapo River	Pompton River	Lat 41°04'39", long 74°11'33", Bergen County, Hydrologic Unit 02030103, 0.4 mi below Darlington Brook, and 0.5 mi south- west of Darlington.	123	1964, 1982	10-20-98	16
01387660 Ramapo River	Pompton River	Lat 41°04'31", long 74°11'52", Bergen County, Hydrologic Unit 02030103, just downstream from Fyke Brook, 0.6 mi southeast of Matty Price Hill, and 0.9 mi southwest of Darlington.	125	1982-83	10-20-98	18
01387710 Ramapo River	Pompton River	Lat 41°03'30", long 74°13'00", Bergen County, Hydrologic Unit 02030103, 0.2 mi upstream from mouth of Fox Brook, 0.8 mi downstream from mouth of Swamp Brook, and 2.4 mi north of Oakland.	130	---	10-20-98	16
01387765 Ramapo River	Pompton River	Lat 41°03'12", long 74°13'38", Bergen County, Hydrologic Unit 02030103, at bridge on Glen Gray Road (Midvale Moun- tain Road), 0.2 mi west of Ramapo Valley Road (U.S. Route 202), 0.6 mi downstream of Fox Brook and 1.7 mi north of Oakland.	133	1982-83, 1991	10-20-98	20
01387769 Ramapo River	Pompton River	Lat 41°03'03", long 74°13'38", Bergen County, Hydrologic Unit 02030103, 0.3 mi west of Ramapo Valley Road (U.S. Route 202) and 1.4 mi north of Oakland.	134	1983, 1991	10-20-98	18
01387811 Ramapo River	Pompton River	Lat 41°02'12", long 74°14'30", Bergen County, Hydrologic Unit 02030103, at bridge on Lenape Lane, 550 ft northwest of Crystal Lake, 175 ft downstream from unnamed tributary, and 0.8 mi north of Oak- land.	135	1982-83	10-20-98	20
01387880 Pond Brook	Ramapo River	Lat 41°01'36", long 74°14'04", Bergen County, Hydrologic Unit 02030103, at bridge on Interstate 287/NJ Route 208 in Oakland, 0.2 mi upstream from former site at Franklin Avenue (prior to October 1975), 0.6 mi upstream from mouth, and 1.5 mi northwest of Franklin Lakes.	6.76	1968-71, 1976-98	06-13-97	3.6
01387883 Pond Brook tributary 2	Pond Brook	Lat 41°01'45", long 74°14'13", Bergen County, Hydrologic Unit 02030103, at downstream right bank of bridge on U.S. Route 202, and 0.2 mi northeast of Inter- state 287/State Route 208.	.33	1968, 1981-82	10-20-98	.01
01387888 Pond Brook	Ramapo River	Lat 41°01'58", long 74°14'37", Bergen County, Hydrologic Unit 02030103, at bridge on Lake Shore Drive, 150 ft down- stream from outlet of Crystal Lake, and 0.5 mi north of Oakland.	7.71	----	10-20-98	.43
01387890 Ramapo River	Pompton River	Lat 41°01'40", long 74°15'00", Bergen County, Hydrologic Unit 02030103, at Interstate 287 bridge, 0.5 mi downstream of mouth of Pond Brook, and 0.7 mi west of Oakland.	143	---	10-20-98 3-19-99 4-13-99 6-18-99 8-02-99 8-09-99	20 346 267 23 5.2 2.1
01387910 Ramapo River	Pompton River	Lat 41°01'19", long 74°15'25", Bergen County, Hydrologic Unit 02030103, 1.2 mi southwest of Oakland, and 2.2 mi northeast of Pompton Lakes.	144	1963-64, 1983	10-20-98	22

Discharge measurements made at miscellaneous sites during water year 1999

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
PASSAIC RIVER BASIN--Continued						
01389005 Passaic River	Newark Bay	Lat 40°53'47", long 74°16'10", Passaic County, Hydrologic Unit 02030103, in Two Bridges, 400 ft downstream from the Pomp- ton River.	734	1991, 1996-98	5-11-99 8-05-99	153 110
01389110 Passaic River	Newark Bay	Lat 40°53'32", long 74°15'58", Passaic County, Hydrologic Unit 02030103, at bridge on U.S. Route 46 at Singac, and 0.6 mi downstream from Pompton River.	745	1996-98	5-11-99 8-05-99	174 122
01389492 Passaic River	Newark Bay	Lat 40°53'04", long 74°14'05", Passaic County, Hydrologic Unit 02030103, at Beatties Dam at Little Falls, 600 ft upstream from Union Boulevard, and 1.5 mi upstream from Peckman River. Note.-- flow over Dam, not through intake canal.	762	1991-95, 1997-98	11-23-98 6-15-99	3.4 94
01389802 Passaic River	Newark Bay	Lat 40°54'57", long 74°10'55", Passaic County, Hydrologic Unit 02030103, just upstream from Passaic Falls (Great Falls) in Paterson and 1.5 mi downstream from Peckman River. Note.-- flow over falls, not through hydroelectric plant.	779	1987-89, 1991-95, 1997-98	6-15-99	143
RAHWAY RIVER BASIN						
01393895 East Branch Rahway River	Rahway River	Lat 40°43'22", long 74°17'07", Essex County, Hydrologic Unit 02030104, at bridge on Millburn Avenue, 0.9 mi east of Millburn, and 1.5 mi upstream from confluence with West Branch Rahway River.	7.09	1998	12-07-98	2.6
RARITAN RIVER BASIN						
01396535 South Branch Raritan River	Raritan River	Lat 40°39'49", long 74°53'52", Hunterdon County, Hydrologic Unit 02030105, at bridge on Arch Street in High Bridge, 0.9 mi northeast of Mariannes Corner, and 4.3 mi northeast of Norton.	68.8	1978-81, 1983, 1985-97	4-28-99	88
01396550 Spruce Run	South Branch Raritan River	Lat 40°43'29", long 74°54'34", Hunterdon County, Hydrologic Unit 02030105, at bridge on Newport Road, 1.2 mi northwest of Woodglen, and 6.4 mi upstream from Spruce Run Reservoir.	5.67	1998	11-16-98 1-24-99 2-01-99 5-10-99 6-25-99 8-05-99	1.7 218 5.8 6.0 1.5 .30
01396588 Spruce Run	South Branch Raritan River	Lat 40°40'41", long 74°55'06", Hunterdon County, Hydrologic Unit 02030105, 800 ft downstream of Rocky Run, 0.3 mi upstream of bridge on Van Syckel Road, and 1.6 mi southeast of Glen Gardner.	15.5	1979, 1981-83, 1985-97	4-28-99	19
01397400 South Branch Raritan River	Raritan River	Lat 40°31'01", long 74°48'10", Hunterdon County, Hydrologic Unit 02030105, at bridge on Main Street in Three Bridges, 1.4 mi downstream from Bushkill Brook, and 3.0 mi northeast of Flemington.	181	1976, 1978-81, 1983, 1985-97	4-28-99	173
01398102 South Branch Raritan River	Raritan River	Lat 40°32'48", long 74°41'48", Somerset County, Hydrologic Unit 02030105, at bridge on Studdiford Drive at South Branch, 0.8 mi upstream from mouth, and 2.7 mi southeast of Readington.	265	1976-83, 1998	11-17-98 4-07-99 4-29-99 5-10-99 8-02-99	59 218 229 141 56
01399120 North Branch Raritan River	Raritan River	Lat 40°38'09", long 74°40'56", Somerset County, Hydrologic Unit 02030105, at bridge on Burnt Mills Road, 0.1 mi upstream from Lamington River, 0.3 mi east of Burnt Mills, and 0.4 mi southwest of Far Hills.	63.8	1964, 1975-78, 1981-83, 1985-97	4-07-99	86

