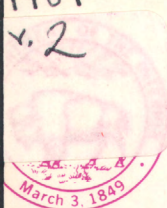
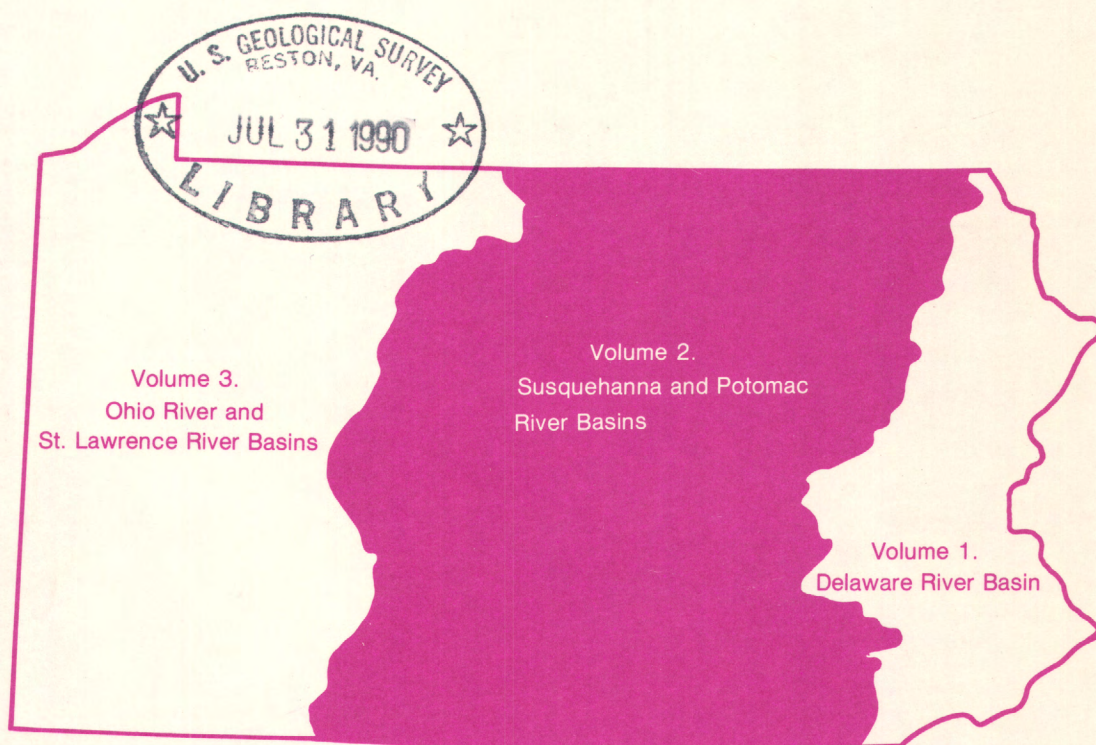


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Water Resources Data Pennsylvania Water Year 1989

Volume 2. Susquehanna and Potomac River Basins



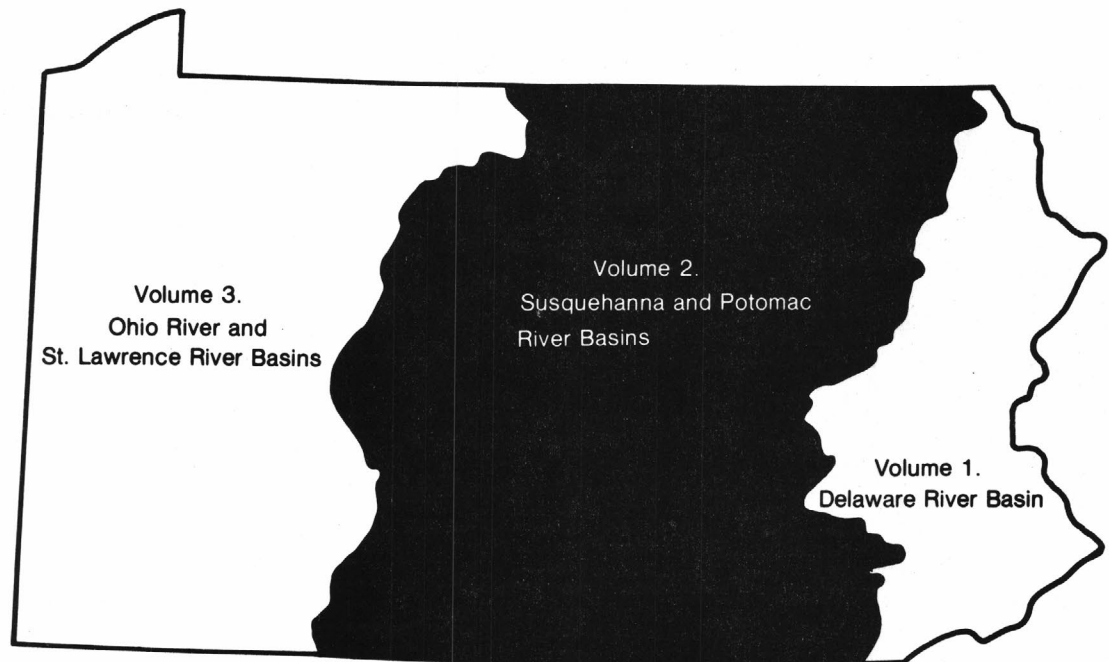
U.S. GEOLOGICAL SURVEY WATER-DATA REPORT PA-89-2
Prepared in cooperation with the Pennsylvania Department of
Environmental Resources, the U.S. Army Corps of Engineers,
Baltimore District, The Susquehanna River Basin Commission,
and with other State, municipal, and Federal agencies



Water Resources Data Pennsylvania Water Year 1989

Volume 2. Susquehanna and Potomac River Basins

by W.C. Loper, T.E. Behrendt, and W.P. Schaffstall



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and with other State, municipal, and Federal agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

MANUEL LUJAN JR., SECRETARY

GEOLOGICAL SURVEY

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Harrisburg, Pennsylvania 17108

1990

PREFACE

This volume of the annual hydrologic data report of Pennsylvania is one of a series of annual reports that document hydrologic data gathered from the U.S. Geological Survey's surface- and ground-water data-collection networks in each State, Puerto Rico, and the Trust Territories. These records of streamflow, ground-water levels, and quality of water provide the hydrologic information needed by State, local, and Federal agencies, and the private sector for developing and managing our Nation's land and water resources. Hydrologic data for Pennsylvania are contained in 3 volumes.

- Volume 1. Delaware River Basin
- Volume 2. Susquehanna and Potomac River Basins
- Volume 3. Ohio and St. Lawrence River Basins

Volume 2 was prepared in cooperation with the Commonwealth of Pennsylvania and other agencies under the general supervision of David E. Click, District Chief, Pennsylvania District; David J. Wangsness, Subdistrict Chief, Harrisburg Subdistrict; Robert A. Hainly, Chief of Hydrologic Data Section, Harrisburg Subdistrict, and William P. Schaffstall, Chief, Williamsport Field Office. It 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. In addition to the authors, who had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to Geological Survey policy and established guidelines, the following individuals contributed significantly to the collection, processing, and tabulation of the data:

G. E. Baumbach	J. D. Hollenbach	P. L. Lietman
J. K. Bender	M. S. Johnson	W. D. Pope
R. W. Conger	M. E. Jones	L. A. Reed
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J. T. Fisher	M. J. Langland	M. V. Truhlar
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CONTENTS

	Page
Preface.....	iii
List of surface-water stations, in downstream order, for which records are published.....	vi
List of ground-water wells, by county, for which records are published.....	viii
Introduction	1
Cooperation	1
Summary of hydrologic conditions.....	2
Surface water.....	2
Ground water.....	8
References.....	10
Special networks and programs.....	10
Explanation of records.....	11
Station identification numbers.....	11
Downstream order system.....	11
Latitude and longitude system.....	11
Records of stage and water discharge.....	11
Data collection and computation.....	12
Data presentation.....	12
Identifying estimated daily discharge.....	14
Accuracy of the records.....	14
Other records available.....	14
Records of surface-water quality.....	14
Classification of records.....	14
Arrangement of records.....	14
On-site measurements and sample collection.....	15
Water temperature.....	15
Sediment.....	15
Laboratory measurements.....	15
Data presentation.....	16
Remark codes.....	16
Records of ground-water levels.....	16
Data collection and computation.....	17
Data presentation.....	17
Records of ground-water quality.....	17
Data collection and computation.....	17
Data presentation.....	18
Access to WATSTORE data.....	18
Definition of terms.....	19
Publications on Techniques of Water-Resources Investigations.....	26
Station records, surface water	
Water-discharge and water-quality station records.....	33
Discharge at partial-record stations and miscellaneous sites	
Crest-stage partial-record stations.....	216
Low-flow partial-record stations.....	219
Special study and miscellaneous sites.....	227
Analyses of samples collected at water-quality partial-record stations.....	230
Station records, ground water	
Ground-water-level and ground-water-quality station records.....	232
Index.....	285

ILLUSTRATIONS

Figure 1. Departures from normal precipitation by NOAA Divisions in the Susquehanna River basin for the 1989 water year.....	3
2. Comparison of May 1989 and normal May precipitation in NOAA Climatological Divisions 4-8 and streamflow station locations.....	4
3. Mean May discharges for the 1989 water year and the period of record at streamflow stations located in NOAA Divisions 4-7.....	5
4. Hydrograph of extreme events at two selected streamflow stations.....	6
5. Median for 1989 water year and interquartile values for 1975-84 of selected nutrient ions and streamflow at four water-quality network stations.....	7
6. Relationship between mean 1989 seasonal water levels and long-term mean water levels.....	9
7. System for numbering wells and miscellaneous sites.....	11
8-11. Maps showing:	
8. Location of continuous data-collection stations and network observation wells.....	28
9. Location of partial-record data-collection stations.....	29
10. Location of water-level and quality of ground-water data-collection stations in northern Lancaster county	30
11. Location of continuous and partial-record data-collection stations, Potomac River basin.....	31

LIST OF SURFACE-WATER STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED

[Letters after station name designates type of data: (d) discharge, (c) chemical, (t) water temperature, (s) sediment, (e) elevation, gage heights, or contents, (r) radiochemical.]

	Page
NORTH ATLANTIC SLOPE BASINS	
SUSQUEHANNA RIVER BASIN	
CHEMUNG RIVER BASIN	
Tioga River near Mansfield (d).....	33
Corey Creek near Mainesburg (d).....	34
Tioga River at Tioga (d).....	35
Tioga River at Tioga Junction (d).....	36
Cowanesque River at Westfield (d).....	37
Cowanesque River near Lawrenceville (d).....	38
Reservoirs in Chemung River basin (e).....	39
Susquehanna River at Towanda (d).....	41
TOWANDA CREEK BASIN	
Towanda Creek near Monroeton (d).....	44
Susquehanna River at Meshoppen (d).....	45
TUNKHANNOCK CREEK BASIN	
Tunkhannock Creek near Tunkhannock (d).....	46
LACKAWANNA RIVER BASIN	
Stillwater Lake near Forest City (e).....	47
Lackawanna River near Forest City (d).....	48
Lackawanna River at Archbald (d).....	49
Lackawanna River at Old Forge (d).....	50
Susquehanna River at Wilkes-Barre (d).....	51
TOBY CREEK BASIN	
Toby Creek at Luzerne (d).....	52
SOLOMON CREEK BASIN	
Solomon Creek at Wilkes-Barre (d).....	53
WAPWALLOPEN CREEK BASIN	
Wapwallopen Creek near Wapwallopen (d).....	54
FISHING CREEK BASIN	
Fishing Creek near Bloomsburg (d).....	55
Susquehanna River at Danville (d,c).....	56
WEST BRANCH SUSQUEHANNA RIVER BASIN	
West Branch Susquehanna River at Bower (d).....	62
West Branch Susquehanna River at Curwensville (d).....	63
West Branch Susquehanna River at Hyde (d).....	64
Clearfield Creek:	
Clearfield Creek at Dimeling (d).....	65
Moshannon Creek at Osceola Mills (d).....	66
West Branch Susquehanna River at Karthaus (d).....	67
Bennett Branch Sinnemahoning Creek:	
Driftwood Branch Sinnemahoning Creek:	
North Creek:	
Waldy Run near Emporium (d).....	68
Driftwood Branch Sinnemahoning Creek at Sterling Run (d).....	69
Sinnemahoning Creek at Sinnemahoning (d).....	70
First Fork Sinnemahoning Creek near Sinnemahoning (d).....	71
Kettle Creek at Cross Fork (d).....	72
Kettle Creek near Westport (d).....	73
West Branch Susquehanna River at Renovo (d).....	74
Young Womans Creek near Renovo (d,c,r).....	75
Bald Eagle Creek:	
Spring Creek at Houserville (d).....	78
Spring Creek near Axemann (d).....	79
Spring Creek at Milesburg (d).....	80
Bald Eagle Creek below Spring Creek at Milesburg (d).....	81
Bald Eagle Creek near Milesburg (t).....	82
Bald Eagle Creek at Blanchard (d).....	84
Marsh Creek at Blanchard (d).....	85
Beech Creek at Monument (d).....	86
Bald Eagle Creek near Beech Creek Station (d).....	87
Pine Creek at Cedar Run (d).....	88
Little Pine Creek:	
Blockhouse Creek near English Center (d).....	89
Pine Creek below Little Pine Creek near Waterville (d).....	90
Lycoming Creek near Trout Run (d).....	91
West Branch Susquehanna River at Williamsport (d).....	92
Loyalsock Creek at Loyalsockville (d).....	93
Muncy Creek near Sonestown (d).....	94
West Branch Susquehanna River at Lewisburg (d,c).....	95
Chillisquaque Creek at Washingtonville (d).....	101
Reservoirs in West Branch Susquehanna River basin (e).....	102
Susquehanna River at Sunbury (d).....	104
SHAMOKIN CREEK BASIN	
Shamokin Creek near Shamokin (d).....	105

LIST OF SURFACE-WATER STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED

	Page
NORTH ATLANTIC SLOPE BASINS--Continued	
SUSQUEHANNA RIVER BASIN--Continued	
PENNS CREEK BASIN	
Penns Creek at Penns Creek (d).....	106
EAST MAHANTANGO CREEK BASIN	
East Mahantango Creek near Dalmatia (d).....	107
JUNIATA RIVER BASIN	
Frankstown Branch Juniata River (head of Juniata River):	
Frankstown Branch Juniata River at Williamsburg (d).....	108
Little Juniata River:	
Bald Eagle Creek at Tyrone (d).....	109
Little Juniata River at Spruce Creek (d).....	110
Juniata River at Huntingdon (d).....	111
Raystown Branch Juniata River:	
Dunning Creek at Belden (d).....	112
Raystown Branch Juniata River at Saxton (d,c).....	113
Raystown Lake near Huntingdon (e).....	116
Raystown Branch Juniata River below Raystown Dam near Huntingdon (d).....	117
Juniata River at Mapleton Depot (d).....	118
Aughwick Creek near Three Springs (d).....	119
Juniata River at Newport (d,c,t,s).....	120
SHERMAN CREEK BASIN	
Bixler Run near Loysville (d).....	127
Sherman Creek at Shermans Dale (d,c).....	128
CLARK CREEK BASIN	
DeHart Reservoir near Carsonville (e).....	131
Clark Creek near Carsonville (d).....	132
CONODOGUINET CREEK BASIN	
Conodoguinet Creek:	
Letort Spring Run near Carlisle (d).....	133
Conodoguinet Creek near Hogestown (d).....	134
Susquehanna River at Harrisburg (d,c,r).....	135
YELLOW BREECHES CREEK BASIN	
Yellow Breeches Creek near Camp Hill (d).....	142
SWATARA CREEK BASIN	
Swatara Creek near Pine Grove (d).....	143
Swatara Creek near Inwood (d).....	144
Swatara Creek at Harper Tavern (d).....	145
Quittapahilla Creek near Belle Grove (d).....	146
Swatara Creek near Hershey (d,c).....	147
WEST CONEWAGO CREEK BASIN	
Swift Run:	
Brush Run, Site 1, near McSherrystown (c).....	150
Tile drain to Brush Run near McSherrystown (c).....	151
Brush Run, Site 2, near McSherrystown (d,c,s).....	152
Brush Run, Site 3, near McSherrystown (c).....	160
Brush Run, Site 4, near McSherrystown (c).....	161
West Conewago Creek near Manchester (d,c).....	162
CODORUS CREEK BASIN	
Codorus Creek at Spring Grove (d).....	165
South Branch Codorus Creek near York (d).....	166
Codorus Creek near York (d,c).....	167
Codorus Creek at Pleasureville (d,c).....	170
Reservoirs in Codorus Creek basin (e).....	175
Susquehanna River at Marietta (d,c).....	176
CONESTOGA RIVER BASIN	
Conestoga River:	
Agricultural Field Runoff Site No. 1 near Churchtown (c,s).....	180
Little Conestoga Creek, Site 1, near Morgantown (c).....	184
Little Conestoga Creek, Site 2A, near Morgantown (c).....	186
Little Conestoga Creek, Site 3A, near Morgantown (d,c,s).....	187
Unnamed Tributary to Little Conestoga Creek, Site 9, at Churchtown (c).....	193
Little Conestoga Creek near Churchtown (d,c,s).....	194
Conestoga River at Lancaster (d).....	203
Little Conestoga Creek:	
Swarr Run near Landisville (d).....	204
Conestoga River at Conestoga (d,c).....	205
MUDDY CREEK BASIN	
Bald Eagle Creek near Fawn Grove (d,c,s).....	210
POTOMAC RIVER BASIN	
Potomac River:	
TONOLOWAY CREEK BASIN	
Tonoloway Creek near Needmore (d).....	215

LIST OF GROUND-WATER WELLS, BY COUNTY, FOR WHICH RECORDS ARE PUBLISHED

(Letter after local well number designates type of data: (l) water level, (c) chemical)

	Page
GROUND WATER RECORDS	
ADAMS COUNTY	
Well 395846077040601 Local number AD 146 (l).....	232
Well 394916077142901 Local number AD 177 (l).....	233
Well 394755077160501 Local number AD 255 (l).....	234
Well 394807077150101 Local number AD 600 (l).....	235
BEDFORD COUNTY	
Well 400217078281901 Local number BD 150 (l).....	236
BLAIR COUNTY	
Well 402452078271301 Local number BA 74 (l).....	237
BRADFORD COUNTY	
Well 414330076280501 Local number BR 92 (l).....	238
CAMERON COUNTY	
Well 412732078034201 Local number CM 13 (l).....	239
CENTRE COUNTY	
Well 404518077575501 Local number CE 118 (l).....	240
CLINTON COUNTY	
Well 411424077462201 Local number CN 1 (l).....	241
CUMBERLAND COUNTY	
Well 400209077183301 Local number CU 2 (l).....	242
DAUPHIN COUNTY	
Well 402118076462201 Local number DA 350 (l).....	243
FRANKLIN COUNTY	
Well 394731077411701 Local number FR 332 (l).....	244
FULTON COUNTY	
Well 400302078090401 Local number FU 93 (l).....	245
HUNTINGDON COUNTY	
Well 401843078075401 Local number HU 301 (l).....	246
JUNIATA COUNTY	
Well 402411077374801 Local number JU 351 (l).....	247
LANCASTER COUNTY	
Well 400506076235201 Local number LN 514 (l).....	248
Well 400741075584301 Local number LN 1643 (l,c).....	249
Well 400746075584301 Local number LN 1645 (l,c).....	251
Well 400744075584701 Local number LN 1646 (l,c).....	253
Well 400741075585101 Local number LN 1650 (l,c).....	255
Well 400739075585101 Local number LN 1651 (l,c).....	257
Well 401149076105501 Local number LN 1669 (l,c).....	259
Well 401156076105701 Local number LN 1670 (l,c).....	261
Well 401148076110301 Local number LN 1673 (l,c).....	263
Well 401152076110101 Local number LN 1676 (l,c).....	265
Well 401156076110501 Local number LN 1677 (l,c).....	267
Well 401152076105701 Local number LN 1679 (l,c).....	269
Spring 400744075583901 Local number LN SP 58 (c).....	271
Spring 401152076105301 Local number LN SP 61 (c).....	272
LUZERNE COUNTY	
Well 411800076162501 Local number LU 243 (l).....	273
LYCOMING COUNTY	
Well 412427076594401 Local number LY 112 (l).....	274
MIFFLIN COUNTY	
Well 404140077354001 Local number MF 344 (l).....	275
PERRY COUNTY	
Well 402339077074502 Local number PE 518 (l).....	276
POTTER COUNTY	
Well 414640077493801 Local number PO 72 (l).....	277
SNYDER COUNTY	
Well 403939076591001 Local number SN 130 (l).....	278
SULLIVAN COUNTY	
Well 413026076352901 Local number SU 34 (l).....	279
SUSQUEHANNA COUNTY	
Well 415323075451301 Local number SQ 61 (l).....	280
TIOGA COUNTY	
Well 414513077333701 Local number TI 100 (l).....	281
UNION COUNTY	
Well 405928077115501 Local number UN 51 (l).....	282
YORK COUNTY	
Well 400320076451501 Local number YO 180 (l).....	283

WATER RESOURCES DATA - PENNSYLVANIA, 1989 INTRODUCTION

The Water Resources Division of the U.S. Geological Survey, in cooperation with State and Federal agencies, collects a large amount of data pertaining to the water resources of Pennsylvania each water year. These data, accumulated during many water years, constitute a valuable data base for developing an improved understanding of the water resources of the State. To make these data readily available to interested parties outside the Geological Survey, the data are published annually in this report series entitled "Water Resources Data - Pennsylvania, Volumes 1, 2, and 3." Volume 1 contains data for the Delaware River basin; Volume 2, the Susquehanna and Potomac River basins; and Volume 3, the Ohio and St. Lawrence River basins.

This report, Volume 2, specifically contains (1) discharge records for 90 continuous record streamflow-gaging stations, 108 partial-record stations, and 20 special study and miscellaneous streamflow sites; (2) elevation and contents records for 13 lakes and reservoirs; (3) water-quality records for 17 streamflow-gaging stations, 10 ungaged streamsites, and 14 wells or springs; and (4) water-level records for 39 ground-water observation wells.

Publications similar to this report are published annually by the Geological Survey for all States. For the purpose of archiving, these official 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 PA-89-2." These water-data reports, beginning with the 1971 water year, are for sale as paper copy or microfiche by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.

The annual series of Water Data Reports for Pennsylvania began with the 1961 water-year report and contained only data relating to quantities of surface water. Starting with the 1964 water year, a companion report (part 2) was introduced that contained only data relating to water quality. Beginning with the 1975 water year the report was changed to its present format of three volumes, with each volume containing data on quantities of surface water, quality of surface and ground water, and ground-water levels.

Prior to the introduction of this series and for several years concurrent with it, water-resources data for Pennsylvania 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," which was released in numbered parts as determined by natural drainage basins. For the 1961-70 water years, the data were published in two 5-year reports. Data prior to 1961 are included in two reports: "Compilation of Records of Surface Waters of the United States through 1950," and "Compilation of Records of Surface Waters of the United States, October 1950 to September 1960." Data for Pennsylvania are published in Parts 1, 3, 4. Data on chemical quality, temperature, and suspended sediment for the 1941-70 water years were published annually under the title "Quality of Surface Waters of the United States," and ground-water levels for the 1935-74 water years were published under the title "Ground-Water Levels in the United States." The above mentioned Water-Supply Papers may be consulted in the libraries of the principal cities of the United States and may be purchased from U.S. Geological Survey, Books and Open-File Reports, Federal Center, Bldg. 41, Box 25425, Denver, Colorado 80225.

Additional information, including current prices, for ordering specific reports may be obtained from the District Chief at the address given on the back of title page or by contacting the Scientific Publications and Information Section, telephone (717) 782-3851.

COOPERATION

The U.S. Geological Survey and organizations of the Commonwealth of Pennsylvania have had cooperative agreements for the systematic collection of surface-water records during the periods 1919-21 and 1931 to date, water-quality records from 1944 to date, and ground-water records from 1925 to date. Organizations that supplied data are also acknowledged in station descriptions. Organizations that assisted in collecting data for this report through cooperative agreement with the Survey are listed below.

The Commonwealth of Pennsylvania Department of Environmental Resources, Arthur A. Davis, Secretary through the following:

- Office of Resources Management, James R. Grace, Deputy Secretary;
- Bureau of Water Resources Management, John E. McSparran, Director;
- Bureau of Topographic and Geologic Survey, Donald M. Hoskins, Director;
- Environmental Protection, Mark M. McClellan, Deputy Secretary;
- Bureau of Water Quality Management, Daniel B. Drawbaugh, Director;
- Bureau of Mining and Reclamation, Ernest F. Giovannitti, Director.

Susquehanna River Basin Commission, Robert J. Bielo, Executive Director;

University Area Joint Authority, David A. Allison, Chairman;

Letort Regional Authority, Kenwood E. Giffhorn, Executive Director;

Lancaster County Planning Commission, Ronald T. Bailey, Planning Director;

City of Harrisburg, Stephen R. Reed, Mayor.

Federal Energy Regulatory Commission Licensees:
 Philadelphia Electric Co.,
 Susquehanna Electric Co.,
 Safe Harbor Water Power Corp.

WATER RESOURCES DATA - PENNSYLVANIA, 1989

The following Federal agencies assisted in the data-collection program by providing funds or services:

Corps of Engineers, U.S. Army, Baltimore District, in collecting records for 25 streamflow-gaging stations, 11 reservoir stations, and 4 crest-stage gages;

National Weather Service, NOAA, U.S. Department of Commerce;

Soil Conservation Service, U.S. Department of Agriculture.

The following organizations aided in collecting records: City of Lancaster, Hershey Foods Corporation, P.H. Glatfelter Co., Pennsylvania Gas and Water Co., and York Water Co.

SUMMARY OF HYDROLOGIC CONDITIONS

Surface Water

The Susquehanna River flows generally southward from southern New York to the Chesapeake Bay in Maryland. At the point where the river enters Maryland, it drains 27,215 mi² (square miles). The majority of this area, 20,962 mi², is located in central Pennsylvania. Streams in the basin are located in the Appalachian Plateau, Valley and Ridge, and Piedmont physiographic provinces. The underlying geology includes rocks of Precambrian to Triassic age.

Precipitation and Streamflow

Annual precipitation for the 1989 water year was above normal in all but one of the National Oceanic and Atmospheric Administration's (NOAA) Climatological Divisions (no. 7) within the Susquehanna River basin. The annual basinwide total was 3 percent more than normal precipitation. Most of the basin received below-normal precipitation for 7 or more months of the year (fig. 1). Of the below-normal months, precipitation was 1 or more inches below normal for all NOAA Divisions within the basin for December, April, and August. Figure 2 shows the NOAA Divisions and selected streamflow stations located within the Divisions. The largest average deficiency, 62 percent, occurred in April. The largest single monthly deficiency was in Division 5 in April. During that month, the total precipitation was 2.49 inches less than normal.

In May, precipitation totals in all five NOAA Divisions were much above normal. Precipitation during the month averaged more than double the normal amount. Figure 2 shows May 1989 precipitation and normal May precipitation for NOAA Divisions 4-8. Basinwide precipitation for the months of May, June, and July averaged 2.7 inches above normal. Precipitation data are from NOAA (1988-89) and local National Weather Service office records.

Monthly mean streamflow at four USGS streamflow-gaging stations located in NOAA Divisions 4-7 were above the long-term median of average monthly flows about one-half of the year. No extreme low flows were recorded, however each station had at least one monthly mean streamflow below the 25th percentile for the long-term mean monthly flow. Figure 3 shows mean May 1989 streamflows along with the quartiles and means for the long-term May streamflows for four selected stations. At all four stations, monthly mean streamflows during 3 months (May, June, and July) exceeded the 75th percentile for the long-term median average monthly flow. Additionally, at two stations, East Mahantango Creek at Dalmatia (01555500) and West Conewago Creek near Manchester (01574000), monthly mean streamflow was the highest ever computed for the month of May, while the highest monthly mean streamflows ever computed for May and June were recorded at the station at Susquehanna River at Meshoppen (01533400). The period of record for Susquehanna River at Meshoppen began in October 1976.

Flows in Aughwick Creek near Three Springs (01564500) and Bixler Run near Loysville (01567500), in NOAA Divisions 8 and 5 respectively, reflect the large amounts of precipitation received from May through July. The mean monthly flows for both streams were above the 75th percentile of the long-term average monthly streamflow for 3 successive months. At the Aughwick Creek station, monthly mean flows exceeded the 75th percentile for May through August. In July, four substantial peak flows occurred in a 3-week period (fig. 4). On July 20, heavy thunderstorms and a tornado in the headwaters of the Bixler Run basin produced a peak 1.80 ft higher than previously recorded in the 35-year history of the gage (Fig. 4). The peak discharge of 16,000 ft³/s has a recurrence interval of over 100 years.

Surface-Water Quality

Surface-water-quality data collected at four special network stations in the 1989 water year were compared to data collected at these stations during 1975-84. Selected common-ion data were evaluated. Figure 5 shows the interquartile values at the four stations for concentrations of dissolved calcium, magnesium, sodium, and chloride; and measured streamflows at the time of the sample. The boxplots indicate the 95th, 75th, 50th, 25th, and 5th percentiles for the selected period of data collection up to and including the 1984 water year. The mean values of samples for the 1989 water year are also shown for comparison. Each percentile indicates the percentage of time it is not expected to be exceeded.

For the 1989 water year, mean dissolved calcium, magnesium, sodium, and chloride concentrations exceeded the respective median concentrations for the period 1975-84, with the exception of the mean concentration of magnesium at the station on the Susquehanna River at Danville. Mean sample concentrations of dissolved calcium and sodium collected at the station on Young Womans Creek near Renovo exceeded the 75th percentile concentration. The streamflows measured at the time of the samples collected in 1989 are compared to streamflows sampled in 1975-84 to help explain concentrations that are consistently higher or lower than the median. The mean of the streamflows sampled in the 1989 water year exceeded the long-term median for all the stations except the Susquehanna River at Harrisburg.

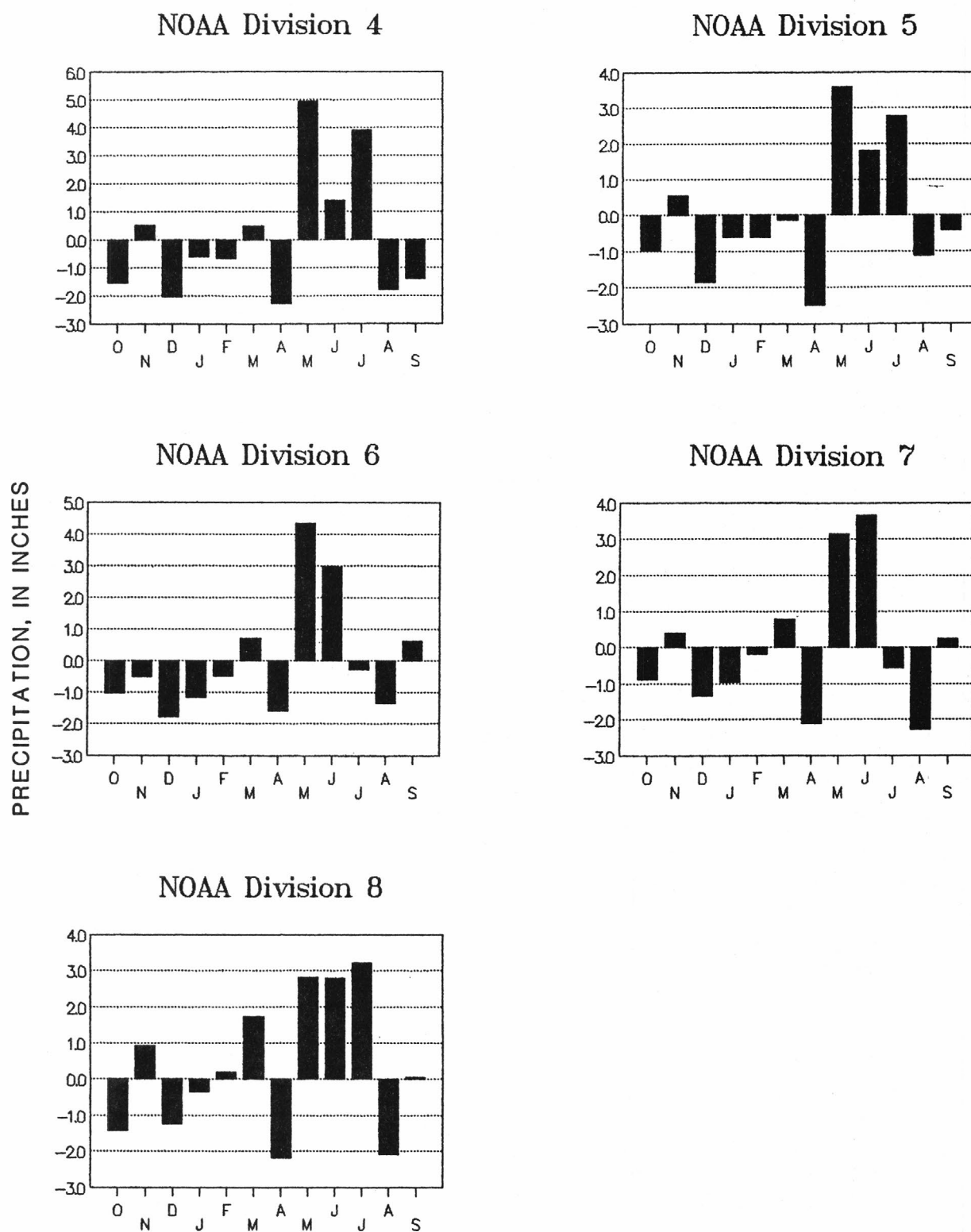


Figure 1.--Departures from normal precipitation by NOAA Divisions in the Susquehanna River basin for the 1989 water year.

WATER RESOURCES DATA - PENNSYLVANIA, 1989

SUSQUEHANNA RIVER BASIN

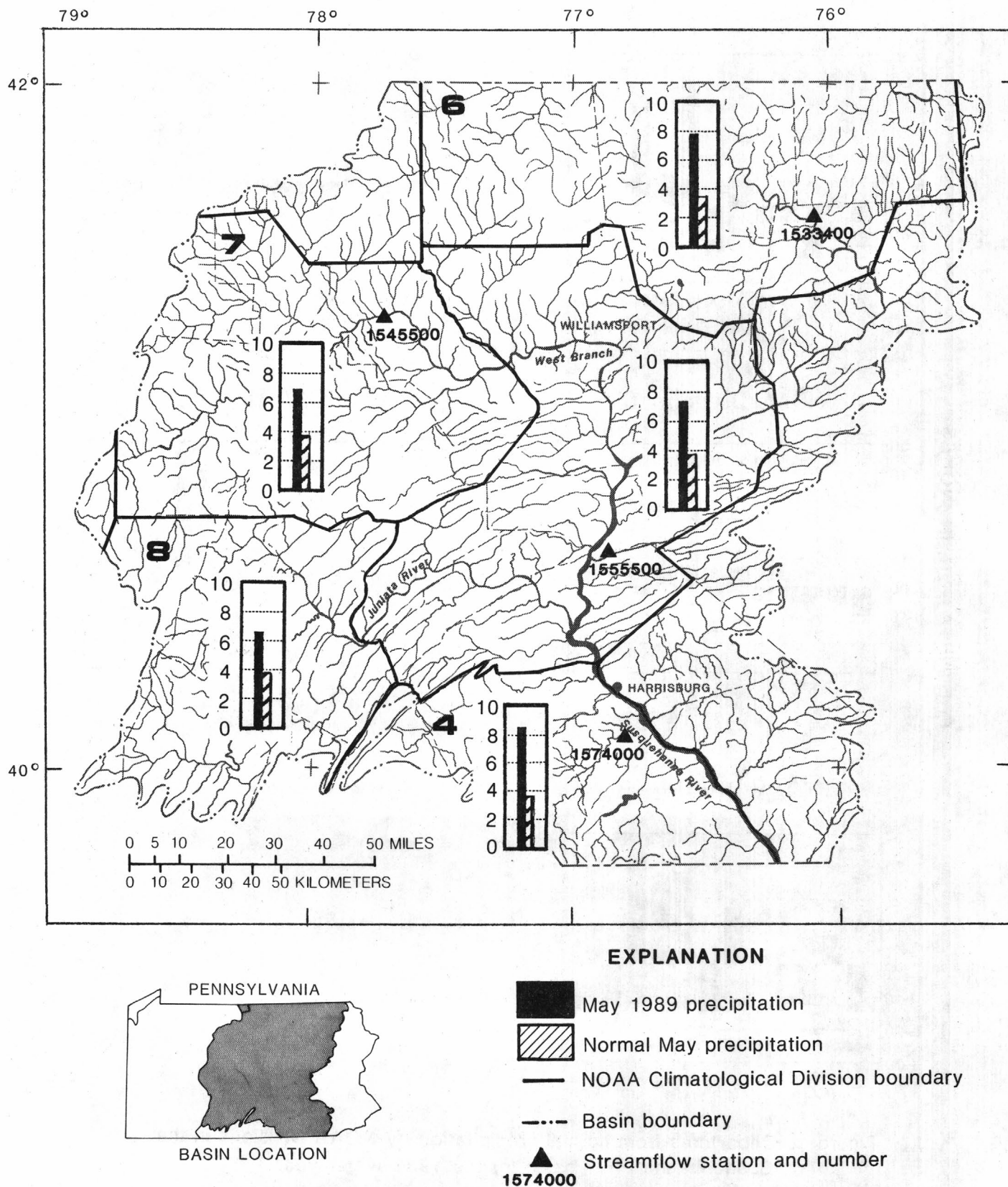


Figure 2.--Comparison of May 1989 and normal May precipitation in NOAA Climatological Divisions 4-8 and streamflow station locations.

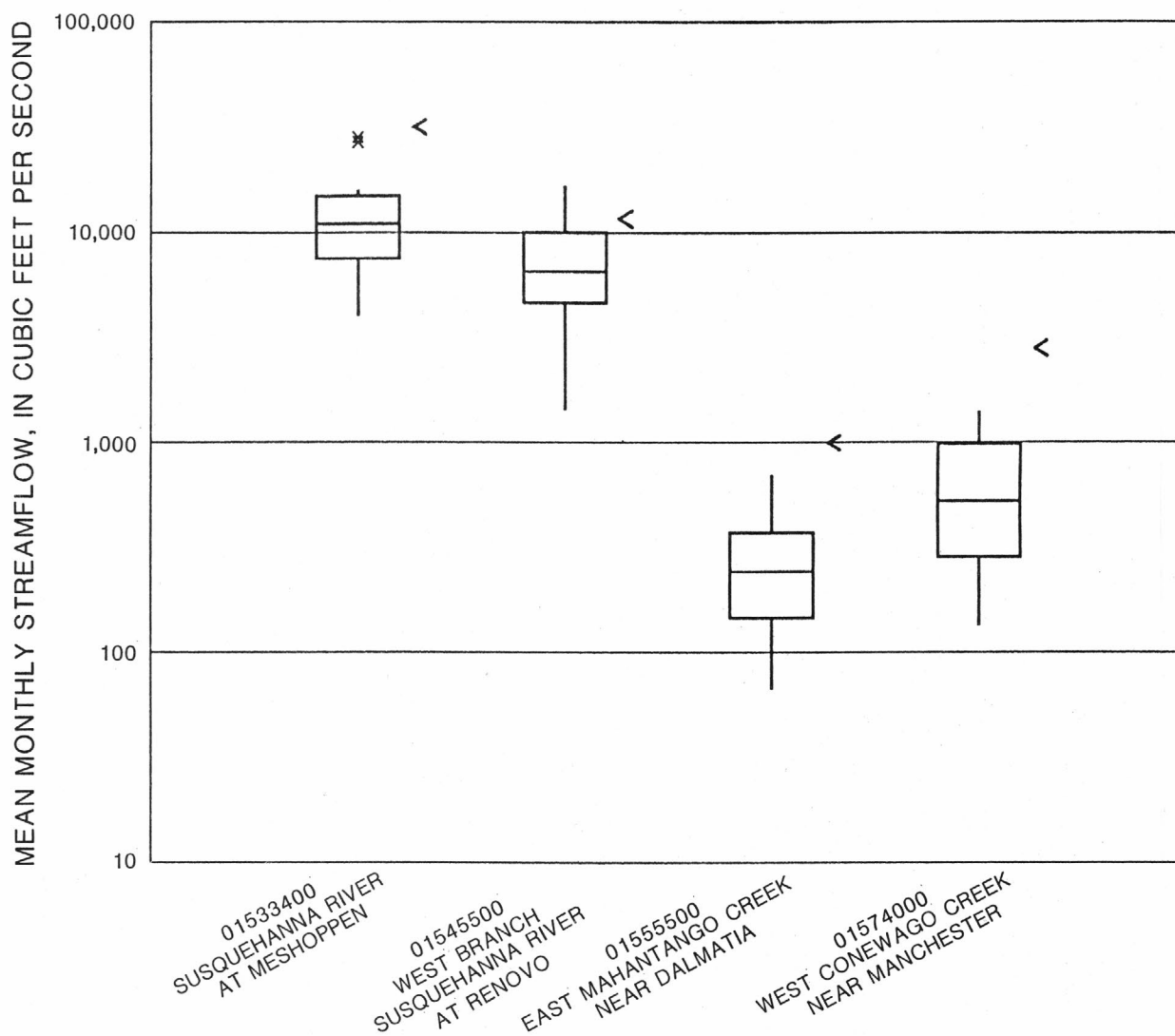
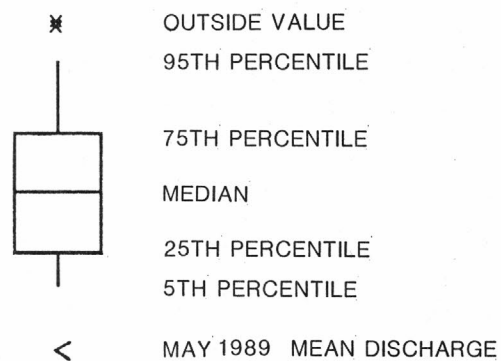
**EXPLANATION**

Figure 3.--Mean May discharges for the 1989 water year and the period of record at streamflow stations located in NOAA Divisions 4-7.