Discharge measurements made at miscellaneous sites during water year 1999

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
RARITAN RIVER BASIN--Continued						
01399525 Axle Brook	Lamington River	Lat 40°41'40", long 74°43'05", Somerset County, Hydrologic Unit 02030105, on right upstream wingwall of bridge on Black River Road, 1.3 mi, south of Pottersville, and 0.3 mi upstream from mouth.	1.22	1977-88, 1989-98	4-22-99 8-05-99 9-10-99	1.4 0 .08
01400630 Millstone River	Raritan River	Lat 40°18'12", long 74°34'33", Mercer County, Hydrologic Unit 02030105, at bridge on Southfield Road, 0.2 mi southeast at Grovers Mill, 3.5 mi southwest of Cran- bury, and 3.0 mi upstream of Bear Brook.	41.0	1971, 1975, 1979-98	9-17-99 9-18-99	1060 405
01403385 Bound Brook	Raritan River	Lat 40°34'51", long 74°29'58", Middlesex County, Hydrologic Unit 02030105, at bridge on State Route 28, 0.3 mi upstream from Green Brook, 0.9 mi northeast of Mid- dlesex, 2.4 mi west of the intersection of State Route 28 and Washington Avenue in Dunellen.	23.9	1998	11-04-98 1-26-99 5-12-99 8-04-99	4.0 44 6.6 1.1
01405340 Manalapan Brook	South River	Lat 40°17'46", long 74°23'53", Middlesex County, Hydrologic Unit 02030105, at bridge on Federal Road, 2.0 mi west of Englishtown, 2.6 mi north of Manalapan, and 3.0 mi downstream from Still House Brook.	20.9	1979-81, 1982, 1986-95, 1997-98	11-17-98 2-04-99 5-17-99 8-10-99	10 37 13 2.6
MANASQUAN RIVER BASIN						
01408009 Mingamahone Brook	Manasquan River	Lat 39°12'45", long 74°10'07", Monmouth County, Hydrologic Unit 02040301, at bridge on Cranberry Bog Road, 0.6 mi upstream from Branch Mingamahone Brook, and 1.7 mi west of Earle.	3.32	1971-74, 1998	1-25-99 5-26-99 8-10-99	22 5.0 .57
01408015 Mingamahone Brook	Manasquan River	Lat 40°11'38", long 74°09'42", Monmouth County, Hydrologic Unit 02040301, at bridge on Belmar Road in Farmingdale, and 3.0 mi upstream from mouth.	6.20	1969-98	3-22-99	49
TOMS RIVER BASIN						
01408600 Wrangel Brook	Toms River	Lat 39°57'39", long 74°13'42", Ocean County, Hydrologic Unit 02040301, at bridge on Southampton Road in Berkeley Township, 0.5 mi upstream from mouth, and 1.7 mi west of Toms River.	19.5	1993-97	12-08-98 1-22-99 3-17-99 4-30-99 5-25-99 6-22-99 8-10-99	19 46 56 28 48 32 14
01408630 Davenport Branch	Wrangel Brook	Lat 39°57'3", long 74°1'42", Ocean County, Hydrologic Unit 02040301, at bridge on Mule Road in Berkeley Township, 1.4 mi upstream of mouth, and 2.5 mi west of Toms River.	12.1	1993-96	10-23-98	20
01408728 Long Swamp Creek	Toms River	Lat 39°57'14", long 74°11'19", Ocean County, Hydrologic Unit 02040301, at bridge on Washington Street in Dover Township at Toms River, and 0.3 mi upstream from mouth.	6.53	1994-98	10-23-98 12-08-98 1-22-99 3-17-99 4-30-99 5-25-99 6-22-99 8-10-99	1.6 1.0 1.8 1.5 2.4 3.1 2.0 .46

Discharge measurements made at miscellaneous sites during water year 1999

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
CEDAR CREEK BASIN						
01408830 Cedar Creek	Barnegat Bay	Lat 39°53'50", long 74°19'00", Ocean County, Hydrologic Unit 02040301, at bridge on Whiting-Lacey Road in Cedar Crest, 0.2 mi downstream from outlet of Bamber Lake, and 3.7 mi southeast of Keswick Grove.	20.1	1977-78, 1998	11-18-98	26
					2-18-99	44
					6-07-99	26
					8-10-99	19
MULLICA RIVER BASIN						
01409416 Hammonton Creek	Mullica River	Lat 39°38'02", long 74°43'05", Atlantic County, Hydrologic Unit 02040301, at bridge on Chestnut Road, 0.4 mi south of Wescoatville, and 1.6 mi upstream from Norton Branch.	9.57	1974, 1978-81, 1983, 1985-98	12-07-98	10
					2-09-99	18
					6-03-99	4.2
					8-11-99	1.4
01409815 West Branch Wading River	Wading River	Lat 39°40'30", long 74°32'28", Burlington County, Hydrologic Unit 02040301, at bridge on State Highway 563 in Maxwell, 1.6 mi southeast of Washington, 1.8 mi southwest of Jenkins, and 2.2 mi upstream from confluence with Oswego River.	85.9	1976-93, 1998	12-07-98	28
					2-09-99	170
					6-01-99	57
					8-17-99	115
GREAT EGG HARBOR RIVER BASIN						
01411035 Hospitality Branch	Great Egg Harbor River	Lat 39°38'36", long 74°58'40", Gloucester County, Hydrologic Unit 02040302, at bridge on Blue Bell Road, 1.2 mi upstream from Timber Lakes, and 2.0 mi west of Cecil.	4.51	1998	12-08-98	1.0
					2-10-99	3.1
					5-24-99	3.2
					8-23-99	1.3
01411110 Great Egg Harbor River	Great Egg Harbor Bay	Lat 39°30'50", long 74°46'47", Atlantic County, Hydrologic Unit 02040302, at bridge on U.S. Route 322 in Weymouth, 0.5 mi upstream from Deep Run, and 20.9 mi upstream from mouth.	154	1978-81, 1985-98	12-07-98	70
					2-17-99	186
					5-13-99	157
					8-11-99	48
01411120 Deep Run	Great Egg Harbor River	Lat 39°30'41", long 74°55'15", Atlantic County, Hydrologic Unit 02040302, down- stream left bank of culvert on U.S. Route 40, 0.2 mi upstream of Pennsylvania-Read- ing-Seashore railroad tracks, 0.3 mi south- east of Buena, and 1.1 mi northwest of Pancoast Lake.	0.33	1997-98	11-06-98	0
					7-06-99	0
					8-24-99	0
					9-16-99	23
					9-23-99	0
01411122 Deep Run	Great Egg Harbor River	Lat 39°31'20", long 74°55'13", Atlantic County, Hydrologic Unit 02040302, upstream right bank of culvert on State Route 54, 0.4 mi southwest of Pancoast Road, 0.6 mi southeast of Landisville, and 0.1 mi northeast of Pancoast Lake.	1.18	1997-98	9-16-99	63
					9-16-99	58
01411196 Babcock Creek	Great Egg Harbor River	Lat 39°28'08", long 74°41'34", Atlantic County, Hydrologic Unit 02040302, at bridge on U.S. Route 322, 1.1 mi east of intersection of U.S. Route 50, 2.2 mi north- east of Mays Landing, and 2.8 mi upstream from Watering Race Branch.	16.3	1998	12-07-98	4.9
					2-22-99	23
					5-20-99	12
WEST CREEK BASIN						
01411444 West Creek	Delaware Bay	Lat 39°15'36", long 75°54'42", Cumberland County, Hydrologic Unit 02040206, at bridge on State Route 550, 1.3 mi upstream from Hands Mill Pond, and 3.7 mi east of Leesburg.	6.64	---	12-09-98	3.1
					2-08-99	8.2
					6-02-99	.09
					8-24-99	0
					9-13-99	0
					9-28-99	.03

Discharge measurements made at miscellaneous sites during water year 1999

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
MAURICE RIVER BASIN						
01411466 Indian Branch	Scotland Run	Lat 39°35'27", long 75°03'36", Gloucester County, Hydrologic Unit 02040206, at bridge on U.S. Route 47 (Delsea Drive), 0.4 mi upstream from Malaga Lake, and 1.4 mi north of Malaga.	6.50	1998	12-08-98	2.4
					2-10-99	7.8
					5-25-99	17
					7-22-99	1.4
					8-11-99	1.8
01411955 Gravelly Run	Buckshutem Creek	Lat 39°20'14", long 75°03'04", Cumberland County, Hydrologic Unit 02040206, 0.3 mi upstream from mouth, 1.1 mi west of com- munity of Laurel Lake, and 2.5 mi southeast of Millville Municipal Airport.	3.19	1998	12-09-98	1.7
					2-18-99	3.4
					6-02-99	1.4
					8-17-99	.51
COHANSEY RIVER BASIN						
01412800 Cohansey River	Delaware Bay	Lat 39°28'21", long 75°15'21", Cumberland County, Hydrologic Unit 02040206, on right bank just downstream from bridge on Silver Lake Road, 0.6 mi south of Seeley, 2.6 mi east of Shiloh, 4.1 mi north of Bridgeton, and 22.5 mi upstream from mouth.	28.0	1975-98	12-08-98	20
					2-16-99	20
					5-20-99	16
					8-18-99	11
DELAWARE RIVER BASIN						
01442760 Dunnfield Creek	Delaware River	Lat 40°58'14", long 75°07'35", Warren County, Hydrologic Unit 02040104, 1,300 ft upstream from mouth, and Delaware River, 0.6 mi northwest of Arrow Island, and 0.6 mi southeast of Delaware Water Gap Toll Bridge on Interstate 80.	3.56	1998	11-09-98	.52
					2-02-99	15
					5-19-99	2.7
					8-09-99	.31
01443440 Paulins Kill	Delaware River	Lat 41°05'55", long 74°41'28", Sussex County, Hydrologic Unit 02040105, at Lafayette, 920 ft downstream of bridge on Lafayette Meadows Road, and 2.0 mi southeast of Ross Corner.	26.3	1997	7-28-99	9.2
01446400 Pequest River	Delaware River	Lat 40°49'45", long 75°04'44", Warren County, Hydrologic Unit 02040105, at bridge on State Route 519, in Belvidere, and 1,400 ft upstream from mouth.	157	1950-53, 1977-82, 1984-98	11-12-98	65
					2-16-99	242
					7-19-99	25
					7-28-99	22
01456200 Musconetcong River	Delaware River	Lat 40°48'48", long 74°50'32", Warren County, Hydrologic Unit 02040105, at bridge on Kings Highway at Beattystown, 1.6 mi upstream from Hances Brook, and 1.8 mi west of Schooleys Mountain.	90.3	1973, 1979-81, 1983, 1985-90, 1993-97	8-04-99	29
01457400 Musconetcong River	Delaware River	Lat 40°35'32", long 75°11'20", Warren County, Hydrologic Unit 02040105, at bridge on County Route 627, at Riegelsville, 0.2 mi north of Mount Joy, and 0.2 mi upstream from mouth.	156	1940-55, 1973, 1977, 1987-98	11-12-98	107
					2-16-99	272
					5-17-99	157
					8-03-99	72
					8-04-99	49
01458570 Nishisakawick Creek	Delaware River	Lat 40°32'32", long 75°02'49", Hunterdon County, Hydrologic Unit 02040105, 1.3 mi north of Frenchtown, 2.1 mi upstream from mouth, and 3.1 mi southeast of Milford.	10.1	1998	11-16-98	1.3
					1-27-99	18
					5-06-99	5.8
					8-05-99	.02
01460399 Delaware and Raritan Canal Spillway	Delaware River	Lat 40°14'40", long 74°49'11", Mercer County, Hydrologic Unit 02040105, approximately 50 ft upstream from Lower Ferry Road, 0.3 mi northwest of Trenton, 0.5 mi southeast of Wilburtha, and 1.5 mi southwest of Fernwood.	---	---	6-12-96	210g