WATER RESOURCES DATA - PENNSYLVANIA, 1989

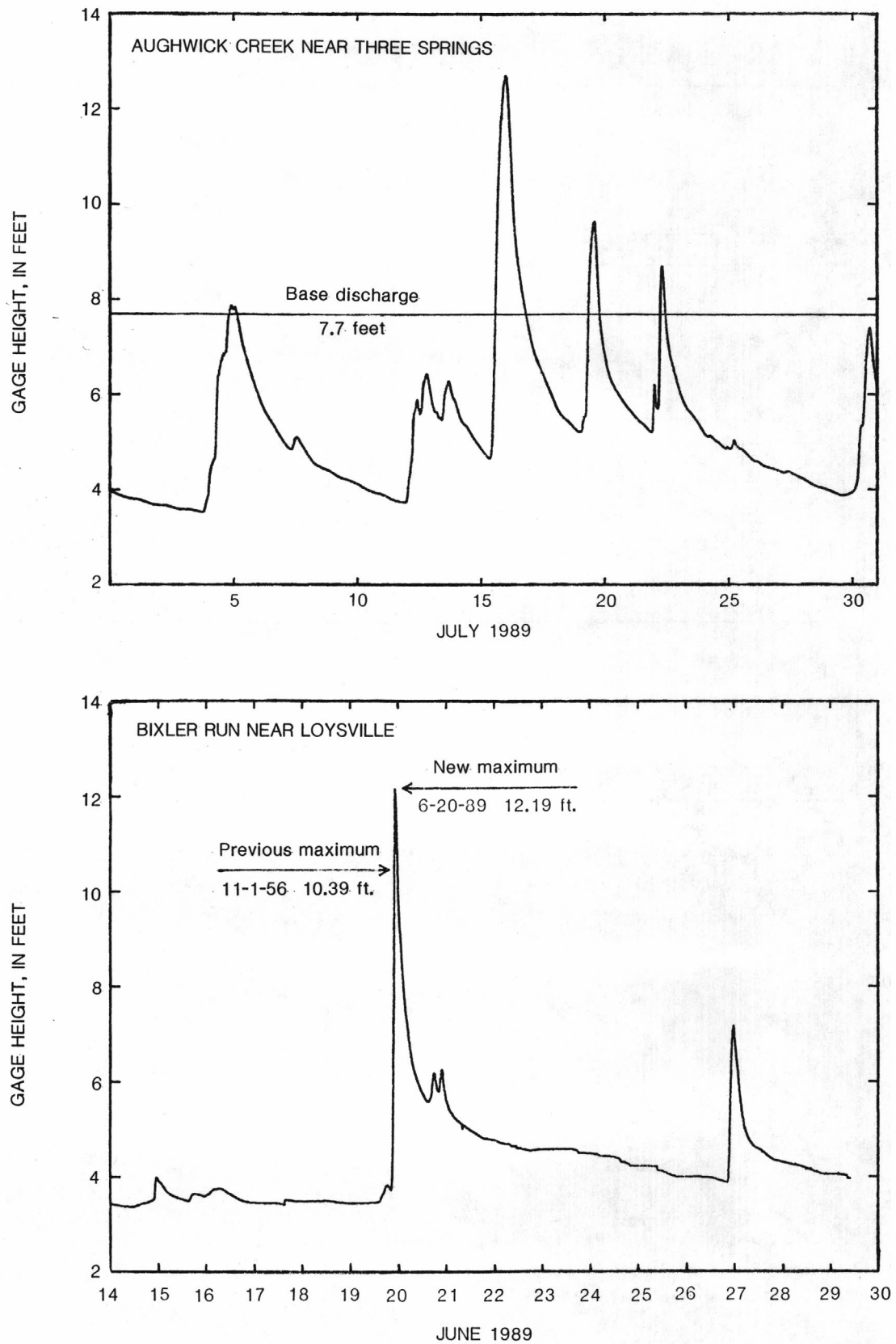


Figure 4.—Hydrograph of extreme events at two selected streamflow stations.

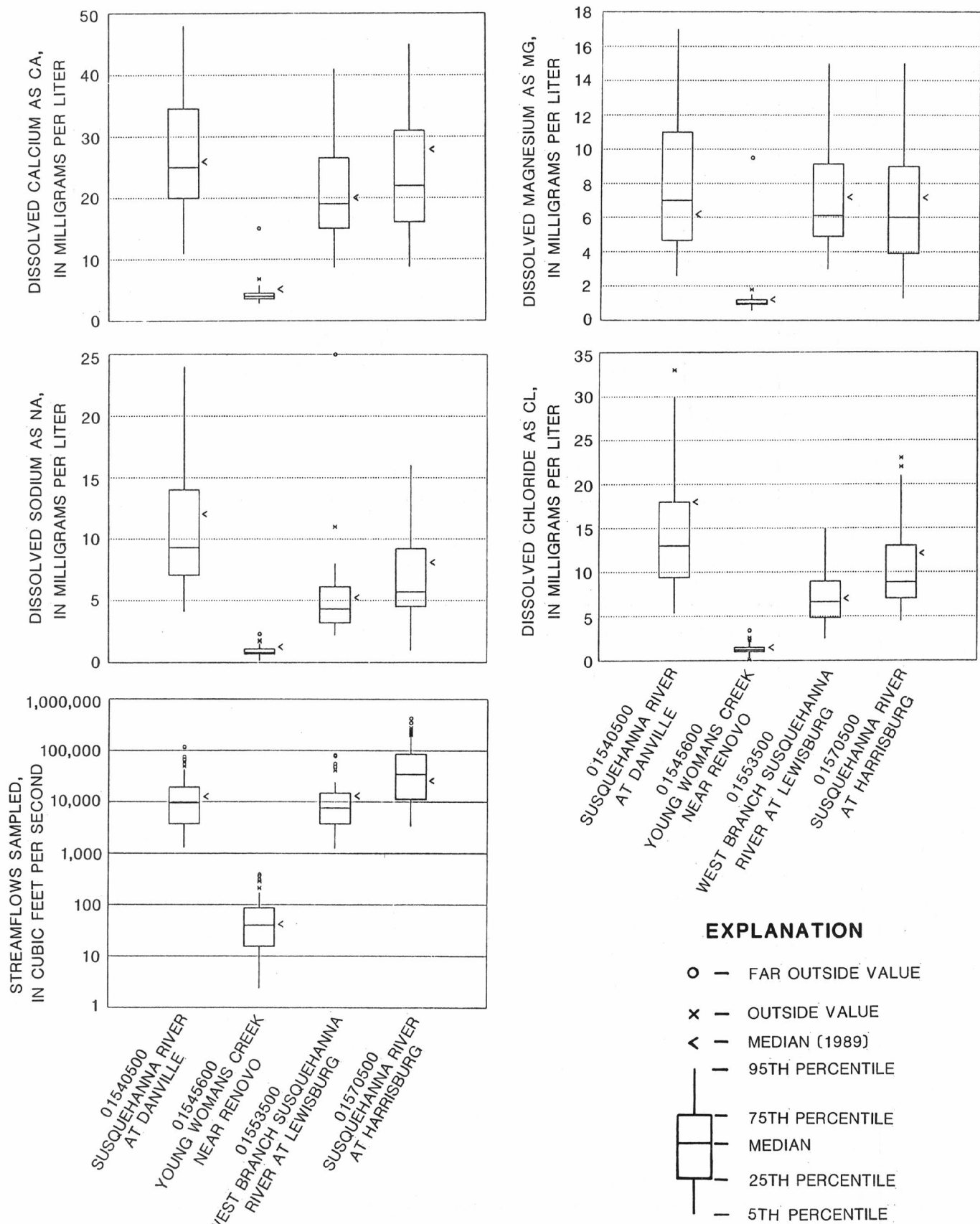


Figure 5.--Median for 1989 water year and interquartile values for 1975-84 of selected nutrient ions and streamflow at four water-quality network stations.

WATER RESOURCES DATA - PENNSYLVANIA, 1989

Reservoirs

The table below lists the mean annual and minimum contents of eight major reservoirs in the basin. For the 1989 water year, total storage was within 5 percent of 1971-80 mean contents at only two reservoirs, Raystown Lake (01563100) and Glendale Lake (01541340). The maximum departure from the long-term mean contents was +27.6 percent at the First Fork Sinnemahoning Creek Reservoir (01543900). At two reservoirs, Foster Joseph Sayers Lake (01547480) and DeHart Reservoir (01568400), 1989 minimum contents were less than their 1971-80 average minimums.

	Mean contents (acre-feet)			Minimum Contents (acre-feet)	
	1971-80 WY	1989 WY	Departure (percent)	1971-80 WY	1989 WY
Stillwater Lake (01534180)	680	644	-5.3	347	380
Curwensville Lake (01541180)	8,280	9,340	+12.8	1,610	4,540
Glendale Lake (01541340)	25,500	26,100	+2.4	14,700	25,500
First Fork Sinnemahoning Creek Reservoir (01543900)	2,210	2,820	+27.6	568	1,460
Kettle Creek Lake (01544800)	1,900	1,760	-7.4	1,260	1,600
Foster Joseph Sayers Lake (01547480)	20,900	18,400	-12.0	4,960	4,880
Raystown Lake (01563100)	504,000	516,000	+2.4	425,000	502,000
DeHart Reservoir (01568400)	17,800	14,600	-18.0	13,200	10,700

Ground Water

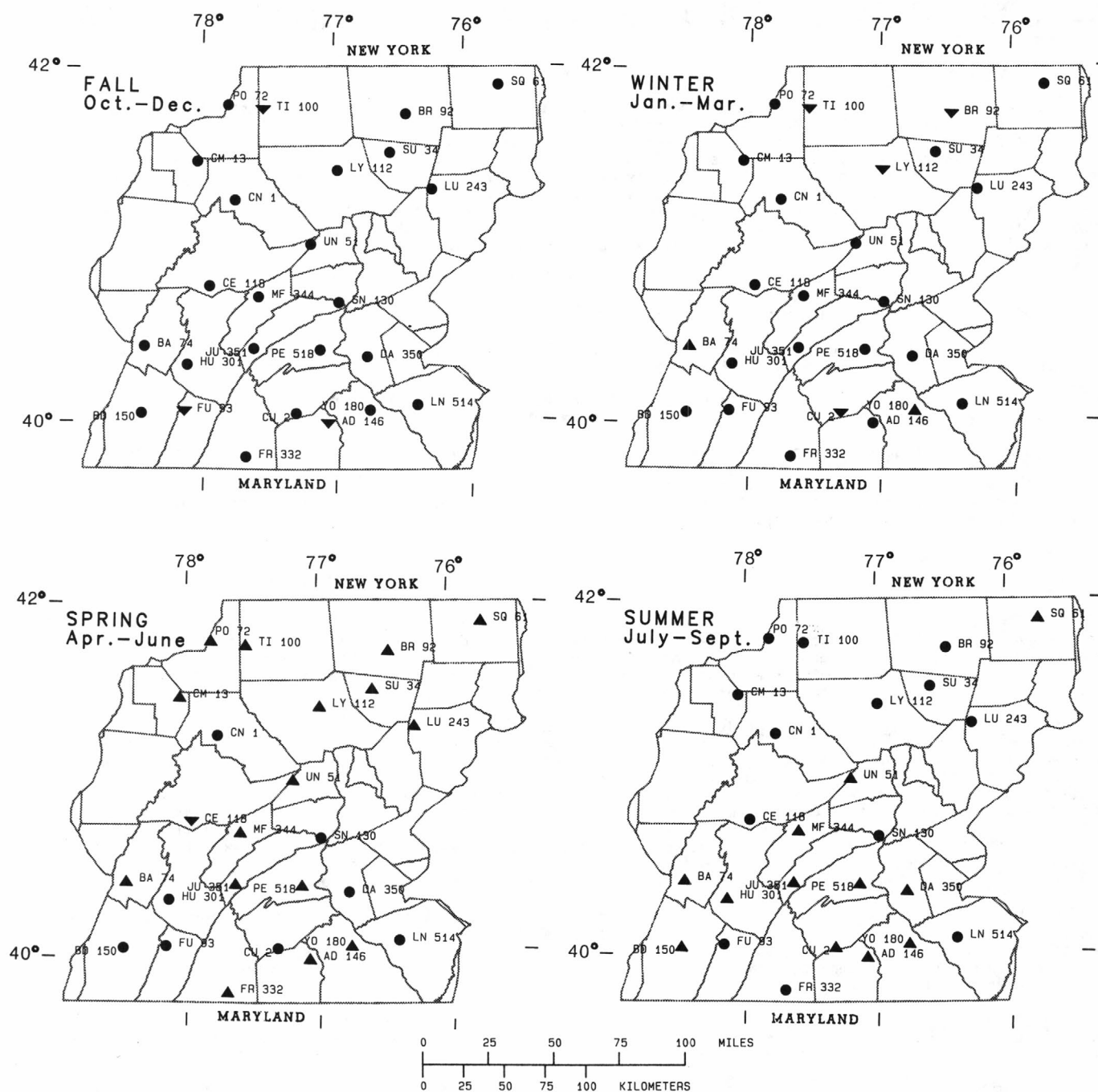
The geologic environment in which ground-water occurs controls the availability of the water and its natural quality. The Susquehanna River basin is underlain predominantly by shale, sandstone, and limestone, and its aquifers are varied in composition and water-yielding properties. Within the basin, adjacent aquifers have poor hydraulic continuity. For this reason, changes in ground-water quantity or quality generally are related only to factors that affect that particular aquifer. Additionally, hydrologic conditions in some aquifers depend on conditions in the overlying soils.

Ground-Water Conditions

The table below presents ground-water-level data for seven wells in the Susquehanna River basin. The table includes the least, greatest, and average maximum depth below land surface for the period of record, as well as the 1989 water year average maximum depth below land surface and departure from the long-term average.

Well	County	Years of Record	Maximum depth below land surface				Departure* 1989 WY
			Least	Greatest	Average	Average (1989 WY)	
			----- (feet) -----				
DA-350	Dauphin	25	1.15	6.95	4.96	4.75	+0.21
HU-301	Huntingdon	20	48.82	55.96	53.89	53.18	+ .71
LN-514	Lancaster	25	16.92	35.47	32.19	32.15	+ .04
PO-72	Potter	22	5.20	39.12	20.58	19.94	+ .64
SQ-61	Susquehanna	17	21.49	37.24	30.74	29.34	+1.40
SU-34	Sullivan	24	7.42	31.12	26.74	26.44	+ .30
UN-51	Union	22	25.26	42.24	38.20	38.07	+ .13

* Departure of 1989 WY levels from long-term average.



EXPLANATION

GROUND-WATER LEVELS

- ▲ MUCH ABOVE NORMAL--More than one standard deviation above long-term mean water level
- ▲ ABOVE NORMAL--One-half to one standard deviation above long-term mean water level
- NORMAL--Within one-half standard deviation of long-term mean water level
- ▼ BELOW NORMAL--One-half to one standard deviation below long-term mean water level
- ▼ MUCH BELOW NORMAL--More than one standard deviation below long-term mean water level

Figure 6.--Relationship between mean 1989 seasonal water levels and long-term mean water levels.

WATER RESOURCES DATA - PENNSYLVANIA, 1989

Figure 6 shows the relation between 1989 water-year seasonal mean ground-water levels and the long-term mean ground-water levels. Levels were normal in the fall and winter seasons in most of the basin. During the spring, levels in most of the basin were above normal, while levels were almost evenly divided between normal and above-normal in the summer. Levels in all wells indicated positive departures from the long-term average for the 1989 water year.

Ground-Water Quality

A summary of the hydrogeology of the Commonwealth of Pennsylvania is in progress (D.J. Low, U.S. Geological Survey, written commun., 1990). Data were obtained from the Ground-water Site Inventory (GWSI) and Water Quality (QWDATA) data bases maintained by the U.S. Geological Survey's Pennsylvania District, and the Water Well Inventory (WWI) data base maintained by the Pennsylvania Geological Survey. Much of the data have been published in earlier reports through the Pennsylvania Geological Survey's Water Report Series, or through the U.S. Geological Survey as Open-File Reports, Professional Papers, Water-Supply Papers, and Water-Resources Investigations. The summary generally is by geologic formation and organized by physiographic provinces using State Map 13 (Berg and others, 1989). Information on water quality is summarized in addition to characteristics such as well yield and construction, specific capacity, water-bearing zones, hydraulic conductivity, and transmissivity.

References

- Berg and others, 1989, State Map 13: Pennsylvania Geological Survey.
- U.S. Department of Commerce, 1988-89, Climatological Data for Pennsylvania, Volume 93-94: National Oceanic and Atmospheric Administration, National Environmental Satellite, Data, and Information Service.
- U.S. Geological Survey, 1986, Water resources data for Pennsylvania, Water Year 1986--Volume 2, Susquehanna and Potomac River basins: U.S. Geological Survey Water-Data Report, 330 p.
- 1987, Water resources data for Pennsylvania, Water Year 1987--Volume 2, Susquehanna and Potomac River basins: U.S. Geological Survey Water-Data Report, 322 p.
- 1988, Water resources data for Pennsylvania, Water Year 1988--Volume 2, Susquehanna and Potomac River basins: U.S. Geological Survey Water-Data Report, 276 p.

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Bench-Mark Network is a network of 55 sites in small drainage basins throughout the country that provides consistent data on hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide. This network also provides 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) is a data-collection network designed by the U.S. Geological Survey to meet many of the information demands of agencies or groups involved in national or regional water-quality planning and management. Most of the 500 or so sites in NASQAN are located at the downstream ends of hydrologic accounting units designed by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Federal Water Resources Council. The objectives of NASQAN are (1) to obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting such that the data may be used for, (2) description of the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (3) detection of changes or trends with time in the pattern of occurrence of water-quality characteristics, and (4) providing a nationally consistent data base useful for water-quality assessment and hydrologic research.

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

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

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

EXPLANATION OF THE RECORDS

The surface-water and ground-water records in this report are for the 1989 water year that began October 1, 1988, and ended September 30, 1989. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and content data for lakes and reservoirs, water-quality data for surface and ground water, and ground-water-level data. The location of these stations and wells are shown in figures 8-11. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

Station Identification Numbers

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

Downstream-Order System

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a main-stream station are listed before that station. A station on a tributary that enters between two main-stream 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 on which a station is situated with respect to the stream to which it is immediately tributary is indicated by an indentation in a list of stations in the front of the report. Each indentation represents one rank. This downstream-order 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 in 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. A station number can be from 8 to 15 digits in length and normally appears to the left of the station name. For example, an 8-digit number for a station such as 01570500, includes a 2-digit part number "01" plus a 6-digit downstream-order number "570500." The part number designates major river basins; for example, part "01" is the North Atlantic Slope basin.

Latitude-Longitude System

The identification numbers for wells and miscellaneous surface-water sites are assigned based on the grid system of latitude and longitude. The system provides the geographic location of the well or miscellaneous site and a unique number for each site. The number consists of 15 digits. The first six digits denote the degrees, minutes, and seconds of latitude, the next seven digits denote the degrees, minutes, and seconds of longitude, and the last two digits (assigned sequentially) identify the wells or other sites within a 1-second grid. See figure 7 below.

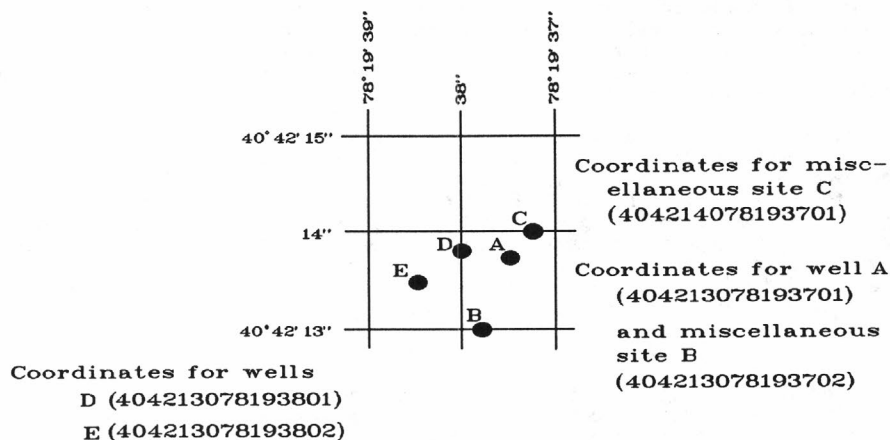


Figure 7.--System for numbering wells and miscellaneous sites (latitude and longitude).

A local well number is also assigned to the wells and consists of a 2-letter abbreviation of the county in which the well is located and a sequential number assigned at the time the well was scheduled.

Records of Stage and Water Discharge

Records of stage and water discharge may be continuous or partial. Continuous records of discharge are those obtained using a continuous stage-recording device through which either instantaneous water discharges may be computed for any time, or mean discharges may be computed for any period of time, during the period of record. Because daily mean discharges or, for reservoirs end-of-day contents, commonly are published for such stations, they are referred to as "daily stations" or "continuous-record 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-record stations," or "Low-flow partial-record stations." Records of miscellaneous discharge measurements or of measurements from special studies, such as low-flow seepage studies, may be considered as partial records, but they are presented separately in this report. Location of all continuous-record and partial-record stations for which data are given in this report are shown in figures 8, 9, and 11.

Data Collection and Computation

The data obtained at a continuous-record gaging station on a stream 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.

Continuous records of stage are obtained with analog recorders that trace continuous graphs of stage, with digital recorders that punch stage values on paper tapes at selected time intervals, or with Data Collection Platforms (DCP's) that electronically record and then transmit the data via satellite to ground receiving stations. Measurements of discharge are made with current meters using methods adopted by the Geological Survey as a result of experience accumulated since 1880. These methods are described in standard textbooks, in Water-Supply Paper 2175, and in U.S. Geological Survey Techniques of Water-Resources Investigations, Book 3, Chapter A6.

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

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

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

When computing records of lake or reservoir contents, it is necessary to have available from surveys, curves or tables defining the relation between 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 relation changes because of deposition of sediment in the lake or reservoir, periodic surveys may be necessary to redefine the relation. Even when this is done, the contents computed may increase in error as the time elapsed since the last survey increases. Discharges over lake or reservoir spillways are computed from stage-discharge relation much as other stream discharges are computed.

For some gaging stations, there are periods when no gage-height data are collected or when the recorded gage height is so imprecise or incorrect that it cannot be used to compute daily mean discharge or end-of-day 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 gaging station and reservoir consist of two parts--the manuscript or station description, and the data table for the current water year. The manuscript provides, under various headings, descriptive information, such as station location, period of record, average discharge, historical extremes, record accuracy, and other remarks pertinent to station operation and regulation. The following information, as appropriate, is provided with each continuous record of discharge or lake content. Comments to follow clarify information presented under the various headings of the station description.

LOCATION.--Information on locations is obtained from the most accurate maps available. The location of the gage 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.

WATER RESOURCES DATA - PENNSYLVANIA, 1989

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 there are published records 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 records from it can reasonably be considered equivalent with records from the present station.

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

GAGE.--The type of gage in current use, the datum of the current gage referred to National Geodetic Vertical Datum of 1929 (see 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 record will either be identified by date in this paragraph of the station description for water-discharge stations or flagged in the daily-discharge table. (See next section, "Identifying Estimated Daily Discharge.") If a remarks statement is used to identify estimated record, the paragraph will begin with this information presented as the first entry. The paragraph is also used to present information relative to the accuracy of the records, to special methods of computation, to conditions that affect natural flow at the station and, possibly, to other pertinent items. For reservoir stations, information is given on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir.

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

AVERAGE DISCHARGE.--The discharge value given is the arithmetic mean of the water-year mean discharges. It is computed only for stations having at least 5 water years of complete record, and only water years of complete record are included in the computation. It is not computed for stations where diversions, storage, or other water-use practices cause the value to be meaningless. If water developments significantly altering flow at a station are put into use after the station has been in operation for a period of years, a new average is computed as soon as 5 water years of record have accumulated following the development.

EXTREMES FOR PERIOD OF RECORD.--Extremes may include maximum and minimum stages and maximum and minimum discharges or content. Unless otherwise qualified, the maximum discharge or content is the instantaneous maximum corresponding to the highest stage that occurred. The highest stage may have been obtained from a graphic or digital recorder, a crest-stage gage, or by direct observation of a nonrecording gage. If the maximum stage did not occur on the same day as the maximum discharge or content, it is given separately. Similarly, the minimum is the instantaneous minimum discharge, unless otherwise qualified, and was determined and is reported in the same manner as the maximum.

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.

EXTREMES FOR CURRENT YEAR.--Extremes given here are similar to those for the period of record, except the peak discharge listing may include secondary peaks. For stations meeting certain criteria, all peak discharges and stages occurring during the water year and equal to or greater than a selected base discharge are presented under this heading. These peaks, excluding the highest one, are referred to as secondary peaks. Peak discharges are not published for canals, ditches, drains, or streams for which the peaks are subject to substantial control by man. The time of occurrence for peaks is expressed in 24-hour local standard time. For example, 12:30 a.m. is 0030, and 1:30 p.m. is 1330. The minimum for the current water year appears below the table of peak data.

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 to determine if the published records were ever revised after the station was discontinued. Of course, if the data 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.

The daily table for stream-gaging stations gives mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the 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 are omitted if there is extensive regulation or diversion or if the drainage area includes large noncontributing areas. In the yearly summary below the monthly summary, the figures shown are the appropriate discharges for the calendar and water years. At some stations monthly and (or) yearly observed discharges are adjusted for reservoir storage or diversion, or diversions or reservoir contents are given. These figures are identified by a symbol and corresponding footnote.

WATER RESOURCES DATA, PENNSYLVANIA, 1989

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

Identifying Estimated Daily Discharge

Beginning with the 1988 annual State data report estimated daily discharge values published in the water-discharge tables 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 (cubic foot per second); to the nearest tenth from 1.0 to 10 ft³/s; to whole numbers from 10 to 1,000 ft³/s; and to 3 significant figures when greater 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 of a more detailed nature than that published for most of the gaging stations such as observations of water temperatures, discharge measurements, gage-height records, and rating tables is on file in the District office. Also most gaging-station records are available in computer-usable form and many statistical analyses have been made.

Information on the availability of unpublished data or statistical analyses may be obtained from the Scientific Publications and Information Section (telephone (717) 782-3851).

Records of Surface-Water Quality

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

Classification of Records

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

A careful distinction needs to be made between "continuing records" as used in this report and "continuous recordings," which refers to a continuous graph or a series of discrete values punched at short intervals on a paper tape. Some records of water quality, such as temperature and specific conductance, may be obtained through continuous recordings; however, because of costs, most data are obtained only monthly or less frequently. Locations of stations for which records on the quality of surface water appear in this report are shown in figures 8 and 9.

Arrangement of Records

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

WATER RESOURCES DATA - PENNSYLVANIA, 1989

On-site Measurements and Sample Collection

During the collection of water-quality data, assurance that the data obtained represent the in-situ quality of the water is a major concern. Certain measurements, such as water temperature, pH, and dissolved oxygen, need to be made onsite when the samples are collected. To assure that measurements made in the laboratory also represent the in-situ water, carefully prescribed procedures need to be followed when collecting the samples, when treating the samples to prevent changes in quality pending analysis, and when shipping the samples to the laboratory. Procedures for onsite measurements and for collecting, treating, and shipping samples are given in publications on "Techniques of Water-Resources Investigations," Book 1, Chapter D2; Book 3, Chapter C2; Book 5, Chapters A1, A3, and A4. All of these references are listed on a following page in this report. Also, detailed information on collecting, treating, and shipping samples may be obtained from the U.S. Geological Survey District Office.

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

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

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum, minimum, and mean values for each constituent measured and are determined from data that are recorded at 15-, 30-, or 60-minute intervals by digital recorders that punch each value on a paper tape, or with Data Collection Platforms (DCP's). More detailed records (hourly values) may be obtained from the U.S. Geological Survey District Office whose address is given on the back of the title page of this report.

Water Temperature

Water temperatures are measured at most of the water-quality stations. At stations where recording instruments are used, maximum, minimum, and mean temperatures for each day are published. In addition, water temperatures are measured at the time of discharge measurements for water-discharge stations and are on file in the District office. For stations where water temperature is measured manually once or twice daily, it is usually measured at about the same time each day. Large streams have a small diurnal temperature change; temperatures in 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 heated waste-water discharges.

Sediment

Suspended-sediment concentrations are determined from samples collected by hand or by pump samplers. Samples are collected by hand using depth-integrating samplers at single or multiple verticals in the cross section. Samples are collected by pump samplers using an intake set to a fixed location in the cross section. The intake is located at a site that best represents the entire cross section on the basis of simultaneous samples collected at various stages by the pumping sampler and by hand. During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, every 15 minutes). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided-day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided-day method. For periods when no samples were collected, daily discharges of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

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

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

Laboratory Measurements

Sediment samples, samples for biochemical-oxygen demand (BOD), samples for indicator bacteria, and daily samples for specific conductance are analyzed locally. The remaining samples are analyzed in the Geological Survey laboratory in Arvada, Colorado. If other laboratories are used, they are identified in the "Remarks" or "Cooperation" paragraph of each water-quality station description. Methods used in analyzing sediment samples and computing sediment records are given in Techniques of Water Resources Investigations, Book 5, Chapter C1. Methods used by the Geological Survey laboratory are given in Techniques of Water Resources Investigations, Book 1, Chapter D2, Book 3, Chapter C2; Book 5, Chapters A1, A3, and A4. Methods used by other laboratories are approved by the U.S. Geological Survey, Water Resources Division.

In March 1989 a bias was discovered in the turbidimetric method for sulfate analysis for those samples analyzed by the U.S. Geological Survey National Water-Quality Laboratory indicating that values below 75 mg/L have a median positive bias of 2 mg/L above the true value for the period between 1982 and 1989. Sulfate values in this report have not been corrected for this bias.

WATER RESOURCES DATA - PENNSYLVANIA, 1989

Data Presentation

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

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

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

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

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

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

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

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

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

REVISIONS.--If errors in published water-quality records are discovered after publication, appropriate updates are made to the Water-Quality File in the U.S. Geological Survey's computerized data system, WATSTORE, and subsequently by monthly transfer of update transactions to the U.S. Environmental Protection Agency's STORET system. Because the usual volume of updates makes it impractical to document individual changes in the State data-report series or elsewhere, potential users of U.S. Geological Survey water-quality data are encouraged to obtain all required data from the appropriate computer file to insure the most recent updates.

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

Remark Codes

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

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

Records of Ground-Water Levels

Ground-water level data from a basic network of observation wells and from ground-water projects are published herein. Locations of observation wells in the basic network are shown in figures 8 and 11. The locations of observation wells for projects are shown in figure 10.

WATER RESOURCES DATA - PENNSYLVANIA, 1989

Data Collection and Computation

Water levels are measured in many types of wells under varying conditions, but the methods of measurement are standardized to the extent possible. The equipment and measuring techniques used at each observation well ensure that measurements at each well are of consistent accuracy and reliability.

Tables of water-level data are presented by counties arranged in alphabetical order. The prime identification number for a given well is the 15-digit number that appears above the station description. The secondary identification number is the local well number, an alphanumeric number, derived from the county location of the well.

Water-level records are obtained from direct measurements with a steel tape, from the graph or punched tape of a water-stage recorder, or with Data Collection Platforms (DCP's). The water-level measurements in this report are given in feet with reference to land-surface datum (lsd). Land-surface datum is a datum plane that is approximately at land surface at each well. If known, the elevation of the land-surface datum is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well description. Water levels in wells equipped with recording gages are reported for each day.

Water levels are reported to as many significant figures as can be justified by the local conditions. Accordingly, most measurements are reported to a hundredth of a foot, but some are given to a tenth of a foot or a larger unit.

Data Presentation

Each well record consists of two parts, the station description and the data table of water levels observed during the water year. The description of the well is presented first through use of descriptive headings preceding the tabular data. The comments to follow clarify information presented under the various headings.

LOCATION.--This paragraph follows the well-identification number and reports the latitude and longitude (given in degrees, minutes, and seconds); the hydrologic-unit number; a geographic point of reference; and the owner's name.

AQUIFER.--This entry designates by name (if a name exists) and geologic age the aquifer(s) open to the well.

WELL CHARACTERISTICS.--This entry describes the well in terms of depth, diameter, casing depth and/or screened interval, method of construction, use, and additional information such as casing breaks, collapsed screen, and other changes since construction.

INSTRUMENTATION.--This paragraph provides information on both the frequency of measurement and the collection method used, allowing the user to better evaluate the reported water-level extremes by knowing whether they are based on weekly, monthly, or some other frequency of measurement.

DATUM.--This entry describes both the measuring point and the land-surface elevation at the well. The measuring point is described physically (such as top of collar, notch in top of casing, plug in pump base and so on), and in relation to land surface (such as 1.3 ft above land-surface datum). The elevation of the land-surface datum is described in feet above (or below) National Geodetic Vertical Datum of 1929 (NGVD of 1929); it is reported with a precision depending on the method of determination.

REMARKS.--This entry describes factors that may influence the water level in a well or the measurement of the water level. It should identify wells that also are water-quality observation wells, and may be used to acknowledge the assistance of local (non-Survey) observers.

PERIOD OF RECORD.--This entry indicates the period for which there are published records for the well. It reports the month and year of the start of publication of water-level records by the U.S. Geological Survey and the words "to current year" if the records are to be continued into the following year. Periods for which water-level records are available, but are not published by the Geological Survey, may be noted.

EXTREMES FOR PERIOD OF RECORD.--This entry contains the highest and lowest water levels of the period of published record, with respect to land-surface datum, and the dates of their occurrence.

A table of water levels follows the station description for each well. Water levels are reported in feet below land-surface datum. Wells equipped with recording gages have water levels reported for each day. Missing records are indicated by dashes in place of the water level.

Records of Ground-Water Quality

Records of ground-water quality are obtained at wells and springs included in ground-water projects. Records of ground-water quality in this report may involve a variety of types of data and measurement frequencies. The locations of ground-water-quality stations are shown in figure 10.

Data Collection and Computation

The records of ground-water quality in this report were obtained mostly as a part of special studies in specific areas. Consequently, a number of chemical analyses are presented for some counties but none are presented for others. As a result, the records for this year, by themselves, do not provide a balanced view of ground-water quality Statewide. Such a view can be attained only by considering records for this year in context with similar records obtained for these and other counties in earlier years.

Most methods for collecting and analyzing water samples are described in the "U.S. Geological Survey Techniques of Water-Resources Investigations" manuals listed on a following page. The values reported in this report represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. All samples were collected by trained personnel.

WATER RESOURCES DATA - PENNSYLVANIA, 1989

A variety of sampling techniques is used for collecting ground-water samples for chemical analyses. Techniques for sampling springs are the same as those used for sampling surface water. An appropriate well-sampling technique is selected at each site so that the chemical samples are representative of the water in the aquifer. Wells are pumped, when possible, until a constant water temperature, specific conductance, and pH are obtained before collecting water samples. Pumping rate, length of pumping, and sampling depth depend on the characteristics of the well and aquifer being sampled. Samples are collected either by a submersible pump or a bailer.

Data Presentation

Ground-water-quality data are published with ground-water-level data at stations where level data are collected. Data collected at partial-record stations and miscellaneous sites follow the information for continuous ground-water record stations. Data for each section are listed alphabetically by county, and are identified by well number. The prime identification number for wells sampled is the 15-digit number derived from the latitude-longitude locations. No descriptive statements are given for ground-water-quality records; however, the well number, depth of well, date of sampling, and other pertinent data are given in the table containing the chemical analyses of the ground water. The REMARK codes listed for surface-water-quality records are also applicable to ground-water-quality records.

ACCESS TO WATSTORE DATA

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

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

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

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

In addition to providing direct access to WATSTORE, data can be provided in various machine-readable formats on magnetic tape or 5-1/4 and 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's 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 the table for converting Inch-pound 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 equal to 43,560 cubic feet or about 326,000 gallons.

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

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

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

Aquifer is a geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

Artesian means confined and is used to describe a well in which the water level stands above the top of the aquifer tapped by the well. A flowing artesian well is one in which the water level is above the land surface.

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

Fecal coliform bacteria are bacteria that are present in the intestines or feces of warmblooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms that produce blue colonies within 24 hour when incubated at $44.5^{\circ}\text{C} \pm 0.2^{\circ}\text{C}$ on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal streptococcal bacteria are bacteria found also in intestines of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at $35^{\circ}\text{C} \pm 1.0^{\circ}\text{C}$ on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35°C . In the laboratory these bacteria are defined as the organisms that produce colonies with a golden-green metallic sheen within 24 hours when incubated at $35^{\circ}\text{C} \pm 1.0^{\circ}\text{C}$ on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

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

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

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

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

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

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

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

Bottom material: See Bed material.

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

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

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

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

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

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

Continuous record station is a station where streamflow and/or water-quality data are collected systematically over a period of years for use in hydrologic analyses. Data may be collected continuously or periodically.

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

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

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

Cubic feet per second per square mile [$(\text{ft}^3/\text{s})/\text{mi}^2$]¹ is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Data Collection Platform (DCP) is an electronic instrument which collects, processes, stores, and transmits data from various sensors to an earth-orbiting Geostationary Operational Environmental Satellite (GOES) and/or through landline telemetry.

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

Base discharge is an arbitrary instantaneous discharge value, determined for stations meeting certain criteria, that will be exceeded about three times per year.

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

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

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

Dissolved-solids concentration of water is determined either analytically by the "residue-on-evaporation" method, or mathematically by totaling the concentrations of individual constituents reported in a comprehensive chemical analysis. During the analytical determination of dissolved solids, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. Therefore, in the mathematical calculation of dissolved-solids concentration, the bicarbonate value, in milligrams per liter, is multiplied by 0.492 to reflect the change.

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

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

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

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

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

¹ Until appropriate changes can be made to the WATSTORE and PRIME computer systems, the unit abbreviations "CFS" and "CFSM" will appear on some computer-generated table headings and summaries.

WATER RESOURCES DATA - PENNSYLVANIA, 1989

Hydrologic Bench-Mark Network is a network of 55 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

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

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

Measuring point (MP) is an arbitrary permanent reference point from which the distance to the water surface in a well is measured to obtain the water level.

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

Methylene blue active substance (MBAS) is a measure of apparent detergents. This determination depends on the formation of a blue color when methylene blue dye reacts with synthetic anionic detergent compounds.

Micrograms per gram ($\mu\text{g/g}$) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the element per unit mass (gram) of material analyzed.

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

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

Miscellaneous record site is a site where limited streamflow and/or water-quality data are collected on a random basis for use in hydrologic analyses.

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

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

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

Organism is any living entity.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Milligrams of carbon per area of volume per unit time [mg C/(m²·time)] for periphyton and macrophytes and [mg C/(m³·time)] for phytoplankton are units for expressing primary productivity. They define the amount of carbon dioxide consumed as measured by radioactive carbon (carbon 14). The carbon 14 method is of greater sensitivity than the oxygen light and dark bottle method, and is preferred for use in unenriched waters. Unit time may be either the hour or day, depending on the incubation period.

Milligrams of oxygen per area or volume per unit time [mg O/(m²·time)] for periphyton and macrophytes and [mg O/(m³·time)] for phytoplankton are the units for expressing primary productivity. They define production and respiration rates as estimated from changes in the measured dissolved-oxygen concentration. The oxygen light and dark bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period.

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

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

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

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

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

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

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

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

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

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

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

Suspended-sediment discharge (tons/day) is the rate at which dry mass of sediment passes a section of a stream or is the quantity of sediment, as measured by dry mass or volume, that passes a section in a given time. It is calculated in units of tons per day as follows: concentration (mg/L) x discharge (ft³/s) x 0.0027.

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

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

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

7-day 10-year low flow (Q7,10) is the discharge at the 10-year recurrence interval taken from a frequency curve of annual values of the lowest mean discharge for 7 consecutive days (the 7-day low flow).

Sodium-adsorption-ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions within soil and is an index of sodium or alkali hazard to the soil. Waters range in respect to sodium hazard from those which can be used for irrigation on almost all soils to those which are generally unsatisfactory for irrigation.

Solute is any substance that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in microsiemens per centimeter at 25°C. Specific conductance is related to the type and concentration of ions in the solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in microsiemens). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

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

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

Substrate is the physical surface upon which an organism lives.

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

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

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

Surficial bed material is that part (0.1 to 0.2 ft) of the bed material that is sampled using U.S. Series Bed-Material Samplers.

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of undissolved material in a water-sediment mixture. It is associated with the material retained on a 0.45 μ m filter.

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that is retained on a 0.45 μ m membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

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

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

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

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

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

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

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

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

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

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

WATER RESOURCES DATA - PENNSYLVANIA, 1989

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

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

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

Water year as used in Geological Survey reports, 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, 1980, is called the "1980 water year."

WDR is used as an abbreviation for "Water-Data Report" in the REVISED RECORDS paragraph to refer to a State's annual hydrologic-data reports.

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 references to previously published reports.

WATER RESOURCES DATA - PENNSYLVANIA, 1989

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

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

The reports listed below are for sale by the U.S. Geological Survey, Books and Open-File Reports Section, Federal Center, Box 25425, Denver, Colorado 80225 (authorized agent of the Superintendent of Documents, Government Printing Office). Prepayment is required. Remittance should be sent by check or money order payable to the U.S. Geological Survey. Prices are not included because they are subject to change. 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."

- 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.
- 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.
- 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-F1. *Application of drilling, coring, and sampling techniques to test holes and wells*, by Eugene Shuter and Warren E. Teasdale: USGS--TWRI Book 2, Chapter F1. 1989. 97 pages.
- 3-A1. *General field and office procedures for indirect discharge measurements*, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.
- 3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.
- 3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.
- 3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages.
- 3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.
- 3-A6. *General procedure for gaging streams*, by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.
- 3-A7. *Stage measurements at gaging stations*, 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 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*, 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.
- 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, N. Yotsukura, G. W. Parker, and L. L. DeLong: USGS--TWRI Book 3, Chapter A18. 1989. 52 pages.

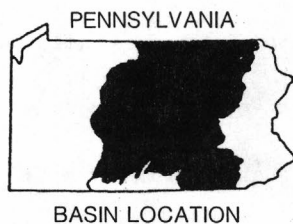
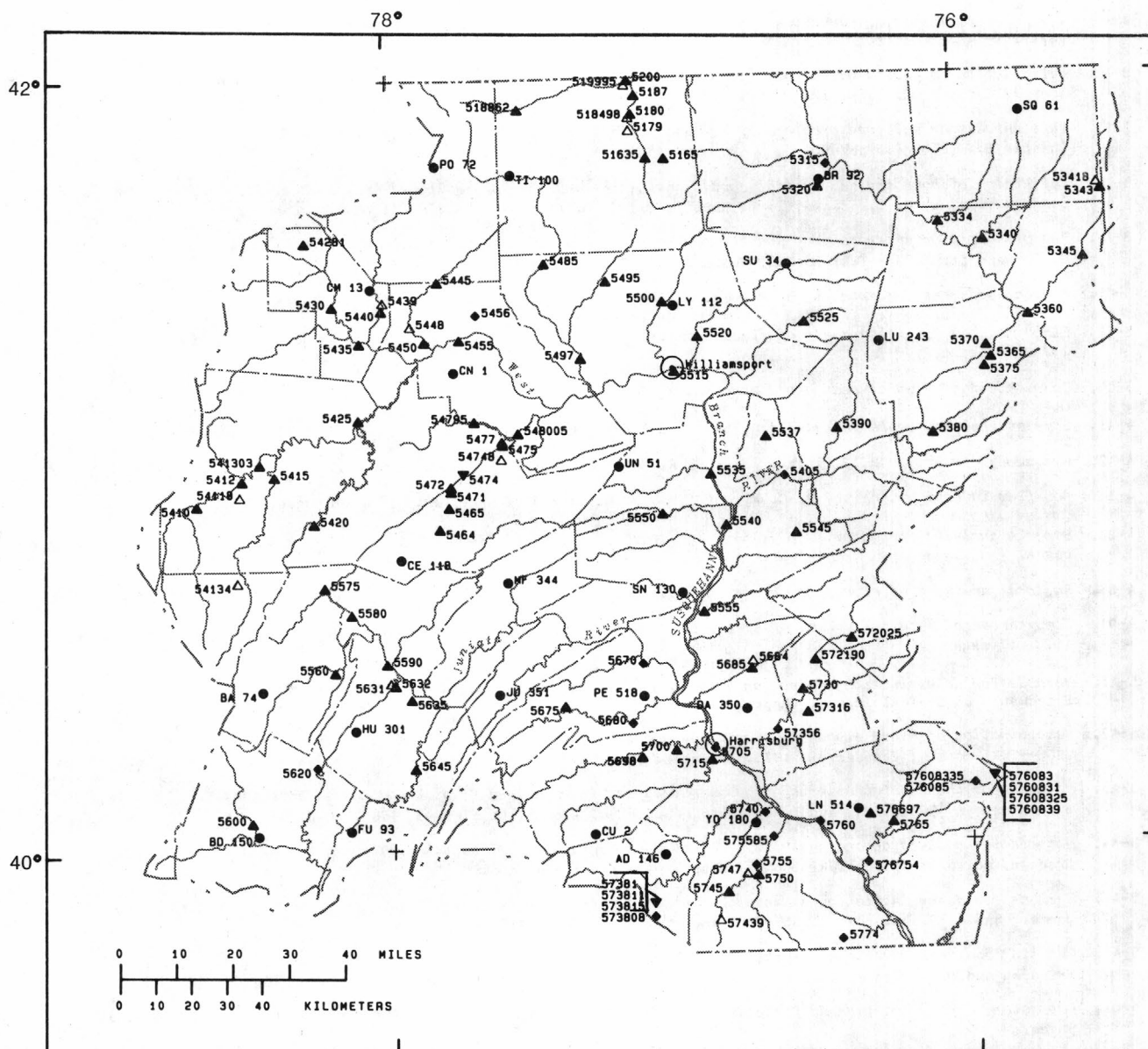
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PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS--Continued

- 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 programmed text for self-instruction*, by G. D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages.
- 3-B3. *Type curves for selected problems of flow to wells in confined aquifers*, by J. E. Reed: USGS--TWRI Book 3, Chapter B3. 1980. 106 pages.
- 3-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-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 H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 pages.
- 3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages.
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- 4-A2. *Frequency curves*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages.
- 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.
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- 5-A1. *Methods for determination of inorganic substances in water and fluvial sediments*, by M. J. Fishman and L. C. Friedman: USGS--TWRI Book 5, Chapter A1. 1989. 545 pages.
- 5-A2. *Determination of minor elements in water by emission spectroscopy*, by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages.
- 5-A3. *Methods for 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.
- 5-C1. *Laboratory theory and methods for sediment analysis*, by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages.
- 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.
- 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.
- 8-A1. *Methods of measuring water levels in deep wells*, by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages.
- 8-A2. *Installation and service manual for U.S. Geological Survey manometers*, by J. D. Craig: USGS--TWRI Book 8, Chapter A2. 1983. 57 pages.
- 8-B2. *Calibration and maintenance of vertical-axis type current meters*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.

WATER RESOURCES DATA - PENNSYLVANIA, 1989

SUSQUEHANNA RIVER BASIN



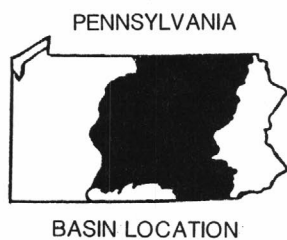
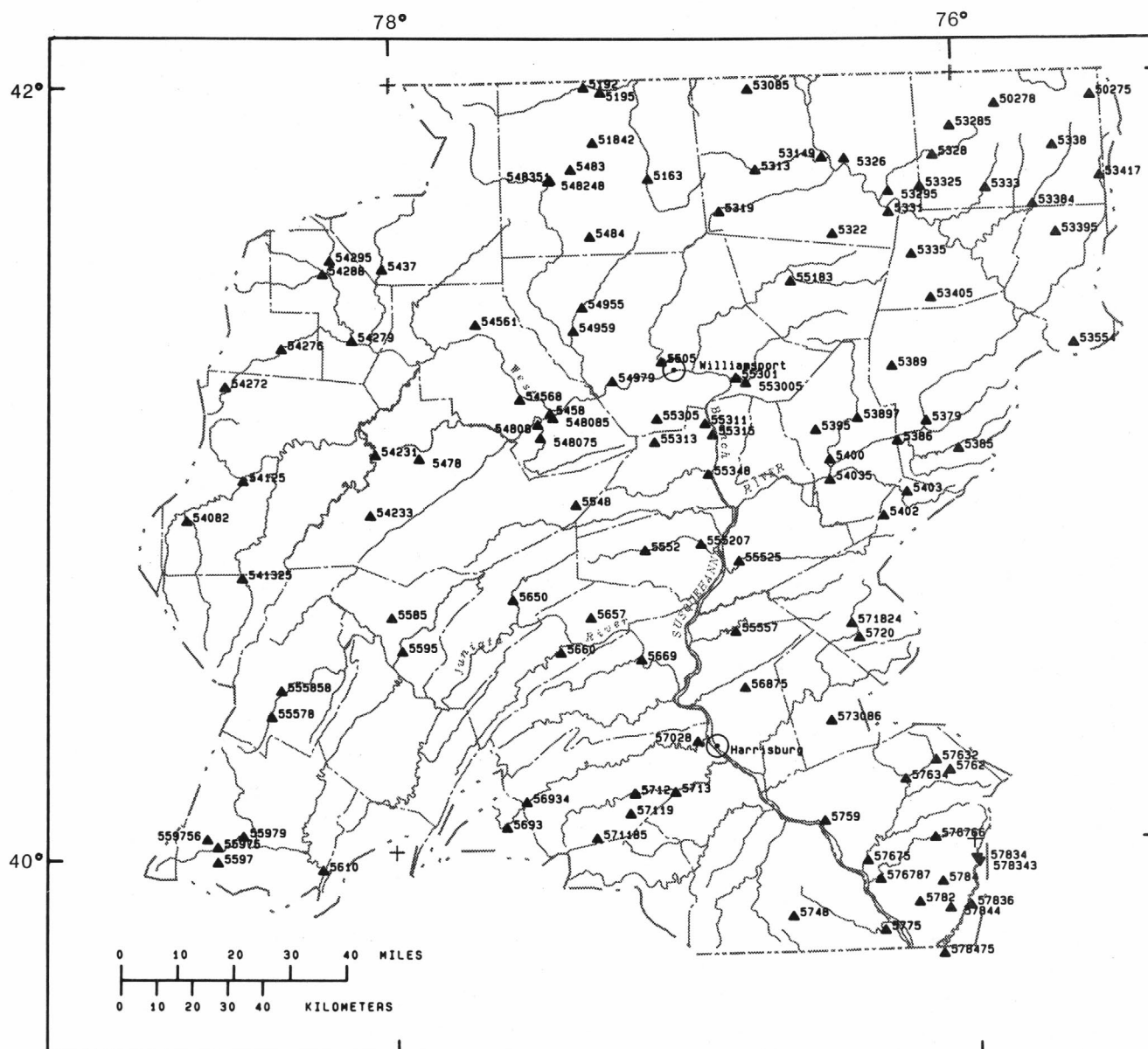
EXPLANATION

- ▲ 5745 STREAMFLOW STATION AND NUMBER
- ▼ 576083 WATER-QUALITY STATION AND NUMBER
- ◆ 5774 STREAMFLOW AND WATER-QUALITY STATION AND NUMBER
- AD 146 OBSERVATION WELL AND NUMBER
- △ 57439 LAKE AND NUMBER

Figure 8.--Location of continuous data-collection stations and network observation wells.

NOTE - Downstream station numbers abbreviated:
First two digits (part number), and last two digits (if zeros) are omitted.
EXAMPLE - Station number 01573560 is shown as 57356,
station number 01570500 is shown as 5705.

SUSQUEHANNA RIVER BASIN



EXPLANATION

- ▲ 5782 STREAMFLOW STATION AND NUMBER
- ▼ 578343 WATER-QUALITY STATION AND NUMBER

NOTE - Downstream station numbers abbreviated:
First two digits (part number), and last two digits
(if zeros) are omitted.
EXAMPLE - Station number 01578340 is shown as 57834,
station number 01578200 is shown as 5782.

Figure 9.--Location of partial-record data-collection stations.

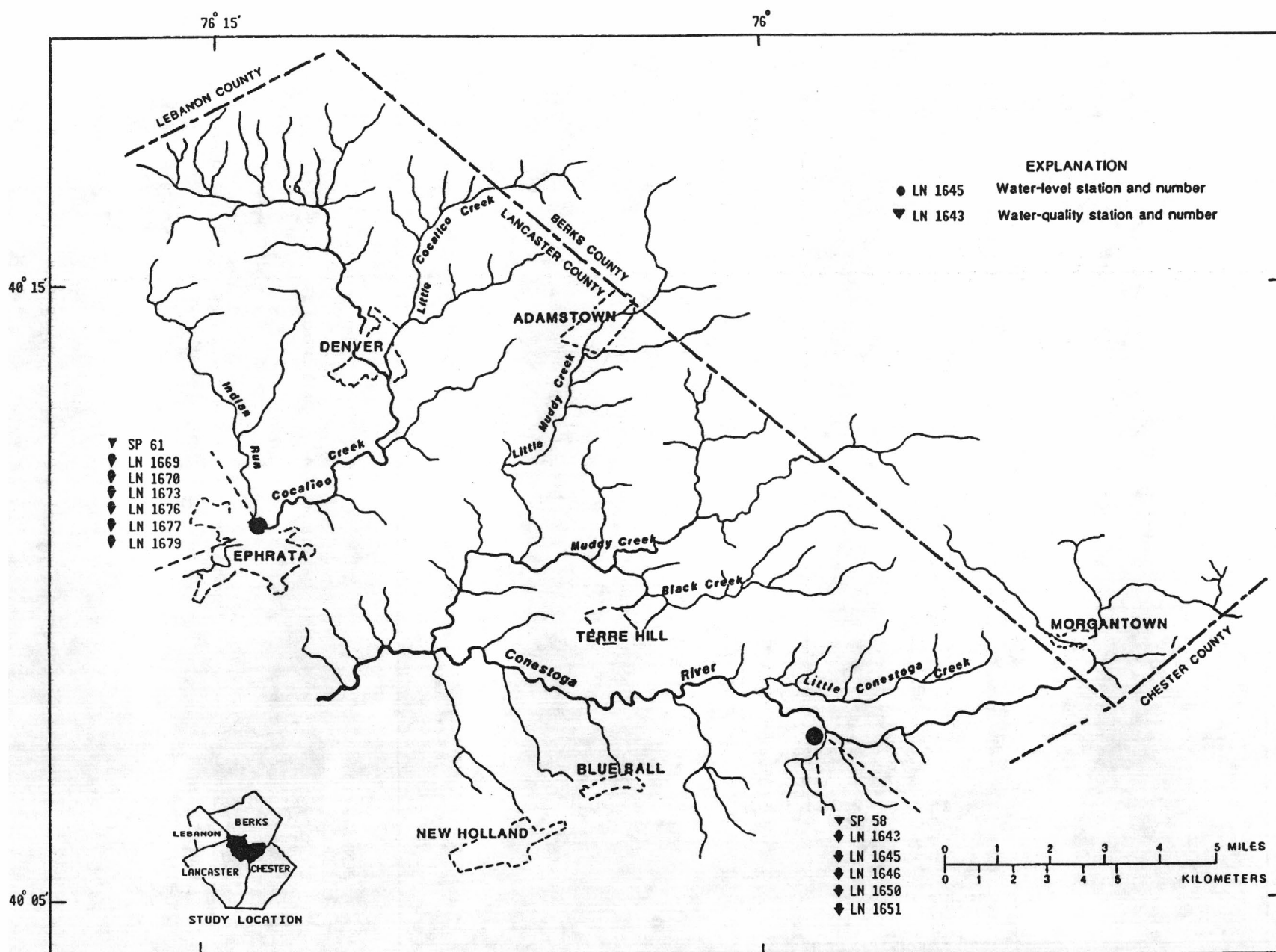
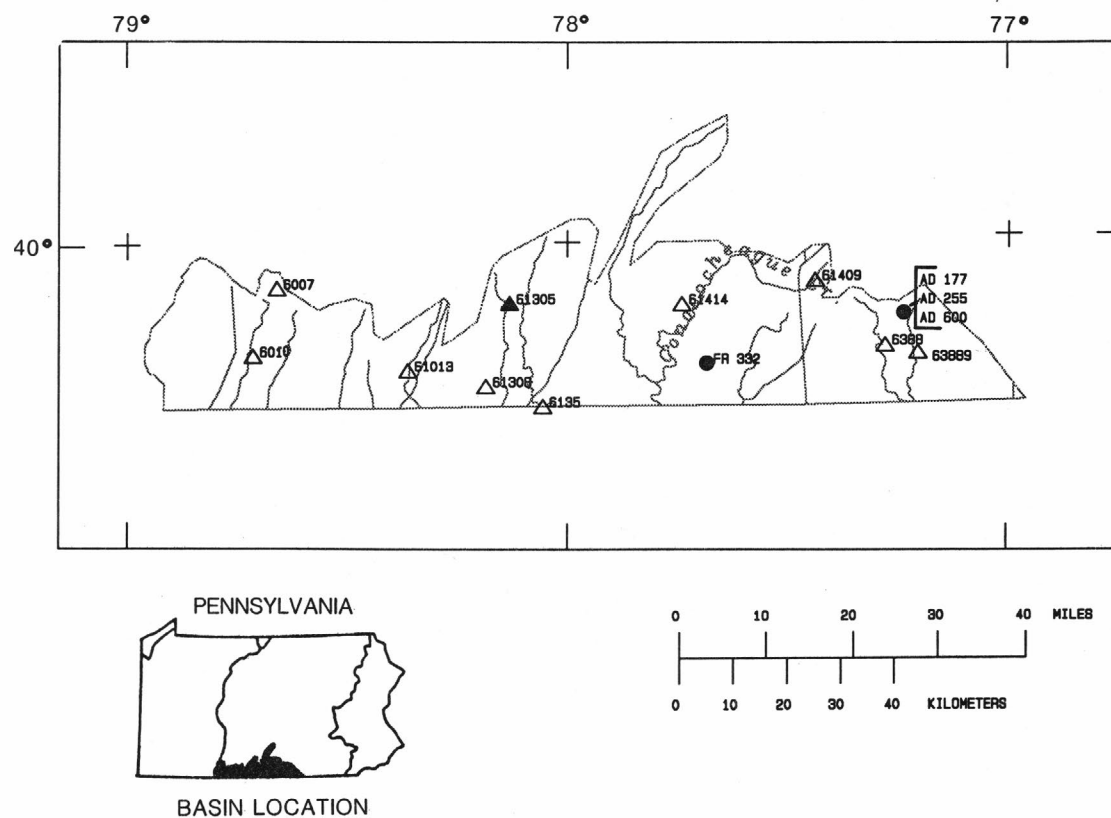


Figure 10.—Location of water-level and quality of ground-water data-collection stations in northern Lancaster county.

WATER RESOURCES DATA - PENNSYLVANIA, 1989
POTOMAC RIVER BASIN

31



EXPLANATION

- ▲ 61305 CONTINUOUS-RECORD STREAMFLOW STATION AND NUMBER
- △ 6010 PARTIAL-RECORD STREAMFLOW STATION AND NUMBER
- FR 332 OBSERVATION WELL AND LOCAL NUMBER

NOTE - Downstream station numbers abbreviated: First two digits (part number), and last two digits (if zeros) are omitted.
EXAMPLE - Station number 01413050 is shown as 61305,
station number 01601000 is shown as 6010.

Figure 11.--Location of continuous and partial-record data-collection stations, Potomac River basin.

WATER-DISCHARGE AND WATER-QUALITY STATION RECORDS

NORTH ATLANTIC SLOPE BASINS

SUSQUEHANNA RIVER BASIN

CHEMUNG RIVER BASIN

01516350 TIOGA RIVER NEAR MANSFIELD, PA

LOCATION.--Lat 41°47'34", long 77°04'44", Tioga County, Hydrologic Unit 02050104, on left bank on Township Route 754, 0.6 mi downstream from Slate Creek, and 1.0 mi south of Mansfield.

DRAINAGE AREA.--153 mi².

PERIOD OF RECORD.--July 1976 to current year.

REVISED RECORDS.--WDR PA-84-2: 1980-83 (P).

GAGE.--Water-stage recorder. Datum of gage is 1,121.28 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite and landline telemeters at station.

AVERAGE DISCHARGE.--13 years, 202 ft³/s, 17.93 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,490 ft³/s, Feb. 14, 1984, gage height, 14.68 ft, from rating curve extended above 6,000 ft³/s; maximum gage height, 16.17 ft, May 14, 1978; minimum daily discharge, 9.6 ft³/s, Sept. 20, 1983.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in September 1975 reached an approximate stage of 20.13 ft, from flood-marks, approximate discharge, 18,000 ft³/s.

EXTREMES 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)
June 17	0230	*4,480	*12.91	No other peak greater than base discharge.			

Minimum daily discharge, 14 ft³/s, Oct. 16-18, 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	33	78	e40	54	e68	940	90	188	139	35	17
2	17	32	72	e39	64	e68	630	368	343	118	35	18
3	17	30	67	e36	e60	e66	542	261	246	103	33	17
4	16	29	62	e30	e48	e64	511	208	497	94	30	16
5	15	38	58	e25	e42	e130	773	191	383	233	31	18
6	15	178	55	e33	e42	e100	640	500	594	202	29	17
7	15	125	54	e35	e39	e56	521	1200	409	136	27	15
8	15	99	51	e50	e36	e35	434	695	332	101	26	15
9	15	88	48	e90	e30	e45	375	537	278	84	25	17
10	15	79	e42	e80	e27	e50	323	1060	287	74	24	19
11	15	75	e37	e67	e33	e56	272	2170	220	68	24	19
12	15	68	e34	e60	e40	e60	237	1240	179	62	24	16
13	15	97	e37	e56	e35	e52	221	747	242	59	25	15
14	15	166	e39	e52	e40	e57	216	576	592	54	23	21
15	15	116	e43	e60	134	69	193	610	1370	51	22	41
16	14	99	e40	57	137	96	178	1680	994	52	21	41
17	14	95	e37	54	92	79	160	1380	2560	53	20	52
18	14	88	e34	50	67	202	157	759	863	47	19	34
19	15	79	e32	48	55	217	161	566	574	45	22	28
20	14	125	e31	48	50	135	145	448	507	64	32	87
21	15	272	e45	e43	297	136	132	370	1510	83	30	68
22	39	173	e39	e38	231	117	123	298	715	63	31	45
23	63	143	e37	e36	140	111	114	289	542	52	26	174
24	82	128	e48	e36	e110	487	107	665	466	45	24	216
25	98	114	110	e36	e96	798	108	434	400	41	22	100
26	64	106	75	e35	e88	663	109	348	323	38	20	71
27	50	101	61	e43	e79	493	101	295	254	36	19	56
28	44	98	e58	43	e72	501	93	241	234	34	18	48
29	40	94	e56	41	---	590	89	200	218	35	18	44
30	37	84	e44	47	---	1360	88	212	168	35	19	39
31	34	---	e41	55	---	1310	---	211	---	33	17	---
TOTAL	870	3052	1565	1463	2238	8271	8693	18849	16488	2334	771	1384
MEAN	28.1	102	50.5	47.2	79.9	267	290	608	550	75.3	24.9	46.1
MAX	98	272	110	90	297	1360	940	2170	2560	233	35	216
MIN	14	29	31	25	27	35	88	90	168	33	17	15
CFSM	.18	.66	.33	.31	.52	1.74	1.89	3.97	3.59	.49	.16	.30
IN.	.21	.74	.38	.36	.54	2.01	2.11	4.58	4.01	.57	.19	.34
CAL YR 1988	TOTAL 44571	MEAN 122	MAX 3930	MIN 14	CFSM .80	IN. 10.84						
WTR YR 1989	TOTAL 65978	MEAN 181	MAX 2560	MIN 14	CFSM 1.18	IN. 16.04						

e Estimated.

CHEMUNG RIVER BASIN

01516500 COREY CREEK NEAR MAINESBURG, PA

LOCATION.--Lat 41°47'27", long 77°00'54", Tioga County, Hydrologic Unit 02050104, on right bank 30 ft upstream from bridge on Township Route 818, 500 ft upstream from small left-bank tributary, 1.1 mi west of Mainesburg, 3.5 mi east of Mansfield, and 4.2 mi upstream from mouth.

DRAINAGE AREA.--12.2 mi².

PERIOD OF RECORD.--May 1954 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,337.50 ft above National Geodetic Vertical Datum of 1929. Prior to June 28, 1954, nonrecording gage at site 30 ft downstream at same datum.

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

AVERAGE DISCHARGE.--35 years, 12.3 ft³/s, 13.69 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,580 ft³/s, June 23, 1972, gage height, 10.44 ft, from flood-mark, from rating curve extended above 490 ft³/s on basis of slope-area measurements at gage height 7.88 ft and at peak flow; no flow on many days.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
June 17	0230	*502	*4.89	No other peak greater than base discharge.			

Minimum daily discharge, 0.33 ft³/s, Oct. 1, 2, 6, 8, 17, Sept. 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.33	.77	2.0	e1.1	1.2	e2.0	55	6.9	11	5.9	1.5	.52
2	.33	.72	1.8	e1.1	1.3	e2.0	37	32	17	4.8	1.3	.69
3	.37	.72	1.7	e1.1	1.5	e1.5	32	18	9.0	4.2	1.1	.61
4	.42	.72	1.4	e1.2	e1.3	e1.3	29	14	31	4.0	.93	.52
5	.36	2.2	1.4	e1.0	e1.3	e1.2	55	13	19	21	.94	.39
6	.33	5.3	1.3	e.90	e1.2	11	42	43	42	9.8	.80	.33
7	.36	3.3	1.2	e1.1	e1.1	4.1	34	91	23	6.6	.69	.38
8	.33	2.4	1.2	e1.7	e1.1	2.7	26	55	19	5.5	.70	.38
9	.39	2.2	e1.1	e2.5	e.90	2.1	23	39	16	4.4	.69	.40
10	.39	1.9	e1.1	e2.0	e.70	1.8	19	105	15	3.6	.64	.37
11	.39	1.8	e1.0	e1.8	e.80	1.6	15	180	11	2.8	.56	.59
12	.44	1.6	e.80	e1.5	e1.4	1.1	13	101	8.6	2.2	.71	.67
13	.36	3.4	e.76	e1.4	e2.0	1.1	12	58	15	2.0	.89	.57
14	.36	3.8	e.96	e1.2	e4.0	.96	11	44	49	1.8	.78	2.6
15	.36	2.7	e1.2	e1.7	e2.1	2.0	10	43	93	1.6	.74	5.1
16	.38	2.3	e1.1	e1.6	14	2.5	9.3	103	66	1.4	.67	4.2
17	.33	2.2	e1.0	e1.5	8.0	2.1	7.9	81	182	1.8	.67	4.1
18	.38	2.0	e.90	e1.4	4.6	11	8.1	48	e56	1.5	.63	1.8
19	.52	1.9	e.82	e1.0	3.1	7.4	8.5	35	e37	1.1	.85	1.3
20	.54	4.0	e.73	e1.0	2.7	6.1	7.0	27	e33	2.6	1.8	7.9
21	.55	6.7	e2.5	e.92	32	4.1	6.4	22	e80	3.9	1.6	2.1
22	3.6	4.4	e1.6	e.84	9.1	4.4	5.6	16	e36	2.5	1.3	1.3
23	3.2	3.8	e1.2	e.88	6.5	3.9	4.9	18	34	1.8	1.0	12
24	3.4	3.4	e2.0	e1.0	e4.5	42	4.6	39	30	1.4	.80	8.2
25	2.5	2.8	e3.0	e.82	e3.5	56	5.0	21	26	1.2	.63	3.8
26	1.5	2.5	e2.5	e.80	e2.6	35	4.9	17	22	.98	.57	2.6
27	1.1	2.5	e1.5	e1.0	e2.2	26	4.7	14	19	.92	.47	2.0
28	.99	2.5	e1.5	e1.1	e2.0	28	4.6	11	18	.80	.46	1.7
29	.92	2.4	e1.6	e.96	---	34	5.1	9.3	12	.76	.58	1.5
30	.81	2.1	e1.3	1.1	---	74	5.4	10	7.7	.72	.83	1.3
31	.78	---	e1.2	1.0	---	77	---	9.8	---	.88	.62	---
TOTAL	27.02	79.03	43.37	38.22	135.60	460.76	505.0	1324.0	1037.3	104.46	26.45	69.92
MEAN	.87	2.63	1.40	1.23	4.84	14.9	16.8	42.7	34.6	3.37	.85	2.33
MAX	3.6	6.7	3.0	2.5	32	77	55	180	182	21	1.8	12
MIN	.33	.72	.73	.80	.70	.96	4.6	6.9	7.7	.72	.46	.33
CFSM	.07	.22	.11	.10	.40	1.22	1.38	3.50	2.83	.28	.07	.19
IN.	.08	.24	.13	.12	.41	1.40	1.54	4.04	3.16	.32	.08	.21

CAL YR 1988 TOTAL 2521.69 MEAN 6.89 MAX 268 MIN .14 CFSM .56 IN. 7.69
WTR YR 1989 TOTAL 3851.13 MEAN 10.60 MAX 182 MIN .33 CFSM .86 IN. 11.74

e Estimated.

CHEMUNG RIVER BASIN

01518700 TIOGA RIVER AT TIOGA JUNCTION, PA

LOCATION.--Lat 41°57'09", long 77°06'56", Tioga County, Hydrologic Unit 02050104, on left bank 0.3 mi upstream from bridge on Township Route 722 at Tioga Junction, 3.3 mi downstream from Crooked Creek, and 5.0 mi downstream from Tioga and Hammond Dams.

DRAINAGE AREA.--446 mi².

PERIOD OF RECORD.--July 1976 to current year.

GAGE.--Water-stage recorder. Datum of gage is 990.43 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated since November 1979 by Tioga Dam (station 01517900) and Hammond Dam (station 01518498). Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite and landline telemeters at station.

AVERAGE DISCHARGE.--13 years, 506 ft³/s, 15.41 in/yr, adjusted for storage since November 1979.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,900 ft³/s, Feb. 25, 1977, gage height, 16.70 ft, from rating curve extended above 4,000 ft³/s; minimum daily, 16 ft³/s, Aug. 26, 27, 28, 1980.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of September 1975 reached a stage of about 22.1 ft, from floodmarks, discharge, about 48,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,460 ft³/s, June 23, gage height, 13.97 ft; minimum daily, 42 ft³/s, Oct. 8, 10, 11, 15-17, 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53	64	123	135	107	205	2710	208	376	289	86	55
2	53	59	113	133	109	196	1500	721	705	303	71	55
3	53	57	112	133	109	155	1340	822	833	296	73	54
4	51	57	106	e130	111	155	1280	471	1010	279	73	54
5	48	62	87	e130	108	155	1790	342	904	370	78	54
6	45	124	86	117	111	155	1530	1030	1520	494	75	54
7	44	158	85	117	123	155	1180	3160	998	394	74	54
8	42	98	85	136	137	155	1030	2310	820	324	74	53
9	43	83	88	152	138	164	822	1680	699	309	62	53
10	42	78	92	169	e130	167	743	2870	698	197	64	53
11	42	78	87	165	107	166	663	5310	539	154	62	54
12	48	75	e82	141	87	166	388	5940	346	93	44	54
13	48	73	e72	127	90	158	302	3170	615	76	58	53
14	48	100	e70	e120	87	138	410	1680	1190	79	60	54
15	42	138	e70	112	96	143	479	1630	5130	111	62	55
16	42	145	e74	112	107	128	420	5230	5140	100	100	57
17	42	172	e76	112	95	96	356	4460	5410	99	180	55
18	43	172	e80	112	94	109	362	2140	3990	98	68	54
19	42	170	e90	114	98	102	470	1390	1200	98	58	55
20	43	207	e100	112	107	108	408	992	1500	105	56	57
21	44	285	107	e110	213	159	166	837	1700	118	56	56
22	53	328	113	e110	208	176	184	819	2160	124	54	55
23	89	287	118	108	117	174	188	571	3800	124	54	93
24	135	243	121	102	128	560	230	1450	2690	119	54	171
25	100	184	123	102	149	2560	230	980	1440	99	54	173
26	75	117	117	104	164	1800	230	553	915	98	54	176
27	69	123	115	106	201	1370	230	627	668	101	54	119
28	65	149	123	105	219	1210	212	654	544	100	54	88
29	65	149	126	112	---	1730	146	522	629	99	55	84
30	65	139	e130	110	---	3790	145	465	393	98	55	80
31	69	---	e130	107	---	4100	---	378	---	98	54	---
TOTAL	1743	4174	3101	3755	3550	20605	20124	53412	48562	5446	2076	2182
MEAN	56.2	139	100	121	127	665	671	1723	1619	176	67.0	72.7
MAX	135	328	130	169	219	4100	2710	5940	5410	494	180	176
MIN	42	57	70	102	87	96	145	208	346	76	44	53
MEAN‡	49.2	164	87.3	90.1	170	666	684	1713	1620	170	51.7	81.5
CFSM‡	.11	.37	.20	.20	.38	1.49	1.53	3.84	3.63	.38	.12	.18
IN‡	.13	.41	.23	.23	.40	1.72	1.71	4.43	4.05	.44	.14	.20

CAL YR 1988 TOTAL 103372 MEAN 282 MAX 6150 MIN 22 MEAN‡ 279 CFSM‡ .63 IN‡ 8.53
WTR YR 1989 TOTAL 168730 MEAN 462 MAX 5940 MIN 42 MEAN‡ 462 CFSM‡ 1.04 IN‡ 14.09

e Estimated.

‡ Adjusted for change in contents in Tioga and Hammond Lakes.

CHEMUNG RIVER BASIN

01518862 COWANESQUE RIVER AT WESTFIELD, PA

LOCATION.--Lat 41°55'23", long 77°31'56", Tioga County, Hydrologic Unit 02050104, on left bank 800 ft downstream from Mill Creek, at Westfield, and 0.5 mi upstream from bridge on State Highway 49.

DRAINAGE AREA.--90.6 mi².

PERIOD OF RECORD.--August 1983 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,337.58 ft above National Geodetic Vertical Datum of 1929.

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

AVERAGE DISCHARGE.--6 years, 90.2 ft³/s, 13.52 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,050 ft³/s, Aug. 13, 1984, gage height, 8.47 ft, from flood-marks, from rating curve extended above 1,000 ft³/s; minimum daily, 1.2 ft³/s, Aug. 23, 1988.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 10	2015	2,500	4.37	June 15	1630	2,440	4.33
May 16	0045	1,960	3.98	June 20	2300	*4,360	*5.71
June 14	1915	2,490	4.36				

Minimum daily discharge, 2.3 ft³/s, Oct. 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	6.0	14	e18	e15	e17	566	46	73	71	18	4.5
2	3.0	5.8	13	e17	e16	e16	389	228	161	55	18	6.6
3	3.4	6.0	13	e16	e17	e15	366	148	83	44	17	5.9
4	2.9	6.0	e12	e21	e12	e23	357	130	303	80	20	4.8
5	2.3	19	e12	e17	e11	e170	433	118	158	204	33	4.1
6	2.4	50	11	e15	e10	e110	323	196	221	82	18	3.5
7	2.4	27	9.7	e17	e9.0	e80	272	524	153	56	15	3.2
8	3.4	22	e9.0	e19	e8.6	e56	225	379	122	42	14	3.0
9	4.1	20	e8.4	e21	e8.0	e54	190	303	124	32	12	3.3
10	4.4	18	e8.0	e18	e6.0	e46	163	1150	153	27	10	3.7
11	5.3	16	e7.0	e16	e8.0	e35	137	1530	98	22	9.6	5.6
12	5.9	14	e6.0	e13	e9.0	e30	119	828	75	18	9.1	4.0
13	5.5	23	e5.6	e12	e8.6	e28	114	492	223	18	9.1	3.4
14	4.6	31	e6.4	e11	e25	e28	109	356	512	15	8.6	3.2
15	4.5	22	e9.0	e13	e70	e56	96	544	1110	13	8.1	22
16	4.3	20	e7.8	e12	e54	55	89	818	750	12	7.9	24
17	3.7	18	e7.0	e11	e45	44	78	517	520	12	7.0	34
18	5.9	16	e6.4	e10	e35	124	82	354	313	11	6.4	19
19	9.6	14	e6.0	e10	e26	87	77	271	233	9.9	7.7	12
20	6.8	24	e17	e9.4	e17	66	67	215	1300	209	12	11
21	5.7	47	e13	e9.0	e150	64	63	177	1380	111	12	8.9
22	19	32	e11	e10	e80	61	56	134	625	60	8.6	9.0
23	25	25	e10	e11	e60	59	52	130	559	43	7.7	32
24	19	22	e15	e12	e45	223	49	143	414	33	7.5	24
25	15	20	e30	e10	e30	268	48	96	353	27	6.2	16
26	11	19	e27	e10	e25	226	48	78	251	26	5.4	12
27	8.9	19	e20	e12	e20	200	46	66	194	31	5.1	9.2
28	8.1	18	e21	e13	e18	257	42	52	161	24	4.8	8.0
29	8.1	17	e28	e11	---	341	39	41	118	21	4.7	7.7
30	7.8	16	e23	e14	---	752	39	53	90	18	5.5	7.6
31	6.3	---	e20	e14	---	801	---	49	---	18	4.5	---
TOTAL	221.3	612.8	406.3	422.4	838.2	4392	4734	10166	10830	1444.9	332.5	315.2
MEAN	7.14	20.4	13.1	13.6	29.9	142	158	328	361	46.6	10.7	10.5
MAX	25	50	30	21	150	801	566	1530	1380	209	33	34
MIN	2.3	5.8	5.6	9.0	6.0	15	39	41	73	9.9	4.5	3.0
CFSM	.08	.23	.14	.15	.33	1.56	1.74	3.62	3.98	.51	.12	.12
IN.	.09	.25	.17	.17	.34	1.80	1.94	4.17	4.45	.59	.14	.13

CAL YR 1988	TOTAL 19438.1	MEAN 53.1	MAX 540	MIN 1.2	CFSM .59	IN. 7.98
WTR YR 1989	TOTAL 34715.6	MEAN 95.1	MAX 1530	MIN 2.3	CFSM 1.05	IN. 14.25

e Estimated.

CHEMUNG RIVER BASIN

01520000 COWANESQUE RIVER NEAR LAWRENCEVILLE, PA

LOCATION.--Lat 41°59'48", long 77°08'25", Tioga County, Hydrologic Unit 02050104, on left bank on SR 4022, 0.5 mi downstream from Cowanesque Dam, 0.8 mi upstream from highway bridge on U.S. Route 15 in Lawrenceville, and 1.4 mi upstream from mouth.

DRAINAGE AREA.--298 mi².

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

REVISED RECORDS.--WDR PA-72-1: 1971(M).

GAGE.--Water-stage recorder. Datum of gage is 983.96 ft above National Geodetic Vertical Datum of 1929. Prior to July 1976 at site 1.1 mi upstream at datum 14.07 ft higher.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since December 1979 by Cowanesque Dam (station 01519995). Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite and landline telemeters at station.