Discharge measurements made at miscellaneous sites during water year 1999

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
DELAWARE RIVER BASIN--Continued						
01463200 Gold Run	Delaware River	Lat 40°14'41", long 74°49'14", Mercer County, Hydrologic Unit 02040105, 80 ft upstream from culvert under Delaware and Raritan Canal, 0.5 mi southeast of Wilburtha, 1.5 mi southwest of Fernwood, and 0.3 mi northwest of Trenton.	1.98	1944, 1996-98	6-12-96	1,500g
01463850 Miry Run	Assunpink Creek	Lat 40°14'50", long 74°41'14", Mercer County, Hydrologic Unit 02040105, at bridge on State Route 533 (Quaker Bridge Road), 2.1 mi upstream of Assunpink Creek, 0.7 mi north of Mercerville, and 3.8 mi northwest of Robbinsville.	10.7	1998	2-01-99 5-05-99 8-04-99	2.4 2.3 .12
01464020 Assunpink Creek	Delaware River	Lat 40°13'01", long 74°46'04", Mercer County, Hydrologic Unit 02040105, at bridge on Peace Street, 0.1 mi upstream from Delaware River, and 0.7 mi southeast of Calhoun Street Bridge.	91.4	1963, 1966, 1998	11-19-98 2-02-99 5-12-99 8-05-99	41 245 48 23
01464504 Crosswicks Creek	Delaware River	Lat 40°10'02", long 74°40'40", Mercer County, Hydrologic Unit 02040201, at bridge on Groveville Road (Main Street) in Groveville, 1.2 mi upstream from Doctors Creek, and 2.2 mi northeast of Bordentown.	98.0	1998	11-16-98 8-09-99	48 18
01464583 North Branch Bakers Brook	Barkers Brook	Lat 40°01'58", long 74°40'12", Burlington County, Hydrologic Unit 02040201, at bridge on Juliustown-Georgetown Road (State Route 663), 1.3 mi east of Jobstown, 1.3 mi north of Juliustown, and 1.9 mi upstream from mouth.	1.72	1998	11-18-98 2-08-99 5-05-99 8-23-99	.42 3.7 .71 1.3
01465893 Little Creek	Southwest Branch Rancocas Creek	Lat 39°53'54", long 74°47'19", Burlington County, Hydrologic Unit 02040202, at bridge on State Route 70 in Chairville, 250 ft east of Skeet Road, 1.9 mi east of Medford, 4.6 mi south of Lumberton, and 4.7 mi upstream from mouth.	6.32	1998	2-08-99 5-18-99 8-16-99	9.4 2.8 .83
01467006 North Branch Rancocas Creek	Rancocas Creek	Lat 39°59'22", long 74°47'06", Burlington County, Hydrologic Unit 02040202, at bridge on Pine Street in Mount Holly.	140	1998	11-12-98 2-17-99 5-29-99 8-12-99	62 147 195 29
01467359 North Branch Big Timber Creek	Big Timber Creek	Lat 39°50'04", long 75°04'02", Camden County, Hydrologic Unit 02040202, at bridge on Chews Landing-Clementon Road (State Route 683), 0.7 mi south of Glendora, 1.8 mi upstream from South Branch Big Timber Creek, and 2.5 mi north of Blackwood.	18.8	1998	11-19-98 2-17-99 6-01-99	19 33 28
01475031 Chestnut Branch	Mantua Creek	Lat 39°42'32", long 75°06'58", Gloucester County, Hydrologic Unit 02040202, 0.3 mi north of Glassboro, 1.4 mi upstream from the mouth of Plank Run, and 1.5 mi south of Pitman.	0.36	1995-96, 1998	10-22-98 11-19-98 12-17-98 3-18-99 4-15-99 5-06-99	.15 .12 .29 .25 .68 .43
01475032 Chestnut Branch	Mantua Creek	Lat 39°42'38", long 75°07'18", Gloucester County, Hydrologic Unit 02040202, 0.7 mi northwest of Glassboro, 1.0 mi upstream from mouth, and 1.4 mi south of Pitman.	0.47	1995-96, 1998	10-22-98 11-19-98 12-17-98 3-18-99 4-15-99 5-06-99	.27 .22 .37 .37 .37 .53

Discharge measurements made at miscellaneous sites during water year 1999

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
DELAWARE RIVER BASIN--Continued						
0147503330 Plank Run	Chestnut Branch	Lat 39°43'01", long 75°08'14", Gloucester County, Hydrologic Unit 02040202, 0.1 mi upstream from Chestnut Branch, 1.0 mi south of Pitman, and 1.5 mi northwest of Glassboro.	0.96	1995-96, 1998	10-22-98	.97
					11-19-98	.87
					12-17-98	.88
					3-18-99	1.4
					4-15-99	1.6
					5-06-99	1.0
01475034 Lost Lake Run	Chestnut Branch	Lat 39°43'26", long 75°07'38", Gloucester County, Hydrologic Unit 02040202, 0.4 mi south of Pitman, 0.7 mi upstream from Chestnut Branch, and 1.5 mi north of Glass- boro.	0.33	1995-96, 1998	10-22-98	0
					11-19-98	0
					12-17-98	0
					3-18-99	0
					4-15-99	0
					5-16-99	0
0147503450 Cabin Run	Chestunt Branch	Lat 39°43'41", long 75°08'35", Gloucester County, Hydrologic Unit 02040202, 0.1 mi upstream from mouth and Alcyon Lake, 1.0 mi west of Pitman, and 1.3 mi east of Rich- wood.	0.51	1995-96, 1998	10-22-98	.15
					11-19-98	.14
					12-17-98	.17
					3-18-99	.18
					4-15-99	.13
					5-06-99	.08

- a Operated as continuous-recording gaging station.
- b Discharge records published in reports of the New Jersey Department of Environmental Protection.
- c Discharge records on file in U.S. Geological Survey Office, West Trenton, New Jersey.
- d Operated as continuous gaging station by Duhernal Water Company.
- f Revised.
- g Not previously published.

ELEVATIONS AT TIDAL CREST-STAGE STATIONS

The following table contains annual maximum elevations 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 mean sea level unless otherwise noted. Only the maximum elevation is given. Information on some other high elevations 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 elevation has been determined.