AVERAGE DISCHARGE.--38 years, 291 ft³/s, 13.26 in/yr, adjusted for storage since December 1979.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 43,700 ft³/s, Sept. 26, 1975, gage height, 18.13 ft, site and datum then in use, from floodmark, from rating curve extended above 6,000 ft³/s on basis of slope-area measurement of peak flow; minimum discharge before construction of Cowanesque Dam, 0.8 ft³/s, Aug. 31, Sept. 1, 27, 1964; no flow Aug. 22, 1978, during dam construction.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,960 ft³/s, June 16, 21, gage height, 11.07 ft; minimum daily, 9.7 ft³/s, Oct. 14-16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	33	41	48	81	81	1850	85	195	183	54	21
2	15	33	41	79	81	67	1090	332	355	117	54	21
3	15	34	40	79	93	62	938	600	347	145	54	21
4	15	35	41	57	71	75	992	326	1070	131	52	21
5	15	35	38	49	70	277	1300	267	672	501	81	21
6	14	35	31	43	70	489	826	393	779	273	102	21
7	14	82	30	43	64	79	689	1700	586	172	47	20
8	15	110	28	43	53	77	572	1160	381	117	37	20
9	15	60	27	36	55	72	488	920	307	103	30	20
10	15	30	27	40	48	81	358	1840	419	78	30	20
11	15	30	27	56	30	94	297	2440	388	60	30	20
12	15	33	27	57	30	93	327	3600	249	62	30	20
13	13	39	27	55	30	61	263	3550	678	61	27	20
14	9.7	43	25	50	30	41	263	2740	659	59	25	20
15	9.7	49	22	48	39	63	263	1770	3360	50	25	20
16	9.7	50	22	42	122	129	227	3010	3900	44	25	20
17	11	50	22	37	178	145	171	2400	3270	44	25	20
18	11	52	22	37	91	221	171	1100	1250	44	25	20
19	11	49	22	37	60	258	171	1020	690	42	24	20
20	11	44	22	33	53	152	173	655	1840	766	23	20
21	12	118	22	30	329	109	159	483	1350	425	22	19
22	14	158	22	30	791	114	113	404	1330	230	20	19
23	13	80	22	30	464	44	84	352	2390	108	20	19
24	12	65	22	27	199	368	103	596	3150	130	19	20
25	12	56	22	25	89	1180	115	402	3230	98	19	19
26	11	40	22	25	125	681	104	302	2020	59	19	19
27	11	32	32	71	120	610	81	277	838	209	19	19
28	15	32	84	84	62	597	81	267	417	173	19	18
29	19	32	126	55	---	987	86	164	269	80	19	16
30	19	35	139	55	---	2070	101	126	265	69	19	17
31	26	---	72	59	---	2620	---	206	---	64	21	---
TOTAL	430.1	1574	1167	1460	3528	11997	12456	33487	36654	4697	1016	591
MEAN	13.9	52.5	37.6	47.1	126	387	415	1080	1222	152	32.8	19.7
MAX	26	158	139	84	791	2620	1850	3600	3900	766	102	21
MIN	9.7	30	22	25	30	41	81	85	195	42	19	16
MEAN‡	19.8	52.5	36.6	47.9	127	395	412	1079	1222	150	31.8	25.1
CFSM‡	.07	.18	.12	.16	.43	1.33	1.38	3.62	4.10	.50	.11	.08
IN‡	.08	.20	.14	.18	.45	1.53	1.54	4.17	4.57	.58	.13	.09

CAL YR 1988 TOTAL 59124.1 MEAN 162 MAX 2710 MIN 9.7 MEAN‡ 162 CFSM‡ .54 IN‡ 7.41
WTR YR 1989 TOTAL 109057.1 MEAN 299 MAX 3900 MIN 9.7 MEAN‡ 300 CFSM‡ 1.01 IN‡ 13.66

‡ Adjusted for change in contents in Cowanesque Lake.

CHEMUNG RIVER BASIN

RESERVOIRS IN CHEMUNG RIVER BASIN

01517900 TIOGA LAKE.--Lat 41°53'57", long 77°08'21", Tioga County, Hydrologic Unit 02050104, at Tioga Dam on Tioga River, 0.8 mi south of Tioga, and 1.7 mi upstream from Crooked Creek. DRAINAGE AREA, 280 mi². PERIOD OF RECORD, November 1979 to current year. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Reservoir is formed by rolled earth and rockfill dam. Flood flows are routed to Hammond Lake through a connecting channel with weir at elevation 1,101.0 ft and to Hammond Dam spillway with crest at elevation 1,131.0 ft. Storage began in November 1979. Capacity at elevation 1,131.0 ft is 62,000 acre-ft. Recreation lake elevation is 1,081.0 ft, capacity 9,500 acre-ft. Reservoir is used for flood control and recreation. Figures given herein represent total contents. Flow is regulated by two service gates and low-flow by-pass system. U.S. Army Corps of Engineers satellite and landline telemeters at station.

COOPERATION.--Records provided by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 32,560 acre-ft, Feb. 16, 1984, elevation, 1,109.34 ft; minimum, 2,210 acre-ft, Oct. 25, 1980, elevation, 1,060.05 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 15,010 acre-ft, June 22, elevation, 1,090.59 ft; minimum, 8,020 acre-ft, Feb. 15, elevation, 1,077.68 ft.

01518498 HAMMOND LAKE.--Lat 41°53'56", long 77°08'52", Tioga County, Hydrologic Unit 02050104, at Hammond Dam on Crooked Creek, 3.0 mi upstream from mouth, and 0.8 mi southwest of Tioga. DRAINAGE AREA, 122 mi². PERIOD OF RECORD, November 1979 to current year. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Reservoir is formed by rolled earth and rockfill dam with concrete chute spillway with uncontrolled weir at elevation 1,131.0 ft. Storage began in November 1979. Capacity at elevation 1,131.0 ft is 63,000 acre-ft. Recreation lake elevation is 1,086.0 ft, capacity 8,850 acre-ft. Reservoir is used for flood control and recreation. Figures given herein represent total contents. Flow is regulated by two gates through a connecting channel that discharges into Tioga Lake, and a low-flow outlet to Crooked Creek. U.S. Army Corps of Engineers satellite and landline telemeters at station.

COOPERATION.--Records provided by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 30,620 acre-ft, Feb. 16, 1984, elevation, 1,109.34 ft; minimum, 2,430 acre-ft, Oct. 24, 1980, elevation, 1,074.00 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 11,220 acre-ft, June 22, elevation, 1,089.43 ft; minimum, 7,900 acre-ft, Feb. 15, elevation, 1,084.68 ft.

01519995 COWANESQUE LAKE.--Lat 41°59'05", long 77°09'05", Tioga County, Hydrologic Unit 02050104, at Cowanesque Dam on Cowanesque River, 1.8 mi southwest of Lawrenceville, and 2.5 mi upstream from mouth. DRAINAGE AREA, 298 mi². PERIOD OF RECORD, December 1979 to current year. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Reservoir is formed by rolled earth and rockfill dam with concrete chute spillway with uncontrolled weir at elevation 1,117.0 ft. Storage began in December 1979. Capacity at elevation 1,117.0 ft is 89,110 acre-ft. Recreation lake elevation is 1,045.0 ft, capacity 7,330 acre-ft. Reservoir is used for flood control and recreation. Figures given herein represent total contents. Flow is regulated by two service gates and low-flow by-pass system. U.S. Army Corps of Engineers satellite and landline telemeters at station.

COOPERATION.--Records provided by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 32,110 acre-ft, Feb. 16, 1984, elevation, 1,079.57 ft; minimum, 65 acre-ft, June 23, 1980, elevation, 1,011.50 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 20,350 acre-ft, June 22, elevation, 1,067.17 ft; minimum, 6,880 acre-ft, Oct. 13, elevation, 1,043.89 ft.

CHEMUNG RIVER BASIN

Reservoirs in Chemung River basin--Continued

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS AT 2400, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

Date	Elevation (feet)	Contents (acre- feet)	Change in contents (equivalent in ft ³ /s/day)	Elevation (feet)	Contents (acre- feet)	Change in contents (equivalent in ft ³ /s/day)
01517900 Tioga Lake				01518498 Hammond Lake		
Sept. 30.....	1,080.46	9,260	--	1,085.92	8,790	--
Oct. 31.....	1,080.20	9,140	- 2.0	1,085.51	8,480	- 5.0
Nov. 30.....	1,082.41	10,200	+17.8	1,086.11	8,920	+ 7.4
Dec. 31.....	1,081.08	9,540	-10.7	1,085.93	8,800	- 2.0
CAL YR 1988.....	--	--	- 1.8	--	--	- 1.4
Jan. 31.....	1,078.60	8,420	-18.2	1,084.87	8,020	-12.7
Feb. 28.....	1,081.73	9,860	+25.9	1,086.24	9,000	+17.6
Mar. 31.....	1,081.52	9,760	- 1.6	1,086.50	9,160	+ 2.6
Apr. 30.....	1,082.24	10,110	+ 5.9	1,087.12	9,550	+ 6.6
May 31.....	1,081.55	9,770	- 5.5	1,086.72	9,290	- 4.2
June 30.....	1,081.70	9,840	+ 1.2	1,086.70	9,280	- 0.2
July 31.....	1,081.15	9,570	- 4.4	1,086.49	9,150	- 2.1
Aug. 31.....	1,079.65	8,890	-11.1	1,086.07	8,890	- 4.2
Sept. 30.....	1,081.12	9,560	+11.3	1,085.86	8,740	- 2.5
WTR YR 1989.....	--	--	+ 0.4	--	--	- 0.1
01519995 Cowanesque Lake						
Sept. 30.....	1,044.45	7,100	--			
Oct. 31.....	1,045.30	7,460	+ 5.9			
Nov. 30.....	1,045.32	7,460	0			
Dec. 31.....	1,045.18	7,400	- 1.0			
CAL YR 1988.....	--	--	0			
Jan. 31.....	1,045.29	7,450	+ 0.8			
Feb. 28.....	1,045.44	7,520	+ 1.3			
Mar. 31.....	1,046.60	8,010	+ 8.0			
Apr. 30.....	1,046.22	7,840	- 2.9			
May 31.....	1,046.07	7,780	- 1.0			
June 30.....	1,046.05	7,770	- 0.2			
July 31.....	1,045.69	7,620	- 2.4			
Aug. 31.....	1,045.55	7,560	- 1.0			
Sept. 30.....	1,046.31	7,880	+ 5.4			
WTR YR 1989.....	--	--	+ 1.1			

SUSQUEHANNA RIVER BASIN

01531500 SUSQUEHANNA RIVER AT TOWANDA, PA

LOCATION.--Lat 41°45'55", long 76°26'28", Bradford County, Hydrologic Unit 02050106, on right bank at Bridge Street in Towanda, and 1.8 mi upstream from Towanda Creek.

DRAINAGE AREA.--7,797 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1913 to current year. Monthly discharge only for some periods, published in WSP 1302. Gage-height records collected at same site since October 1892 are contained in reports of U.S. Weather Bureau.

REVISED RECORDS.--WSP 756: Drainage area. WSP 1302: 1922, 1929.

GAGE.--Water-stage recorder. Datum of gage is 694.38 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 18, 1938, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow slightly regulated by 7 flood-control reservoirs, which have a combined capacity of 356,800 acre-ft. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter and National Weather Service landline telemeter at station.

AVERAGE DISCHARGE.--76 years, 10,530 ft³/s, 18.34 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 320,000 ft³/s, June 24, 1972, gage height, 33.43 ft from floodmarks, from rating curve extended above 180,000 ft³/s; minimum, 334 ft³/s, Sept. 23, 24, 1964; minimum gage height, -0.56 ft, Aug. 17, 1965.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 68,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 1	1230	69,300	13.39	May 12	0100	*91,400	*16.03

Minimum daily discharge, 857 ft³/s, Sept. 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1410	4390	8910	6220	5940	5540	67500	4990	7470	7420	2810	1040
2	1250	4090	8120	6040	6530	5140	52900	6450	9500	6410	2500	1060
3	1350	4080	7770	5870	7400	4840	39200	15600	13900	5740	2300	1050
4	1280	5230	7360	5500	7130	4580	36500	15700	13400	5410	2170	1050
5	1210	6800	6910	e3000	5890	4520	38200	12400	14100	5810	2200	1030
6	1210	9070	6620	e2800	e5000	6670	42100	14200	12800	7660	2570	983
7	1190	17900	6270	e2900	e4700	6740	37100	45600	13300	8090	3290	949
8	1200	23800	6000	3970	e4300	5860	31700	51900	11700	8940	4040	911
9	1670	19000	5840	5110	e3700	5060	26700	42200	10600	9430	3620	865
10	1750	13900	5420	5720	e3500	4560	22800	35600	9570	6810	2880	857
11	1390	11200	4730	5660	e3500	4420	19900	71700	11700	5530	2400	869
12	1320	9580	4140	5270	e3600	4320	17500	84600	12000	4940	2200	897
13	1310	8630	e2800	4970	e3600	4260	15300	63500	10200	4630	2090	913
14	1350	8990	e2700	4960	e3700	4000	13600	46300	11900	4300	2060	934
15	1390	10200	e3000	4990	4040	3890	12800	35700	24100	3860	1960	1090
16	1360	9670	e3100	4910	4990	5890	12000	44500	40600	3610	1870	1200
17	1310	8290	e3000	4710	5580	9210	11700	43000	50100	3330	1780	1740
18	1300	8080	e2900	4600	5600	8520	11300	31600	41000	3040	1690	2130
19	1280	8720	e2800	4410	4830	10400	10600	23600	29100	2870	1660	2580
20	1290	8570	e3000	4330	4260	10300	9730	19100	21200	2850	1510	3880
21	1260	13600	3440	3980	4490	8070	8940	15700	32500	4320	1480	6090
22	1520	19100	3740	3480	11900	7090	8000	13500	32100	4720	1410	6240
23	2510	17900	4080	3450	19500	6510	7490	11800	24900	4810	1480	4720
24	4870	13900	4310	3400	13900	6840	6960	13900	25700	4350	1540	6440
25	7400	11700	4800	3440	8570	25700	6580	15000	28800	3820	1510	6830
26	9280	10200	5690	3600	7090	31600	6320	12500	21700	3260	1430	5680
27	8000	8990	5920	3620	6410	26600	6000	10700	15700	2810	1300	4510
28	6420	8330	5510	4270	5900	23300	5680	10000	11800	2610	1220	4070
29	5490	8780	5600	5160	---	26000	5410	8990	10100	2790	1240	3410
30	4910	9500	7000	4870	---	37000	5100	7840	8730	2610	1190	2980
31	4630	---	7360	5030	---	63100	---	7270	---	2830	1080	---
TOTAL	83110	322190	158840	140240	175550	380530	595610	835440	580270	149610	62480	76998
MEAN	2681	10740	5124	4524	6270	12280	19850	26950	19340	4826	2015	2567
MAX	9280	23800	8910	6220	19500	63100	67500	84600	50100	9430	4040	6830
MIN	1190	4080	2700	2800	3500	3890	5100	4990	7470	2610	1080	857
CFSM	.34	1.38	.66	.58	.80	1.57	2.55	3.46	2.48	.62	.26	.33
IN.	.40	1.54	.76	.67	.84	1.82	2.84	3.99	2.77	.71	.30	.37
CAL YR 1988	TOTAL 2670932	MEAN 7298	MAX 48100	MIN 711	CFSM .94	IN. 12.74						
WTR YR 1989	TOTAL 3560868	MEAN 9756	MAX 84600	MIN 857	CFSM 1.25	IN. 16.99						

e Estimated.

SUSQUEHANNA RIVER BASIN

01531500 SUSQUEHANNA RIVER AT TOWANDA, PA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1935, 1967-68, 1973, 1976, 1988 to current year.

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE.--January 1951 to July 1954.

REMARKS.--Samples collected from bridge on U.S. Highway 6.

COOPERATION.--Water-quality samples collected by Susquehanna River Basin Commission and analyzed by the Pa. Department of Environmental Resources. Suspended-sediment samples analyzed by the U.S. Geological Survey.

WATER-QUALITY DATA, WATER YEAR SEPTEMBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE FIELD (μ S/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NO ₂ +NO ₃ TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)
SEPT										
22...	1330	1570	325	7.80	20.0	0.800	0.020	0.020	--	0.26
OCT										
05...	1540	1210	340	8.30	16.0	0.700	0.020	0.020	0.25	--
NOV										
16...	1340	9590	200	7.90	9.0	0.760	0.060	0.060	0.23	--
DEC										
06...	1130	6640	160	6.60	15.0	0.860	0.060	0.060	--	--
JAN										
05...	1130	3000	215	5.70	--	1.08	0.080	0.080	0.19	--
FEB										
02...	1145	6470	230	7.80	3.0	1.08	0.070	0.070	0.15	--
21...	1640	4560	265	--	8.0	1.04	<0.020	<0.020	--	--
22...	1255	12600	250	--	4.0	1.02	0.100	0.100	1.6	0.31
22...	1915	15400	260	--	5.0	0.900	0.110	0.110	1.8	0.89
23...	1200	20300	200	--	4.0	0.840	0.110	0.110	1.5	0.70
24...	1130	13800	180	--	3.0	0.860	0.120	0.120	0.88	0.68
25...	1110	8640	190	--	5.0	0.880	0.140	0.140	0.73	0.61
27...	1135	6500	240	--	3.0	1.00	0.120	0.110	0.73	0.64
MAR										
16...	1115	5540	269	6.90	9.0	1.10	0.010	0.010	0.47	0.24
30...	1345	35700	150	7.90	9.0	0.790	0.090	0.090	0.83	0.28
31...	1500	66000	--	7.80	8.0	0.740	0.060	0.050	1.4	0.84
APR										
01...	1210	69200	162	7.20	7.5	0.820	0.070	0.040	1.4	0.70
02...	1330	51800	110	7.60	10.0	0.880	0.050	0.030	1.0	0.61
03...	1400	37900	138	7.60	10.0	0.960	0.060	0.060	0.36	0.24
04...	1205	36900	155	7.35	9.0	0.970	0.070	0.060	0.33	0.31
05...	1420	39100	145	7.75	9.0	0.960	0.060	0.060	0.29	0.24
07...	1225	36900	145	7.35	8.0	0.840	0.070	0.060	0.60	0.47
10...	1300	22800	187	7.15	7.0	1.01	0.050	0.050	0.16	--
12...	1340	17200	187	7.40	11.0	1.06	0.060	0.060	0.15	--
27...	1230	6000	240	8.50	16.0	0.860	<0.020	<0.020	--	--
MAY										
05...	1445	11700	190	7.80	11.0	0.590	0.020	0.020	0.49	0.34
07...	1530	52200	125	7.70	10.0	0.480	0.060	0.040	1.4	0.59
08...	1530	50400	120	7.70	9.0	0.530	0.030	0.030	0.47	0.17
09...	1500	40900	125	7.60	11.0	0.640	0.050	0.050	0.35	0.17
10...	1420	34500	130	7.40	10.0	0.620	0.070	0.060	0.24	0.22
11...	1500	81900	130	7.65	9.5	0.560	0.050	0.040	0.83	0.19
12...	1215	85300	120	7.70	9.5	0.590	0.070	0.060	0.93	0.54
14...	0900	47600	135	7.85	9.5	0.770	0.050	0.040	0.65	0.46
15...	1650	34100	155	7.90	16.0	0.810	0.020	0.020	0.61	0.51
17...	1330	42700	145	7.80	16.0	0.770	0.040	0.040	0.34	0.31
19...	1210	23300	170	7.60	20.0	0.840	0.020	<0.020	0.66	--
21...	1230	15500	190	7.85	19.0	0.880	0.020	0.020	0.25	--
24...	1210	14900	215	7.40	16.0	0.840	0.050	0.040	0.24	0.25
JUN										
22...	1330	28800	173	7.90	23.0	0.790	0.090	0.070	0.68	0.34
23...	1350	26000	188	7.60	24.0	0.860	0.020	0.020	0.87	0.61
24...	1230	26500	180	7.80	25.0	0.750	0.020	0.020	1.2	0.45
26...	1350	21100	200	7.85	26.0	0.810	0.100	0.100	0.52	0.29
28...	1330	11200	230	7.90	25.0	0.950	0.070	0.070	0.27	0.22
JUL										
24...	1220	4400	320	7.80	23.0	1.19	0.030	0.030	0.27	0.25
AUG										
15...	1415	1930	345	8.50	26.0	0.900	0.050	0.050	0.40	0.29
SEP										
12...	1210	913	410	7.10	21.0	0.860	0.030	0.030	0.25	0.25

< Actual value is known to be less than the value shown.

SUSQUEHANNA RIVER BASIN

01531500 SUSQUEHANNA RIVER AT TOWANDA, PA--Continued

WATER-QUALITY DATA, WATER YEAR SEPTEMBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
SEPT 22...	--	0.28	--	0.210	0.050	0.013	3.6	10	42
OCT 05...	0.27	<0.20	0.97	0.070	0.050	0.020	2.9	8	26
NOV 16...	0.29	<0.20	1.0	0.060	0.040	0.019	3.2	15	388
DEC 06...	<0.20	<0.20	--	0.040	0.030	0.009	2.9	4	72
JAN 05...	0.27	<0.20	1.3	0.020	<0.020	0.004	2.6	3	24
FEB 02...	0.22	<0.20	1.3	0.050	0.030	0.004	3.0	8	140
21...	0.81	0.56	1.8	0.050	0.040	0.006	3.2	3	37
22...	1.7	0.41	2.7	0.180	0.060	0.020	5.8	73	2480
22...	1.9	1.0	2.8	0.180	0.060	0.009	5.9	74	3080
23...	1.6	0.81	2.4	0.170	0.060	0.011	6.6	81	4440
24...	1.0	0.80	1.9	0.120	0.070	0.011	5.2	36	1340
25...	0.87	0.75	1.7	0.110	0.070	0.009	5.0	24	560
27...	0.85	0.75	1.8	0.080	0.070	0.006	4.1	6	105
MAR 16...	0.48	0.25	1.6	0.070	0.050	0.006	3.3	6	90
30...	0.92	0.37	1.7	0.190	0.040	0.005	5.1	150	14500
31...	1.5	0.89	2.2	0.170	0.040	0.003	7.1	313	55800
APR 01...	1.5	0.74	2.3	0.120	0.040	0.005	4.7	222	41500
02...	1.1	0.64	2.0	0.070	0.040	--	4.2	103	14400
03...	0.42	0.30	1.4	0.050	0.040	0.002	3.6	55	5630
04...	0.40	0.37	1.4	0.050	0.040	0.006	3.3	44	4380
05...	0.35	0.30	1.3	0.040	0.030	0.002	4.2	48	5070
07...	0.67	0.53	1.5	0.040	0.030	0.002	3.7	39	3890
10...	0.21	<0.20	1.2	0.050	0.030	0.006	3.1	27	1660
12...	0.21	<0.20	1.3	0.040	0.030	0.005	2.8	16	743
27...	0.56	0.23	1.4	0.040	0.040	0.020	2.9	5	81
MAY 05...	0.51	0.36	1.1	0.040	0.020	0.004	3.1	13	411
07...	1.5	0.63	2.0	0.090	0.030	0.005	5.4	261	36800
08...	0.50	0.20	1.0	0.060	0.030	0.005	4.8	99	13500
09...	0.40	0.22	1.0	0.070	0.030	0.009	4.2	56	6180
10...	0.31	0.28	0.93	0.070	0.030	0.002	3.3	40	3730
11...	0.88	0.23	1.4	0.290	0.040	0.002	4.9	330	73000
12...	1.0	0.60	1.6	0.140	0.050	0.009	4.5	164	37800
14...	0.70	0.50	1.5	0.090	0.050	0.009	3.9	56	7200
15...	0.63	0.53	1.4	0.090	0.060	0.005	3.5	36	3310
17...	0.38	0.35	1.2	0.050	0.050	0.007	4.3	104	12000
19...	0.68	0.51	1.5	0.050	0.030	0.005	3.4	33	2080
21...	0.27	<0.20	1.2	0.050	0.020	0.007	3.2	25	1050
24...	0.29	0.29	1.1	0.040	0.030	0.008	4.0	32	1290
JUN 22...	0.77	0.41	1.6	0.270	<0.020	0.007	5.3	243	18900
23...	0.89	0.63	1.7	0.180	0.050	0.025	3.2	140	9830
24...	1.2	0.47	2.0	0.260	0.050	0.003	4.3	221	15800
26...	0.62	0.39	1.4	0.100	0.050	0.015	4.2	91	5180
28...	0.34	0.29	1.3	0.100	0.050	0.002	4.7	49	1480
JUL 24...	0.30	0.28	1.5	0.090	0.050	0.003	3.8	17	202
AUG 15...	0.45	0.34	1.3	0.060	0.040	0.018	<3.0	5	26
SEP 12...	0.28	0.28	1.1	0.100	0.100	0.043	3.5	6	15

< Actual value is known to be less than the value shown.

TOWANDA CREEK BASIN

01532000 TOWANDA CREEK NEAR MONROETON, PA

LOCATION.--Lat 41°42'25", long 76°29'06", Bradford County, Hydrologic Unit 02050106, on left bank on Township Route 406, 0.8 mi southwest of Monroeton, and 1.0 mi upstream from South Branch Towanda Creek.

DRAINAGE AREA.--215 mi².

PERIOD OF RECORD.--February 1914 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 756: Drainage area. WSP 1051: 1943-44(M). WSP 1302: 1922(M), 1924, 1925-26(M), 1928, 1929(M), 1930-31. WSP 1432: 1921(M), 1932(M), 1933, 1934-35(M), 1936, 1938(M), 1940. WDR PA-78-2: 1972(M). WDR PA-87-2: 1978-79.

GAGE.--Water-stage recorder. Datum of gage is 765.53 ft above National Geodetic Vertical Datum of 1929. Non-recording gage Aug. 27, 1976, to Oct. 20, 1977, at present site and datum. Nonrecording gage Sept. 26, 1975, to Aug. 26, 1976, at bridge 0.6 mi downstream at datum 11.82 ft lower. Water-stage recorder Oct. 1, 1942, to Sept. 25, 1975, 0.6 mi downstream at datum 11.82 ft lower. Prior to Oct. 1, 1942, nonrecording gage at present site at datum 8.62 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. National Weather Service satellite telemeter at station.

AVERAGE DISCHARGE.--75 years, 285 ft³/s, 18.00 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 74,000 ft³/s, June 22, 1972, gage height, 15.3 ft in gage well, 16.9 ft from floodmark, site and datum then in use; minimum observed, 0.7 ft³/s, Sept. 15, 17, 21, 22, 1932.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 11	0600	4,940	10.87	May 17	0415	*6,480	*11.47

Minimum daily discharge, 8.4 ft³/s, Sept. 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	67	139	e90	80	e74	1790	98	226	151	35	11
2	20	66	128	e90	90	e70	964	461	554	126	35	11
3	19	63	118	e80	89	e66	741	367	317	107	33	11
4	18	59	110	e66	e68	e76	689	276	465	96	28	10
5	17	69	101	e56	e60	102	791	249	358	495	29	9.2
6	17	344	96	e60	e68	127	713	875	567	504	26	8.8
7	17	267	92	e66	e66	93	560	2010	429	288	24	8.8
8	16	213	88	e90	e62	e88	458	1090	352	205	21	8.7
9	17	182	81	e200	e56	e86	407	767	298	158	20	8.6
10	16	160	76	154	e50	e78	359	1450	327	131	18	8.4
11	17	144	e70	128	e58	74	303	4170	248	109	17	9.0
12	17	127	e68	115	e60	73	270	2220	196	94	19	10
13	16	248	e58	112	e64	64	253	1170	226	87	20	9.6
14	15	409	e68	e90	e70	70	241	791	388	76	18	12
15	15	284	e62	e100	e90	79	218	636	1430	67	16	26
16	14	234	e58	92	e110	99	212	2330	1390	63	15	28
17	14	224	e56	e86	94	88	192	3860	2010	66	14	41
18	14	201	e47	e82	e84	217	186	1400	866	60	13	34
19	14	171	e49	78	e80	302	182	843	553	52	14	29
20	14	244	e50	75	e74	188	167	617	400	87	18	319
21	16	510	e52	e68	254	178	151	491	701	114	20	156
22	91	345	e52	e56	348	158	143	387	565	84	18	86
23	146	281	e56	e74	205	145	132	329	420	67	19	302
24	187	242	67	74	e110	516	122	647	523	57	19	402
25	194	210	155	68	e100	1220	117	448	442	49	15	183
26	143	186	120	60	e96	1010	116	357	349	44	13	126
27	116	171	98	67	e86	703	109	317	271	39	12	95
28	99	180	98	e60	e79	658	102	271	247	36	11	77
29	89	180	134	e56	---	792	98	217	257	32	12	66
30	80	153	e100	e56	---	2370	94	209	185	29	13	60
31	72	---	e94	e70	---	2280	---	224	---	29	12	---
TOTAL	1561	6234	2641	2619	2751	12144	10880	29577	15560	3602	597	2166.1
MEAN	50.4	208	85.2	84.5	98.2	392	363	954	519	116	19.3	72.2
MAX	194	510	155	200	348	2370	1790	4170	2010	504	35	402
MIN	14	59	47	56	50	64	94	98	185	29	11	8.4
CFSM	.23	.97	.40	.39	.46	1.82	1.69	4.44	2.41	.54	.09	.34
IN.	.27	1.08	.46	.45	.48	2.10	1.88	5.12	2.69	.62	.10	.37
CAL YR 1988	TOTAL 60588.8	MEAN 166	MAX 2830	MIN 5.0	CFSM .77	IN. 10.48						
WTR YR 1989	TOTAL 90332.1	MEAN 247	MAX 4170	MIN 8.4	CFSM 1.15	IN. 15.63						

e Estimated.

SUSQUEHANNA RIVER BASIN

01533400 SUSQUEHANNA RIVER AT MESHOPPEN, PA

LOCATION.--Lat 41°36'26", long 76°03'02", Wyoming County, Hydrologic Unit 02050106, on right bank 0.3 mi south of Meshoppen, 0.3 mi downstream from Meshoppen Creek, 2.3 mi upstream from bridge on State Highway 87, and 2.4 mi upstream from Mehoopany Creek.

DRAINAGE AREA.--8,720 mi².

PERIOD OF RECORD.--October 1976 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 640 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow slightly regulated by 7 flood-control reservoirs, which have a combined capacity of 356,800 acre-ft. National Weather Service satellite and landline telemeter at station.

AVERAGE DISCHARGE.--13 years, 11,680 ft³/s, 18.19 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 207,000 ft³/s, Mar. 6, 1979, gage height, 35.06 ft; minimum, 677 ft³/s, July 16, 1988, gage height, 7.26 ft; minimum gage height, 7.23 ft, Aug. 24, 25, 1985.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1972 reached a stage of 43.51 ft, from floodmark information by local resident, discharge, about 331,000 ft³/s, from rating curve extended above 220,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 70,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 1	0400	82,300	23.35	May 12	0730	*105,000	*26.06

Minimum discharge, 921 ft³/s, Sept. 11, 12, 13, gage height, 7.35 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1310	4690	10100	7860	5720	5920	80700	5390	8280	8840	2830	1130
2	1240	4420	9080	6900	6510	5500	67200	7230	9540	7390	2610	1110
3	1120	4080	8570	6530	7310	5060	48400	14100	13800	6430	2360	1100
4	1190	4470	8080	6320	7810	5010	41300	16900	14300	5930	2190	1100
5	1160	6190	7590	e3900	6610	4740	42100	14500	15200	7870	2270	1100
6	1110	8080	7150	e3200	5740	5680	47800	18400	14400	9590	2660	1080
7	1110	14200	6800	e3700	e5000	7710	44000	51800	14100	9550	2760	1040
8	1120	22700	6460	4330	e4600	6150	36300	64000	13500	9920	3690	1020
9	1140	21200	6230	5110	e4200	5660	30200	52700	12200	10700	3900	982
10	1640	15300	5920	6250	3580	4930	25100	42400	11400	8540	3210	948
11	1680	12400	5280	6450	e3900	4630	21600	71700	11600	6510	2540	922
12	1380	10700	4670	6400	e3900	4490	18800	102000	12700	5610	2260	921
13	1330	9710	3380	6050	e4200	4350	16700	79600	11800	5080	2130	945
14	1330	9730	e3100	5490	4250	4200	14600	58300	11500	4800	2050	1010
15	1370	10800	e3000	e5300	4360	3970	13900	43300	22900	4300	1990	1080
16	1430	10800	e3200	e5200	5230	4400	13400	46300	44100	3840	1890	1190
17	1450	9700	e3100	e5000	6090	8450	12800	57400	55500	3590	1830	1360
18	1430	8720	e3000	e4800	5900	9550	12300	41200	51400	3170	1740	1860
19	1440	9160	e3000	e4700	5870	10100	11900	28400	35500	2870	1710	2180
20	1420	9720	e3300	e4600	5060	11700	11000	22200	24100	3050	1680	3240
21	1430	13100	e3600	4670	4840	9550	10300	18100	27500	3290	1570	5340
22	1710	18400	3810	3810	9390	8020	9190	15300	40500	5370	1520	6980
23	2070	19600	4400	3570	18000	7270	8500	13500	27100	5280	1460	5600
24	3650	15500	4570	3980	16100	7210	7860	14600	29400	4940	1510	6220
25	6310	13000	5220	3590	10900	22400	7300	16600	31300	4330	1540	7450
26	9200	11500	6170	3680	8150	35400	6950	14500	25500	3630	1510	6740
27	9370	10300	6550	4000	7120	30700	6610	12900	18600	2970	1430	5180
28	7450	9490	6290	4010	6450	25600	6220	11800	14000	2550	1340	4490
29	6180	9380	6010	5060	---	26500	5870	10700	12000	2500	1260	3870
30	5360	10100	7000	5290	---	37600	5580	9430	10400	2490	1290	3140
31	4890	---	8600	5020	---	68600	---	8510	---	2420	1220	---
TOTAL	84020	337140	173230	154770	186790	401050	684480	983760	644120	167350	63950	80328
MEAN	2710	11240	5588	4993	6671	12940	22820	31730	21470	5398	2063	2678
MAX	9370	22700	10100	7860	18000	68600	80700	102000	55500	10700	3900	7450
MIN	1110	4080	3000	3200	3580	3970	5580	5390	8280	2420	1220	921
CFSM	.31	1.29	.64	.57	.77	1.48	2.62	3.64	2.46	.62	.24	.31
IN.	.36	1.44	.74	.66	.80	1.71	2.92	4.20	2.75	.71	.27	.34
CAL YR 1988	TOTAL 2867308			MEAN 7834	MAX 60800	MIN 708	CFSM .90	IN. 12.23				
WTR YR 1989	TOTAL 3960988			MEAN 10850	MAX 102000	MIN 921	CFSM 1.24	IN. 16.90				

e Estimated.

TUNKHANNOCK CREEK BASIN

01534000 TUNKHANNOCK CREEK NEAR TUNKHANNOCK, PA

LOCATION.--Lat 41°33'30", long 75°53'42", Wyoming County, Hydrologic Unit 02050106, on left bank 300 ft upstream from bridge on U.S. Highway 6 at Dixon, 3.0 mi northeast of Tunkhannock, and 4.0 mi upstream from mouth.

DRAINAGE AREA.--383 mi².

PERIOD OF RECORD.--February 1914 to current year. Monthly discharge only for some periods, published in WSP 1302. Prior to October 1965, published as "at Dixon".

REVISED RECORDS.--WSP 756: Drainage area. WSP 1051: 1921(M), 1932, 1934-35(M), 1936, 1938(M), 1939-40, 1942-44, 1945(M). WSP 1302: 1922, 1923(M), 1924-25, 1927-28. WSP 1432: 1919(M), 1920, 1933, 1934(P). WDR PA-85-2: 1954(P), 1955(M), 1956(P), 1957(M), 1958-64(P), 1967-71(P), 1977(M), 1978(P), 1981(M), 1982-84(P).

GAGE.--Water-stage recorder. Datum of gage is 610.50 ft above National Geodetic Vertical Datum of 1929 (Pennsylvania Department of Transportation bench mark). Prior to Aug. 10, 1938, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. National Weather Service satellite telemeter at station.

AVERAGE DISCHARGE.--75 years, 538 ft³/s, 19.08 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,200 ft³/s, Apr. 5, 1947, gage height, 13.96 ft, from rating curve extended above 14,000 ft³/s on basis of contracted-opening measurement of peak flow; maximum gage height, 15.77 ft, Mar. 15, 1986; minimum discharge, 6.2 ft³/s, Sept. 24, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 6	1115	11,200	9.82	June 24	2400	6,350	7.54
May 7	0630	*11,400	*9.95				

Minimum discharge, 30 ft³/s, part of each day Oct. 14-20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	76	342	e200	196	218	2640	233	437	686	124	53
2	37	75	312	e190	197	188	1630	1250	752	566	121	59
3	36	86	288	e170	204	191	1270	1250	500	470	121	65
4	35	92	270	e130	206	185	1250	938	440	399	118	57
5	35	87	249	e100	200	200	1210	791	444	1440	141	49
6	36	173	232	e120	e190	246	1170	6530	668	1140	221	45
7	36	242	e210	e140	e180	190	1120	8020	761	724	168	43
8	35	228	e200	e160	e170	179	973	3670	855	738	149	42
9	33	199	e190	e230	e150	177	849	2310	726	545	119	41
10	33	182	e170	219	e140	156	801	2290	956	411	102	40
11	33	166	e140	184	150	147	684	4460	730	336	92	40
12	32	154	e110	165	153	145	594	3380	540	282	90	39
13	32	157	e105	217	130	127	527	2310	605	260	103	38
14	31	424	e120	231	124	126	492	1850	625	230	113	40
15	30	309	e140	193	140	132	456	1810	1840	202	101	59
16	30	249	e120	189	420	166	569	1520	1560	183	87	63
17	31	253	e115	205	288	168	611	1780	2950	179	79	76
18	31	367	e110	189	230	163	544	1520	2030	171	72	85
19	31	288	e108	170	207	254	508	1250	1360	155	69	79
20	32	603	e105	168	182	231	444	1090	1060	303	92	217
21	33	1670	e110	146	505	214	401	954	999	464	94	197
22	77	937	e125	118	964	216	365	860	1140	286	83	146
23	213	671	120	130	600	205	332	714	1070	718	74	151
24	164	546	115	131	388	322	303	870	3200	370	69	265
25	172	468	414	131	296	2070	275	825	3360	257	66	191
26	140	406	294	124	318	1370	264	663	1640	213	59	170
27	114	372	212	195	272	1150	267	802	1230	201	55	177
28	100	365	204	211	250	1070	255	652	1210	181	53	143
29	94	441	290	179	---	1410	238	505	1070	173	53	120
30	89	384	235	173	---	1880	236	468	847	140	61	107
31	81	---	e220	194	---	2270	---	435	---	128	62	---
TOTAL	1943	10670	5975	5302	7450	15766	21278	56000	35605	12551	3011	2897
MEAN	62.7	356	193	171	266	509	709	1806	1187	405	97.1	96.6
MAX	213	1670	414	231	964	2270	2640	8020	3360	1440	221	265
MIN	30	75	105	100	124	126	236	233	437	128	53	38
CFSM	.16	.93	.50	.45	.69	1.33	1.85	4.72	3.10	1.06	.25	.25
IN.	.19	1.04	.58	.51	.72	1.53	2.07	5.44	3.46	1.22	.29	.28

CAL YR 1988 TOTAL 114980 MEAN 314 MAX 7740 MIN 26 CFSM .82 IN. 11.17
WTR YR 1989 TOTAL 178448 MEAN 489 MAX 8020 MIN 30 CFSM 1.28 IN. 17.33

e Estimated.

LACKAWANNA RIVER BASIN

01534180 STILLWATER LAKE NEAR FOREST CITY, PA

LOCATION.--Lat 41°41'46", long 75°29'10", Susquehanna County, Hydrologic Unit 02050107, at Stillwater Dam on Lackawanna River, 0.3 mi downstream from confluence of East and West Branches, 1.4 mi south of Union Dale, and 3.5 mi north of Forest City.

DRAINAGE AREA.--37.1 mi².

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

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Reservoir formed by an earthfill dam, rock faced, with ungated concrete spillway at elevation 1,621.00 ft. Storage began in December 1959. Capacity at elevation 1,621.00 ft is 12,000 acre-ft. Reservoir is used for flood control and municipal water supply. Figures given herein represent total contents. Flood storage is regulated by power-operated slide gate; water supply storage is regulated by a weir formed by stop logs. U.S. Army Corps of Engineers satellite and landline telemeters at station.

COOPERATION.--Records provided by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 6,470 acre-ft, Mar. 16, 1986, elevation, 1,605.61 ft; minimum, 242 acre-ft, Sept. 10, 1960, elevation, 1,568.85 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 4,170 acre-ft, June 25, elevation, 1,596.80 ft; minimum, 380 acre-ft, Oct. 2, 11, 17-21, elevation, 1,572.41 ft.

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS AT 2400, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

Date	Elevation (feet)	Contents (acre- feet)	Change in contents (equivalent in ft ³ /s/day)
Sept. 30	1,572.46	384	--
Oct. 31	1,573.08	441	+ 0.9
Nov. 30	1,573.97	527	+ 1.4
Dec. 31	1,573.51	482	- 0.7
CAL YR 1988	--	--	- 0.1
Jan. 31	1,573.60	491	+ 0.2
Feb. 28	1,573.17	449	- 0.8
Mar. 31	1,582.82	1,640	+19.4
Apr. 30	1,580.40	1,300	- 5.8
May 31	1,573.50	482	-13.3
June 30	1,575.05	640	+ 2.7
July 31	1,572.93	427	- 3.5
Aug. 31	1,572.74	410	- 0.3
Sept. 30	1,572.93	427	+ 0.3
WTR YR 1989	--	--	+ 0.1

LACKAWANNA RIVER BASIN

01534300 LACKAWANNA RIVER NEAR FOREST CITY, PA

LOCATION.--Lat 41°40'47", long 75°28'20", Susquehanna County, Hydrologic Unit 02050107, on left bank 1,600 ft upstream from bridge on State Highway 171, 1.3 mi downstream from Stillwater Dam, 1.6 mi downstream from confluence of East and West Branches, and 2.2 mi north of Forest City.