Maximum elevation at tidal crest-stage partial-record stations

Station name and number	Location	Period of record	Water year 1999 maximum		Period of record maximum	
			Date	Elevation (ft)	Date	Elevation (ft)
Hackensack River at New Milford, NJ (01378501)	Lat 40°56'52", long 74°01'34", Bergen County, Hydrologic Unit 02030103, on right bank approx. 50 ft downstream from New Milford gaging station, on dam wingwall 10 ft downstream from dam.	1997-99	1-10-97 7-23-98 9-16-99	16.21r 10.03r 17.7d	9-16-99	17.7d
Hackensack River at NJ Route 3 near Lynhurst, NJ (01378626)	Lat 40°48'17", long 74°03'55", Bergen County, Hydrologic Unit 02030103, on downstream side of concrete left channel pier on the westbound State Route 3 bridge, 0.5 mi east of East Rutherford, and 0.6 mi east of Lynhurst.	1997-99	10-19-96a 2-24-98a 1-03-99	6.90a 6.40a 6.32	10-19-96	6.90a
Passaic River at Garfield, NJ (01390000)	Lat 40°51'53", long 74°06'37", Bergen County, Hydrologic Unit 02030103, on left bank downstream wingwall bridge on Passaic Street at Garfield, 0.3 mi west of intersection of Midland Avenue and Passaic Street.	1997-99	10-19-96a 5-13-98a 9-16-99	8.95a 8.05a 14.7	9-16-99	14.7
Elizabeth River at Linden, NJ (01393510)	Lat 40°38'50", long 74°12'19", Union County, Hydrologic Unit 02030104, on concrete right wingwall, upstream of bridge on Atlantic Avenue in Linden, just east of Mattano Park, and 0.8 mi east of Bayway Circle.	1997-99	10-19-96a 1-03-99	6.98a 6.01	10-19-96a	6.98a
Rahway River at U.S. Route 1, at Rahway, NJ (01396035)	Lat 40°35'56", long 74°16'09", Union County, Hydrologic Unit 02030104, on downstream right abutment of bridge on U.S. Route 1 (at Lawrence Street prior to 1999) in Rahway, 930 ft downstream of South Branch Rahway River, and 1.6 mi south of Linden.	1997-99	10-19-96r 2-24-98r 9-16-99	8.57r 6.85r 7.68	10-19-96r	8.57r
Raritan River at State Route 18 at New Brunswick, NJ (01404171)	Lat 40°30'31", long 74°27'26", Middlesex County, Hydrologic Unit 02030104, on left bank, 100 ft downstream from bridge on State Route 18, on the downstream end of small tributary culvert headwall in Johnson Park, next to unnamed road, and 0.8 mi northwest of New Brunswick.	1997-99	10-19-96a 2-24-98a 9-16-99	12.5a 7.79a 17.2	9-16-99	17.2
Raritan River at Perth Amboy, NJ (01406700)	Lat 40°30'31", long 74°17'30", Middlesex County, Hydrologic Unit 02030105, on upstream left bridge pier of Victory Bridge on State Route 35 in Perth Amboy, 0.5 mi downstream from Garden State Parkway bridge, and 1.5 mi upstream from mouth.	1938, 1944, 1950, 1953, 1955, 1960, 1967-70†, 1980-99	1-03-99	6.44	12-11-92	10.4
Luppataatong Creek at Keyport, NJ (01407030)	Lat 40°26'08", long 74°12'27", Monmouth County, Hydrologic Unit 02030104, on left bank upstream side of Front Street Bridge in Keyport, 0.1 mi upstream from mouth, and 2.0 mi northwest of Matawan.	1944, 1950, 1960, 1980-99	1-03-99	6.34	9-12-60	10.3
Navesink River at Red Bank, NJ (01407535)	Lat 40°21'14", long 74°04'00", Monmouth County, Hydrologic Unit 02030104, on wooden piling upstream side of old boat ramp at right bank, in Red Bank, 0.15 mi north of East Front Street, on the east side of Riverview Hospital.	1997-99	10-19-96a 2-24-98a 3-15-99	5.77a 5.52a 4.84	10-19-96a	5.77a

Maximum elevation at tidal crest-stage partial-record stations--Continued

Station name and number	Location	Period of record	Water year 1999 maximum		Period of record maximum	
			Date	Elevation (ft)	Date	Elevation (ft)
Branchport Creek at Oceanport, NJ (01407590)	Lat 40°19'12", long 74°00'12", Monmouth County, Hydrologic Unit 02030104, on wooden piling at right bank bulkhead, just upstream from bridge on Monmouth Boulevard in Oceanport, and 1.2 mi north of Long Branch.	1997-99	10-19-96r 2-24-98r 3-15-99	>5.0br 5.11br 4.11b	2-24-98r	5.11br
Metedeconk River at Laurelton, NJ (01408155)	Lat 40°03'58", long 74°08'01", Ocean County, Hydrologic Unit 02040301, on downstream right wingwall of the bridge on State Route 70, just downstream of Forge Pond, at Laurelton.	1997-99	8-21-97cr 3-09-98r 9-16-99	3.73cr 4.08r 3.54	2-24-98	4.08
Toms River at Toms River, NJ (01408700)	Lat 39°57'02", long 74°11'58", Ocean County, Hydrologic Unit 02040301, on fourth piling at the left bank bulkhead, downstream from bridge on South Main Street in Toms River.	1997-99	10-19-96r 3-09-98r 9-16-99	3.87r 3.76r 3.40	10-19-96r	3.87r
Manahawkin Bay near Manahawkin, NJ (01409145)	Lat 39°40'13", long 74°12'54", Ocean County, Hydrologic Unit 02040301, at west end of bridge on State Route 72 over Manahawkin Bay, 2.5 mi northwest of Ship Bottom, and 3.1 mi southeast of Manahawkin.	1965-99	1-15-99	3.83	12-11-92	6.02
Little Egg Harbor at Beach Haven, NJ (01409285)	Lat 39°33'10", long 74°15'07", Ocean County, Hydrologic Unit 02040301, in Beach Haven at U.S. Coast Guard station, 6.0 mi east of Tuckerton and 7.4 mi southwest of Ship Bottom.	1979-99	1-15-99	4.59	12-11-92	6.93
Batsto River at Pleasant Mills, NJ (01409510)	Lat 39°37'55", long 74°38'40", Ocean County, Hydrologic Unit 02040301, on right bank, 1.0 mi southeast of Pleasant Mills, and 0.5 mi upstream from mouth.	1958-99†	9-16-99	4.60	3-07-62	7.2
Mullica River near Port Republic, NJ (01410100)	Lat 39°33'12", long 74°27'46", Atlantic County, Hydrologic Unit 02040301, on right bank on bulkhead piling at south end of U.S. Route 9 and Garden State Parkway bridge over Mullica River, 2.8 mi northeast of Port Republic, and 2.8 mi south of New Gretna.	1962, 1965-99	1-15-99	5.18	3-06-62	7.9
Absecon Creek at Absecon, NJ (01410500)	Lat 39°25'45", long 74°31'16", Atlantic County, Hydrologic Unit 02040302, on right abutment of bridge on Mill Road, 50 ft downstream of former gaging station, 1.0 mi west of Absecon, and 3.4 mi upstream from mouth.	1923-29†, 1933-38†, 1946-84†, 1985-99	9-16-99	5.12	3-29-84	7.77
Beach Thorofare at Atlantic City, NJ (01410570)	Lat 39°21'56", long 74°26'44", Atlantic County, Hydrologic Unit 02040302, on east abutment south side of AMTRAK railroad swivel bridge in Atlantic City, 0.5 mi northeast of Bader Field airport, and 2.7 mi northeast of Ventnor City.	1944, 1950, 1960, 1962, 1978†, 1969-99	10-19-96r 3-15-99	5.61r 5.25	3-06-62	8.3
Great Egg Harbor River at U.S. 40, at Mays Landing, NJ (01411175)	Lat 39°26'55", long 74°43'38", Atlantic County, Hydrologic Unit 02040302, at Mays Landing river access parking lot on the south side of River Drive and intersection of Faragut Road, in Mays Landing, 0.1 mi downstream of bridge on U.S. Route 40.	1997-99	9-16-99	5.09	2-05-98	6.21
Tuckahoe River at Head of River, NJ (01411300)	Lat 39°18'25", long 74°49'15", Cape May County, Hydrologic Unit 02040302, downstream right abutment of highway bridge on State Route 49, 0.2 mi upstream from McNeals Branch, 0.4 mi southeast of Head of River, and 3.7 mi west of Tuckahoe.	1979-99†	3-15-99	4.50	12-11-92	7.01

Maximum elevation at tidal crest-stage partial-record stations--Continued

Station name and number	Location	Period of record	Water year 1999 maximum		Period of record maximum	
			Date	Elevation (ft)	Date	Elevation (ft)
Great Egg Harbor Bay at Beesleys Point, NJ (01411315)	Lat 39°17'16", long 74°37'41", Cape May County, Hydrologic Unit 02040302, on upstream side of earth filled pier at Tuckahoe Inn, 250 ft east of U.S. Route 9 toll bridge over Great Egg Harbor Bay at Beesleys Point, 2.5 mi southwest of Somers Point.	1963-78†, 1979-81, 1997-99	8-22-97r 2-05-98r 3-15-99	5.59r 7.12r 6.47	2-05-98r	7.12r
Great Egg Harbor Bay at Ocean City, NJ (01411320)	Lat 39°17'03", long 74°34'41", Cape May County, Hydrologic Unit 02040302, on bulkhead at west end of 7th Street (prior to October 1974, gage was located at 5th Street), in Ocean City, and 2.5 mi southeast of Somers Point.	1965-99	1-03-99	5.48	12-11-92	7.89
Lakes Bay at Pleasantville, NJ (01411325)	Lat 39°22'54", long 74°31'08", Atlantic County, Hydrologic Unit 02040302, on west shore of Lakes Bay, at east end of East Bayview Avenue, on pier on south side of road, in Pleasantville and 5.2 mi west of Atlantic City.	1997-99	1-03-99	5.57	2-05-98	5.97
Strathmere Bay at Strathmere, NJ (01411335)	Lat 39°12'04", long 74°39'19", Cape May County, Hydrologic Unit 02040302, on right bank upstream side of Corsons Inlet Bridge, On County Route 636, in Strathmere, 3.9 mi north of Sea Isle City, and 5.5 mi south of Ocean City.	1997-99	12-13-96r 2-05-98r 1-03-99	5.07br 6.47br 4.38b	2-05-98r	6.47br
Great Channel at Stone Harbor, NJ (01411360)	Lat 39°03'26", long 74°45'53", Cape May County, Hydrologic Unit 02040302, on County pier near east end of bridge at west end of Borough of Stone Harbor, 3.7 mi southeast of Cape May Court House, and 3.9 mi southwest of Avalon.	1965-99	3-15-99	4.90	3-29-84	7.33
Grassy Sound Channel at Nummy Island, near North Wildwood, NJ (01411370)	Lat 39°01'43", long 74°48'05", Cape May County, Hydrologic Unit 02040302, on pier at Dad's Place Marina at the south end of bridge from Nummy Island, 1.1 mi northwest of North Wildwood, and 1.0 mi west of Hereford Inlet.	1993-96†, 1997-99	3-15-99	6.13	2-05-98	8.19
Maurice River at Millville, NJ (01411900)	Lat 39°23'43", long 75°02'27", Cumberland County, Hydrologic Unit 02040206, at State Route 49 Bridge on downstream concrete wall at left bank bridge abutment in Millville, 0.4 mi south of Broad Street, and 300 ft west of intersection with High Street.	1997-99	8-22-97r 2-05-98r 1-03-99	4.53br 4.47b 4.42b	8-22-97	4.53b
Cohansey River at Bridgeton, NJ (01413015)	Lat 39°25'45", long 75°14'13", Cumberland County, Hydrologic Unit 02040206, at County Bridge #8-1 (Commerce Street) on upstream concrete wall at right bank bridge abutment, approx. 700 ft north of bridge on Broad Street (State Route 49) in Bridgeton.	1997-99	12-13-96r 2-05-98r 9-16-99	5.98r 6.38r 6.31	2-05-98r	6.38r
Cohansey River at Greenwich, NJ (01413038)	Lat 39°23'02", long 75°20'58", Cumberland County, Hydrologic Unit 02040206, at Greenwich Pier, 0.7 mi southwest of Greenwich, and 5.8 mi southwest of Shiloh.	1951, 1979-99	9-16-99	5.91	11-25-50	8.8
Delaware River at Marine Terminal, NJ (01464040)	Lat 40°11'21", long 74°45'22", Mercer County, Hydrologic Unit 02040201, on downstream left bank concrete wall near Trenton Marine Terminal on Lambertson Road, approx. 0.2 mi south of the intersection with State Route 29.	1921-46†, 1951-55†, 1957-92†, 1997-99	10-19-96r 5-13-98r 9-16-99	7.76br 7.62br 8.87b	8-20-55	17.9b

Maximum elevation at tidal crest-stage partial-record stations--Continued

Station name and number	Location	Period of record	Water year 1999 maximum		Period of record maximum	
			Date	Elevation (ft)	Date	Elevation (ft)
Delaware River at Chester, PA (01477050)	Lat 39°49'52", long 75°19'58", Gloucester County, Hydrologic Unit 02040202, on left bank on floodgate at mouth of Repaupo Creek 2.2 mi northeast of Bridgeport, 5.5 mi north of Swedesboro, and at mile 84.00, prior to October 1980 located at Reynolds Aluminum Company pier in Chester, PA at river mile 82.30.	1972-77†, 1979-85, 1997-99	9-16-99	6.69	2-26-79	7.53
Salem River at Salem NJ, (01482650)	Lat 39°34'40", long 75°28'37", Salem County, Hydrologic Unit 02040206, on downstream left bank side of bridge on State Route 49 at Salem.	1997-99	1-03-99	5.07	2-05-98	5.53
Alloway Creek at Hancocks Bridge, NJ (01483050)	Lat 39°30'31", long 75°27'39", Salem County, Hydrologic Unit 02040206, on left bank at downstream side of bridge on Locust Island Road (County Route 658) in Hancocks Bridge, 3.7 mi southwest from Quinton, and 4.0 mi south of Salem.	1980-85, 1993, 1997-99	9-16-99	5.79	12-11-93	7.57

† Operated as a continuous-record gaging station.

a Not previously published.

b Elevation is to North American Datum of 1988 not National Geodetic Vertical Datum of 1929.

c Probably was exceeded on Oct. 19, 1996 when gage failed to record.

d Peak based on high water marks at the New Milford gage house, not the actual CSG.

r Revised.

	Page		Page
Absecon Creek at Absecon	283	Berkeley Heights, Blue Brook at Seeleys Pond Dam near	257
Accuracy of the records	17	Bernardsville, Passaic River near	248
Acknowledgments	iii	Big Brook near Marlboro	258
Acre-foot, definition of	23	Black River: See Lamington River	
Albertson Branch near Elm	269	Blackwater Branch at Norma	260
Allendale, Hohokus Brook at	251	Blackwells Mills, Millstone River at	134
Ramsey Brook at	251,265	Blackwood, Big Timber Creek, South Branch	270
Allentown, Doctors Creek at	270	Blairstown, Paulins Kill at	201
Allenwood, Manasquan River near	161	Yards Creek near	203
Alloway, Cool Run near	270	Blawenburg, Rock Brook near	255
Cedar Brook near	270	Bloomfield, Third River at	251
Alloway Creek at Hancocks Bridge	285	Bloomsbury, Musconetcong River near	211
Alpaugh Brook at Hampton	253	Blue Anchor Brook at Elm	269
Annual runoff	23	Blue Brook at Seeleys Pond Dam near Berkeley Heights	257
Annual Seven-Day Minimum	24	Boonton, Rockaway River above Reservoir, at	59
Assunpink Creek at Trenton	219	Rockaway River below Reservoir, at	61
near Clarksville	217	Bordentown, Crosswicks Creek tributary at U.S. Route 206	
Atco, Hays Mill Creek at	268	near	262
Mullica River near	268	Thornton Creek at	262
Atco, Mullica River near	259	Bound Brook, Raritan River below Calco Dam, at	136
Atlantic City, Beach Thorofare at	283	at Middlesex	257
Atlantic Highlands, Many Mind Creek at	258	Middle Brook at	257
Atsion, Clark Branch near	268	Branchport Creek at Oceanport	283
Sleeper Branch Diversion (Saltars Ditch) near	268	Bridgeton, Cohansey River at	284
Sleeper Branch near	268	Brookville, Oyster Creek tributary at	259
Awosting, Wanaque River at	73	Brotman, Maurice River at	260
Axle Brook near Pottersville	253	Burlington, Delaware River at	223
		Burnt Mills, Lamington River at	253
Back Brook tributary near Ringoes	253	Byram, Delaware River tributary at	261
Baldwins Creek at Pennington	255		
Barnegat Bay at Bayshore	169	Canoe Brook near Millburn	264
at Loveladies	173	Cedar Brook near Alloway	270
at Mantoloking	168	Cedar Creek Basin:	
at Waretown	172	discharge measurements at miscellaneous sites	278
Base flow	23	Cedar Knolls, Whippany River tributary no. 5 at Boulevard	
Basking Ridge, Penn Brook tributary at	248	Road at	249
Basgalore Creek at Russell Mill Road near Swedesboro	270	Cfs-day, definition of	23
Batsto, Mullica River near	174	Chatham, Passaic River near	51
Batsto River at Batsto	176	Cherry Hill, South Branch Pennsauken Creek at	230
at Pleasant Mills	178,283	Chesilhurst, Hays Mill Creek near	268
Bayshore, Barnegat Bay at	169	Cooper Branch near	268
Beach Haven, Little Egg Harbor at	283	Wildcat Branch near	268
Beach Thorofare at Atlantic City	283	Chester, Delaware River at	285
Bear Brook at Route 535 near Locust Corner	254	Clarksburg, Doctors Creek at	262
at Park Ridge	247	Clarksville, Assunpink Creek near	217
at Route 571 near Grovers Mill	255	Clayton, Little Ease Run near	187
Beattystown, Hances Brook near	270	Clifton, Weasel Brook at	251
Beaverdam Brook at Lincoln Park	265	Clinton, Spruce Run at	114
Beden Brook near Hopewell	267	Closter, Tenakill Brook at	248
Beden Brook near Rocky Hill	255	Cohansey River at Bridgeton	284
Bedload discharge, definition of	23	Cohansey River at Greenwich	284
Bees Branch at Hurffville	263	Cohansey River Basin:	
Beesleys, Great Egg Harbor Bay at	284	crest-stage partial-record stations in	260
Belcoville, South River near	269	discharge measurements at miscellaneous sites	279
Belle Mead, Pike Run at	132	Coles Brook at Hackensack	264
Royce Brook tributary near	256	Collingswood, Newton Creek at	262
Belleville, Second River at	251	Columbus, Crafts Creek at	262
Belvidere, Delaware River at	207	Contents, definition of	23