DRAINAGE AREA.--38.8 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 1,551.28 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 11, 1958, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since December 1959 by Stillwater Dam (station 01534180). Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--31 years, 71.8 ft³/s, 25.13 in/yr, adjusted for storage since December 1959.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,390 ft³/s, Jan. 22, 1959, gage height, 6.41 ft, from rating curve extended above 930 ft³/s; no flow part of each day July 21, 22, 1978, result of shutoff at Stillwater Dam.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 824 ft³/s, June 26, gage height, 4.72 ft; minimum daily, 3.6 ft³/s, Oct. 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.2	19	70	39	47	28	269	23	43	127	16	6.9
2	3.8	19	63	36	56	32	265	121	63	82	16	8.1
3	4.4	21	57	36	58	24	256	262	69	65	14	8.8
4	4.6	22	50	44	75	27	228	252	60	53	14	7.1
5	5.4	27	45	23	40	28	176	234	63	108	15	5.6
6	6.4	143	40	23	35	43	174	98	77	136	17	5.2
7	6.4	177	39	23	33	37	171	381	100	135	18	5.4
8	5.0	158	38	23	28	23	144	672	106	126	19	5.5
9	4.6	116	35	27	34	24	104	604	104	120	18	5.6
10	4.4	85	31	29	23	14	114	649	114	105	15	5.5
11	4.3	71	29	27	22	8.7	113	436	118	73	14	5.3
12	4.2	54	26	27	21	13	92	260	108	51	14	5.1
13	4.0	57	24	31	20	11	50	523	96	41	14	4.9
14	3.8	109	24	35	20	10	44	447	97	33	14	5.8
15	3.8	112	24	32	30	14	59	367	132	28	13	8.7
16	3.7	94	24	31	63	15	79	287	155	25	12	9.4
17	3.6	90	23	30	67	15	95	231	184	24	11	12
18	4.1	104	22	27	37	17	103	213	199	23	10	13
19	4.2	97	21	26	29	17	101	178	203	21	9.9	15
20	4.3	111	21	26	24	17	79	143	199	28	12	29
21	4.3	221	23	63	67	18	39	115	194	44	12	36
22	20	263	25	22	134	17	36	96	190	48	12	29
23	49	232	23	21	131	17	43	81	184	51	12	26
24	54	175	25	20	103	22	43	81	242	38	12	33
25	67	116	56	19	91	67	42	81	390	29	12	30
26	55	95	72	20	42	208	65	72	668	24	10	27
27	37	82	56	32	35	342	37	73	755	21	9.3	25
28	26	80	50	40	31	300	27	68	610	19	8.5	22
29	24	86	63	32	---	254	22	56	410	19	8.2	19
30	24	79	54	35	---	257	21	45	223	18	9.2	16
31	21	---	44	46	---	268	---	43	---	17	9.0	---
TOTAL	470.5	3115	1197	945	1396	2187.7	3091	7192	6156	1732	400.1	434.9
MEAN	15.2	104	38.6	30.5	49.9	70.6	103	232	205	55.9	12.9	14.5
MAX	67	263	72	63	134	342	269	672	755	136	19	36
MIN	3.6	19	21	19	20	8.7	21	23	43	17	8.2	4.9
MEAN‡	16.1	105	37.9	30.6	49.1	90.0	97.2	219	208	52.4	12.6	14.8
CFSM‡	.41	2.71	.98	.79	1.27	2.32	2.51	5.64	5.36	1.35	.32	.38
IN. ‡	.47	3.02	1.13	.91	1.32	2.67	2.80	6.50	5.98	1.56	.37	.42

CAL YR 1988 TOTAL 19632.0 MEAN 53.6 MAX 404 MIN 1.3 MEAN‡ 53.5 CFSM‡ 1.38 IN.‡ 18.78
WTR YR 1989 TOTAL 28317.2 MEAN 77.6 MAX 755 MIN 3.6 MEAN‡ 77.6 CFSM‡ 2.00 IN.‡ 27.17

‡ Adjusted for change in contents in Stillwater Lake.

LACKAWANNA RIVER BASIN

01534500 LACKAWANNA RIVER AT ARCHBALD, PA

LOCATION.--Lat 41°30'16", long 75°32'33", Lackawanna County, Hydrologic Unit 02050107, on right bank along county road in Archbald, and 0.5 mi upstream from White Oak Run and Gilmartin Street bridge.

DRAINAGE AREA.--108 mi².

PERIOD OF RECORD.--October 1939 to current year. Monthly discharge only for some periods, published in WSP 1302.

GAGE.--Water-stage recorder. Datum of gage is 889.33 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Regulation at low flow by mine pumps upstream from station. Flow regulated since December 1959 by Stillwater Dam (station 01534180) about 17 mi upstream. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite and landline telemeters at station.

AVERAGE DISCHARGE.--50 years, 193 ft³/s, 24.31 in/yr, adjusted for storage since December 1959.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,510 ft³/s, May 22, 1942, gage height, 10.58 ft, from rating curve extended above 1,900 ft³/s on basis of slope-area measurement of peak flow; minimum, 3.0 ft³/s, Oct. 9, 11, 1943; minimum gage height, 1.08 ft, Oct. 18, 1941.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,440 ft³/s, May 6, gage height, 6.79 ft, from rating curve extended as explained above; minimum, 21 ft³/s, Oct. 17, 18, 19, 20; minimum gage height, 1.67 ft, Sept. 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	56	178	e64	112	97	647	126	198	285	67	36
2	30	62	163	e62	124	89	558	593	248	213	67	34
3	28	63	152	e59	132	85	531	572	206	185	69	33
4	31	62	139	e58	108	84	497	507	189	169	61	33
5	35	85	128	e56	97	92	421	477	176	476	72	31
6	34	255	121	e54	e85	104	424	1750	197	349	64	31
7	34	265	115	e63	e76	85	416	1250	229	302	61	32
8	33	234	108	e75	e69	e73	374	1230	248	311	60	31
9	28	194	100	e69	e64	e64	312	1010	247	259	60	31
10	27	157	93	e67	e60	e58	312	1180	378	228	57	29
11	30	142	82	e64	e57	55	292	1270	298	195	54	30
12	31	123	67	77	e55	58	269	802	265	164	54	29
13	29	175	e62	e70	e53	58	222	961	288	150	53	28
14	26	216	e60	e66	e53	54	199	836	289	137	51	55
15	25	202	e58	88	96	64	210	699	483	125	49	43
16	23	183	e56	84	147	70	260	624	454	113	48	39
17	23	200	e58	80	111	65	249	727	653	113	45	53
18	23	199	63	e69	87	85	258	582	531	106	43	43
19	23	183	67	e65	e71	97	247	501	461	97	46	55
20	23	374	69	e61	e64	78	224	428	407	134	54	95
21	27	569	71	63	e150	83	173	365	390	136	48	82
22	73	506	71	59	283	79	153	313	378	128	45	70
23	80	440	67	65	243	80	154	281	396	150	45	87
24	88	364	81	66	204	159	151	320	623	120	50	89
25	96	281	117	64	149	388	145	272	699	107	46	74
26	91	240	126	71	124	452	139	242	836	94	43	90
27	80	212	109	113	110	594	131	247	942	85	41	77
28	70	219	e91	93	104	555	117	216	846	79	42	64
29	66	218	e81	85	---	647	104	192	637	74	42	60
30	63	198	e73	105	---	649	99	176	417	68	41	54
31	59	---	e68	117	---	645	---	169	---	67	38	---
TOTAL	1363	6677	2894	2252	3088	5846	8288	18918	12609	5219	1616	1538
MEAN	44.0	223	93.4	72.6	110	189	276	610	420	168	52.1	51.3
MAX	96	569	178	117	283	649	647	1750	942	476	72	95
MIN	23	56	56	54	53	54	99	126	176	67	38	28
MEAN‡	44.9	224	92.7	72.8	109	208	270	597	423	164	51.8	51.6
CFSM‡	.42	2.07	.86	.67	1.01	1.93	2.50	5.53	3.92	1.52	.48	.48
IN.‡	.48	2.31	.99	.77	1.05	2.23	2.79	6.38	4.37	1.75	.55	.54

CAL YR 1988 TOTAL 52627 MEAN 144 MAX 1050 MIN 19 MEAN‡ 144 CFSM‡ 1.33 IN.‡ 18.11
WTR YR 1989 TOTAL 70308 MEAN 193 MAX 1750 MIN 23 MEAN‡ 193 CFSM‡ 1.79 IN.‡ 24.21

e Estimated.

‡ Adjusted for change in contents in Stillwater Lake.

LACKAWANNA RIVER BASIN

01536000 LACKAWANNA RIVER AT OLD FORGE, PA

LOCATION.--Lat 41°21'33", long 75°44'41", Lackawanna County, Hydrologic Unit 02050107, on right bank 100 ft downstream from bridge on SR 3017, 150 ft upstream from Delaware, Lackawanna, and Western Railroad bridge in Old Forge, and 0.5 mi upstream from St. Johns Creek.

DRAINAGE AREA.--332 mi².

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

REVISED RECORDS.--WSP 1432: 1939(M), 1940, 1945.

GAGE.--Water-stage recorder. Datum of gage is 595.26 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1974, water-stage recorder at same site and datum. Oct. 1, 1974, to Aug. 17, 1975, nonrecording gage at site 150 ft upstream at different datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since December 1959 by Stillwater Dam (station 01534180) about 33 mi upstream. Several measurements of water temperature were made during the year. National Weather Service satellite and landline telemeters at station.

AVERAGE DISCHARGE.--51 years, 489 ft³/s, 20.00 in/yr, adjusted for storage since December 1959.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,000 ft³/s, Aug. 19, 1955, gage height, 20.05 ft, from floodmark, from rating curve extended above 3,800 ft³/s on basis of slope-area measurements at gage heights 15.30 ft, 16.49 ft, and at peak flow; minimum, 20 ft³/s, Sept. 21, 1964, gage height, 1.28 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,050 ft³/s, May 6, gage height, 8.93 ft, from rating curve extended as explained above; minimum, 42 ft³/s, Oct. 20, 21, gage height, 2.09 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	57	89	299	168	166	186	1320	268	400	559	186	92
2	54	93	278	166	175	167	1040	1720	501	440	145	89
3	56	97	261	163	190	168	911	1410	404	377	152	82
4	56	96	246	137	173	160	857	1080	363	336	129	79
5	69	125	233	97	155	166	750	934	337	898	318	82
6	61	292	225	118	155	188	757	5860	390	633	524	75
7	60	351	207	126	150	157	758	4560	452	543	274	66
8	57	319	186	190	133	149	662	3150	493	600	203	65
9	55	286	173	166	120	144	577	2250	446	482	167	60
10	54	236	158	142	108	144	550	2470	887	415	144	57
11	56	216	144	138	123	128	489	3510	632	360	132	58
12	59	182	101	155	125	121	452	2540	498	293	134	61
13	56	303	117	151	115	120	404	2190	604	263	125	59
14	54	364	125	135	118	123	370	1840	628	241	122	231
15	51	316	150	175	166	124	373	1580	951	215	115	133
16	48	292	133	157	227	143	459	1560	1090	199	142	106
17	49	325	121	142	161	136	431	2750	1500	199	128	183
18	49	326	118	136	152	151	421	1900	1220	186	109	124
19	50	290	121	141	136	188	403	1440	983	183	124	194
20	48	698	122	136	126	165	376	1170	803	291	142	244
21	53	1070	120	115	368	169	306	976	780	254	112	218
22	207	810	117	95	506	161	273	811	1050	251	101	197
23	139	651	114	117	407	153	260	723	1770	261	101	340
24	146	541	165	120	325	298	254	960	2250	216	103	305
25	135	441	183	118	258	749	236	758	1790	180	95	229
26	130	375	173	117	248	707	238	620	1520	165	81	326
27	117	337	166	191	228	869	224	617	1540	153	74	270
28	112	373	217	155	198	812	208	525	1440	148	83	219
29	101	360	233	139	---	1010	188	434	1170	136	104	185
30	91	322	196	150	---	1170	179	399	794	122	112	164
31	93	---	174	171	---	1220	---	407	---	138	98	---
TOTAL	2423	10576	5376	4427	5512	10346	14726	51412	27686	9737	4579	4593
MEAN	78.2	353	173	143	197	334	491	1658	923	314	148	153
MAX	207	1070	299	191	506	1220	1320	5860	2250	898	524	340
MIN	48	89	101	95	108	120	179	268	337	122	74	57
CFSM	.24	1.06	.52	.43	.59	1.01	1.48	5.00	2.78	.95	.44	.46
IN.	.27	1.19	.60	.50	.62	1.16	1.65	5.76	3.10	1.09	.51	.51

CAL YR 1988 TOTAL 119341 MEAN 326 MAX 4820 MIN 47 CFSM .98 IN. 13.37
WTR YR 1989 TOTAL 151393 MEAN 415 MAX 5860 MIN 48 CFSM 1.25 IN. 16.96

‡ Adjusted for change in contents in Stillwater Lake.

SUSQUEHANNA RIVER BASIN

01536500 SUSQUEHANNA RIVER AT WILKES-BARRE, PA

LOCATION.--Lat 41°15'03", long 75°52'52", Luzerne County, Hydrologic Unit 02050107, on left bank at foot of West Union Street, 800 ft downstream from North Street bridge in Wilkes-Barre, and 1.6 mi upstream from Toby Creek.

DRAINAGE AREA.--9,960 mi², approximately.

PERIOD OF RECORD.--April 1899 to current year. Monthly discharge only for some periods, published in WSP 1302. Gage-height records collected at same site since November 1890, contained in reports of U.S. Weather Bureau.

REVISED RECORDS.--WSP 109: 1900-1905. WSP 351: Drainage area. WSP 781: 1902(M). WSP 1302: 1916. WSP 1432: 1901-5, 1907, 1909, 1913, 1937(M). WDR PA-86-2: 1960(M) 1964(M) 1975(M) 1979(M).

GAGE.--Water-stage recorder. Datum of gage is 512.07 ft above National Geodetic Vertical Datum of 1929. See WSP 1722 for history of changes prior to Mar. 23, 1949.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow slightly regulated by 8 flood-control reservoirs, which have a combined capacity of 368,800 acre-ft. U.S. Army Corps of Engineers satellite telemeter and National Weather Service landline telemeter at station.

AVERAGE DISCHARGE.--90 years, 13,310 ft³/s, 18.15 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 345,000 ft³/s, June 24, 1972, gage height, 40.91 ft, from floodmark, from slope-area measurement of peak flow near West Pittston and adjusted for flow from intervening area; minimum, 528 ft³/s, Sept. 27, 1964, gage height, -1.78 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known prior to 1899, 33.1 ft, Mar. 18, 1865, from floodmarks, discharge, about 232,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 82,000 ft³/s and maximum(*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 1	1400	87,900	19.74	May 12	1500	*117,000	*23.12

Minimum discharge, 1,180 ft³/s, Sept. 12, 13, gage height, -0.27 ft.

REVISIONS.--In order to maintain the correct relationship between the previously revised annual maximum discharge for the 1964 water year (published in WDR PA-86-2) and a supplemental peak, the supplemental peak has been revised to 180,000 ft³/s, March 7, 1964 (0200 hrs).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1720	4980	11200	8600	5770	7110	85400	6300	9820	11900	3420	1540
2	1600	4830	10600	7630	6720	6550	80400	9940	10600	10100	3660	1470
3	1520	4500	9680	7280	7530	6070	59500	14500	13100	8640	3360	1410
4	1420	4280	9220	6370	8390	5660	46300	19900	15600	7610	3050	1390
5	1460	5110	8660	e4500	8060	5590	44700	18500	16000	9320	2920	1380
6	1410	7670	8110	e3600	6760	5620	49500	33100	16200	12900	4290	1370
7	1340	10900	7730	e3400	e6000	7350	50200	59600	16000	12100	3700	1350
8	1330	19100	7320	e3600	e5500	7660	41800	78100	16100	12100	3670	1310
9	1320	23000	6970	e4500	e5000	6680	34900	67400	14600	12200	4430	1280
10	1990	18000	6720	e5200	e4500	6000	29100	53600	14500	11900	4280	1250
11	1750	14100	6250	6270	e3600	5320	24800	69200	13600	9120	3640	1220
12	1750	11900	5020	6480	e3500	5110	21600	111000	14200	7350	3160	1190
13	1500	10900	4230	6700	e3500	4910	19000	97300	14300	6440	2870	1190
14	1420	11100	3160	e5800	e3600	4800	16800	74300	13300	5880	2720	1470
15	1410	11300	e2900	e5500	e4200	4680	15500	55200	19400	5450	2590	1420
16	1430	11800	e3200	e5300	e4900	4600	15400	47100	38700	4880	2520	1400
17	1460	11300	e3400	e5000	5820	6100	14800	67800	55900	4530	2410	1670
18	1440	10200	e3200	e4800	6270	10000	14000	56200	59300	4300	2230	1790
19	1400	9720	e3100	e4600	6500	10300	13500	37400	45700	3920	2160	2340
20	1380	10900	e3000	e4300	6140	11900	12800	28100	30900	4000	2280	3370
21	1380	15000	e3100	e4100	5940	11500	11900	22800	24500	4710	2180	4930
22	1900	18600	e3300	e3800	8460	9550	10900	19100	44200	5040	2010	6780
23	2490	21400	e3800	e3700	15300	8380	9890	16500	34600	7090	1960	7790
24	2930	18900	e4500	e3800	19200	8100	9230	16700	34700	6480	1850	6580
25	5130	15400	e5200	e4000	13800	16700	8530	19000	37500	5640	1860	7980
26	8100	13300	5980	e4200	10300	35800	8050	18000	33900	4920	1860	8410
27	9980	11900	6750	e4300	8780	36700	7650	16000	25300	4330	1800	7120
28	8850	11100	7350	e4500	7740	30400	7250	14400	19700	3800	1730	5510
29	7190	10700	6980	4760	---	28700	6820	13000	16600	3370	1670	4890
30	6110	10800	6560	5890	---	35000	6490	11700	13900	3330	1640	4210
31	5420	---	7410	5840	---	61200	---	10600	---	3270	1610	---
TOTAL	89530	362690	184600	158320	201780	414040	776710	1182340	732720	216620	83530	95010
MEAN	2888	12090	5955	5107	7206	13360	25890	38140	24420	6988	2695	3167
MAX	9980	23000	11200	8600	19200	61200	85400	111000	59300	12900	4430	8410
MIN	1320	4280	2900	3400	3500	4600	6490	6300	9820	3270	1610	1190
CFSM	.29	1.21	.60	.51	.72	1.34	2.60	3.83	2.45	.70	.27	.32
IN.	.33	1.35	.69	.59	.75	1.55	2.90	4.42	2.74	.81	.31	.35

CAL YR 1988 TOTAL 3241930 MEAN 8858 MAX 61500 MIN 1060 CFSM .89 IN. 12.11
WTR YR 1989 TOTAL 4497890 MEAN 12320 MAX 111000 MIN 1190 CFSM 1.24 IN. 16.80

e Estimated.

TOBY CREEK BASIN

01537000 TOBY CREEK AT LUZERNE, PA

LOCATION.--Lat 41°16'57", long 75°53'46", Luzerne County, Hydrologic Unit 02050107, on left bank at Luzerne, 150 ft upstream from bridge on State Highway 309, 0.5 mi upstream from inlet works of flood basin, and 2.5 mi upstream from mouth.

DRAINAGE AREA.--32.4 mi².

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

GAGE.--Water-stage recorder and concrete control. Datum of gage is 574.60 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Slight regulation by Huntsville Reservoir 5.9 mi upstream, usable capacity 5,900 acre-ft. Diversion from reservoir for municipal supply. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--48 years, 45.5 ft³/s, 19.07 in/yr, adjusted for diversion.

COOPERATION.--Records of diversion provided by Pennsylvania Gas and Water Co.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,390 ft³/s, June 22, 1972, gage height, 6.07 ft in gage well, 7.59 ft from floodmarks, from rating curve extended above 1,200 ft³/s on basis of slope-area measurement of peak flow; minimum, 0.1 ft³/s, Sept. 12, 1944; minimum daily, 0.5 ft³/s, Sept. 20, Oct. 8, 1946.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 708 ft³/s, May 6, gage height, 2.70 ft; minimum daily, 8.5 ft³/s, Oct. 19, 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	8.8	25	20	24	28	131	40	44	54	24	12
2	11	8.8	22	19	25	26	103	140	46	46	22	13
3	10	9.2	21	19	29	25	95	92	35	38	17	13
4	10	9.2	19	16	23	25	87	70	37	35	16	12
5	10	20	20	16	22	28	82	90	30	214	19	12
6	9.9	40	22	17	21	27	83	549	42	119	24	11
7	9.8	26	21	18	20	23	74	461	47	86	18	11
8	9.6	18	19	37	18	22	65	246	67	74	15	10
9	9.9	16	17	29	17	20	61	171	53	53	14	10
10	9.1	15	17	22	17	19	54	259	70	44	13	10
11	9.8	14	17	20	17	19	46	347	51	38	13	10
12	9.3	13	13	36	17	20	43	263	37	32	14	11
13	9.3	48	23	30	16	18	41	185	59	29	14	10
14	9.0	38	19	21	16	18	38	173	53	25	13	23
15	9.1	23	17	44	37	21	46	154	87	23	13	14
16	9.4	18	14	34	37	23	64	193	111	26	15	20
17	9.0	28	13	28	21	21	47	264	203	32	20	24
18	9.3	20	13	26	20	25	43	177	127	34	15	16
19	8.5	17	13	26	19	24	39	137	98	33	19	27
20	8.5	110	13	26	17	21	34	112	77	48	22	29
21	9.2	120	15	22	95	27	32	92	84	35	16	20
22	36	64	14	21	71	25	31	71	184	33	14	18
23	17	48	15	20	48	23	28	78	207	33	16	34
24	18	40	37	20	34	127	25	161	137	30	15	26
25	14	34	38	20	36	142	23	104	109	29	13	17
26	12	29	21	23	34	91	24	81	80	29	13	30
27	10	28	17	31	32	76	22	71	63	29	13	19
28	11	44	32	23	29	72	21	59	123	29	12	15
29	10	36	34	22	---	80	22	48	114	28	13	14
30	10	28	24	24	---	102	22	46	70	26	13	13
31	9.1	---	21	24	---	124	---	46	---	20	12	---
TOTAL	346.8	971.0	626	754	812	1342	1526	4980	2545	1404	490	504
MEAN	11.2	32.4	20.2	24.3	29.0	43.3	50.9	161	84.8	45.3	15.8	16.8
MAX	36	120	38	44	95	142	131	549	207	214	24	34
MIN	8.5	8.8	13	16	16	18	21	40	30	20	12	10
(†)	4.77	4.85	4.41	3.96	3.34	3.46	2.87	2.39	2.71	4.57	2.66	2.19
MEAN‡	16.0	37.2	24.6	28.3	32.3	46.8	53.8	163	87.5	49.9	18.5	19.0
CFSM‡	.49	1.15	.76	.87	1.00	1.44	1.66	5.03	2.70	1.54	.57	.59
IN.‡	.56	1.28	.88	1.00	1.04	1.66	1.85	5.80	3.01	1.78	.66	.66

CAL YR 1988 TOTAL 11061.4 MEAN 30.2 MAX 253 MIN 6.3 MEAN‡ 35.3 CFSM‡ 1.09 IN.‡ 14.83
WTR YR 1989 TOTAL 16300.8 MEAN 44.7 MAX 549 MIN 8.5 MEAN‡ 48.2 CFSM‡ 1.49 IN.‡ 20.19

† Diversion for municipal supply, equivalent in cubic feet per second.
‡ Adjusted for diversion.

SOLOMON CREEK BASIN

01537500 SOLOMON CREEK AT WILKES-BARRE, PA

LOCATION.--Lat 41°13'39", long 75°54'17", Luzerne County, Hydrologic Unit 02050107, on right bank at southwest city limits of Wilkes-Barre, 20 ft downstream from Central Railroad of Pennsylvania bridge, 0.4 mi downstream from Spring Run, and 3.4 mi upstream from mouth.

DRAINAGE AREA.--15.7 mi².

PERIOD OF RECORD.--March 1940 to current year. Monthly discharge only for March 1940, published in WSP 1302.

REVISED RECORDS.--WSP 1272: Drainage area. WSP 1382: 1940, 1942, 1944(P), 1945-47, 1949(M), 1951-52, 1953-54(M).

GAGE.--Water-stage recorder and broad-crested weir. Datum of gage is 548.31 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Some regulation by mine pumps upstream from station. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--49 years, 18.7 ft³/s, 16.17 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,450 ft³/s, Aug. 18, 1955, gage height, 9.83 ft, from rating curve extended above 570 ft³/s on basis of computation of peak flow through culvert; no flow Sept. 4-13, 15-20, 1983.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 16, 1933, reached a stage of 11.4 ft, from floodmark, discharge not determined.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 320 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 6	2215	*242	*3.23				

Minimum daily discharge, 0.14 ft³/s, Sept. 12, 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.6	4.8	18	8.4	6.2	9.1	31	12	11	16	2.9	.38
2	2.0	4.7	16	9.4	6.7	11	25	47	9.3	14	2.2	.90
3	2.5	4.5	16	8.8	6.7	7.2	24	39	8.5	13	2.3	.28
4	2.0	4.7	14	16	7.2	7.3	21	33	8.6	12	2.2	.64
5	2.4	10	14	e7.2	6.3	6.9	20	36	7.2	20	2.5	.29
6	1.8	20	12	e6.3	5.4	7.5	23	148	9.6	14	5.1	.19
7	2.4	16	10	9.7	e5.0	8.5	22	124	10	13	3.6	.18
8	1.7	14	9.4	14	e4.7	7.9	20	71	9.8	9.8	3.3	.18
9	2.2	14	7.4	8.3	e4.3	7.6	22	50	9.8	9.4	1.9	.17
10	1.5	13	e6.1	10	4.4	8.8	19	55	12	17	2.0	.15
11	2.1	12	e5.0	8.6	5.6	5.2	17	92	9.2	12	1.6	.15
12	1.7	12	e4.5	12	4.3	5.6	15	77	7.9	5.8	1.6	.14
13	2.2	18	e4.3	11	5.4	4.6	14	52	19	5.8	2.1	.14
14	1.3	18	e4.1	17	4.1	4.2	13	45	16	4.3	1.2	.87
15	1.7	15	e3.9	20	6.1	4.8	14	37	17	2.8	1.7	.48
16	1.6	14	e3.5	16	5.3	4.4	16	56	21	3.3	.99	.50
17	1.4	19	e2.9	14	5.0	4.4	13	98	43	2.9	1.5	.68
18	1.2	16	e2.8	9.5	4.4	5.3	11	64	36	3.0	1.2	.42
19	.98	15	e3.2	10	4.6	6.0	10	52	31	2.5	2.1	1.2
20	.53	41	e3.5	9.1	4.3	8.1	9.9	41	24	4.5	3.0	.86
21	2.3	48	e3.2	10	13	10	9.2	32	24	3.7	1.4	3.6
22	21	35	e2.9	11	16	9.1	8.8	26	23	2.8	1.7	2.8
23	8.5	30	e2.7	13	15	8.6	8.5	29	35	2.9	.85	5.8
24	6.9	25	e5.0	7.2	18	20	7.4	33	44	2.5	1.5	3.9
25	5.4	24	8.1	7.0	17	35	7.4	26	39	2.8	.80	3.2
26	5.2	19	5.4	6.4	12	32	6.9	23	32	2.4	.70	8.9
27	5.4	17	5.0	7.9	10	38	5.9	20	26	2.5	.86	5.8
28	5.8	32	e4.5	6.2	12	51	5.8	17	28	2.2	.64	4.3
29	5.1	27	e4.3	6.9	---	56	5.5	15	25	2.3	1.0	3.2
30	5.0	20	e4.2	6.5	---	57	4.9	14	20	2.3	.68	2.4
31	4.8	---	14	6.9	---	52	---	13	---	2.4	.68	---
TOTAL	111.21	562.7	219.9	314.3	219.0	503.1	430.2	1477	615.9	213.9	55.80	52.70
MEAN	3.59	18.8	7.09	10.1	7.82	16.2	14.3	47.6	20.5	6.90	1.80	1.76
MAX	21	48	18	20	18	57	31	148	44	20	5.1	8.9
MIN	.53	4.5	2.7	6.2	4.1	4.2	4.9	12	7.2	2.2	.64	.14
CFSM	.23	1.19	.45	.65	.50	1.03	.91	3.03	1.31	.44	.11	.11
IN.	.26	1.33	.52	.74	.52	1.19	1.02	3.50	1.46	.51	.13	.12

CAL YR 1988 TOTAL 4120.01 MEAN 11.3 MAX 93 MIN .53 CFSM .72 IN. 9.76
WTR YR 1989 TOTAL 4775.71 MEAN 13.1 MAX 148 MIN .14 CFSM .83 IN. 11.32

e Estimated.

WAPWALLOPEN CREEK BASIN

01538000 WAPWALLOPEN CREEK NEAR WAPWALLOPEN, PA

LOCATION.--Lat 41°03'33", long 76°05'38", Luzerne County, Hydrologic Unit 02050107, on left bank 100 ft upstream from Harts Bridge on SR 3012, 2.2 mi southeast of Wapwallopen, and 3.7 mi upstream from mouth.

DRAINAGE AREA.--43.8 mi².

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

REVISED RECORDS.--WSP 1302: 1926(M), 1929(M), 1938(M). WSP 1432: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 752.41 ft above National Geodetic Vertical Datum of 1929 (Penn Central Railroad bench mark). Prior to Mar. 15, 1930, nonrecording gage at same site and datum.

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

AVERAGE DISCHARGE.--70 years, 64.6 ft³/s, 20.03 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,410 ft³/s, June 22, 1972, gage height, 11.04 ft, from rating curve extended above 1,400 ft³/s on basis of contracted-opening measurement of peak flow; minimum, 1.1 ft³/s, Aug. 4, 1955, gage height, 0.44 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 580 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 6	0800	649	4.24	May 16	2200	*721	*4.47
May 7	0200	649	4.24	June 22	2200	718	4.46

Minimum discharge, 7.1 ft³/s, Sept. 10, 11, 12, gage height, 1.00 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.9	12	59	51	35	e37	107	35	63	95	17	9.4
2	7.9	12	54	37	35	e35	87	187	54	81	16	9.5
3	8.6	11	50	33	37	e32	87	108	46	70	15	9.0
4	8.8	10	47	e31	33	e31	83	83	51	64	15	8.6
5	9.2	15	44	e30	e31	e33	81	84	43	110	18	8.5
6	8.8	89	43	e33	e29	e37	98	423	57	77	16	8.7
7	8.1	48	41	e40	e28	63	99	437	60	63	31	8.7
8	8.0	36	39	e60	e27	65	83	268	78	54	19	8.8
9	7.7	30	36	89	e31	47	83	199	60	45	16	8.5
10	7.8	27	e34	72	e40	35	77	217	121	41	15	8.1
11	8.1	25	e32	63	e35	32	69	296	65	38	14	8.1
12	8.3	23	e31	60	e32	31	65	243	50	33	15	8.0
13	8.2	32	e29	65	e28	29	61	190	96	34	15	8.1
14	8.2	47	e28	49	e31	28	58	176	86	32	14	8.4
15	8.2	32	e34	78	e36	32	59	165	83	28	13	10
16	8.1	29	e37	55	e40	36	71	360	123	29	13	11
17	8.1	43	e35	43	e36	32	60	528	228	36	12	16
18	8.3	42	e34	38	e34	36	54	312	152	28	12	12
19	9.0	33	e32	e36	e32	39	51	226	116	25	12	13
20	9.3	128	e31	e35	e30	32	47	180	94	42	18	29
21	9.9	239	e30	e36	e50	41	44	150	119	35	19	16
22	70	129	e30	e50	96	47	42	124	233	27	15	16
23	37	103	e29	63	74	37	39	121	347	24	13	26
24	26	87	39	51	55	79	38	184	371	22	15	33
25	25	75	74	43	e50	171	37	127	225	20	12	17
26	18	67	43	38	e46	111	36	103	196	20	11	31
27	16	62	34	44	e42	97	35	93	208	19	11	27
28	14	86	36	34	e39	92	33	81	178	19	10	16
29	15	89	57	32	---	100	32	70	164	17	10	14
30	13	66	44	35	---	99	31	66	116	16	10	13
31	12	---	48	37	---	106	---	64	---	16	9.7	---
TOTAL	422.5	1727	1234	1461	1112	1722	1847	5900	3883	1260	451.7	420.4
MEAN	13.6	57.6	39.8	47.1	39.7	55.5	61.6	190	129	40.6	14.6	14.0
MAX	70	239	74	89	96	171	107	528	371	110	31	33
MIN	7.7	10	28	30	27	28	31	35	43	16	9.7	8.0
CFSM	.31	1.31	.91	1.08	.91	1.27	1.41	4.35	2.96	.93	.33	.32
IN.	.36	1.47	1.05	1.24	.94	1.46	1.57	5.01	3.30	1.07	.38	.36

CAL YR 1988	TOTAL 20661.1	MEAN 56.5	MAX 639	MIN 7.7	CFSM 1.29	IN. 17.55
WTR YR 1989	TOTAL 21440.6	MEAN 58.7	MAX 528	MIN 7.7	CFSM 1.34	IN. 18.21

e Estimated.

FISHING CREEK BASIN

01539000 FISHING CREEK NEAR BLOOMSBURG, PA

LOCATION.--Lat 41°04'41", long 76°25'53", Columbia County, Hydrologic Unit 02050107, on left bank 25 ft downstream from Bowmans Mill bridge on SR 4034, 0.8 mi downstream from Green Creek, 0.9 mi west of Orangeville, and 5.5 mi north of Bloomsburg.

DRAINAGE AREA.--274 mi².

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

REVISED RECORDS.--WSP 1202: 1939-42, 1948(P), 1950.

GAGE.--Water-stage recorder. Datum of gage is 543.84 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Several measurements of water temperature were made during the year. National Weather Service satellite telemeter at station.

AVERAGE DISCHARGE.--51 years, 477 ft³/s, 23.64 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,900 ft³/s, June 22, 1972, gage height, 15.18 ft, from floodmark in gage shelter, from rating curve extended above 9,500 ft³/s on basis of contracted-opening measurement at gage height 12.08 ft; minimum, 7.6 ft³/s, July 19, 1939, gage height 1.71 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 7	0230	*7,680	*8.26	May 16	0700	5,810	7.33

Minimum daily discharge, 38 ft³/s, Sept. 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	140	209	e210	e270	274	324	1270	210	335	482	133	55
2	135	203	e200	e230	281	273	1020	918	303	402	123	55
3	133	194	190	e210	320	280	923	798	262	344	114	52
4	129	394	173	e190	296	267	892	658	290	308	106	e50
5	122	621	193	e180	262	284	838	654	266	713	105	e48
6	116	544	e210	e190	271	321	899	4880	297	607	106	e47
7	112	441	e190	e210	258	220	828	5890	308	509	162	e45
8	108	368	e170	e280	226	e190	739	3090	293	423	111	e44
9	105	346	e150	e350	219	e170	677	2110	277	349	96	e43
10	103	822	e140	e290	201	e160	608	2280	412	304	88	e42
11	101	778	e130	e260	239	e150	521	2870	321	271	81	e40
12	101	795	e120	e250	205	e150	465	2500	255	237	95	e39
13	101	816	e115	e480	179	e140	424	1820	408	227	181	e38
14	100	713	e110	e330	187	e140	403	1610	430	209	118	e39
15	96	1140	e105	598	262	201	385	1500	599	185	96	e41
16	94	2100	e105	456	464	253	490	4890	708	179	88	e52
17	91	1510	e100	415	265	228	421	3980	772	187	81	e72
18	89	e960	e100	374	229	247	375	2510	715	163	76	e60
19	89	e740	e100	e330	226	294	352	1740	598	147	82	e100
20	87	e620	e95	e290	213	240	328	1300	492	292	126	e82
21	87	e540	e95	277	823	272	311	1040	681	334	e90	e68
22	301	e470	e95	242	1010	282	294	843	813	235	e75	e62
23	356	e420	e95	271	756	249	275	717	891	195	e65	e80
24	349	e390	e250	253	533	518	261	924	1090	166	83	e130
25	447	e350	e430	245	433	1300	251	709	871	166	77	e110
26	357	e310	e290	237	e400	1110	246	593	709	163	70	e140
27	303	e280	e220	334	e360	1000	231	517	613	308	64	e100
28	273	e260	e250	275	342	942	217	441	660	192	62	e76
29	273	e240	e360	247	---	1020	206	379	857	152	60	e66
30	245	e225	e290	262	---	1090	202	347	602	132	60	e60
31	224	---	e280	292	---	1210	---	346	---	129	58	---
TOTAL	5367	17799	5561	9118	9734	13525	15352	53064	16128	8710	2932	1936
MEAN	173	593	179	294	348	436	512	1712	538	281	94.6	64.5
MAX	447	2100	430	598	1010	1300	1270	5890	1090	713	181	140
MIN	87	194	95	180	179	140	202	210	255	129	58	38
CFSM	.63	2.17	.65	1.07	1.27	1.59	1.87	6.25	1.96	1.03	.35	.24
IN.	.73	2.42	.75	1.24	1.32	1.84	2.08	7.20	2.19	1.18	.40	.26

CAL YR 1988 TOTAL 135849 MEAN 371 MAX 2810 MIN 29 CFSM 1.35 IN. 18.39
WTR YR 1989 TOTAL 159226 MEAN 436 MAX 5890 MIN 38 CFSM 1.59 IN. 21.62

e Estimated.

SUSQUEHANNA RIVER BASIN

01540500 SUSQUEHANNA RIVER AT DANVILLE, PA
(National stream-quality accounting network station)

LOCATION.--Lat 40°57'29", long 76°37'10", Montour County, Hydrologic Unit 02050107, on right bank 200 ft upstream from Mill Street bridge on State Highway 54 at Danville and 0.8 mi upstream from Mahoning Creek.

DRAINAGE AREA.--11,220 mi², approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1899 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 756: Drainage area. WSP 1302: 1904, 1914-17, 1923. WSP 1432: 1900-03, 1905-06, 1908-10, 1912-13, 1933.

GAGE.--Water-stage recorder. Datum of gage is 431.29 ft above National Geodetic Vertical Datum of 1929. Prior to June 29, 1939, nonrecording gage at or near Mill Street bridge at same datum. Since Oct. 1, 1971, water-stage recorder for Susquehanna River at Sunbury (station 01553990), used as an auxiliary gage.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow slightly regulated by 8 flood-control reservoirs which have a combined capacity of 368,800 acre-ft. National Weather Service satellite telemeter at station.