Page	Page
Continuing record station, definition of.....23	Dover Forge, Davenport Branch near.....268
Control, definition of.....23	Downstream order system.....13
Control structure.....23	Drainage area, definition of.....24
Cool Run near Alloway.....270	Drainage basin, definition of.....24
Cooperation.....1	Duck Pond Run near Princeton Junction.....255
Cooper Branch near Chesilhurst.....268	Dwars Kill at Norwood.....264
Cooper River at Haddonfield.....232	
Crafts Creek at Columbus.....262	East Branch Bass River near New Gretna.....181
at Route 68, at Georgetown.....262	East Branch Paulins Kill near Lafayette.....199
Creskill, Tenakill Brook at.....248,264	East Branch Rahway River at Maplewood.....251,265
Crest-stage partial-record stations.....247	East Branch Rahway River at Millburn Avenue at Millburn.....251
Crest-stage partial-record stations, tidal.....282	East Branch Stony Brook at Best Lake at Watchung.....142
Crosswicks Creek at Extonville.....221	East Creek Basin:
tributary at U.S. Route 206 near Bordentown.....262	crest-stage partial-record stations in.....258
Cub Brook at Northfield.....249	East Creek at NJ Route 35 at South River.....258
Cubic feet per second-day.....23	Eayrestown, Southwest Branch Rancocas Creek at.....270
Cubic foot per second, definition of.....23	Electric Brook at Long Valley.....266
Cuckels Brook at US Route 22 near Somerville.....256	Elizabeth River at Linden.....282
	at Ursino Lake at Elizabeth.....100
Daily record.....23	Elm, Albertson Branch near.....269
Daily record station.....23	Blue Anchor Brook at.....269
Darlington, Ramapo River at.....265	Great Swamp Branch at.....269
Data collection and computation.....13	Elmer, Muddy Run near.....269
Data presentation.....14	Elmwood Park, Fleischer Brook at Market Street at.....250
Datum.....23	Englewood, Metzler Brook at.....248
Davenport Branch near Dover Forge.....268	Ewan, Miery Run near.....263
Dead River near Millington.....264	Explanation of the Records.....4
Deep Run at U.S. Route 40 at Landisville.....260	Extonville, Crosswicks Creek at.....221
at Route 54 at Landisville.....260	
Deepavaal Brook at Two Bridges.....265	Far Hills, North Branch Raritan River near.....120
Definition of terms.....23	Farmingdale, Mingamahone Brook at.....258
Delaware and Raritan Canal at Port Mercer.....213	Fishing Creek Basin:
Delaware and Raritan Canal, diversions.....151,244	discharge measurements at low-flow sites.....269
Delaware River at Belvidere.....207	Fishing Creek at Rio Grande.....269
at Burlington.....223	Flat Brook near Flatbrookville.....197
at Chester.....285	Fleischer Brook at Market Street at Elmwood Park.....250
at Montague.....195	Flemington, Walnut Brook near.....253
at Port Jervis, NY.....191	Flow-duration percentiles.....24
at Riegelsville.....261	Folsom, Great Egg Harbor River at.....183
at Trenton.....215	Four Bridges, South Branch Raritan River at.....106
Delaware River at Marine Terminal at Trenton.....284	Franklin, Walkkill River at.....264
Delaware River tributary at Byram.....261	Furnace Brook at Oxford.....260
Delaware River Basin:	
crest-stage partial-record stations in.....260	Gage datum.....24
discharge measurements at low-flow partial-record	Gage height.....24
stations in.....269	Gaging station.....24
discharge measurements at miscellaneous sites in.....279	Garfield, Passaic River at.....282
diversions and withdrawals in.....244	Georgetown, Crafts Creek at Route 68, at.....262
reservoirs in.....238	Glassboro, Plank Run at.....263
Discharge, definition of.....24	Glen Gardner, Spruce Run at.....110
Discharge measurements at miscellaneous sites.....271	Glendon, PA, Lehigh River at.....209
Discontinued crest-stage partial-record stations.....xiii	Glenmoore, Stony Brook at.....255,266
Discontinued low-flow stations.....xv	Godeffroy, NY, Neversink River at.....193
Discontinued surface-water discharge stations.....x	Grandin, Sidney Brook at.....266
Discontinued tidal crest-stage and tidal gaging stations.....xxii	Grassy Sound at Nummy Island near North Wildwood.....284
Doctors Creek at Allentown.....270	Gravelly Run at Somerdale.....262
Doctors Creek at Clarksburg.....262	Great Channel at Stone Harbor.....284
Dover, Rockaway River at Warren Street at.....249	Great Egg Harbor Bay at Beesleys.....284

	Page		Page
at Ocean City.....	284	Hudson River Basin:	
Great Egg Harbor River at Folsom.....	183	discharge at low-flow sites.....	264
Great Egg Harbor River at Mays Landing.....	283	discharge at miscellaneous sites.....	271
Great Egg Harbor River Basin:		Hurffville, Bees Branch at.....	263
crest-stage partial-record stations in.....	260	Hutchinson, Buckhorn Creek at Hutchinson Road at.....	260
discharge measurements at low-flow partial-record		Hydrologic Bench-Mark Network.....	4
stations in.....	269	Hydrologic benchmark station.....	24
discharge measurements at miscellaneous sites.....	278	Hydrologic conditions, summary of.....	2
Great Swamp Branch at Elm.....	269	Hydrologic unit, definition of.....	24
Green Brook at Plainfield.....	257		
Green Brook at Rock Avenue at Plainfield.....	257	Identifying estimated daily discharge.....	17
at Seeley Mills.....	140	Inch.....	23
Green Pond Brook at Picatinny Arsenal.....	53	Instantaneous discharge.....	24
at Wharton.....	57	Introduction.....	1
below Picatinny Lake, at Picatinny Arsenal.....	55	Ironia, Lamington (Black) River near.....	266
Greenwood Branch at New Lisbon.....	226		
Greenwich, Cohansey River at.....	284	Jumping Brook above reservoir, near Neptune City.....	267
Griggstown, Millstone River at.....	256	Jumping Brook near Neptune City.....	156
Grovers Mill, Bear Brook at Route 571 near.....	255		
Millstone River near.....	267	Kenilworth, Rahway River at.....	252
Millstone River at Southfield Road near.....	254	Keswick Grove, Michaels Branch tributary at.....	259
		Keyport, Luppataong Creek at.....	282
Hackensack, Coles Brook at.....	264	Kingston, Heathcote Brook at.....	267
Hackensack River at New Milford.....	44,282	Kinnelon, Pequannock River tributary at.....	265
at NJ Route 3 near Lynhurst.....	282		
at Rivervale.....	40	Lafayette, East Branch Paulins Kill near.....	199
at West Nyack, NY.....	38	Lakes and reservoirs:	
Hackensack River Basin, diversions.....	48	Beltzville Lake, PA.....	240
crest-stage partial-record stations.....	247	Blue Marsh Lake, PA.....	240
discharge measurements at low-flow sites.....	264	Boonton Reservoir.....	94
discharge at miscellaneous sites.....	271	Canistear Reservoir.....	94
reservoir and lake elevations.....	46	Cannonsville Reservoir, NY.....	238
Hackettstown, Mine Brook near.....	269	Chambers Lake Reservoir.....	241
Haddon Heights, South Branch Newton Creek at.....	262	Charlotteburg Reservoir.....	94
Haddonfield, Cooper River at.....	232	Cliff Lake, NY.....	239
Hampton, Alpaugh Brook.....	253	Clinton Reservoir.....	94
Hances Brook near Beattystown.....	270	De Forest Lake.....	46
Hancocks Bridge, Alloway Creek at.....	285	Echo Lake.....	94
Hannabrand Brook at Old Mill Road, near Spring		Green Lane Reservoir, PA.....	241
Lake Heights.....	267	Greenwood Lake.....	95
Harrisville, Oswego River at.....	179	Hopatcong, Lake.....	240
Hart Brook near Pennington.....	255	Jadwin, General Edgar, Reservoir, PA.....	238
Hays Mill Creek at Atco.....	268	Merrill Creek Reservoir.....	240
near Chesilhurst.....	268	Manasquan Reservoir.....	163
Head of River, Tuckahoe River at.....	185,283	Marsh Creek Reservoir, PA.....	241
Heathcote Brook at Kingston.....	267	Monksville Reservoir.....	95
High Bridge, South Branch Raritan River near.....	108	Neversink Reservoir, NY.....	239
High tide, definition of.....	24	Nockamixon Reservoir, PA.....	240
Hightstown, Peddie Brook at.....	267	Oak Ridge Reservoir.....	94
Rocky Brook at.....	267	Oradell Reservoir.....	46
Hillsdale, Woodcliff Lake at.....	247	Penn Forest Reservoir, PA.....	239
Pascack Brook at.....	247	Pepacton Reservoir, NY.....	238
Pascack Brook at Woodcliff Lake Outlet at.....	247	Prompton Reservoir, PA.....	238
Hog Swamp: See Harvey Brook		Round Valley Reservoir.....	150
Hohokus Brook at Allendale.....	251	Splitrock Reservoir.....	94
at Ho-Ho-Kus.....	251	Spruce Run Reservoir.....	150
Holland Brook at Readington.....	253	Still Creek Reservoir, PA.....	240
Hopewell, Beden Brook near.....	267	Swinging Bridge Reservoir, NY.....	238

Page	Page
Lakes and reservoirs (continued):	
Tappan, Lake.....46	Mantua Creek at Sewell.....270
Toronto Reservoir, NY.....239	Mantoloking, Barnegat Bay at.....168
Wallenpaupack, Lake, PA.....238	Manville, Raritan River at.....128
Walter, Francis E., Reservoir, PA.....239	Royce Brook at.....267
Wanaque Reservoir.....95	Many Mind Creek at Atlantic Highlands.....258
Wild Creek Reservoir, PA.....239	Many Mind Creek Basin:
Woodcliff Lake.....46	crest-stage partial-record stations in.....258
Lakes Bay at Pleasantville.....284	Mapelwood, East Branch Rahway River at.....251,265
Lakewood, North Branch Metedeconk River at.....267	Marlboro, Big Brook near.....258
North Branch Metedeconk River near.....164	Martinsville, West Branch Middle Brook near.....138
South Branch Metedeconk River near.....166	Masonicus Brook at West Mahwah.....265
Lambertville, Moore Creek tributary at Valley Road, near.....261	Maurice River at Brotmanville.....260
Lamington River at Burnt Mills.....253	at Millville.....284
at Milltown.....266	at Norma.....189
at Succasunna.....266	Maurice River Basin:
near Ironton.....266	crest-stage partial-record stations.....260
near Pottersville.....122	discharge measurements at low-flow partial-record
Landisville, Deep Run at Route 40 at.....260	stations in.....269
Deep Run at tributary at NJ Route 54, at.....260	discharge measurements at miscellaneous sites.....279
Lapahannock Creek at Ridge Road, at Roxburg.....261	Mays Landing, Great Egg Harbor River at.....283
Latitude - Longitude system.....13	McDonalds Branch in Lebanon State Forest.....224
Laurelton, Metedeconk River at.....283	Mean discharge, definition of.....24
Lawrence Brook at Weston Mills.....146	Metedeconk River at Laurelton.....283
Lawrenceville, Shabakunk Creek tributary at Texas Avenue,	Metedeconk River Basin:
near.....261	crest-stage partial-record stations in.....258
Lebanon State Forest, McDonalds Branch in.....224	Metzler Brook at Englewood.....248
Lehigh River at Glendon, PA.....209	Michaels Branch tributary at Keswick Grove.....259
Lincoln Park, Beaverdam Brook at.....265	Middle Brook at Bound Brook.....257
Linden, Elizabeth River at.....282	Middlebush, Six Mile Run near.....256
Little Ease Run near Clayton.....187	Middlesex, Bound Brook at.....257
Little Egg Harbor at Beach Haven.....283	Middle Valley, South Branch Raritan River at.....266
Little Falls, Passaic River above Beatties Dam.....250	Miery Run near Ewan.....263
Passaic River at.....87	Millburn, Canoe Brook near.....264
Locust Corner, Bear Brook at Route 535 near.....254	East Branch Rahway River at Millburn Avenue, at.....252
Lodi, Saddle River at.....91	West Branch Rahway River at.....252,266
Long Valley, Electric Brook at.....266	West Branch Rahway River at Millburn Avenue at.....252
Lopatcong Creek at Phillipsburg.....269	Millington, Dead River near.....264
Loveladies, Barnegat Bay at.....173	Passaic River near.....49
Low-flow partial-record stations.....264	Millstone River at Blackwells Mills.....134
Low tide, definition of.....24	at Carnegie Lake at Princeton.....255
Luppataong Creek at Keyport.....282	at Griggstown.....256
Lynhurst, Hackensack River at NJ Route 3 near.....282	at Millstone.....256
	at Plainsboro.....254
	at Southfield Road near Grovers Mill.....254
	at Weston.....256
	near Grovers Mill.....267
Macopin Intake Dam, Pequannock River at.....71	Milltown, Lamington River at.....266
Macopin River at Macopin Reservoir.....265	Tanners Brook near.....266
Mahwah, Ramapo River near.....81	Millville, Maurice River at.....284
Mahwah River near Suffern.....249	Mine Brook near Hackettstown.....269
Malapardis Brook at Whippany.....264	Mingamahone Brook at Farmingdale.....258
Manahawkin Bay near Manahawkin.....283	Miscellaneous sites, definition.....24
Manalapan Brook at Spotswood.....148	Miscellaneous sites, discharge measurement at.....271
Manalapan Brook tributary at Smithburg.....258	Molly Ann Brook at North Haledon.....250,265
Manasquan River at Squankum.....159	Montague, Delaware River at.....195
near Allenwood.....161	Montague, White Brook tributary at.....260
Manasquan River Basin:	Montvale, Pascack Brook at.....247
crest-stage partial-record stations in.....258	Moore Creek tributary at Valley Road, near Lambertville.....261
discharge at miscellaneous sites.....277	Morristown, Whippany River at.....65
diversions.....163	
reservoir in.....163	

	Page		Page
Morristown, Whippany River near	63	Northfield, Cub Brook at.....	249
Mountain Lake Brook near Pequest.....	269	Norwood, Dwars Kill at.....	264
Mountainside, Nomahegan Brook near	266		
Muddy Run near Elmer.....	269	Oakland, Pond Brook at.....	249
Mulhockaway Creek at Van Syckel	112	Ocean City, Great Egg Harbor Bay at.....	284
Mullica Creek Basin:		Oceanport, Branchport Creek at	283
crest-stage partial-record stations in	259	Oswego River at Harrisville.....	179
Mullica Hill, Raccoon Creek at	263	Oxford, Furnace Brook at	260
Raccoon Creek, Tributary No. 3, near	263	Oyster Creek Basin:	
Mullica River near Atco.....	259,268	crest-stage partial-record stations in	259
near Batsto	174	Oyster Creek tributary at Brookville.....	259
near Port Republic.....	283		
Mullica River Basin:		Palatine Branch at Palatine	269
discharge measurement at low-flow partial-record stations		Papakating Creek at Pelletstown	264
in	268	Park Ridge, Bear Brook at	247
Mullica River Basin:		Partial-record stations, crest-stage	244
discharge measurements at miscellaneous sites.....	278	definition of	24
Musconetcong River near Bloomsbury	211	low-flow	264
Musquapsink Brook at Westwood	248	miscellaneous measurements	271
near Westwood.....	248	tidal crest-stage	282
		Pascack Brook at Montvale	247
National Atmospheric Deposition Program/National Trends		at Hillsdale	247
Network	4	at Westwood	42
National Geodetic Vertical Datum of 1929 (NGVD of 1929)	24	at Woodcliff Lake Outlet at Hillsdale	247
National stream-quality accounting network (NASQAN),		Passaic River above Beatties Dam at Little Falls	250
definition of.....	4	at Little Falls	87
National Water-Quality Assessment (NAWQA) Program.....	4	at Garfield.....	282
Navesink River at Red Bank.....	282	at Newark.....	93
Neptune City, Jumping Brook above reservoir, near	267	at Pine Brook.....	69
Jumping Brook near.....	156	at Two Bridges	254
Shark River near	154	below Pompton River at Two Bridges	250
Neshanic River at Reaville.....	118	near Bernardsville	248
Neversink River at Godeffroy, NY	193	near Chatham	51
Neshanic Station, South Branch River near.....	253	near Millington.....	49
Newark, Passaic River at	93	Passaic River tributary at Summit.....	249
New Brunswick, Raritan River at State Route 18 at.....	282	Passaic River Basin:	
New Egypt, Stony Ford Brook at.....	261	crest stage gages.....	248
New Gretna, East Branch Bass River near	181	discharge measurements at miscellaneous sites.....	271
New Lisbon, Greenwood Branch at.....	226	diversions	98
New Milford, Hackensack River at	44,282	low flow	264
Newton Creek at Collingswood.....	262	reservoirs.....	95
Nichomus Run near Woodstown	270	Paulins Kill at Blairstown	201
Nomahegan Brook near Mountainside	266	Paulins Kill tributary at Ross Corner.....	261
Norma, Blackwater Branch at.....	260	Peckman River, at Ozone Avenue at Verona	250,265
Maurice River at	189	Peddie Brook at Hightstown.....	267
North Branch Foulerton Brook at Roseland	249	Pelletstown, Papakating Creek at	264
North Branch Metedeconk River at Lakewood.....	267	Pemberton, North Branch Rancocas Creek at.....	225
at Smithburg.....	258	Pennington, Baldwins Creek at.....	255
near Lakewood.....	164	Hart Brook near.....	255
North Branch Rancocas Creek at Pemberton.....	228	Penns Brook tributary at Basking Ridge.....	248
North Branch Raritan River near Far Hills	120	Pequannock River at Macopin Intake Dam	71
at North Branch.....	254	Pequannock River tributary at Kinnelon.....	265
at South Branch.....	254	Pequest, Mountain Lake Brook near.....	269
near Raritan.....	126	Pequest River at Pequest.....	205
North Branch, North Branch Raritan River at	254	Periodic station.....	24
North Haledon, Molly Ann Brook at	250,265	Perth Amboy, Raritan River at.....	282
North Plainfield, Stony Brook at.....	257	Peters Brook at Mercer Street, at Somerville.....	254
North Wildwood, Grassy Sound at Nummy Island, near	284	near Raritan.....	254