AVERAGE DISCHARGE.--90 years, 15,260 ft³/s, 18.47 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 363,000 ft³/s, June 25, 1972, from rating curve extended above 250,000 ft³/s; maximum gage height, 32.32 ft, June 24, 1972 (backwater from West Branch Susquehanna River); minimum discharge, 508 ft³/s, Sept. 27, 1964, gage height, 1.51 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 18, 1865, reached a stage of 28 ft, discharge not determined.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 116,000 ft³/s, May 13, gage height, 17.70 ft; minimum, 1,650 ft³/s, Sept. 14, 15, gage height, 2.25 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2420	5900	12700	8930	6820	9170	73400	7410	12500	16400	4060	2080
2	2270	5460	12900	9600	6830	8330	82300	9350	11800	13900	4130	2040
3	2190	5270	11900	8530	7900	7730	69900	14900	12700	11900	4260	1930
4	2080	4980	11100	8220	8890	7230	53400	19400	16000	10300	3980	1840
5	1960	4760	10500	7150	9510	6850	47000	22600	17300	10300	3850	1790
6	1900	6280	9800	6270	9000	7000	47600	35100	18200	13800	3640	1770
7	1910	9560	9190	5330	7720	6770	52200	64800	18300	15300	4820	1780
8	1820	13700	8780	4850	6940	8540	48200	82800	18200	14400	4370	1770
9	1770	22800	e8200	e4700	6040	8450	40900	78200	17800	14100	4180	1770
10	1770	23500	e7600	e5800	e4800	7750	35100	65000	17100	14200	4810	1760
11	1750	18200	e7000	e7000	e4600	7030	29800	63200	16700	12800	4730	1730
12	1840	14800	e6400	7550	e4400	6440	25900	98000	15300	10000	4250	1730
13	2240	13000	e5400	8370	e4300	6120	22800	110000	16500	8390	4070	1700
14	2020	13400	e5000	8020	e4600	5880	20500	87400	16500	7520	3550	1660
15	1860	13300	e4400	7570	e5200	5790	18200	67600	15900	6830	3310	1670
16	1820	13300	e3500	e7400	e5800	5820	17700	65700	29400	6450	3170	1820
17	1800	13700	e3200	e7200	e6500	5720	17400	76700	51600	6110	3050	1920
18	1820	13300	e3100	e6900	6650	7730	16500	76300	64700	5530	2940	2000
19	1840	11900	e3000	e6600	7050	11700	15700	54500	56400	5150	2840	2140
20	1810	12100	e2900	e6300	7360	11900	15000	39400	41100	4960	2900	3090
21	1790	20200	e3100	e5900	7580	13800	14100	31500	30500	5440	2980	4150
22	2000	22000	e3400	e5600	9730	12700	13200	25800	36900	5770	2990	5520
23	3030	24100	e3800	e5200	12800	10800	12000	22000	49000	6120	2760	7600
24	3330	24900	e4300	e5000	20300	10100	11000	21300	40900	7820	2600	8830
25	3790	20700	e5200	e4700	19900	14900	10300	21800	43000	7190	2480	7480
26	5400	17300	e6500	e5000	14900	29400	9610	22600	41900	6640	2370	8900
27	8730	15200	7010	e5200	11900	41200	9080	20300	34600	6100	2360	9330
28	10600	14000	7700	e5400	10200	37700	8610	18400	27400	5260	2300	7770
29	9350	13500	8620	5520	---	32700	8130	16400	23600	4570	2240	6170
30	7730	12700	8030	5730	---	34100	7690	14800	19500	4090	2190	5480
31	6620	---	7780	6920	---	46100	---	13500	---	4010	2130	---
TOTAL	101260	423810	212010	202460	238220	435450	853220	1366760	831300	271350	104310	109220
MEAN	3266	14130	6839	6531	8508	14050	28440	44090	27710	8753	3365	3641
MAX	10600	24900	12900	9600	20300	46100	82300	110000	64700	16400	4820	9330
MIN	1750	4760	2900	4700	4300	5720	7690	7410	11800	4010	2130	1660
CFSM	.29	1.26	.61	.58	.76	1.25	2.53	3.93	2.47	.78	.30	.32
IN.	.34	1.41	.70	.67	.79	1.44	2.83	4.53	2.76	.90	.35	.36

CAL YR 1988 TOTAL 3881990 MEAN 10610 MAX 73200 MIN 1450 CFSM .95 IN. 12.87
WTR YR 1989 TOTAL 5149370 MEAN 14110 MAX 110000 MIN 1660 CFSM 1.26 IN. 17.07

e Estimated.

SUSQUEHANNA RIVER BASIN

01540500 SUSQUEHANNA RIVER AT DANVILLE, PA.--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1946-53, 1957 to current year.

REMARKS.--In March 1989 a bias was discovered in the turbidimetric method for sulfate analysis for those samples analyzed by the U.S. Geological Survey National Water-Quality Laboratory indicating that values below 75 mg/L have a median positive bias of 2 mg/L above the true value for the period between 1982 and 1989. Sulfate values in this report have not been corrected for this bias.

Agency collection codes: 42011 - Susquehanna River Basin Commission, 1028 - U.S. Geological Survey. Agency analyzing codes: 9813 - Pa. Department of Environmental Resources, 80020 - U.S. Geological Survey.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	AGENCY COL- LECTING SAMPLE (CODE NUMBER)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE FIELD (μS/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)
OCT									
05...	1245	42011	9813	1900	400	8.20	16.0	--	--
NOV									
16...	0815	1028	80020	13200	191	7.65	7.5	0.810	0.010
DEC									
06...	0750	42011	9813	9860	206	7.50	13.0	--	--
JAN									
05...	0735	42011	9813	7220	236	7.70	0.0	--	--
FEB									
02...	0735	42011	9813	6640	282	7.80	3.5	--	--
21...	1315	42011	9813	7490	265	--	5.0	--	--
22...	1530	42011	9813	9640	290	--	4.0	--	--
22...	2145	42011	9813	10800	260	--	4.0	--	--
23...	1430	42011	9813	13600	270	--	4.0	--	--
24...	1115	1028	80020	21700	232	7.60	0.5	0.990	0.010
24...	1340	42011	9813	22200	230	--	3.0	--	--
25...	1430	42011	9813	18400	240	--	4.0	--	--
27...	1550	42011	9813	11500	225	--	2.0	--	--
MAR									
16...	0740	42011	9813	5820	278	7.90	5.5	--	--
30...	1630	42011	9813	35700	140	7.50	11.0	--	--
31...	1730	42011	9813	53800	--	7.80	10.0	--	--
APR									
01...	1530	42011	9813	79300	147	7.20	8.5	--	--
02...	1530	42011	9813	82000	130	8.00	11.0	--	--
03...	1700	42011	9813	63600	120	7.70	12.0	--	--
04...	1630	42011	9813	49900	120	7.20	10.0	--	--
05...	1040	42011	9813	46800	140	7.40	11.0	--	--
07...	1515	42011	9813	52800	142	7.30	10.0	--	--
10...	0945	42011	9813	35300	150	7.40	6.5	--	--
12...	1015	42011	9813	25900	175	7.30	8.0	--	--
28...	0740	42011	9813	8670	244	8.40	13.0	--	--
MAY									
02...	1145	42011	9813	9640	240	8.60	13.0	--	--
03...	1130	42011	9813	15900	215	7.90	15.0	--	--
04...	1150	42011	9813	20400	200	7.90	13.0	--	--
05...	1140	42011	9813	22500	210	7.90	11.0	--	--
07...	1115	42011	9813	64500	120	7.60	10.0	--	--
08...	1130	42011	9813	84400	125	7.50	9.0	--	--
09...	1055	42011	9813	77200	130	7.60	10.0	--	--
10...	1025	42011	9813	64300	113	7.35	10.0	--	--
11...	1120	42011	9813	62600	135	7.25	9.5	--	--
12...	0850	42011	9813	97300	130	7.45	9.5	--	--
14...	0545	42011	9813	90900	120	7.45	9.5	--	--
15...	1230	42011	9813	65300	140	7.35	16.0	--	--
17...	1040	42011	9813	77900	140	7.65	13.0	--	--
19...	0900	42011	9813	55100	140	7.15	16.0	--	--
21...	0915	42011	9813	31700	160	7.70	18.0	--	--
25...	1830	1028	80020	22600	192	7.60	17.5	--	<0.010
JUN									
22...	1020	42011	9813	32500	187	7.90	22.0	--	--
23...	1050	42011	9813	51600	168	7.60	22.0	--	--
24...	0915	42011	9813	40000	163	7.05	22.0	--	--
26...	1030	42011	9813	43100	175	7.65	23.0	--	--
28...	1030	42011	9813	27200	185	7.90	22.0	--	--
30...	1030	42011	9813	19400	205	7.80	21.0	--	--
JUL									
21...	1320	42011	9813	5500	320	7.30	23.0	--	--
AUG									
09...	1610	1028	80020	4180	330	8.10	25.0	--	<0.010
SEP									
12...	0910	42011	9813	1730	--	--	24.0	--	--

< Actual value is known to be less than the value shown.

SUSSQUEHANNA RIVER BASIN

01540500 SUSQUEHANNA RIVER AT DANVILLE, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
OCT									
05...	0.540	--	0.040	0.040	0.26	--	0.30	<0.20	0.84
NOV									
16...	--	0.820	0.070	0.070	0.33	--	0.40	--	--
DEC									
06...	0.900	--	0.080	0.080	--	--	<0.20	<0.20	--
JAN									
05...	0.920	--	0.080	0.080	0.15	--	0.23	<0.20	1.1
FEB									
02...	1.20	--	0.040	0.040	--	--	<0.20	<0.20	--
21...	1.22	--	0.020	<0.020	0.92	--	0.94	0.94	2.2
22...	1.22	--	0.080	0.080	0.83	0.73	0.91	0.81	2.1
22...	1.20	--	0.030	0.030	1.1	0.76	1.1	0.79	2.3
23...	1.10	--	0.060	0.060	1.2	0.28	1.3	0.34	2.4
24...	--	1.00	0.090	0.060	1.0	--	1.1	--	--
24...	1.04	--	0.030	0.030	1.3	0.52	1.3	0.55	2.3
25...	0.960	--	0.080	0.080	1.2	0.74	1.3	0.82	2.3
27...	0.960	--	0.110	0.100	0.71	0.57	0.82	0.67	1.8
MAR									
16...	1.18	--	0.010	0.010	0.22	0.19	0.23	0.20	1.4
30...	0.840	--	0.070	0.070	0.40	0.25	0.47	0.32	1.3
31...	0.840	--	0.060	0.060	1.5	0.68	1.6	0.74	2.4
APR									
01...	0.800	--	0.060	0.060	2.5	0.70	2.6	0.76	3.4
02...	0.840	--	0.050	0.050	0.92	0.74	0.97	0.79	1.8
03...	0.860	--	0.080	0.060	0.63	0.25	0.71	0.31	1.6
04...	0.900	--	0.090	0.060	0.46	0.31	0.55	0.37	1.4
05...	0.960	--	0.060	0.060	0.39	0.26	0.45	0.32	1.4
07...	0.900	--	0.060	0.060	0.71	0.47	0.77	0.53	1.7
10...	0.950	--	0.060	0.060	0.22	0.17	0.28	0.23	1.2
12...	0.990	--	0.060	0.060	0.36	0.15	0.42	0.21	1.4
28...	0.480	--	<0.020	<0.020	--	--	0.63	0.37	1.1
MAY									
02...	0.640	--	<0.020	<0.020	--	--	0.41	<0.20	1.0
03...	0.680	--	0.020	0.020	0.42	--	0.44	<0.20	1.1
04...	0.530	--	<0.020	<0.020	--	--	0.36	<0.20	0.89
05...	0.640	--	<0.020	<0.020	--	--	1.1	0.66	1.7
07...	0.750	--	0.040	0.030	1.1	0.50	1.1	0.53	1.8
08...	0.660	--	0.040	0.030	0.75	0.20	0.79	0.23	1.4
09...	0.620	--	0.050	0.050	0.55	0.17	0.60	0.22	1.2
10...	0.640	--	0.080	0.070	0.43	0.26	0.51	0.33	1.2
11...	0.660	--	0.040	0.030	0.26	0.17	0.30	0.20	0.96
12...	0.680	--	0.080	0.070	0.90	0.43	0.98	0.50	1.7
14...	0.680	--	0.070	0.070	0.91	0.46	0.98	0.53	1.7
15...	0.730	--	0.030	0.020	0.78	0.56	0.81	0.58	1.5
17...	0.880	--	0.050	0.050	0.65	0.45	0.70	0.50	1.6
19...	0.790	--	0.050	0.050	0.64	0.59	0.69	0.64	1.5
21...	0.900	--	0.050	0.050	0.32	0.31	0.37	0.36	1.3
25...	--	0.820	0.030	0.030	0.47	--	0.50	--	--
JUN									
22...	0.750	--	0.060	0.040	0.40	0.22	0.46	0.26	1.2
23...	0.730	--	<0.020	<0.020	--	--	1.2	0.40	1.9
24...	0.770	--	0.030	0.030	1.6	0.39	1.6	0.42	2.4
26...	0.790	--	0.110	--	0.52	--	0.63	0.63	1.4
28...	0.790	--	0.040	0.040	0.46	0.21	0.50	0.25	1.3
30...	0.880	--	0.030	0.030	0.80	0.49	0.83	0.52	1.7
JUL									
21...	0.750	--	0.020	0.020	0.29	0.29	0.31	0.31	1.1
AUG									
09...	--	0.700	0.010	0.010	--	--	0.40	--	--
SEP									
12...	0.460	--	0.020	<0.020	0.52	--	0.54	0.28	1.0

< Actual value is known to be less than the value shown.

SUSQUEHANNA RIVER BASIN

01540500 SUSQUEHANNA RIVER AT DANVILLE, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORGANIC TOTAL (MG/L AS P)	PHOS- PHOROUS ORGANIC DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT									
05...	0.060	0.030	<0.002	0.06	0.03	3.4	5	26	--
NOV									
16...	0.060	0.030	<0.010	0.06	0.03	--	12	428	98
DEC									
06...	0.050	0.020	0.015	0.05	0.00	2.4	5	133	--
JAN									
05...	0.040	0.020	0.002	0.04	0.02	2.8	4	78	--
FEB									
02...	0.040	0.020	0.003	0.04	0.02	2.6	6	108	--
21...	0.070	0.060	0.004	0.07	0.06	3.6	4	81	--
22...	0.090	0.050	0.002	0.09	0.05	3.4	18	469	--
22...	0.120	0.050	0.003	0.12	0.05	3.3	20	583	--
23...	0.140	0.040	0.004	0.14	0.04	3.7	27	991	--
24...	0.190	0.020	0.010	0.19	0.01	--	64	3750	84
24...	0.160	0.060	0.008	0.16	0.05	4.8	60	3600	--
25...	0.170	0.060	0.007	0.17	0.05	5.0	50	2480	--
27...	0.070	0.050	0.005	0.07	0.04	4.1	29	900	--
MAR									
16...	0.080	0.040	0.004	0.08	0.04	3.1	9	142	--
30...	0.140	0.030	0.002	0.14	0.03	3.8	57	5490	--
31...	0.050	0.040	0.005	0.05	0.03	3.5	158	23000	--
APR									
01...	0.080	0.040	0.009	0.08	0.03	6.1	339	72600	--
02...	0.070	0.040	0.004	0.07	0.04	5.5	187	41400	--
03...	0.050	0.030	0.005	0.05	0.02	4.2	110	18900	--
04...	0.060	0.050	0.005	0.06	0.04	3.7	67	9030	--
05...	0.040	0.030	0.004	0.04	0.03	4.0	48	6070	--
07...	0.080	0.030	0.002	0.08	0.03	3.8	53	7560	--
10...	0.090	0.060	0.030	0.09	0.03	3.6	38	3620	--
12...	0.050	0.030	0.005	0.05	0.02	3.0	26	1820	--
28...	0.060	0.040	0.002	0.06	0.04	2.6	10	234	--
MAY									
02...	0.070	0.030	0.004	0.07	0.03	3.5	11	286	--
03...	0.150	0.030	0.002	0.15	0.03	3.3	30	1290	--
04...	0.080	0.030	0.002	0.08	0.03	3.9	28	1540	--
05...	0.060	0.020	0.002	0.06	0.02	3.5	26	1580	--
07...	0.090	0.020	0.004	0.09	0.02	4.8	181	31500	--
08...	0.250	0.050	0.004	0.25	0.05	4.5	229	52200	--
09...	0.180	0.030	0.002	0.18	0.03	4.6	154	32100	--
10...	0.130	0.040	0.002	0.13	0.04	3.8	70	12200	--
11...	0.110	0.040	0.002	0.11	0.04	3.6	51	8620	--
12...	0.110	0.050	0.004	0.11	0.05	3.7	124	32600	--
14...	0.080	0.050	0.006	0.08	0.04	4.0	89	21800	--
15...	0.100	0.050	0.002	0.10	0.05	3.7	64	11300	--
17...	0.070	0.060	0.020	0.07	0.04	3.5	71	14900	--
19...	0.050	0.030	0.002	0.05	0.03	3.7	49	7290	--
21...	0.050	0.030	0.002	0.05	0.03	3.0	32	2740	--
25...	0.020	0.010	<0.010	0.02	0.01	--	24	1460	94
JUN									
22...	0.090	<0.020	0.010	0.09	--	3.6	59	5180	--
23...	0.280	0.040	0.007	0.28	0.03	8.7	220	30700	--
24...	0.390	0.050	0.002	0.39	0.05	5.9	407	44000	--
26...	0.180	0.040	0.008	0.18	0.03	4.2	143	16600	--
28...	0.190	0.040	--	0.19	0.04	4.4	109	8000	--
30...	0.160	0.080	0.050	0.16	0.03	4.1	51	2670	--
JUL									
21...	0.060	0.030	0.002	0.06	0.03	2.9	38	564	--
AUG									
09...	0.020	0.020	<0.010	0.02	0.02	--	7	79	77
SEP									
12...	0.070	0.030	0.004	0.07	0.03	3.9	9	42	--

< Actual value is known to be less than the value shown.

SUSQUEHANNA RIVER BASIN

01540500 SUSQUEHANNA RIVER AT DANVILLE, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	AGENCY COL- LECTING SAMPLE (CODE NUMBER)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (μ S/CM)	PH (STAND- ARD UNITS)	TUR- BID- ITY (NTU)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 μ M-MF (COLS./ 100 ML)
NOV 16...	0815	1028	80020	13200	191	7.65	6.9	769	11.0	91	100
FEB 24...	1115	1028	80020	21700	232	7.60	19	773	13.0	89	320
MAY 25...	1830	1028	80020	22600	192	7.60	--	762	10	104	190
AUG 09...	1610	1028	80020	4180	330	8.10	1.4	772	9.4	112	K 10

DATE	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB WH WAT TOT FLD (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER DIS IT FIELD (MG/L AS HCO3)	ALKA- LITY WAT WH TOT FET FIELD (MG/L AS CACO3)
NOV 16...	38	74	39	22	4.7	7.3	17	0.4	1.7	45	36
FEB 24...	430	77	43	23	4.8	13	26	0.7	2.0	42	34
MAY 25...	K 35	--	--	--	--	--	--	--	--	50	41
AUG 09...	K 350	120	66	33	9.2	17	23	0.7	2.0	67	55

DATE	ALKA- LITY WAT DIS TOT IT FIELD (MG/L AS CACO3)	ALKA- LITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)
NOV 16...	73	43	* 31	11	0.10	4.5	124	108	0.17	4420
FEB 24...	70	46	* 27	20	0.10	1.4	128	117	0.17	7500
MAY 25...	41	--	--	--	--	--	--	--	--	--
AUG 09...	55	59	* 56	22	0.10	2.4	198	178	0.27	2230

DATE	ALUM- INUM, DIS- SOLVED (μ G/L AS AL)	ARSENIC DIS- SOLVED (μ G/L AS AS)	BARIUM, DIS- SOLVED (μ G/L AS BA)	BERYL- LIUM, DIS- SOLVED (μ G/L AS BE)	CADMIUM, DIS- SOLVED (μ G/L AS CD)	CHRO- MIUM, DIS- SOLVED (μ G/L AS CR)	COBALT, DIS- SOLVED (μ G/L AS CO)	COPPER, DIS- SOLVED (μ G/L AS CU)	IRON, DIS- SOLVED (μ G/L AS FE)	LEAD, DIS- SOLVED (μ G/L AS PB)
NOV 16...	20	<1	21	1	1	2	<3	1	240	<5
FEB 24...	10	<1	28	<0.5	<1	<1	<3	2	170	<5
MAY 25...	--	--	--	--	--	--	--	--	--	--
AUG 09...	70	<1	29	<0.5	<1	<1	<3	3	20	<1

K Results based on non-ideal colony count.

< Actual value is known to be less than the value shown.

* See "REMARKS" paragraph, page 57.

SUSQUEHANNA RIVER BASIN

01540500 SUSQUEHANNA RIVER AT DANVILLE, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	LITHIUM DIS- SOLVED ($\mu\text{G/L}$ AS LI)	MANGA- NESE, DIS- SOLVED ($\mu\text{G/L}$ AS MN)	MERCURY DIS- SOLVED ($\mu\text{G/L}$ AS HG)	MOLYB- DENUM, DIS- SOLVED ($\mu\text{G/L}$ AS MO)	NICKEL, DIS- SOLVED ($\mu\text{G/L}$ AS NI)	SELE- NIUM, DIS- SOLVED ($\mu\text{G/L}$ AS SE)	SILVER, DIS- SOLVED ($\mu\text{G/L}$ AS AG)	STRON- TIUM, DIS- SOLVED ($\mu\text{G/L}$ AS SR)	VANA- DIUM, DIS- SOLVED ($\mu\text{G/L}$ AS V)	ZINC, DIS- SOLVED ($\mu\text{G/L}$ AS ZN)
NOV 16...	<4	73	<0.1	<10	4	<1	<1.0	75	<6	7
FEB 24...	<4	100	--	<10	3	<1	<1.0	85	<6	8
MAY 25...	--	--	--	--	--	--	--	--	--	--
AUG 09...	9	21	--	<10	2	<1	<1.0	160	<6	5

CROSS-SECTION ANALYSES, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK)	SPE- CIFIC CON- DUCT- ANCE ($\mu\text{S/CM}$)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV								
16...	0730	130	197	7.60	7.5	11.1	14	--
16...	0735	230	199	7.40	7.5	11.0	15	--
16...	0740	330	196	7.45	7.5	11.0	15	--
16...	0745	430	202	7.45	7.5	11.0	13	93
16...	0750	530	200	7.55	7.5	11.0	14	--
16...	0755	630	196	7.55	7.5	10.9	14	--
16...	0800	700	197	7.55	7.5	10.9	11	97
16...	0820	830	197	7.65	7.5	11.0	12	--
16...	0825	900	192	7.55	7.5	11.0	11	--
16...	0830	1030	174	7.55	7.5	11.0	12	92
16...	0835	1100	186	7.55	7.5	11.0	--	--
16...	0840	1230	167	7.55	7.5	11.0	12	--
MAY								
25...	1800	80	174	7.40	16.5	10.0	29	83
25...	1804	220	181	7.60	--	--	20	95
25...	1805	280	190	7.40	16.5	10.0	20	95
25...	1810	410	195	7.50	--	--	18	96
25...	1815	480	198	7.45	17.0	10.2	19	97
25...	1820	600	198	7.50	--	--	20	97
25...	1825	680	198	7.60	17.5	10.0	19	99
25...	1840	880	197	7.60	18.0	10.2	17	98
25...	1845	980	195	7.50	--	--	20	97
25...	1850	1080	185	7.60	17.5	10.1	20	94
25...	1855	1180	183	7.60	--	--	18	96
25...	1900	1270	177	7.50	17.0	10.0	14	94

< Actual value is known to be less than the value shown.

WEST BRANCH SUSQUEHANNA RIVER BASIN

01541000 WEST BRANCH SUSQUEHANNA RIVER AT BOWER, PA

LOCATION.--Lat 40°53'49", long 78°40'38", Clearfield County, Hydrologic Unit 02050201, on right bank at downstream side of highway bridge on Township Route 418 at Bower, and 4.6 mi downstream from Chest Creek and Mahaffey.

DRAINAGE AREA.--315 mi².

PERIOD OF RECORD.--October 1913 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 726: Drainage area: WSP 1302: 1914-17, 1918(M), 1922-23, 1924(M), 1925-29, 1930-31(M), 1933(M).

GAGE.--Water-stage recorder. Datum of gage is 1,207.14 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 17, 1929, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite and landline telemeters at station.

AVERAGE DISCHARGE.--76 years, 558 ft³/s, 24.06 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,500 ft³/s, Mar. 18, 1936, gage height, 19.74 ft, from floodmark in gage shelter, from rating curve extended above 7,200 ft³/s on basis of slope-area measurement of peak flow; minimum, 14 ft³/s, Aug. 29, 1939; minimum daily, 16 ft³/s, Sept. 29, Oct. 1, 6, 13, 1930, Aug. 29, Aug. 31 to Sept. 2, 1939.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known prior to 1913, about 18.5 ft, May 13, 1889, discharge, about 27,000 ft³/s.

EXTREMES 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. 31	0330	*10,100	*12.98	No other peak greater than base discharge.			

Minimum discharge, 52 ft³/s, Oct. 16, 17, gage height, 4.10 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	69	80	261	e360	514	e470	4540	224	558	660	184	82
2	68	80	238	e330	481	e380	2560	617	473	529	175	123
3	74	80	215	e280	489	e370	1970	526	389	445	152	112
4	73	84	204	e260	506	e360	1610	486	713	383	141	89
5	69	213	186	e220	437	456	1360	465	543	1280	161	79
6	68	840	180	e270	413	817	1130	1000	578	1760	514	68
7	68	432	175	e450	e300	676	966	1540	469	922	302	65
8	65	326	165	e540	e270	e520	840	1790	391	1880	211	68
9	64	286	157	e640	e240	e490	778	1490	355	1080	178	89
10	63	245	e120	e450	e220	e480	698	2680	392	775	154	85
11	77	247	e110	e400	e250	e520	588	3060	326	628	140	243
12	85	214	e100	494	e270	759	532	2510	274	488	136	141
13	72	279	e110	1110	e250	727	498	1810	519	925	130	98
14	67	572	e170	728	e290	783	461	1500	1320	1260	121	86
15	60	377	e180	1080	e900	1360	432	1460	1410	777	111	254
16	58	303	e170	998	2740	1350	415	1970	1460	569	109	387
17	53	291	e140	774	1440	1040	374	2000	1710	513	107	488
18	64	262	e130	654	1020	986	389	1540	1330	411	102	242
19	73	222	e130	596	829	943	383	1220	950	361	98	183
20	87	604	e140	548	687	767	340	988	1300	577	108	149
21	79	1880	e170	e350	1960	975	313	884	2310	403	118	131
22	84	987	e210	e370	2230	986	297	713	1710	329	120	121
23	100	686	e240	e350	1420	848	275	640	1390	291	110	161
24	174	536	e600	363	1020	1830	257	663	963	254	166	260
25	216	441	1410	338	e740	2710	242	566	738	228	112	174
26	151	379	797	399	e700	1910	243	1070	592	206	93	141
27	118	337	590	938	e600	1430	236	1020	590	215	85	126
28	103	342	562	653	e500	1280	221	726	2350	230	81	112
29	98	328	603	551	---	2390	220	596	1370	193	84	105
30	91	280	e390	568	---	6770	223	569	863	174	107	99
31	84	---	e380	564	---	9000	---	552	---	182	84	---
TOTAL	2675	12233	9233	16626	21716	44383	23391	36875	28336	18928	4494	4561
MEAN	86.3	408	298	572	776	1432	780	1190	945	611	145	152
MAX	216	1880	1410	1110	2740	9000	4540	3060	2350	1880	514	488
MIN	53	80	100	260	220	360	220	224	274	174	81	65
CFSM	.27	1.29	.95	1.82	2.46	4.55	2.48	3.78	3.00	1.94	.46	.48
IN.	.32	1.44	1.09	2.09	2.56	5.24	2.76	4.35	3.35	2.24	.53	.54

CAL YR 1988 TOTAL 146948 MEAN 401 MAX 7090 MIN 42 CFSM 1.27 IN. 17.37
WTR YR 1989 TOTAL 224561 MEAN 612 MAX 9000 MIN 53 CFSM 1.94 IN. 26.39

e Estimated.

WEST BRANCH SUSQUEHANNA RIVER BASIN

01541200 WEST BRANCH SUSQUEHANNA RIVER AT CURWENSVILLE, PA

LOCATION.--Lat 40°57'41", long 78°31'10", Clearfield County, Hydrologic Unit 02050201, on left bank 30 ft downstream from bridge on State Highway 453, 0.8 mi downstream from Curwensville Dam, 1.1 mi south of Curwensville, and 1.8 mi upstream from Anderson Creek.

DRAINAGE AREA.--367 mi².

PERIOD OF RECORD.--October 1955 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,124.52 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 24, 1956, nonrecording gage and crest-stage gage 30 ft upstream at same datum.

REMARKS.--Records fair. Flow regulated since November 1965 by Curwensville Dam (station 01541180). Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--34 years, 657 ft³/s, 24.31 in/yr, adjusted for storage since November 1965.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,700 ft³/s, Mar. 10, 1964, gage height, 14.19 ft; no flow at times; minimum daily, 19 ft³/s, Aug. 16, 17, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,660 ft³/s, June 23, gage height, 7.61 ft; minimum daily, 55 ft³/s, Oct. 1-3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	100	318	363	634	562	4310	144	667	865	193	90
2	55	147	303	429	584	509	4290	199	667	597	223	111
3	55	170	274	468	556	424	4120	247	591	475	218	128
4	56	170	255	393	554	391	3890	375	739	459	200	128
5	60	174	219	297	554	413	3590	456	792	714	168	115
6	64	477	197	162	516	667	3230	778	726	2520	270	89
7	65	870	197	178	402	834	2430	1920	645	1240	457	e86
8	67	563	197	393	289	607	1670	2120	540	1550	403	e68
9	70	255	197	576	264	497	1160	1920	495	1520	269	e69
10	70	255	179	650	264	569	837	2490	475	849	218	e70
11	77	255	161	585	263	584	734	3840	466	703	165	e115
12	77	268	159	547	260	677	687	3120	469	514	140	244
13	77	285	121	1030	292	786	611	2480	671	501	141	200
14	77	477	102	825	307	794	550	1440	1400	1470	141	134
15	78	589	145	1130	558	1120	470	1530	1760	1240	138	114
16	81	589	166	1240	2790	1620	444	2120	1900	715	e110	230
17	84	584	166	1040	2230	1270	446	2260	1880	463	e74	412
18	90	575	166	788	1370	1070	444	1980	1790	444	e85	414
19	94	575	166	669	979	1130	438	1490	1240	370	117	414
20	96	575	166	673	792	951	361	1300	1270	436	102	e260
21	100	1620	166	521	1570	939	262	1020	786	498	101	e150
22	100	2070	198	332	2740	1170	247	898	1190	416	100	e150
23	102	1190	273	298	2010	1050	247	791	3590	376	100	162
24	130	732	414	420	1040	1200	236	744	2020	349	118	203
25	214	569	1790	469	814	2230	215	744	943	300	171	242
26	234	489	1220	412	857	2490	207	1030	761	202	171	196
27	234	411	766	828	846	2350	168	1500	677	161	135	136
28	234	334	646	1020	666	1670	143	1110	1830	237	108	120
29	155	332	634	706	---	1680	144	727	2170	249	90	120
30	102	332	481	586	---	2740	144	627	1230	202	91	96
31	100	---	328	634	---	3980	---	597	---	199	89	---
TOTAL	3153	16032	10770	18662	25001	36974	36725	41997	34380	20834	5106	5066
MEAN	102	534	347	602	893	1193	1224	1355	1146	672	165	169
MAX	234	2070	1790	1240	2790	3980	4310	3840	3590	2520	457	414
MIN	55	100	102	162	260	391	143	144	466	161	74	68
MEAN†	107	452	348	604	889	1536	910	1397	1150	671	164	167
CFSM†	.29	1.23	.95	1.65	2.42	4.19	2.48	3.81	3.13	1.83	.45	.46
IN.†	.33	1.37	1.10	1.90	2.52	4.83	2.77	4.39	3.49	2.11	.52	.51

CAL YR 1988 TOTAL 167824 MEAN 459 MAX 4230 MIN 49 MEAN† 459 CFSM† 1.25 IN.† 17.01
WTR YR 1989 TOTAL 254700 MEAN 698 MAX 4310 MIN 55 MEAN† 698 CFSM† 1.90 IN.† 25.84

e Estimated.

† Adjusted for change in contents in Curwensville Lake.

WEST BRANCH SUSQUEHANNA RIVER BASIN

01541303 WEST BRANCH SUSQUEHANNA RIVER AT HYDE, PA

LOCATION.--Lat 41°00'16", long 78°27'25", Clearfield County, Hydrologic Unit 02050201, on right bank 60 ft downstream from bridge at intersection of SR 1001 and State Highway 879, and at Hyde.

DRAINAGE AREA.--474 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 1,093.90 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated since November 1965 by Curwensville Dam (station 01541180) located about 5 mi upstream. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite and landline telemeters at station.

AVERAGE DISCHARGE.--11 years, 880 ft³/s, 25.21 in/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,360 ft³/s, Feb. 13, 1984, gage height, 10.82 ft, from rating curve extended above 6,000 ft³/s; maximum gage height, 11.45 ft, Feb. 18, 1981, (backwater from ice); minimum daily discharge, 46 ft³/s, Sept. 14, 1982.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 10, 1964, reached a stage of 18.1 ft, from floodmarks, discharge, 19,400 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,600 ft³/s, Mar. 31, gage height, 9.51 ft; minimum daily, 72 ft³/s, Sept. 8-10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	91	93	400	543	850	755	5240	212	1020	1130	223	114
2	93	122	376	580	789	672	4900	364	977	826	238	121
3	95	172	346	630	758	575	4650	411	859	586	251	144
4	92	181	315	e560	745	515	4380	485	1230	566	215	142
5	90	242	282	e450	726	561	4120	625	1320	866	215	137
6	92	524	246	e260	678	840	3720	916	1240	2900	240	110
7	92	993	245	e280	561	1020	3020	2380	1080	1600	492	100
8	91	748	245	e600	e390	797	2040	2770	855	1620	464	72
9	90	335	240	926	e360	618	1600	2540	e740	1890	310	72
10	90	331	e220	1120	e360	723	1140	3380	e690	1030	246	72
11	97	328	e200	801	e360	755	1030	4820	e680	890	194	125
12	95	329	e190	729	e360	843	866	3980	e670	644	156	257
13	92	398	e150	1180	e370	960	847	3260	1340	523	155	224
14	89	580	e130	1220	e440	965	750	2040	1950	1530	151	160
15	89	747	e190	1270	800	1250	653	2130	2720	1480	149	129
16	87	724	e210	1540	3180	1800	612	3130	2850	898	128	233
17	87	710	e210	1220	2730	1490	596	3150	2920	524	83	434
18	95	686	e210	1020	1690	1250	604	2760	2530	477	99	425
19	99	658	e210	856	1270	1340	591	2000	1820	416	137	418
20	95	792	e210	863	1020	1180	519	1760	1860	447	120	303
21	96	1830	e210	e700	2080	1150	366	1440	2050	604	119	171
22	102	2450	245	e500	3560	1400	335	1210	1760	468	118	171
23	105	1510	360	410	2590	1280	331	1100	4010	415	117	185
24	129	948	624	525	e1500	1540	319	1030	2830	367	125	216
25	229	750	2180	606	e1000	2820	289	987	1410	333	167	267
26	248	625	1610	579	e1100	3100	285	1590	1110	247	195	229
27	241	550	1060	1020	1130	2880	245	1910	1030	187	144	164
28	238	445	902	1260	899	2180	198	1550	2060	238	130	125
29	193	434	910	936	---	2140	196	1030	2690	283	110	125
30	94	423	755	778	---	4290	196	896	1580	224	109	118
31	92	---	496	863	---	5460	---	895	---	222	108	---
TOTAL	3608	19658	14177	24825	32296	47149	44638	56751	49881	24431	5708	5563
MEAN	116	655	457	801	1153	1521	1488	1831	1663	788	184	185
MAX	248	2450	2180	1540	3560	5460	5240	4820	4010	2900	492	434
MIN	87	93	130	260	360	515	196	212	670	187	83	72
MEAN‡	121	574	458	802	1149	1864	1174	1873	1667	787	182	183
CFSM‡	.26	1.21	.97	1.69	2.42	3.93	2.48	3.95	3.52	1.66	.38	.39
IN.‡	.30	1.35	1.12	1.95	2.52	4.53	2.77	4.55	3.93	1.91	.44	.44
CAL YR 1988	TOTAL 211026		MEAN 577	MAX 5020	MIN 76	MEAN‡ 577	CFSM‡ 1.22	IN.‡ 16.57				
WTR YR 1989	TOTAL 328685		MEAN 901	MAX 5460	MIN 72	MEAN‡ 901	CFSM‡ 1.90	IN.‡ 25.81				

e Estimated.

‡ Adjusted for change in contents in Curwensville Lake.

WEST BRANCH SUSQUEHANNA RIVER BASIN

01541500 CLEARFIELD CREEK AT DIMELING, PA

LOCATION.--Lat 40°58'18", long 78°24'22", Clearfield County, Hydrologic Unit 02050201, on right bank at downstream side of highway bridge on SR 2024 at Dimeling, 600 ft downstream from Little Clearfield Creek, and 4.0 mi southeast of Clearfield.

DRAINAGE AREA.--371 mi².

PERIOD OF RECORD.--October 1913 to current year. Monthly discharges only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 756: Drainage area. WSP 891: 1936-39. WSP 1302: 1915-17, 1918-19(M). WSP 1502: 1939. WDR PA-87-2: 1986(M).

GAGE.--Water-stage recorder. Datum of gage is 1,146.08 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 17, 1928, nonrecording gage, and Oct. 17, 1928, to Oct. 25, 1967, water-stage recorder at site 200 ft upstream at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated since December 1960 by Glendale Dam (station 01541340) about 25 mi upstream. Several measurements of water temperature were made during the year. National Weather Service satellite telemeter at station.

AVERAGE DISCHARGE.--76 years, 580 ft³/s, 21.23 in/yr, adjusted for storage since December 1960.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,600 ft³/s, Mar. 18, 1936, gage height, 18.49 ft, from floodmark in gage shelter, from rating curve extended above 15,000 ft³/s; minimum, 6.0 ft³/s, Oct. 1, 9, 1925; minimum daily, 7.1 ft³/s, Oct 1, 1925.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,010 ft³/s, Mar. 30, gage height, 9.66 ft; minimum daily, 67 ft³/s, Oct. 18, 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	104	80	315	335	403	488	4980	232	691	749	185	112
2	96	77	292	306	397	407	3410	466	577	621	184	119
3	93	77	270	284	390	382	2530	543	490	530	169	123
4	91	80	252	e250	e330	361	2050	455	887	457	155	105
5	88	140	234	e210	e370	371	1710	419	701	662	161	92
6	81	889	221	e240	e350	626	1420	620	680	1020	227	88
7	77	530	210	e240	e320	668	1210	1400	583	689	213	86
8	74	360	201	e310	e250	489	1050	1470	490	800	170	88
9	73	302	e170	e520	e270	528	951	1390	423	750	149	89
10	71	268	e140	e400	e260	502	851	2200	406	554	136	96
11	74	254	e130	e400	e270	487	739	2900	390	482	129	153
12	77	236	e150	e600	e270	569	645	2870	337	405	127	148
13	79	241	e160	e540	e240	640	588	2060	436	709	127	128
14	78	399	e210	e450	e300	645	546	1750	1050	1890	122	115
15	74	356	e250	e620	e800	1000	503	1910	1120	892	133	206
16	71	291	e200	e1000	1810	1490	481	3210	1370	652	126	410
17	68	270	e170	660	1080	1100	426	3830	1530	566	115	566
18	67	256	e150	595	807	1020	413	2640	1400	479	106	277
19	67	235	e150	556	701	1060	404	1940	995	403	101	184
20	71	401	e170	536	611	880	365	1570	1090	440	97	151
21	74	1510	e200	484	1160	880	334	1320	2780	443	100	134
22	79	916	e220	335	1800	913	316	1080	2200	361	114	126
23	88	734	237	347	1230	799	296	922	1550	320	107	140
24	107	625	391	332	941	1360	274	909	1280	282	103	220
25	123	550	1030	324	745	2780	264	801	1040	255	107	204
26	126	487	641	315	712	2040	257	1190	1020	238	93	158
27	114	441	463	428	633	1620	251	1330	813	241	87	136
28	101	406	428	480	532	1390	236	906	1560	258	84	122
29	93	375	455	430	---	1790	234	742	1410	212	84	116
30	87	343	335	401	---	5160	232	666	935	191	91	113
31	83	---	339	403	---	6670	---	711	---	186	100	---
TOTAL	2649	12129	8784	13331	17982	39115	27966	44452	30234	16737	4002	4805
MEAN	85.5	404	283	430	642	1262	932	1434	1008	540	129	160
MAX	126	1510	1030	1000	1810	6670	4980	3830	2780	1890	227	566
MIN	67	77	130	210	240	361	232	232	337	186	84	86
MEAN†	84.7	412	283	432	648	1270	911	1440	1013	531	124	158
CFSM†	.23	1.11	.76	1.16	1.75	3.42	2.46	3.88	2.73	1.43	.33	.43
IN.†	.27	1.24	.88	1.34	1.82	3.94	2.74	4.47	3.05	1.65	.38	.48

CAL YR 1988 TOTAL 154934 MEAN 423 MAX 5480 MIN 30 MEAN† 423 CFSM† 1.14 IN.† 15.53
WTR YR 1989 TOTAL 222186 MEAN 609 MAX 6670 MIN 67 MEAN† 609 CFSM† 1.64 IN.† 22.26

e Estimated.

† Adjusted for change in contents in Glendale Lake.

WEST BRANCH SUSQUEHANNA RIVER BASIN

01542000 MOSHANNON CREEK AT OSCEOLA MILLS, PA

LOCATION.--Lat 40°50'58", long 78°16'05", Clearfield County, Hydrologic Unit 02050201, on left bank 10 ft upstream from Penn Central Railroad bridge at Osceola Mills, and 0.1 mi downstream from Trout Run.

DRAINAGE AREA.--68.8 mi².

PERIOD OF RECORD.--October 1940 to current year.

REVISED RECORDS.--WSP 1232: 1941-46, 1948, 1950-51, Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,446.98 ft above National Geodetic Vertical Datum of 1929.

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

AVERAGE DISCHARGE.--49 years, 111 ft³/s, 21.91 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,120 ft³/s, June 23, 1972, gage height, 14.25 ft, from rating curve extended above 1,800 ft³/s on basis of contracted-opening measurements at gage heights 7.58 ft, 9.00 ft, and 14.25 ft; minimum, 1.0 ft³/s, Jan. 30, 1981, result of freezeup; minimum daily, 3.6 ft³/s, Oct. 17, 24, 1980.

EXTREMES 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)
Mar. 30	1615	*980	*4.54	May 17	0030	816	4.07
May 11	2000	623	3.48	June 21	0815	710	3.75

Minimum daily discharge, 15 ft³/s, Oct. 14-17, 31.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	16	40	41	53	92	716	67	155	146	45	27
2	17	16	37	40	52	82	532	122	135	132	44	28
3	18	16	35	39	65	78	446	90	126	120	41	24
4	17	18	33	e39	62	76	371	81	177	112	40	24
5	16	73	31	e37	56	85	317	79	142	152	48	23
6	17	110	31	e37	56	e100	266	117	142	143	42	23
7	17	48	30	43	e52	e86	235	191	125	106	39	24
8	18	36	29	62	e52	e73	211	198	113	93	37	25
9	16	32	27	e56	e50	e68	203	189	108	85	36	24
10	16	29	e25	e48	e50	e69	179	409	109	80	35	23
11	20	29	e25	41	e54	80	160	522	95	73	34	32
12	18	26	e23	51	e50	100	147	538	89	68	34	25
13	16	39	e24	70	e48	97	139	446	105	148	34	23
14	15	48	e25	e58	58	100	127	413	162	111	33	28
15	15	35	e25	76	122	161	122	513	170	80	33	61
16	15	32	e23	71	159	159	114	734	198	70	32	71
17	15	34	e23	62	e97	148	105	740	269	68	32	47
18	17	30	e22	59	e93	162	105	576	218	63	31	31
19	19	29	e22	61	92	156	97	445	195	61	31	27
20	18	103	e24	60	90	145	88	362	295	82	31	25
21	18	153	e24	e58	192	162	85	303	638	89	31	24
22	26	78	e24	e54	185	152	82	253	487	72	30	27
23	23	65	32	e50	144	136	76	230	399	65	30	56
24	28	59	69	47	e125	245	72	234	333	54	29	47
25	25	55	88	45	e118	294	69	196	260	53	28	33
26	20	53	50	50	117	256	68	224	233	50	27	30
27	18	51	43	60	111	251	68	186	197	49	26	29
28	17	49	49	50	100	246	63	158	297	53	26	29
29	17	45	e46	48	---	302	62	147	201	48	28	29
30	16	42	e45	54	---	743	61	149	164	45	29	28
31	15	---	e43	54	---	884	---	171	---	45	24	---
TOTAL	560	1449	1067	1621	2503	5788	5386	9083	6337	2616	1040	947
MEAN	18.1	48.3	34.4	52.3	89.4	187	180	293	211	84.4	33.5	31.6
MAX	28	153	88	76	192	884	716	740	638	152	48	71
MIN	15	16	22	37	48	68	61	67	89	45	24	23
CFSM	.26	.70	.50	.76	1.30	2.71	2.61	4.26	3.07	1.23	.49	.46
IN.	.30	.78	.58	.88	1.35	3.13	2.91	4.91	3.43	1.41	.56	.51

CAL YR 1988	TOTAL 28529	MEAN 77.9	MAX 981	MIN 12	CFSM 1.13	IN. 15.43
WTR YR 1989	TOTAL 38397	MEAN 105.0	MAX 884	MIN 15	CFSM 1.53	IN. 20.76

e Estimated.

WEST BRANCH SUSQUEHANNA RIVER BASIN

01542500 WEST BRANCH SUSQUEHANNA RIVER AT KARTHAUS, PA

LOCATION.--Lat 41°07'03", long 78°06'33", Clearfield County, Hydrologic Unit 02050201, on left bank 900 ft upstream from bridge on State Highway 879 at Karthaus, 1,000 ft upstream from Mosquito Creek, and 3.3 mi downstream from Moshannon Creek. Records include flow of Mosquito Creek.

DRAINAGE AREA.--1,462 mi², includes that of Mosquito Creek.

PERIOD OF RECORD.--February 1940 to current year. October 1918 to September 1920 (gage heights only) in reports of Water Supply Commission of Pennsylvania.

GAGE.--Water-stage recorder. Datum of gage is 830.59 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 30, 1920, nonrecording gage at site 900 ft downstream at datum 20.88 ft lower. Feb. 21 to Sept. 30, 1940, nonrecording gage at site 900 ft downstream at present datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since December 1960 by Glendale Dam (station 01541340) about 70 mi upstream and since November 1965 by Curwensville Dam (station 01541180) about 50 mi upstream. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter and National Weather Service landline telemeter at station.

AVERAGE DISCHARGE.--49 years, 2,494 ft³/s, 23.17 in/yr, adjusted for storage since December 1960.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 84,300 ft³/s, June 23, 1972, gage height, 18.57 ft, from rating curve extended above 50,000 ft³/s; minimum, 100 ft³/s, Sept. 26, 27, 1964, gage height, 0.43 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, about 24.5 ft, Mar. 18, 1936, from floodmarks at highway bridge, discharge, about 135,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 19,300 ft³/s, Mar. 31, gage height, 9.31 ft; minimum daily, 268 ft³/s, Sept. 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	403	333	1250	1530	2050	2320	16200	976	3030	3480	823	348
2	364	341	1110	1550	2010	2050	12600	1460	2730	2960	835	395
3	370	370	1090	1550	1990	1880	10700	1870	2530	2420	797	387
4	371	420	1010	1430	2050	1740	9610	1750	3220	2100	767	380
5	347	582	940	1070	1990	1700	8600	1790	3640	2520	724	379
6	347	1460	874	1030	1900	1950	7590	2020	3550	4330	757	356
7	345	2350	822	955	1760	2480	6660	4060	3250	4290	837	324
8	343	1960	801	1280	1450	2200	5160	5890	2780	2850	1080	308
9	333	1450	767	1940	1200	1870	4550	5930	2480	3820	953	286
10	326	1120	722	1940	1060	1830	3590	7100	2310	2710	759	268
11	340	1070	647	1860	1180	1890	3280	11800	2120	2290	662	292
12	359	1010	720	1780	1260	2010	2810	11100	1920	1950	605	334
13	369	1040	630	2040	1180	2290	2740	9390	3060	1700	544	521
14	349	1370	1000	2840	1240	2350	2410	7140	3880	3030	522	497
15	338	1680	815	2340	1630	2500	2270	6500	6040	3460	503	547
16	328	1630	917	3360	4960	3830	2090	9350	6850	2520	500	671
17	314	1550	652	2870	5860	3910	2000	11200	6980	1930	485	1290
18	320	1470	620	2610	3910	3220	1980	9910	6560	1610	399	1300
19	354	1390	593	2270	3270	3400	1920	7470	5110	1450	377	977
20	380	1520	606	2180	2770	3320	1820	6240	5220	1460	426	844
21	370	3260	693	2010	3540	3010	1630	5270	10200	1880	438	670
22	392	4900	730	1570	7380	3280	1440	4370	8730	1820	421	487
23	430	3610	754	1450	6080	3290	1350	3850	8580	1710	402	571
24	470	2540	1190	1460	4650	3490	1290	3690	8480	1380	402	719
25	551	2130	3150	1550	3350	7100	1220	3380	5140	1220	350	721
26	593	1860	3880	1550	3140	7540	1180	3830	5140	1110	396	718
27	667	1710	2690	1830	3060	7010	1170	4910	4050	1110	449	603
28	575	1560	2200	2510	2650	6170	1070	4420	4860	919	402	497
29	551	1420	2260	2280	---	5690	1000	3330	6780	956	376	429
30	517	1320	2030	1950	---	11900	982	2970	4630	913	347	411
31	408	---	1650	2000	---	19000	---	2950	---	824	335	---
TOTAL	12524	48426	37813	58585	78570	126220	120912	165916	143850	66722	17673	16530
MEAN	404	1614	1220	1890	2806	4072	4030	5352	4795	2152	570	551
MAX	667	4900	3880	3360	7380	19000	16200	11800	10200	4330	1080	1300
MIN	314	333	593	955	1060	1700	982	976	1920	824	335	268
MEAN†	408	1541	1221	1894	2809	4423	3695	5399	4804	2142	564	547
CFSM†	.28	1.05	.84	1.30	1.92	3.03	2.53	3.69	3.29	1.47	.39	.37
IN.†	.32	1.17	.97	1.50	2.00	3.49	2.82	4.25	3.67	1.69	.45	.41

CAL YR 1988 TOTAL 610543 MEAN 1668 MAX 15300 MIN 212 MEAN† 1668 CFSM† 1.14 IN.† 15.53
WTR YR 1989 TOTAL 893741 MEAN 2449 MAX 19000 MIN 268 MEAN† 2449 CFSM† 1.68 IN.† 22.74

† Adjusted for change in contents in Curwensville and Glendale Lakes.

WEST BRANCH SUSQUEHANNA RIVER BASIN
01542810 WALDY RUN NEAR EMPORIUM, PA

LOCATION.--Lat 41°34'44", long 78°17'34", Cameron County, Hydrologic Unit 02050202, on left bank 15 ft downstream from highway bridge on Township Route 318 at North Creek Chapel, 0.1 mi upstream from mouth, and 5.5 mi north-west of Emporium.

DRAINAGE AREA.--5.24 mi².

PERIOD OF RECORD.--Occasional discharge measurements and annual maximum, water years 1963-64. August 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,263.62 ft above National Geodetic Vertical Datum of 1929. July 25, 1963, to Aug. 27, 1964, crest-stage gage at same site and datum.

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

AVERAGE DISCHARGE.--25 years, 8.71 ft³/s, 22.57 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 828 ft³/s, Sept. 28, 1967, gage height, 6.32 ft, from rating curve extended above 80 ft³/s on basis of slope-area measurements at gage heights 5.09 ft, 5.86 ft, and at peak flow; no flow Sept. 14-19, 1964.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 30	2345	174	4.72	June 20	2130	*407	*5.48
June 15	2030	147	4.61				

Minimum daily discharge, 0.16 ft³/s, Aug. 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.24	.76	3.0	9.0	12	4.9	60	4.7	5.3	5.0	.41	.73
2	.28	.76	2.7	7.3	13	e5.0	31	18	4.6	4.1	.40	.59
3	.27	.73	2.6	6.2	14	e3.8	24	21	4.0	3.3	.37	.32
4	.25	1.6	2.5	e5.0	13	3.7	28	15	5.0	3.4	.44	.26
5	.27	4.7	2.3	e4.0	11	5.3	30	12	4.3	4.2	.91	.25
6	.27	9.4	2.3	e3.8	9.8	5.7	27	12	5.4	2.6	.47	.23
7	.26	6.8	2.2	e3.7	e7.8	e5.2	19	36	5.4	2.7	.41	.23
8	.28	5.0	2.1	e6.0	e7.2	e4.1	14	37	5.2	2.5	.36	.27
9	.25	4.3	1.8	e8.0	e6.2	e4.3	11	25	5.5	2.0	.34	.27
10	.28	4.8	e1.7	e8.4	e5.4	e4.3	8.4	44	5.4	1.8	.29	.25
11	.49	5.4	e1.5	e6.6	e4.9	4.0	6.9	71	4.9	1.5	.28	.33
12	.43	5.0	e1.3	e6.2	e4.4	3.8	6.1	43	5.4	1.3	.28	.24
13	.44	5.7	e1.5	e5.8	e4.0	e3.5	6.0	27	20	1.1	.27	.18
14	.34	6.1	e2.0	e8.0	e3.5	3.3	5.3	19	27	.98	.25	.87
15	.28	5.8	e2.5	6.1	e5.8	4.4	5.0	17	89	.82	.23	2.6
16	.26	5.2	e2.1	5.5	e8.4	4.5	4.9	32	83	.71	.23	3.3
17	.24	4.6	e1.7	5.0	e9.6	4.2	4.6	31	35	.68	.20	2.0
18	.86	3.7	e1.5	4.6	e9.0	8.3	4.7	21	22	.62	.17	1.0
19	.68	3.2	e1.3	4.4	e8.0	12	4.5	15	15	.67	.34	.70
20	.49	6.2	e1.2	4.2	e6.6	11	4.3	11	155	.91	.45	.54
21	.55	12	e4.8	e3.9	e26	9.7	4.3	9.0	190	.69	.43	.46
22	1.3	12	3.5	e3.3	45	7.6	4.2	6.8	55	.91	.39	.88
23	1.5	9.4	4.2	e3.5	26	6.6	4.0	6.3	26	.73	.41	3.5
24	2.1	7.3	11	3.3	17	13	3.8	6.3	15	.55	.29	2.1
25	2.0	5.9	28	3.0	12	32	3.8	5.6	10	.50	.22	1.1
26	1.6	5.0	20	6.9	9.8	30	3.8	8.0	6.7	.48	.18	.87
27	1.3	4.5	14	17	7.6	23	3.4	9.5	9.5	.47	.17	.66
28	1.3	4.2	14	15	5.9	23	3.3	9.2	11	.49	.16	.52
29	1.1	3.5	17	12	---	36	3.3	7.7	9.0	.40	.27	.47
30	.94	3.1	16	11	---	89	3.0	7.1	6.4	.38	.37	.43
31	.83	---	12	11	---	122	---	5.9	---	.38	.28	---
TOTAL	21.68	156.65	184.3	207.7	312.9	497.2	341.6	593.1	845.0	46.87	10.27	26.15
MEAN	.70	5.22	5.95	6.70	11.2	16.0	11.4	19.1	28.2	1.51	.33	.87
MAX	2.1	12	28	17	45	122	60	71	190	5.0	.91	3.5
MIN	.24	.73	1.2	3.0	3.5	3.3	3.0	4.7	4.0	.38	.16	.18
CFSM	.13	1.00	1.13	1.28	2.13	3.06	2.17	3.65	5.38	.29	.06	.17
IN.	.15	1.11	1.31	1.47	2.22	3.53	2.43	4.21	6.00	.33	.07	.19

CAL YR 1988	TOTAL 1968.43	MEAN 5.38	MAX 75	MIN .11	CFSM 1.03	IN. 13.97
WTR YR 1989	TOTAL 3243.42	MEAN 8.89	MAX 190	MIN .16	CFSM 1.70	IN. 23.03

e Estimated.

WEST BRANCH SUSQUEHANNA RIVER BASIN

01543000 DRIFTWOOD BRANCH SINNEMAHOING CREEK AT STERLING RUN, PA

LOCATION.--Lat 41°24'48", long 78°11'50", Cameron County, Hydrologic Unit 02050202, on downstream side of second pier from left bank of highway bridge on SR 3002 at village of Sterling Run, and 300 ft upstream from Sterling Run.

DRAINAGE AREA.--272 mi².

PERIOD OF RECORD.--October 1913 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 1272: Drainage area. WSP 1502: 1933(M), 1934-38, 1939(M).

GAGE.--Water-stage recorder. Datum of gage is 894.84 ft above National Geodetic Vertical Datum of 1929. Oct. 1, 1913, to Sept. 30, 1931, nonrecording gage and Oct. 1, 1931, to Sept. 30, 1932, water-stage recorder at present site and datum. Oct. 1, 1932, to Sept. 30, 1942, nonrecording gage at site 800 ft upstream at same datum.

REMARKS.--Records poor. Several measurements of water temperature were made during the year. National Weather Service satellite telemeter at station.

AVERAGE DISCHARGE.--76 years, 449 ft³/s, 22.42 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 47,800 ft³/s, July 18, 1942, gage height, 14.70 ft, from floodmarks at highway bridge, from rating curve extended above 11,000 ft³/s on basis of slope-area measurement of peak flow; minimum observed, 0.4 ft³/s, Sept. 12, 13, 14, 1930.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 31	0230	5,460	4.86	June 21	0200	*18,400	*9.27
June 15	2400	6,310	5.29				

Minimum daily discharge, 13 ft³/s, Aug. 29, Sept. 12-14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39	96	211	582	533	358	2970	163	e420	208	57	15
2	35	97	201	476	e480	253	2030	959	e350	192	57	52
3	33	83	180	401	e440	260	1630	1070	e300	175	50	50
4	31	88	176	330	e390	250	1520	982	e350	157	41	25
5	29	216	159	e200	e360	273	1510	811	e320	261	69	18
6	29	773	153	e270	e390	367	1490	701	e380	226	66	16
7	27	431	138	296	e350	e240	1320	1390	e300	174	44	15
8	27	334	e120	354	e290	e210	1100	1680	e280	155	36	15
9	26	315	e110	434	e250	e230	934	1510	e260	141	30	15
10	25	276	e90	e300	e200	e220	716	1780	510	130	26	15
11	27	281	e84	e280	e240	221	541	2810	429	118	21	14
12	33	279	e75	e290	e240	216	454	2480	359	107	19	13
13	38	271	e80	328	e180	195	385	1900	1320	101	19	13
14	37	348	e130	284	e210	177	365	1540	1660	96	20	13
15	33	349	e150	346	e250	184	333	1640	4040	87	19	97
16	30	325	e130	341	e700	207	309	3070	4610	79	18	118
17	29	307	e110	303	635	207	271	2490	2780	77	16	169
18	29	258	e90	279	595	397	259	1780	1980	73	15	97
19	63	228	e90	270	555	654	259	1440	1560	66	14	68
20	52	282	e98	261	468	582	249	1130	5380	73	17	49
21	45	585	e110	e170	1010	556	240	1020	11000	101	26	33
22	52	628	e160	e140	1660	444	229	810	3160	106	32	29
23	93	604	e150	e160	1400	377	216	630	1920	167	43	66
24	96	488	445	e180	1070	663	204	602	1430	102	47	111
25	121	375	1190	202	830	1750	198	596	1070	82	26	90
26	128	343	1060	241	756	1640	198	737	732	73	18	69
27	129	294	866	871	573	1290	191	969	491	155	16	52
28	127	281	805	679	421	1220	164	893	529	120	15	38
29	101	251	972	585	---	1880	159	e700	310	93	13	32
30	101	222	838	567	---	3160	159	e560	246	74	15	25
31	96	---	793	565	---	4740	---	e540	---	63	15	---
TOTAL	1761	9708	9964	10985	15476	23421	20603	39383	48476	3832	920	1432
MEAN	56.8	324	321	354	553	756	687	1270	1616	124	29.7	47.7
MAX	129	773	1190	871	1660	4740	2970	3070	11000	261	69	169
MIN	25	83	75	140	180	177	159	163	246	63	13	13
CFSM	.21	1.19	1.18	1.30	2.03	2.78	2.52	4.67	5.94	.45	.11	.18
IN.	.24	1.33	1.36	1.50	2.12	3.20	2.82	5.39	6.63	.52	.13	.20

CAL YR 1988 TOTAL 112039.5 MEAN 306 MAX 2600 MIN 9.1 CFMS 1.13 IN. 15.32
WTR YR 1989 TOTAL 185961.0 MEAN 509 MAX 11000 MIN 13 CFMS 1.87 IN. 25.43

e Estimated.

WEST BRANCH SUSQUEHANNA RIVER BASIN

01543500 SINNEMAHOING CREEK AT SINNEMAHOING, PA

LOCATION.--Lat 41°19'02", long 78°06'12", Cameron County, Hydrologic Unit 02050202, on left bank 0.2 mi upstream from Grove Run, and 0.7 mi upstream from Penn Central Railroad bridge at Sinnemahoning.

DRAINAGE AREA.--685 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 769.36 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter and National Weather Service landline telemeter at station.

AVERAGE DISCHARGE.--51 years, 1,135 ft³/s, 22.50 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 60,800 ft³/s, June 23, 1972, gage height, 21.78 ft, from rating curve extended above 31,000 ft³/s on basis of slope-area measurement at gage height 21.58 ft; minimum, 1.2 ft³/s, Sept. 4, 1939, gage height, 1.18 ft; minimum daily, 1.4 ft³/s, Sept. 3, 1939.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 21.94 ft, Mar. 18, 1936, from floodmark, discharge, 61,200 ft³/s, from rating curve extended as explained above.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 31	0130	13,700	9.15	June 15	2200	10,800	8.08
May 16	0730	9,460	7.55	June 21	0400	*24,300	*12.69

Minimum daily discharge, 37 ft³/s, Sept. 8, 9, 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	89	169	444	1240	1080	897	8730	400	842	693	173	62
2	86	166	411	1000	1100	689	5590	1870	733	587	170	69
3	89	162	374	877	1200	703	4080	2000	643	505	155	96
4	91	170	355	773	e1100	638	3470	1730	993	484	136	68
5	82	359	328	e520	e960	672	3450	1490	928	1200	144	e56
6	77	1690	315	e720	e940	889	3200	1600	1240	1010	168	e47
7	79	1000	303	799	e840	613	2720	3130	1100	671	155	e38
8	81	761	297	945	e680	e520	2200	3950	944	534	144	37
9	77	698	266	1120	e600	e540	1860	3480	844	442	120	37
10	76	598	e220	e740	e500	546	1530	5160	933	384	106	39
11	84	626	e210	e700	e600	514	1250	7860	749	338	96	41
12	112	540	e190	e720	e620	501	1080	6560	625	286	92	39
13	116	582	e200	e850	e450	433	989	4620	1400	264	91	38
14	100	858	335	689	e540	452	912	3540	1820	242	87	37
15	87	730	382	924	e620	472	823	4350	6730	213	79	88
16	79	659	327	861	e1500	528	776	8760	8850	193	74	207
17	74	646	264	767	e1300	462	696	7290	5780	187	70	382
18	78	570	e230	716	1240	762	723	4800	3760	175	65	190
19	153	484	e230	694	1220	1350	682	3320	2630	159	62	123
20	175	629	e250	664	1050	1150	611	2440	6570	182	69	95
21	159	1580	e300	e540	2590	1160	575	2080	18700	480	89	79
22	161	1320	e410	e450	4290	1060	549	1600	8840	322	101	70
23	227	1140	372	e540	3300	965	516	1340	5100	535	117	99
24	253	974	971	594	2360	1570	494	1410	3270	335	104	204
25	386	832	2890	550	1830	4120	477	1170	2200	248	76	161
26	316	723	2180	523	1580	3870	466	1250	1640	205	62	114
27	257	651	1710	1340	1310	3260	463	1290	1260	407	58	92
28	223	618	1640	1100	1030	3190	426	1090	1580	378	55	77
29	226	566	1910	1030	---	5060	410	968	1130	271	55	68
30	207	483	1560	1040	---	8990	406	910	843	205	58	63
31	183	---	1530	1090	---	12600	---	912	---	182	62	---
TOTAL	4483	20984	21404	25116	36430	59176	50154	92370	92677	12317	3093	2816
MEAN	145	699	690	810	1301	1909	1672	2980	3089	397	99.8	93.9
MAX	386	1690	2890	1340	4290	12600	8730	8760	18700	1200	173	382
MIN	74	162	190	450	450	433	406	400	625	159	55	37
CFSM	.21	1.02	1.01	1.18	1.90	2.79	2.44	4.35	4.51	.58	.15	.14
IN.	.24	1.14	1.16	1.36	1.98	3.21	2.72	5.02	5.03	.67	.17	.15

CAL YR 1988 TOTAL 263763 MEAN 721 MAX 5650 MIN 21 CFSM 1.05 IN. 14.32
WTR YR 1989 TOTAL 421020 MEAN 1153 MAX 18700 MIN 37 CFSM 1.68 IN. 22.86

e Estimated.

WEST BRANCH SUSQUEHANNA RIVER BASIN

01544000 FIRST FORK SINNEMAHONING CREEK NEAR SINNEMAHONING, PA

LOCATION.--Lat 41°24'06", long 78°01'28", Cameron County, Hydrologic Unit 02050202, on right bank on Township Route 357, 350 ft downstream from Woodrock Run, 1,500 ft upstream from Roaring Run, 0.8 mi downstream from George B. Stevenson Dam (First Fork Sinnemahoning Creek Reservoir), and 7.5 mi northeast of Sinnemahoning.

DRAINAGE AREA.--245 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 878.71 ft above National Geodetic Vertical Datum of 1929. Prior to Apr. 1, 1954, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since Jan. 31, 1956 by George B. Stevenson Dam (station 01543900). Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--36 years, 391 ft³/s, 21.67 in/yr, adjusted for storage since January 1956.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,200 ft³/s, Mar. 1, 1956, gage height, 6.60 ft; minimum daily, 0.10 ft³/s, Aug. 8, 1975.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,340 ft³/s, June 22, gage height, 4.73 ft; minimum daily, 7.8 ft³/s, Sept. 14, 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	66	167	479	298	297	3060	162	277	321	40	29
2	30	66	165	364	370	219	3710	354	246	248	51	38
3	29	57	147	315	439	226	2960	580	217	207	43	45
4	28	56	126	277	498	221	1490	591	322	206	41	30
5	27	63	118	168	500	206	1480	573	303	274	57	21
6	48	303	118	162	465	323	1580	567	360	185	71	13
7	75	309	118	239	434	267	1330	1100	385	130	34	10
8	78	301	115	304	343	147	994	1960	385	166	45	11
9	67	238	108	298	236	223	730	1500	347	124	42	17
10	75	214	92	230	205	209	619	1670	345	104	32	16
11	83	212	83	210	226	158	506	2630	276	89	31	16
12	66	194	64	276	268	167	391	2440	226	94	31	14
13	34	185	41	280	203	161	372	1700	461	80	32	9.8
14	26	257	58	225	203	149	343	1250	623	80	32	7.8
15	25	319	94	214	242	154	293	1120	2700	77	29	7.8
16	23	290	95	233	375	183	289	1570	4340	67	25	67
17	21	287	74	201	361	199	253	1960	3570	66	25	86
18	20	225	64	191	318	251	239	1610	2020	61	25	65
19	31	127	64	176	358	527	257	1170	1260	56	23	32
20	42	146	64	170	337	491	234	899	1940	84	28	26
21	27	415	89	149	799	443	225	689	54	116	43	25
22	51	484	122	92	1380	373	244	534	2760	88	47	26
23	71	471	99	97	1270	309	233	421	5930	78	45	42
24	91	430	118	127	873	388	223	574	5100	63	39	57
25	105	345	483	160	692	964	210	730	2310	55	32	46
26	111	297	687	160	586	1450	195	723	995	41	26	39
27	87	262	656	327	427	1280	189	600	653	50	21	28
28	75	246	586	253	344	1150	174	453	675	70	19	22
29	75	211	608	269	---	1620	167	386	533	74	19	21
30	75	175	555	279	---	1380	171	344	406	49	23	23
31	70	---	521	315	---	2220	---	322	---	34	26	---
TOTAL	1697	7251	6499	7240	13050	16355	23161	31182	40019	3437	1077	890.4
MEAN	54.7	242	210	234	466	528	772	1006	1334	111	34.7	29.7
MAX	111	484	687	479	1380	2220	3710	2630	5930	321	71	86
MIN	20	56	41	92	203	147	167	162	54	34	19	7.8
MEAN‡	41.5	256	210	234	466	640	657	1006	1334	112	34.5	29.7
CFSM‡	.17	1.04	.86	.96	1.90	2.61	2.68	4.11	5.44	.46	.14	.12
IN.‡	.20	1.16	.99	1.11	1.98	3.01	2.99	4.74	6.07	.53	.16	.13
CAL YR 1988	TOTAL 101245.7	MEAN 277	MAX 4030	MIN 4.8	MEAN‡ 277	CFSM‡ 1.13	IN.‡ 15.38					
WTR YR 1989	TOTAL 151858.4	MEAN 416	MAX 5930	MIN 7.8	MEAN‡ 416	CFSM‡ 1.70	IN.‡ 23.07					

‡ Adjusted for change in contents in First Fork Sinnemahoning Creek Reservoir.

WEST BRANCH SUSQUEHANNA RIVER BASIN

01544500 KETTLE CREEK AT CROSS FORK, PA

LOCATION.--Lat 41°28'33", long 77°49'34", Clinton County, Hydrologic Unit 02050203, on right bank just upstream from abutment of former highway bridge on Township Route 318, 0.2 mi downstream from Potter-Clinton County line, and 0.7 mi southeast of Cross Fork.

DRAINAGE AREA.--136 mi².

PERIOD OF RECORD.--October 1940 to current year. Monthly discharge only for October, November 1940, published in WSP 1302..

GAGE.--Water-stage recorder. Datum of gage is 1,027.12 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite and landline telemeters at station.

AVERAGE DISCHARGE.--49 years, 225 ft³/s, 22.47 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,300 ft³/s, June 23, 1972, gage height, 11.76 ft, from floodmark in gage well, from rating curve extended above 9,200 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 1.2 ft³/s, Sept. 2-4, 1971.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, about 14.0 ft, Mar. 18, 1936, from information by local residents, discharge, about 20,000 ft³/s, from rating curve extended as explained above.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
June 21	1030	*3,770	*6.20	No other peak greater than base discharge.			

Minimum daily discharge, 12 ft³/s, Oct. 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	28	101	e160	127	164	1630	93	176	179	43	18
2	14	28	91	169	146	e120	1110	158	167	151	41	29
3	16	27	84	155	e170	e110	791	165	143	127	37	20
4	15	28	79	e120	e180	e95	611	178	210	116	34	17
5	13	55	73	e90	e190	e120	613	188	193	209	48	15
6	14	149	70	e120	e180	e140	645	230	239	145	36	15
7	15	124	67	e140	e170	e100	597	593	243	123	33	15
8	15	113	64	e150	e160	e98	503	774	235	110	30	15
9	16	108	e58	e160	e150	e94	413	674	225	93	28	15
10	12	98	e56	e150	e130	e90	335	807	219	82	25	15
11	14	96	e50	e120	e120	e78	284	1470	178	73	24	16
12	17	83	e40	e125	e100	e78	250	1450	160	65	23	14
13	17	105	e30	e115	e120	e67	229	1030	240	61	23	13
14	14	153	e40	e110	e130	e68	204	744	330	55	22	14
15	13	153	e54	e120	e140	e72	186	588	1450	51	21	18
16	13	152	e60	e110	e180	e88	171	602	2180	47	20	26
17	13	148	e56	e97	e150	83	154	726	1550	46	19	39
18	14	127	e52	e90	e140	159	155	749	1070	43	18	24
19	24	110	e68	88	e120	232	144	615	741	42	20	19
20	20	136	e82	83	e140	222	137	486	1050	78	28	18
21	17	229	e90	e60	e240	218	138	395	3430	88	31	17
22	41	242	e68	e54	e500	191	136	308	2130	59	26	17
23	52	247	e62	e68	e400	171	131	268	1240	53	25	52
24	48	228	e84	e70	e300	258	125	365	827	51	25	53
25	50	202	e220	e70	e280	574	119	364	589	45	19	32
26	41	178	e200	e72	e260	662	115	352	427	41	17	27
27	37	162	e180	e130	e220	618	107	302	361	120	16	24
28	36	154	e160	e90	195	594	100	256	312	78	16	22
29	36	129	e180	e82	---	751	95	222	250	59	18	20
30	32	110	e170	e96	---	1410	91	219	210	49	21	19
31	29	---	e150	120	---	2030	---	190	---	45	17	---
TOTAL	722	3902	2839	3384	5338	9755	10319	15561	20775	2584	804	658
MEAN	23.3	130	91.6	109	191	315	344	502	692	83.4	25.9	21.9
MAX	52	247	220	169	500	2030	1630	1470	3430	209	48	53
MIN	12	27	30	54	100	67	91	93	143	41	16	13
CFSM	.17	.96	.67	.80	1.40	2.31	2.53	3.69	5.09	.61	.19	.16
IN.	.20	1.07	.78	.93	1.46	2.67	2.82	4.26	5.68	.71	.22	.18

CAL YR 1988 TOTAL 53018.8 MEAN 145 MAX 2350 MIN 8.4 CFSM 1.07 IN. 14.50
WTR YR 1989 TOTAL 76641.0 MEAN 210 MAX 3430 MIN 12 CFSM 1.54 IN. 20.96

e Estimated.

WEST BRANCH SUSQUEHANNA RIVER BASIN

01545000 KETTLE CREEK NEAR WESTPORT, PA

LOCATION.--Lat 41°19'12", long 77°52'27", Clinton County, Hydrologic Unit 02050203, on left bank on SR 4001, 0.4 mi upstream from Short Bond Run, 3.5 mi upstream from mouth and Westport, and 5.0 mi downstream from Alvin R. Bush Dam (Kettle Creek Lake).

DRAINAGE AREA.--233 mi².

PERIOD OF RECORD.--October 1954 to current year.

GAGE.--Water-stage recorder. Datum of gage is 728.24 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 14, 1956, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated since February 1962 by Alvin R. Bush Dam (station 01544800). Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--35 years, 367 ft³/s, 21.39 in/yr, adjusted for storage since February 1962.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,970 ft³/s, Mar. 8, 1956, gage height, 10.48 ft; maximum gage height, 13.31 ft, Jan. 22, 1959 (backwater from ice); minimum discharge, 3.0 ft³/s, Dec. 6, 1964, gage height, 1.12 ft; minimum daily, 4.4 ft³/s, Nov. 3, 6, 12, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,120 ft³/s, June 23, gage height, 7.65 ft; minimum daily, 18 ft³/s, Oct. 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	44	124	257	183	252	2800	144	293	248	66	25
2	25	37	124	279	224	210	1910	191	257	207	64	25
3	26	31	120	233	274	203	1450	254	233	186	55	27
4	27	34	118	e180	316	186	1050	278	332	176	53	28
5	32	47	103	e170	351	180	1040	300	366	343	52	27
6	35	173	95	e200	382	236	1120	314	411	286	57	25
7	42	204	95	e210	349	e150	1070	803	499	180	53	24
8	34	171	95	e180	e270	e140	874	1440	483	195	48	23
9	29	158	85	e190	e210	152	675	1240	418	168	43	22
10	25	136	73	e170	e220	159	517	1310	398	139	39	20
11	18	127	72	e150	e220	152	435	2160	321	132	37	20
12	22	126	e72	178	e210	144	372	2340	233	107	33	20
13	28	117	e68	189	e200	128	340	1660	334	91	28	20
14	28	157	e110	e170	e180	121	307	1280	375	90	29	20
15	28	199	e180	e150	207	124	279	995	1850	87	29	21
16	25	205	e170	193	273	139	256	1010	3280	87	30	25
17	24	195	e100	e140	e230	140	224	1270	2540	86	29	57
18	22	176	e80	e120	e190	178	222	1370	1790	77	27	66
19	27	152	e82	152	e210	374	216	1180	1290	71	30	36
20	25	164	82	e130	243	394	200	886	1250	107	27	31
21	29	315	78	e110	549	380	197	650	933	134	32	30
22	34	389	85	e90	977	319	190	536	1440	99	40	31
23	46	374	81	e120	826	270	192	451	3960	79	44	41
24	68	336	80	e130	611	352	183	565	3920	80	40	78
25	67	288	208	121	472	1080	177	698	2570	77	39	69
26	75	232	365	116	444	1210	177	696	786	62	30	44
27	59	224	331	168	388	1180	176	617	551	82	24	35
28	49	198	349	162	297	1080	166	444	480	129	24	31
29	49	176	357	139	---	1420	156	378	357	88	24	27
30	49	148	e270	160	---	2600	144	345	277	69	24	27
31	46	---	e240	180	---	3500	---	347	---	66	24	---
TOTAL	1117	5333	4492	5137	9506	17153	17115	26152	32227	4028	1174	975
MEAN	36.0	178	145	166	339	553	570	844	1074	130	37.9	32.5
MAX	75	389	365	279	977	3500	2800	2340	3960	343	66	78
MIN	18	31	68	90	180	121	144	144	233	62	24	20
MEAN‡	33.4	178	146	166	339	553	570	844	1075	130	38.2	31.8
CFSM‡	.14	.76	.63	.71	1.45	2.37	2.45	3.62	4.61	.56	.16	.14
IN.‡	.16	.85	.73	.82	1.51	2.73	2.73	4.17	5.14	.65	.18	.16

CAL YR 1988 TOTAL 88589.0 MEAN 242 MAX 4310 MIN 9.5 MEAN‡ 242 CFSM‡ 1.04 IN.‡ 14.17
WTR YR 1989 TOTAL 124409.0 MEAN 341 MAX 3960 MIN 18 MEAN‡ 341 CFSM‡ 1.46 IN.‡ 19.83

e Estimated.

‡ Adjusted for change in contents in Kettle Creek Lake.

WEST BRANCH SUSQUEHANNA RIVER BASIN

01545500 WEST BRANCH SUSQUEHANNA RIVER AT RENOVO, PA

LOCATION.--Lat 41°19'28", long 77°45'03", Clinton County, Hydrologic Unit 02050203, on right bank at abandoned Eighth Street bridge abutment at South Renovo, and 1.0 mi upstream from Paddy Run.

DRAINAGE AREA.--2,975 mi².

PERIOD OF RECORD.--October 1907 to current year. Monthly discharge only for some periods, published in WSP 1302. Gage height records collected July 1895 to December 1903 and October 1905 to September 1974 are contained in reports of U.S. Weather Bureau.

REVISED RECORDS.--WSP 756: Drainage area. WSP 1302: 1908-10, 1912-13, 1914-15(M). WSP 2103: 1968 (monthly mean). WDR PA-88-2: 1987.

GAGE.--Water-stage recorder. Datum of gage is 634.19 ft above National Geodetic Vertical Datum of 1929. Prior to Mar. 17, 1930, nonrecording gage at same site and datum.

REMARKS.--Records excellent except those for estimated daily discharges, which are fair. Flow slightly regulated by 4 flood-control reservoirs which have a combined capacity of 316,000 acre-ft. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite and landline telemeters at station.

AVERAGE DISCHARGE.--82 years, 4,964 ft³/s, 22.66 in/yr, adjusted for storage 1961-75.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 236,000 ft³/s, Mar. 18, 1936, gage height, 29.39 ft, from floodmark in gage shelter from rating curve extended above 87,000 ft³/s on basis of slope-area measurement of peak flow; minimum, 80 ft³/s, Dec. 6, 1908, gage height, -1.10 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known prior to 1895, 27.3 ft, June 1, 1889, from floodmark, discharge, about 211,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, unknown, June 21, gage height, unknown; minimum, 381 ft³/s, Sept. 10, 11, gage height, -0.12 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	605	701	2250	4140	4010	4670	e36000	1950	5010	5890	1200	452
2	533	607	2090	3800	4080	3960	e28000	3200	4710	4870	1190	476
3	504	573	1940	3490	4280	3530	e23000	5080	4240	4040	1160	514
4	500	603	1840	3200	4660	3340	18400	5010	4850	3380	1080	547
5	494	833	1710	2500	4590	3130	16600	4560	6170	4910	1040	521
6	474	2820	1640	2080	4470	3650	15600	4830	6360	6150	1040	493
7	471	4060	1560	2410	4130	3820	13900	8070	6380	960	1060	460
8	490	3780	1490	2660	3520	3690	11400	14400	5710	4880	1150	426
9	500	3170	1440	4000	2870	3170	9400	14000	5020	4670	1260	407
10	482	2430	1340	3640	2180	3090	7920	15700	4760	4490	1080	392
11	471	2250	1210	3420	2350	2970	6580	27300	4260	3330	912	384
12	492	2170	1430	3330	2790	3000	5810	27100	3630	2930	828	393
13	527	2040	1220	3600	2610	3170	5140	21400	4520	2510	772	421
14	523	2690	1030	4050	2280	3310	4880	16300	7300	2460	719	576
15	483	3030	1870	4130	2910	3360	4360	14400	14600	4580	690	614
16	454	3210	1410	4720	5850	4390	4080	21200	26300	3520	658	746
17	432	2960	1330	4850	9230	5320	3660	25300	21800	2710	641	1300
18	420	2820	1240	4230	6990	4750	3560	21500	16800	2160	627	1840
19	420	2510	1250	4000	5890	6130	3530	16400	12700	1910	559	1340
20	526	2460	1370	3590	5410	6170	3300	12800	12500	1850	559	1060
21	589	4940	1560	3340	6360	5800	3060	10600	e35000	2550	578	925
22	592	7570	1730	2700	14500	5650	2780	8810	e29000	2710	618	740
23	670	6760	1750	2350	13800	5600	2620	7330	27800	2810	682	684
24	845	5350	1900	2490	10500	5850	2510	7210	24600	2310	639	914
25	975	4360	5590	2590	7880	13700	2430	7050	16300	1850	599	1060
26	1170	3690	8250	2610	6960	16400	2350	6780	10300	1600	513	948
27	1110	3290	6430	3410	6300	15300	2290	8310	8160	1580	502	854
28	1050	3020	5480	4210	5380	13500	2210	7570	8200	1720	530	723
29	934	2730	5740	4300	---	15200	2050	6250	9650	1520	508	613
30	905	2460	5160	3970	---	23300	2000	5400	7790	1400	484	548
31	838	---	4560	3870	---	e38000	---	5210	---	1270	456	---
TOTAL	19479	89887	78810	107680	156880	236920	249420	361020	354420	93520	24334	21371
MEAN	628	2996	2542	3474	5603	7643	8314	11650	11810	3017	785	712
MAX	1170	7570	8250	4850	14500	38000	36000	27300	35000	6150	1260	1840
MIN	420	573	1030	2080	2180	2970	2000	1950	3630	960	456	384
CFSM	.21	1.01	.85	1.17	1.88	2.57	2.79	3.91	3.97	1.01	.26	.24
IN.	.24	1.12	.99	1.35	1.96	2.96	3.12	4.51	4.43	1.17	.30	.27

CAL YR 1988 TOTAL 1184337 MEAN 3236 MAX 29400 MIN 248 CFSM 1.09 IN. 14.81
WTR YR 1989 TOTAL 1793741 MEAN 4914 MAX 38000 MIN 384 CFSM 1.65 IN. 22.43

e Estimated.