Page	Page
Philadelphia, PA, Schuylkill River at.....	234
Phillipsburg, Lopatcong Creek at	269
Picatunny Arsenal, Green Pond Brook at	53
Green Pond Brook below Picatunny Lake at.....	55
Pike Run at Belle Mead	132
Pine Brook, Passaic River at	69
Whippany River near	67
Plainfield, Green Brook at.....	257
Green Brook at Rock Avenue	257
Plainsboro, Millstone River at	254
Plank Run at Glassboro.....	263
Pleasant Mills, Batsto River at	178,283
Nescochague Creek at	258
Pleasantville, Lakes Bay at	284
Pohatcong Creek tributary near Washington	261
Polly Pond Brook Basin:	
discharge measurements at low-flow partial-record stations	
in	267
Polly Pond Brook at South Belmar	267
Pompton Lakes, Ramapo River at	83
Pompton Plains, Pompton River at	85
Pond Brook at Oakland	249
Port Jervis, NY, Delaware River at	191
Port Mercer, Delaware and Raritan Canal at	213
Port Republic, Mullica River near	283
Pottersville, Axle Brook near.....	253
Lamington (Black) River near	122
Preakness (Singac) Brook near Preakness	250
Princeton Junction, Duck Pond Run near	255
Princeton, Millstone River at Carnegie Lake at.....	255
Stony Brook at	130
Pump Branch near Waterford Works	268
Raccoon Creek at Mullica Hill	263
near Swedesboro	236
Raccoon Creek Tributary No. 3 near Mullica Hill.....	263
Rahway River at Kenilworth	252
at Morris Avenue at Springfield.....	252
at Rahway.....	104
at Robinsons Branch	252
near Springfield.....	102
Rahway River Basin:	
low-flow partial-record stations in	265
discharge at miscellaneous sites.....	276
Ramapo River at Darlington	265
at Pompton Lakes.....	83
at Suffern, NY.....	79
near Mahwah.....	81
Ramsey Brook at Allendale	250,265
Raritan, North Branch Raritan River near	126
Peters Brook near	254
Raritan River at Manville.....	128
at Perth Amboy	282
at State Route 18 at New Brunswick	282
Raritan River below Calco Dam, at Bound Brook	136
Raritan River Basin:	
crest-stage partial-record stations in	251,253
discharge measurements at low-flow partial-record	
stations in	266
discharge measurements at miscellaneous sites.....	276
diversions	151
reservoirs in.....	150
Readington, Holland Brook at	253
Reaville, Neshanic River at.....	118
Records collected by other agencies	2
Records of stage and water discharge	13
Recurrence interval	24
Red Bank, Navesink River at	282
Swimming River near	152
References, selected.....	25
Reservoirs: See Lakes and reservoirs	
Ridgefield, Wolf Creek at	248
Ridgewood, Saddle River at	89
Riegelsville, Delaware River at	261
Ringoes, Back Brook tributary near.....	253
Ringwood Creek near Wanaque.....	75
Rio Grande, Fishing Creek at	269
River mile, definition of	25
River mileage	25
Rivervale, Hackensack River at	40
Robinsons Branch at Rahway	252
Rockaway River at Warren Street at Dover	249
above reservoir at Boonton.....	59
below Reservoir, at Boonton.....	61
Rock Brook near Blawenburg.....	255
Rocky Brook at Hightstown.....	267
Rocky Hill, Beden Brook near.....	256
Roseland, North Branch Foulerton Brook at	249
Ross Corner, Paulins Kill tributary at	261
Roxburg, Lapahannock Creek at.....	261
Royce Brook at Manville	267
Royce Brook tributary near Belle Mead	256
Runoff in inches, definition of	25
Saddle River at Lodi	91
at Ridgewood	89
at Upper Saddle River.....	250
Salem River at Salem.....	285
Sawmill Brook at South River	257
Schuylkill River at Philadelphia, PA.....	234
Sea level, definition of	25
Second River at Belleville	251
Seeley, West Branch Cohansey River at	260
Seeley Mills, Green Brook at	140
Selected References	25
Seven-day 10-year low flow	25
Sewell, Mantua Creek at	270
Shabakunk Creek tributary at Texas Avenue, near	
Lawrenceville	261
Shark River near Neptune City	154
Shark River Basin:	
diversions	158
low-flow partial-record stations in	267
Shrewsbury River Basin, crest-stage partial-record stations in	258
Sidney Brook at Grandin	266
Singac Brook at Singac.....	265

	Page		Page
Six Mile Run near Middlebush.....	256	Swimming River near Red Bank	152
Sleeper Branch near Atsion	268	Synoptic studies, definition of	25
Diversions (Salters Ditch) near Atsion.....	268		
Smithburg, Manalapan Brook tributary at	258	Tanners Brook near Milltown	366
North Branch Metedeconk River at	258	Techniques of Water-Resources Investigation, Publications on	26
Somerdale, Gravelly Run at	262	Tenakill Brook at Closter	248
Somerville, Cuckels Brook at US Route 22 near.....	256	at Cresskill	248,264
Peters Brook at Mercer Street.....	254	Third River at Bloomfield.....	251
South Belmar, Polly Pond Brook at	267	Thornton Creek at Bordentown	262
South Branch Big Timber Creek at Blackwood.....	270	Tidal crest-stage stations	282
South Branch Metedeconk River near Lakewood	166	Toms River at Toms River	283
South Branch Newton Creek at Haddon Heights	262	discharge at lowflow sites	268
South Branch, North Branch Raritan River at	254	near Toms River	170
South Branch Pennsauken Creek at Cherry Hill.....	230	Toms River Basin:	
South Branch Raritan River at Four Bridges	106	crest-stage partial-record stations in	259
at Middle Valley	266	discharge measurements at miscellaneous sites.....	277
at South Branch.....	253	Toms River, Wrangle Brook at Bimini Drive near	259
at Stanton	116	Wrangle Brook at Mule Road near	259
near High Bridge.....	108	Trenton, Assunpink Creek at	219
South Branch River near Neshanic Station.....	253	Delaware River at	215
South Branch Rockaway Creek at Whitehouse Station.....	124	Delaware River at Marine Terminal at.....	284
South River, East Creek at NJ Route 35 at	258	Tuckahoe River at Head of River	185,283
Sawmill Brook at	257	Two Bridges, Deepavaal Brook at	265
South River near Belcoville	269	Passaic River below Pompton River at.....	250
Southwest Branch Rancocas Creek at Eayrestown.....	270		
Special networks and programs	4	Upper Saddle River, Saddle River at	250
Spotswood, Manalapan Brook at	148		
Spring Lake Heights, Hannabrand Brook, Old Mill Road near	267	Van Syckel, Mulhockaway Creek at	112
Springfield, Rahway River at	102	Van Winkle Brook at Springfield.....	266
Rahway River at Morris Avenue at	252	Verona, Peckman River at Ozone Avenue at	250,265
Rahway River near	102		
Van Winkle Brook at	266	Wallkill River at Franklin	264
Spruce Run at Clinton.....	114	near Sussex.....	264
at Glen Gardner.....	110	Walnut Brook near Flemington.....	253
Squankum, Manasquan River at	159	Wanaque, Ringwood Creek near	75
Stafford Forge, Westeconk Creek at	259	Wanaque River at Awosting	73
Stage	25	at Wanaque	77
Stage and water-discharge records, explanation of	13	Waretown, Barnegat Bay at	172
Stage-discharge relation, definition of	25	Washington, Pohatcong Creek tributary near	261
Stanton, South Branch Raritan River at	116	Watchung, East Branch Stony Brook at Best Lake at.....	142
Station Identification numbers	13	Stony Brook at	144
Station Manuscript	14	Water data, USGS, access to	23
Stone Harbor, Great Channel at	284	Waterford Works, Pump Branch near	268
Stony Brook at Glenmore	266	Water level	25
at North Plainfield.....	257	Water-Related Articles	22
at Princeton	130	Water-Related Factsheets	22
at Watchung	144	Water-Related Reports	18
Stony Ford Brook at New Egypt.....	261	Water Resources Projects, current	17
Strathmere Bay at Strathmere	284	Water temperature	17
Streamflow, definition of.....	25	Water Year, definition of	25
Succasunna, Lamington (Black) River at	266	WDR, definition of.....	25
Suffern, NY, Mahwah River near	249	Weasel Brook at Clifton.....	251
Ramapo River at	79	Weighted average, definition of	25
Summit, Passaic River tributary at	249	West Allenhurst, Harvey Brook at	256
Surface area, definition of	25	West Branch Cohansey River at Seeley	260
Sussex, Wallkill River near	264	West Branch Middle Brook near Martinsville	138
Swedesboro, Raccoon Creek near.....	236	West Branch Rahway River at Millburn	252,266
Basgalore Creek at Russell Mill Road near	270	at Millburn Avenue at Millburn	252

INDEX

293

Page	Page
West Creek Basin:	
discharge measurements at miscellaneous sites.....	278
West Mahwah, Masonicus Brook at	265
West Nyack, NY, Hackensack River at	38
Westecunk Creek at Stafford Forge	259
Weston, Millstone River at	256
Weston Mills, Lawrence Brook at	146
Westwood, Musquapsink Brook at	248
Musquapsink Brook near	248
Pascack Brook at.....	42
Wharton, Green Pond Brook at.....	57
Whippany, Malapardis Brook at	264
Whippany River at Morristown	65
Whippany River near Morristown	63
near Pine Brook.....	67
Whippany River tributary no. 5 at Boulevard Road at Cedar Knolls	249
White Brook tributary at Montague	260
Whitehouse, Rockaway Creek at	266
Whitehouse Station, South Branch Rockaway Creek at	124
Wildcat Branch near Chesilhurst	268
Wolf Creek at Ridgefield	248
Woodcliff Lake at Hillsdale	247
Woodstown, Nichomus Run near	270
Wrangel Brook at Bimini Drive near Toms River	259
at Mule Road near Toms River	259,268
Wreck Pond Brook Basin:	
discharge measurements at low-flow partial-record stations in	267
WSP, definition of	25
Yards Creek near Blairstown	203