WEST BRANCH SUSQUEHANNA RIVER BASIN

01545600 YOUNG WOMANS CREEK NEAR RENOVO, PA
(Hydrologic bench-mark station and radiochemical program)

LOCATION.--Lat 41°23'22", long 77°41'28", Clinton County, Hydrologic Unit 02050203, on left bank on SR 4005, 0.3 mi downstream from Laureley Fork, 1.5 mi upstream from Left Branch Young Womans Creek, 3.7 mi upstream from mouth, and 5.0 mi northeast of Renovo.

DRAINAGE AREA.--46.2 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1964 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 780 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are fair.

AVERAGE DISCHARGE.--24 years, 73.5 ft³/s, 21.60 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,370 ft³/s, June 23, 1972, gage height, 7.98 ft, from rating curve extended above 1,000 ft³/s on basis of slope-area measurement of peak flow; minimum, 1.0 ft³/s, Aug. 22, 23, 1988, gage height, 1.40 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 460 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 30	2000	605	3.39	June 21	2045	*772	*3.67

Minimum daily discharge, 3.2 ft³/s, Oct. 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.2	6.2	41	e36	e18	e58	432	40	85	67	21	6.0
2	5.2	5.9	38	e37	e20	e56	325	56	78	59	18	7.7
3	5.3	5.6	36	e35	e25	50	257	51	70	53	17	6.1
4	4.7	6.2	34	e27	e32	48	212	49	86	58	15	5.3
5	4.1	18	32	e19	e42	54	204	50	75	171	18	4.8
6	3.8	56	31	e23	e31	e52	190	67	93	151	14	4.7
7	3.8	36	29	e29	e24	e55	176	159	87	127	14	4.6
8	3.4	30	28	e35	e23	e52	159	186	86	107	13	4.6
9	3.5	28	26	e31	e21	e40	141	176	92	89	12	4.7
10	3.5	27	25	e28	e20	e35	122	245	93	76	10	4.7
11	4.5	25	e17	e27	e18	e34	108	414	80	66	9.3	5.0
12	5.0	22	e11	e26	e17	e33	97	381	75	58	9.3	4.6
13	5.3	37	e9.0	e25	e18	e29	89	293	82	51	9.5	4.2
14	4.2	51	e13	e24	e40	30	81	234	95	45	8.4	4.7
15	3.5	47	e17	e26	e42	32	76	204	203	40	7.9	8.4
16	3.5	45	e21	e24	e45	33	71	234	329	37	7.7	14
17	3.2	44	e20	e20	e26	30	66	320	317	35	7.1	14
18	3.6	40	e19	e20	e23	67	66	309	246	31	6.6	7.4
19	4.5	36	e21	e19	e30	79	61	250	193	29	9.1	6.1
20	4.2	59	e34	e18	e41	73	58	201	262	37	13	5.8
21	4.2	88	e20	e15	e86	74	55	168	688	33	15	5.5
22	20	83	e15	e10	e98	69	52	137	557	28	11	5.9
23	15	80	e12	e14	e90	63	51	119	368	25	9.8	26
24	14	75	e19	e15	e80	104	49	160	268	22	10	21
25	15	69	e28	e16	e70	171	47	148	201	20	7.5	11
26	11	63	e29	e17	e68	193	46	150	159	18	6.4	8.2
27	9.1	59	e27	e22	e64	197	43	135	128	35	6.0	6.8
28	8.2	55	e30	e14	e62	205	41	119	115	24	5.8	6.2
29	7.9	49	e34	e13	---	251	40	107	94	19	5.9	5.9
30	7.4	44	e35	e19	---	465	38	105	77	18	7.5	5.7
31	6.7	---	e34	e20	---	554	---	96	---	18	5.8	---
TOTAL	202.5	1289.9	785.0	704	1174	3286	3453	5363	5382	1647	330.6	229.6
MEAN	6.53	43.0	25.3	22.7	41.9	106	115	173	179	53.1	10.7	7.65
MAX	20	88	41	37	98	554	432	414	688	171	21	26
MIN	3.2	5.6	9.0	10	17	29	38	40	70	18	5.8	4.2
CFSM	.14	.93	.55	.49	.91	2.29	2.49	3.74	3.88	1.15	.23	.17
IN.	.16	1.04	.63	.57	.95	2.65	2.78	4.32	4.33	1.33	.27	.18

CAL YR 1988	TOTAL 16632.9	MEAN 45.4	MAX 850	MIN 1.1	CFSM .98	IN. 13.39
WTR YR 1989	TOTAL 23846.6	MEAN 65.3	MAX 688	MIN 3.2	CFSM 1.41	IN. 19.20

e Estimated.

WEST BRANCH SUSQUEHANNA RIVER BASIN

01545600 YOUNG WOMANS CREEK NEAR RENOVO, PA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1965 to current year.

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: October 1980 to September 1981.

REMARKS.--In March 1989 a bias was discovered in the turbidimetric method for sulfate analysis for those samples analyzed by the U.S. Geological Survey National Water-Quality Laboratory indicating that values below 75 mg/L have a median positive bias of 2 mg/L above the true value for the period between 1982 and 1989. Sulfate values in this report have not been corrected for this bias.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

		DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (µS/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI KF AGAR (COLS. PER 100 ML)	
OCT 18...	1000	4.1	50	7.22	12.0	0.40	751	9.1	86	K 4	53	
JAN 11...	0900	28	42	7.02	0.0	0.40	772	13.9	94	K 2	K 3	
APR 12...	0900	98	35	6.92	4.0	0.30	764	13.0	99	K 2	K 3	
JUL 25...	0930	20	42	7.46	18.5	0.30	765	8.8	93	29	150	
DATE		HARD-NESS TOTAL (MG/L AS CaCO3)	HARD-NESS NONCARB WH WAT TOT FLD (MG/L AS CaCO3)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3)	ALKA-LINITY WAT WH TOT FET FIELD (MG/L AS CaCO3)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CaCO3)
OCT 18...	20	8		5.6	1.5	1.8	15	0.2	1.1	14	12	11
JAN 11...	15	9		4.3	1.1	1.0	12	0.1	0.70	6	6	5
APR 12...	14	9		3.9	1.0	0.80	11	0.1	0.70	4	5	3
JUL 25...	15	7		4.3	1.1	0.90	11	0.1	0.80	8	9	7
DATE		ALKA-LINITY LAB (MG/L AS CaCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS Cl)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)
OCT 18...	12		* 9.7	2.1	<0.10	3.8	38	33	0.05	0.42	<0.010	<0.100
JAN 11...	6.0		* 11	1.2	0.10	4.0	20	31	0.03	1.51	<0.010	0.940
APR 12...	5.0		* 8.3	1.0	0.10	4.0	29	24	0.04	7.67	<0.010	0.320
JUL 25...	9.0		* 8.0	1.1	<0.10	4.5	37	27	0.05	2.02	<0.010	0.220
DATE		NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHOROUS TOTAL (MG/L AS P)	PHOS-PHOROUS DIS-SOLVED (MG/L AS P)	PHOS-PHOROUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHOROUS ORGANIC TOTAL (MG/L AS P)	PHOS-PHOROUS ORGANIC DIS-SOLVED (MG/L AS P)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
OCT 18...	0.010		0.020	0.49	0.50	0.010	0.010	<0.010	0.01	0.01	2	0.02
JAN 11...	0.030		0.030	0.27	0.30	<0.010	<0.010	<0.010	--	--	2	0.15
APR 12...	0.010		0.020	--	<0.20	<0.010	<0.010	<0.010	--	--	4	1.1
JUL 25...	0.021		0.010	0.48	0.50	<0.010	0.010	--	--	0.01	7	0.38

K Results based on non-ideal colony count.

< Actual value is known to be less than the value shown.

* See "REMARKS" paragraph above.

WEST BRANCH SUSQUEHANNA RIVER BASIN

01545600 YOUNG WOMANS CREEK NEAR RENOVO, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	ALUM- INUM, DIS- SOLVED (μ G/L AS AL)	ARSENIC DIS- SOLVED (μ G/L AS AS)	BARIUM, DIS- SOLVED (μ G/L AS BA)	BERYL- LIUM, DIS- SOLVED (μ G/L AS BE)	CADMIUM DIS- SOLVED (μ G/L AS CD)	CHRO- MIUM, DIS- SOLVED (μ G/L AS CR)	COBALT, DIS- SOLVED (μ G/L AS CO)	COPPER, DIS- SOLVED (μ G/L AS CU)	IRON, DIS- SOLVED (μ G/L AS FE)
OCT 18...	1000	4.1	<10	<1	33	<0.5	<1	<1	<3	<1	32
JAN 11...	0900	28	<10	<1	27	<0.5	<1	<1	<3	<1	4
APR 12...	0900	98	20	<1	27	<0.5	<1	<1	<3	<1	5
JUL 25...	0930	20	50	<1	29	<0.5	<1	<1	<3	8	14

DATE	LEAD, DIS- SOLVED (μ G/L AS PB)	LITHIUM DIS- SOLVED (μ G/L AS LI)	MANGA- NESE, DIS- SOLVED (μ G/L AS MN)	MERCURY DIS- SOLVED (μ G/L AS HG)	MOLYB- DENUM, DIS- SOLVED (μ G/L AS MO)	NICKEL, DIS- SOLVED (μ G/L AS NI)	SELE- NIUM, DIS- SOLVED (μ G/L AS SE)	SILVER, DIS- SOLVED (μ G/L AS AG)	STRON- TIUM, DIS- SOLVED (μ G/L AS SR)	VANA- DIUM, DIS- SOLVED (μ G/L AS V)	ZINC, DIS- SOLVED (μ G/L AS ZN)
OCT 18...	<5	<4	17	<0.1	<10	<1	<1	1.0	36	<6	28
JAN 11...	<5	<4	2	<0.1	<10	2	<1	<1.0	29	<6	3
APR 12...	<5	<4	3	<0.1	<10	1	<1	<1.0	27	<6	6
JUL 25...	2	<4	6	<0.1	<10	6	<1	<1.0	28	<6	6

RADIOCHEMICAL ANALYSIS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	GROSS ALPHA, DIS- SOLVED (μ G/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (μ G/L AS U-NAT)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L)
OCT 18...	1000	4.1	1.1	<0.4	<0.4	1.2	<0.4	1.1	<0.4	0.04
APR 12...	0900	98	0.70	<0.4	<0.4	0.8	<0.4	0.8	<0.4	0.04

< Actual value is known to be less than value shown.

WEST BRANCH SUSQUEHANNA RIVER BASIN
01546400 SPRING CREEK AT HOUSERVILLE, PA

LOCATION.--Lat 40°50'01", long 77°49'40", Centre County, Hydrologic Unit 02050204, on right bank 15 ft upstream from bridge on Township Route 365, 0.7 mi north of Houserville, 1.3 mi downstream from Slab Cabin Run, and 3.3 mi northeast of State College.

DRAINAGE AREA.--58.5 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 926.63 ft above National Geodetic Vertical Datum of 1929.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 687 ft³/s, Mar. 15, 1986, gage height, 6.79 ft; minimum, 16 ft³/s, Oct. 29, 1985, gage height, 2.56 ft.

EXTREMES 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)
May 11	1245	268	4.54	June 21	0615	*476	*5.62
May 15	2000	313	4.78	June 24	2215	422	5.35
May 16	1715	264	4.52	June 28	0030	287	4.64
June 17	0215	446	5.47	July 5	0545	239	4.39
June 20	0615	378	5.12				

Minimum daily discharge, 18 ft³/s, Oct. 13-17, 29-31, Nov. 1-3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	18	36	28	36	49	136	57	75	110	68	49
2	23	18	35	28	35	46	123	79	72	101	65	36
3	23	18	33	28	43	45	120	59	69	96	62	35
4	22	24	32	27	39	45	113	55	79	91	60	35
5	21	45	32	26	37	47	103	62	72	154	63	34
6	21	41	31	27	37	50	95	83	69	116	57	34
7	19	32	30	26	36	45	88	91	64	97	57	34
8	19	28	31	44	35	44	83	92	60	88	55	33
9	19	27	30	38	35	44	81	90	60	84	54	32
10	19	26	29	e34	34	43	76	151	58	80	52	38
11	19	24	30	e33	34	45	73	222	55	76	51	41
12	19	24	30	e45	33	49	70	211	55	73	50	38
13	18	42	26	e52	32	50	67	180	72	113	49	36
14	18	36	26	e44	36	52	64	160	69	105	50	34
15	18	35	25	e58	59	63	63	168	86	78	48	46
16	18	35	24	e54	56	68	61	229	95	77	47	46
17	18	38	24	e50	46	64	59	228	292	73	46	35
18	19	33	24	e48	44	67	58	197	170	69	44	34
19	19	31	24	47	44	63	56	174	139	80	45	32
20	19	68	24	46	44	64	54	153	259	138	45	32
21	23	65	24	43	82	70	52	135	403	149	44	31
22	27	54	23	41	70	65	50	117	332	115	43	35
23	21	49	28	40	63	61	49	110	266	112	42	50
24	26	46	41	40	59	122	49	111	246	96	41	36
25	21	44	36	39	57	134	47	96	244	89	40	33
26	20	42	30	39	56	130	46	143	185	84	40	32
27	19	42	29	39	54	120	45	105	160	82	39	31
28	19	40	31	37	51	112	44	90	196	78	38	30
29	18	37	29	36	---	120	44	84	142	73	39	29
30	18	36	28	36	---	154	43	84	121	71	38	28
31	18	---	28	36	---	151	---	81	---	70	37	---
TOTAL	624	1098	903	1209	1287	2282	2112	3897	4265	2918	1509	1069
MEAN	20.1	36.6	29.1	39.0	46.0	73.6	70.4	126	142	94.1	48.7	35.6
MAX	27	68	41	58	82	154	136	229	403	154	68	50
MIN	18	18	23	26	32	43	43	55	55	69	37	28
CFSM	.34	.63	.50	.67	.79	1.26	1.20	2.15	2.43	1.61	.83	.61
IN.	.40	.70	.57	.77	.82	1.45	1.34	2.48	2.71	1.86	.96	.68

CAL YR 1988 TOTAL 15562 MEAN 42.5 MAX 243 MIN 18 CFSM .73 IN. 9.90
WTR YR 1989 TOTAL 23173 MEAN 63.5 MAX 403 MIN 18 CFSM 1.09 IN. 14.74

e Estimated.

WEST BRANCH SUSQUEHANNA RIVER BASIN

01546500 SPRING CREEK NEAR AXEMANN, PA

LOCATION.--Lat 40°53'23", long 77°47'40", Centre County, Hydrologic Unit 02050204, on right bank at upstream side of bridge on SR 3001, 1.6 mi west of Axemann, 1.8 mi southwest of Bellefonte, and 2.5 mi upstream from Logan Branch.

DRAINAGE AREA.--87.2 mi².

PERIOD OF RECORD.--October 1940 to current year.

GAGE.--Water-stage recorder. Datum of gage is 788.81 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 19, 1940, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good. Occasional regulation at low flow by fish hatchery and Rockview Penitentiary. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--49 years, 91.7 ft³/s, 14.28 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,410 ft³/s, June 23, 1972, gage height, 7.47 ft in gage well, 8.75 ft from floodmarks, from rating curve extended above 1,400 ft³/s on basis of contracted-opening measurement of peak flow; minimum, 9.6 ft³/s, Nov. 24, 1941, gage height, 1.69 ft; minimum daily, 20 ft³/s, Dec. 20, 30, 1963, Jan. 28, 29, 31, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of March 1936 reached a stage of 8.6 ft, from information by local residents, discharge not determined.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 350 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 15	2300	361	3.35	June 21	0900	*607	*3.85
June 17	0500	545	3.73	June 25	0100	500	3.64
June 20	0930	456	3.55				

Minimum daily discharge, 40 ft³/s, Oct. 5-7, 13-21, 29-31, Nov. 1-3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	40	64	48	59	68	181	84	106	159	98	81
2	41	40	62	48	57	66	166	109	103	145	93	69
3	41	40	61	48	62	65	158	91	102	135	88	66
4	41	43	60	48	61	65	152	87	116	128	85	66
5	40	55	60	46	59	66	140	89	105	198	91	66
6	40	73	59	47	58	71	130	103	105	165	83	65
7	40	49	59	46	57	65	120	121	101	138	82	65
8	41	47	59	55	56	63	110	119	99	126	81	65
9	41	46	58	56	55	63	107	110	98	119	80	65
10	41	46	58	52	56	63	101	178	98	113	78	65
11	41	45	58	51	56	64	99	260	96	108	78	77
12	41	45	55	58	55	67	97	263	95	103	77	69
13	40	59	55	62	55	67	94	231	116	150	76	68
14	40	54	54	58	57	69	93	210	110	146	76	66
15	40	49	54	66	69	75	92	211	122	115	75	77
16	40	49	53	65	75	83	91	290	154	109	74	77
17	40	50	54	62	65	81	88	304	373	105	73	68
18	40	49	53	64	64	83	88	268	238	98	72	66
19	40	48	53	67	63	80	86	240	200	97	74	64
20	40	77	53	66	63	80	84	217	311	194	73	63
21	40	109	54	64	94	84	83	198	538	209	72	62
22	44	82	53	63	89	81	82	172	454	163	71	63
23	41	79	56	63	79	78	81	157	360	167	71	81
24	43	75	64	62	76	135	80	161	309	142	70	68
25	42	72	55	60	74	174	79	141	345	130	69	64
26	41	70	49	61	73	167	79	188	253	124	69	62
27	41	70	49	61	73	157	78	156	221	120	68	62
28	41	68	49	59	71	147	78	128	256	116	67	63
29	40	66	49	59	---	157	78	120	202	105	68	61
30	40	65	48	59	---	196	78	115	173	103	68	60
31	40	---	48	58	---	197	---	111	---	101	67	---
TOTAL	1262	1760	1716	1782	1831	2977	3073	5232	5959	4131	2367	2014
MEAN	40.7	58.7	55.4	57.5	65.4	96.0	102	169	199	133	76.4	67.1
MAX	44	109	64	67	94	197	181	304	538	209	98	81
MIN	40	40	48	46	55	63	78	84	95	97	67	60
CFSM	.47	.67	.63	.66	.75	1.10	1.17	1.94	2.28	1.53	.88	.77
IN.	.54	.75	.73	.76	.78	1.27	1.31	2.23	2.54	1.76	1.01	.86
CAL YR 1988	TOTAL 27058	MEAN 73.9	MAX 370	MIN 40	CFSM .85	IN. 11.54						
WTR YR 1989	TOTAL 34104	MEAN 93.4	MAX 538	MIN 40	CFSM 1.07	IN. 14.55						

LOCATION.--Lat 40°55'54", long 77°47'13", Centre County, Hydrologic Unit 02050204, on left bank 60 ft downstream from privately-owned bridge, 400 ft west of State Highway 144, and 0.8 mi upstream from mouth and Milesburg.

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

REMARKS.--No estimated daily discharges. Records good. Occasional regulation at low flow by fish hatchery and Rockview Penitentiary. Several measurements of water temperature were made during the year. National Weather Service satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,170 ft³/s, June 23, 1972, gage height, 13.20 ft, from peak-stage indicator, from rating curve extended above 900 ft³/s on basis of computation of peak discharge at dam; minimum, 60 ft³/s, Sept. 30, 1969, gage height, 2.22 ft.

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 17	0030	646	4.57	June 25	0300	761	4.88
June 17	0545	764	4.89	July 21	0115	583	4.39
June 21	1100	*1.180	*5.87				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	132	129	155	136	151	180	392	176	247	331	240	186
2	133	122	155	136	147	175	367	218	232	310	230	173
3	133	119	153	136	159	173	352	191	227	296	223	164
4	130	130	149	136	159	170	335	184	248	286	219	162
5	128	154	147	132	154	173	312	187	227	400	223	162
6	128	189	147	135	154	183	292	212	227	358	214	160
7	128	157	145	132	152	170	274	232	216	314	209	160
8	128	152	142	155	150	165	258	233	208	295	204	159
9	128	147	141	160	145	164	251	231	205	280	200	158
10	128	144	139	150	146	164	234	324	203	269	198	158
11	127	141	139	148	147	168	223	457	196	257	197	168
12	126	137	135	158	145	176	217	492	194	249	198	160
13	123	162	135	173	144	179	212	448	216	320	195	158
14	125	167	135	167	147	181	206	411	208	309	192	175
15	127	158	133	184	172	189	206	417	224	263	189	182
16	127	155	128	183	184	204	203	565	281	255	187	175
17	126	158	129	178	168	199	195	627	583	245	183	165
18	126	151	128	176	164	204	192	568	445	231	180	157
19	127	149	127	177	165	201	190	498	385	233	188	154
20	126	203	124	176	165	199	186	444	593	417	184	152
21	128	229	127	170	223	208	182	405	1060	518	180	151
22	143	202	125	165	226	203	179	364	876	432	176	154
23	132	194	133	165	213	195	176	343	686	416	175	181
24	137	187	149	164	205	270	174	348	585	361	173	167
25	131	180	159	160	199	357	172	316	607	331	170	158
26	130	175	142	161	199	354	170	382	490	314	169	154
27	128	174	140	159	194	339	169	334	435	299	168	150
28	127	170	142	157	187	320	166	295	477	283	167	149
29	127	163	141	155	---	321	165	277	399	262	166	146
30	127	159	137	155	---	384	164	271	356	252	165	144
31	127	---	137	152	---	406	---	259	---	247	163	---
TOTAL	3993	4857	4318	4891	4764	6974	6814	10709	11536	9633	5925	4842
MEAN	129	162	139	158	170	225	227	345	385	311	191	161
MAX	143	229	159	184	226	406	392	627	1060	518	240	186
MIN	123	119	124	132	144	164	164	176	194	231	163	144
CFSM	.81	1.14	.98	1.11	1.20	1.58	1.60	2.43	2.71	2.18	1.35	1.14
IN.	1.05	1.27	1.13	1.28	1.25	1.83	1.79	2.81	3.02	2.52	1.55	1.27
CAL YR 1988	TOTAL 64086		MEAN 175	MAX 612	MIN 117	CFSM 1.23	IN. 16.79					
WTR YR 1988	TOTAL 79256		MEAN 217	MAX 1060	MIN 119	CFSM 1.53	IN. 20.76					

WEST BRANCH SUSQUEHANNA RIVER BASIN

01547200 BALD EAGLE CREEK BELOW SPRING CREEK AT MILESBERG, PA

LOCATION.--Lat 40°56'35", long 77°47'12", Centre County, Hydrologic Unit 02050204, on right bank 130 ft downstream from bridge on State Highway 144 at Milesburg, and 250 ft downstream from Spring Creek.

DRAINAGE AREA.--265 mi².

PERIOD OF RECORD.--October 1955 to current year. Monthly discharge only for October and November 1955 published in WSP 1722. Prior to October 1967, published as North Bald Eagle Creek below Spring Creek at Milesburg.

GAGE.--Water-stage recorder. Datum of gage is 682.49 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 31, 1956, nonrecording gage at site 130 ft upstream at same datum.

REMARKS.--No estimated daily discharges. Records good. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite and landline telemeters at station.

AVERAGE DISCHARGE.--34 years, 401 ft³/s, 20.55 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,300 ft³/s, June 23, 1972, gage height, 11.67 ft, from floodmark in gage well, from rating curve extended above 9,000 ft³/s; minimum, 50 ft³/s, Aug. 3, 1966, gage height, -0.80 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
June 21	0645	*5,590	*6.03	No other peak greater than base discharge.			

Minimum daily discharge, 119 ft³/s, Oct. 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	139	130	214	233	257	310	1260	241	346	441	323	202
2	139	123	205	233	250	279	949	473	320	407	309	207
3	138	120	198	219	298	273	821	360	299	382	291	176
4	133	134	190	197	318	263	736	326	361	368	278	168
5	129	312	183	163	285	275	666	327	314	701	287	165
6	127	634	182	190	279	347	594	443	321	717	268	162
7	127	337	179	199	260	288	542	653	293	515	258	163
8	126	266	174	337	227	255	497	709	272	442	247	162
9	126	232	169	409	207	273	489	646	267	399	241	162
10	126	210	159	297	210	285	439	1490	267	372	235	159
11	126	196	160	285	227	335	395	1890	247	347	228	175
12	124	180	144	390	220	423	372	1480	238	327	227	163
13	119	292	149	543	197	420	355	1080	295	472	226	161
14	120	379	155	414	219	408	339	905	311	478	219	167
15	121	299	159	547	359	513	333	1210	427	371	215	263
16	121	265	149	525	545	566	324	2000	730	340	209	273
17	120	250	145	456	388	476	302	1680	1250	332	204	266
18	121	225	142	418	360	493	296	1200	863	307	199	194
19	123	208	143	416	349	488	284	929	653	305	211	177
20	124	625	142	399	330	446	270	762	1520	1250	204	169
21	127	1020	155	339	861	487	258	657	4540	1390	199	164
22	159	563	152	299	853	498	248	555	2050	853	192	167
23	157	434	166	300	656	439	241	514	1300	985	190	230
24	160	367	366	293	519	979	235	534	993	669	185	241
25	163	323	610	276	437	1380	232	455	890	545	180	195
26	149	295	394	268	418	1070	227	585	737	479	177	180
27	138	279	329	286	386	860	229	502	622	442	177	167
28	134	266	315	259	338	736	220	416	699	399	174	162
29	130	242	308	250	---	771	218	380	561	357	171	158
30	130	224	242	258	---	1610	213	368	483	336	172	155
31	128	---	237	263	---	1780	---	365	---	332	169	---
TOTAL	4104	9430	6615	9961	10253	18026	12584	24135	22469	16060	6865	5553
MEAN	132	314	213	321	366	581	419	779	749	518	221	185
MAX	163	1020	610	547	861	1780	1260	2000	4540	1390	323	273
MIN	119	120	142	163	197	255	213	241	238	305	169	155
CFSM	.50	1.19	.81	1.21	1.38	2.19	1.58	2.94	2.83	1.95	.84	.70
IN.	.58	1.32	.93	1.40	1.44	2.53	1.77	3.39	3.15	2.25	.96	.78

CAL YR 1988	TOTAL 106078	MEAN 290	MAX 2700	MIN 119	CFSM 1.09	IN. 14.89
WTR YR 1989	TOTAL 146055	MEAN 400	MAX 4540	MIN 119	CFSM 1.51	IN. 20.50

WEST BRANCH SUSQUEHANNA RIVER BASIN

01547400 BALD EAGLE CREEK NEAR MILESBERG, PA

LOCATION.--Lat 40°58'31", long 77°44'35", Centre County, Hydrologic Unit 02050204, on left bank at bridge on SR 1003 at Curtin, 250 ft downstream from Nittany Creek, 500 ft downstream from Antis Run, and 3.5 mi downstream from Milesburg.

DRAINAGE AREA.--296 mi².

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: July 1967 to current year.

INSTRUMENTATION.--Water-temperature recorder since July 1967.

REMARKS.--The temperature recorder measures the water temperature of the inflow to Foster Joseph Sayers Lake. Interruptions in the record are due to malfunctions of the equipment.

EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE (water years 1967-81, 1983-89): Maximum, 29.0° C, July 17, 18, Aug. 9, 23, 1968, June 27, 30, July 16, 1969; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 22.0°C, July 11; minimum, 0.5°C, Feb. 9, 25.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	16.5	13.5	15.0	8.0	6.0	6.5	6.0	5.0	5.5	3.0	2.0	2.5
2	15.0	14.0	14.5	8.0	6.5	7.5	5.5	4.5	5.0	4.0	3.0	3.5
3	15.0	13.0	14.0	10.5	6.0	8.0	6.5	3.5	5.0	3.5	2.0	3.0
4	15.5	12.0	13.5	10.5	7.0	8.5	6.0	4.0	5.0	2.5	1.0	2.0
5	13.0	11.0	12.0	11.5	9.5	10.0	5.0	3.5	4.0	2.0	1.0	1.5
6	11.0	10.0	10.5	10.0	8.5	9.5	6.5	4.5	5.5	2.5	1.5	2.0
7	11.0	9.0	10.0	8.5	7.5	8.0	6.5	4.5	5.5	3.5	2.5	3.0
8	11.0	9.0	10.0	7.5	7.0	7.5	6.5	4.5	5.5	3.5	1.5	2.0
9	11.5	9.0	10.5	9.0	7.5	8.0	5.5	4.0	4.5	2.5	1.5	2.0
10	12.5	10.0	11.0	9.0	7.0	8.0	4.0	3.0	3.5	3.0	1.0	1.5
11	12.0	10.0	11.0	8.5	7.0	8.0	3.5	2.0	3.0	3.5	1.5	2.0
12	10.5	8.5	9.5	8.5	5.5	7.0	2.5	1.0	1.5	2.5	2.0	2.5
13	9.5	8.0	8.5	8.0	7.0	7.0	3.0	1.0	2.0	3.0	1.0	2.0
14	11.5	6.5	9.0	8.5	5.5	7.0	4.0	2.5	3.5	2.0	1.0	1.5
15	12.5	7.5	10.0	9.0	6.5	7.5	4.5	3.0	4.0	3.0	2.5	3.0
16	14.5	10.5	12.0	9.5	7.0	8.5	3.5	2.0	2.5	4.5	2.5	3.5
17	15.0	11.0	13.0	10.0	7.0	8.5	3.5	2.5	3.0	4.0	2.0	3.0
18	13.0	10.5	12.5	8.0	5.5	6.5	3.5	2.0	2.5	4.0	2.0	3.0
19	10.5	9.0	10.0	6.5	6.0	6.5	4.5	3.0	3.5	5.0	3.5	4.0
20	12.5	8.5	9.5	7.5	6.5	7.0	6.0	3.5	4.5	4.5	2.0	3.5
21	9.0	8.5	8.5	8.0	7.0	7.5	6.5	5.0	6.0	2.0	1.0	1.5
22	9.5	9.0	9.0	7.0	5.5	6.5	5.5	4.0	5.0	2.0	1.0	1.5
23	11.5	8.0	10.0	6.0	4.5	5.0	4.5	4.0	4.0	2.5	1.5	2.0
24	11.0	9.5	10.0	6.0	3.5	5.0	4.5	1.0	3.0	3.5	2.0	2.5
25	10.5	8.0	9.0	5.5	3.5	4.5	3.5	1.5	2.5	3.5	3.0	3.5
26	9.0	7.0	8.0	6.5	4.0	5.5	3.0	2.0	2.5	4.5	3.5	4.0
27	9.5	6.0	7.5	8.5	6.0	7.0	4.0	2.5	3.0	4.5	3.5	4.0
28	9.0	6.5	7.5	8.5	6.5	8.0	4.0	3.0	3.5	5.0	2.5	3.5
29	10.5	6.5	8.0	7.0	5.5	6.5	3.0	2.0	2.5	5.5	3.5	4.5
30	10.5	6.0	8.0	6.0	4.5	5.5	2.0	1.5	2.0	6.5	5.5	6.0
31	9.5	5.0	7.0	---	---	---	3.0	1.5	2.0	7.5	5.0	6.0
MONTH	16.5	5.0	10.5	11.5	3.5	7.0	6.5	1.0	3.5	7.5	1.0	3.0

WEST BRANCH SUSQUEHANNA RIVER BASIN

01547400 BALD EAGLE CREEK NEAR MILESBERG, PA--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	8.0	4.5	6.5	5.0	2.0	3.0	7.5	6.0	7.0	14.5	11.0	12.5
2	6.5	6.0	6.5	4.5	2.0	3.0	8.5	5.0	7.0	12.0	9.5	11.0
3	6.0	2.5	5.0	6.5	2.5	4.5	9.5	7.0	8.0	12.0	9.0	10.0
4	3.0	1.5	2.0	5.0	4.5	5.0	11.0	8.0	9.5	14.5	7.5	11.0
5	3.0	1.5	2.0	5.0	4.0	5.0	10.0	8.5	9.5	11.0	10.5	11.0
6	4.0	2.0	2.5	3.5	1.5	2.0	9.5	7.0	8.5	14.0	10.0	11.5
7	3.5	1.5	2.5	2.5	1.0	1.5	8.5	6.5	7.5	10.0	8.0	9.0
8	2.5	1.5	2.0	3.5	1.0	2.0	9.5	5.5	7.5	9.0	7.5	8.0
9	2.0	.5	1.5	4.5	1.5	2.5	9.5	7.0	8.0	10.5	8.0	9.0
10	2.5	1.0	1.5	4.5	2.0	3.0	9.0	6.0	7.0	9.5	8.5	9.0
11	3.0	1.5	2.0	5.5	1.5	3.0	8.5	4.5	6.5	9.0	8.5	9.0
12	3.5	2.0	2.5	5.0	2.5	3.5	10.0	4.5	7.5	9.0	8.0	8.5
13	3.0	2.0	2.5	5.5	1.5	3.5	9.5	6.5	7.5	11.0	8.0	9.5
14	4.0	3.0	3.5	4.5	3.0	4.0	11.0	5.5	8.5	12.0	9.5	10.5
15	4.0	1.5	2.5	8.5	4.5	6.0	9.0	7.5	8.5	10.5	9.5	10.0
16	3.0	1.5	2.0	8.0	4.5	6.0	13.0	8.0	10.5	11.0	10.0	10.5
17	2.5	1.0	2.0	9.0	4.0	6.5	12.0	8.0	10.5	14.0	10.0	12.0
18	3.0	1.0	1.5	8.0	5.5	7.0	14.5	10.5	12.5	15.0	10.5	13.0
19	4.5	1.5	2.5	6.5	4.0	5.0	14.5	9.5	12.0	16.5	11.5	14.0
20	4.0	2.0	3.0	4.0	2.5	3.5	14.0	8.5	11.5	16.0	12.5	14.0
21	4.0	2.5	3.0	6.5	3.5	4.5	13.0	10.0	11.5	17.5	13.0	15.0
22	4.5	4.0	4.0	6.5	2.5	4.5	13.0	8.5	10.5	17.0	12.5	15.0
23	4.0	2.0	3.5	7.0	2.5	4.5	13.0	7.0	10.5	14.0	12.5	13.0
24	3.5	1.0	2.0	5.0	4.0	4.5	13.5	8.0	11.0	14.0	12.0	13.0
25	2.5	.5	1.5	7.5	4.5	6.0	14.5	10.0	12.5	16.0	12.0	14.0
26	3.5	2.0	2.5	9.5	6.0	7.5	14.5	10.5	12.5	16.5	13.5	15.0
27	4.0	2.5	3.0	11.0	6.0	8.5	16.5	10.5	13.5	16.5	13.0	14.5
28	4.0	1.5	2.5	12.0	8.5	10.0	13.5	11.0	12.5	16.0	11.0	13.5
29	---	---	---	12.5	10.0	11.0	12.0	11.5	12.0	17.0	11.5	14.5
30	---	---	---	10.5	8.5	9.0	16.0	11.5	13.5	16.5	13.0	15.0
31	---	---	---	8.5	7.0	8.0	---	---	---	16.0	14.5	15.5
MONTH	8.0	.5	3.0	12.5	1.0	5.0	16.5	4.5	10.0	17.5	7.5	12.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	20.0	14.5	17.5	18.5	14.5	16.5	15.5	14.5	15.0	17.5	16.0	16.5
2	20.0	16.5	18.0	19.0	15.5	17.5	17.5	15.0	16.0	18.0	16.0	16.5
3	19.0	15.0	17.5	18.5	16.0	17.5	19.5	16.0	17.5	16.5	14.5	16.0
4	20.0	16.5	18.0	18.0	16.0	17.0	20.0	17.5	19.0	16.5	14.0	15.5
5	16.5	14.5	15.5	17.5	16.5	17.0	21.0	18.5	19.5	16.5	14.0	15.5
6	16.0	14.0	15.0	18.5	16.5	17.5	20.5	18.0	19.5	16.0	14.0	15.0
7	17.0	14.5	15.5	19.5	16.5	18.0	19.5	16.5	18.0	16.5	14.5	15.5
8	19.5	14.5	17.0	20.0	17.0	18.5	16.0	14.0	15.0	17.0	15.0	16.0
9	18.0	15.0	16.0	19.0	16.0	17.5	17.0	13.5	15.5	18.0	15.5	16.5
10	18.0	14.5	16.0	20.5	16.5	18.5	17.5	14.5	16.0	19.0	16.0	18.0
11	18.5	14.5	16.5	22.0	18.0	20.0	16.5	15.5	16.0	18.5	16.5	17.5
12	16.5	14.0	15.5	19.5	17.5	18.0	16.0	15.0	15.5	18.0	15.5	17.0
13	17.5	15.0	16.0	18.5	16.5	17.5	18.0	15.0	16.5	17.0	15.5	16.5
14	16.5	15.0	15.5	19.0	16.5	18.0	18.0	16.0	17.0	16.5	15.0	15.5
15	15.0	14.5	15.0	18.5	15.5	17.5	18.5	16.0	17.5	16.5	15.5	16.0
16	16.5	14.5	15.5	17.5	15.5	16.5	18.0	16.5	17.5	15.5	14.5	15.0
17	15.5	14.0	15.0	19.0	15.0	17.0	18.0	16.0	17.5	16.5	14.5	15.5
18	16.0	13.0	14.5	19.5	16.0	18.0	17.0	15.5	16.5	15.5	14.5	15.0
19	17.0	13.5	15.5	18.5	16.5	17.5	16.5	15.0	16.0	15.5	14.0	15.0
20	16.0	14.5	15.5	18.5	17.5	18.0	16.5	15.0	16.0	17.0	14.5	15.5
21	14.5	13.5	14.0	18.0	17.0	17.5	18.0	15.5	16.5	17.0	15.5	16.0
22	14.5	13.5	14.0	18.5	16.5	17.0	18.5	16.0	17.5	18.0	15.5	16.5
23	15.5	14.0	14.5	19.0	17.0	18.0	19.5	16.5	18.0	18.0	13.0	15.5
24	17.0	14.5	16.0	19.5	17.0	18.5	19.5	16.5	18.0	14.0	11.0	12.5
25	18.0	15.5	16.5	20.0	17.5	18.5	18.0	16.0	17.5	13.0	11.0	12.0
26	17.0	15.5	16.5	20.0	17.5	19.0	18.0	15.0	16.5	15.0	12.5	13.5
27	17.5	15.0	16.5	19.0	17.5	18.5	17.0	15.5	16.5	13.5	11.0	12.5
28	18.0	16.0	16.5	19.5	17.0	18.5	18.5	15.5	17.0	13.5	10.5	12.0
29	17.5	15.0	16.5	19.0	16.0	17.5	17.5	16.0	17.0	14.0	11.0	12.5
30	18.0	14.0	16.0	18.0	15.5	16.5	19.0	16.0	17.5	14.0	12.0	13.0
31	---	---	---	15.5	14.5	15.0	18.5	15.5	17.5	---	---	---
MONTH	20.0	13.0	16.0	22.0	14.5	17.5	21.0	13.5	17.0	19.0	10.5	15.0

WEST BRANCH SUSQUEHANNA RIVER BASIN

01547500 BALD EAGLE CREEK AT BLANCHARD, PA

LOCATION.--Lat 41°03'06", long 77°36'17", Centre County, Hydrologic Unit 02050204, on left bank 0.4 mi downstream from Foster Joseph Sayers Dam, 0.7 mi upstream from Marsh Creek, and 0.9 mi south of Blanchard.

DRAINAGE AREA.--339 mi².

PERIOD OF RECORD.--May 1954 to current year. Prior to October 1967, published as North Bald Eagle Creek at Blanchard.

REVISED RECORDS.--WSP 1903: 1956(M).

GAGE.--Water-stage recorder. Datum of gage is 579.79 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since March 1971 by Foster Joseph Sayers Dam (station 01547480). Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--35 years, 460 ft³/s, 18.43 in/yr, adjusted for storage since March 1971.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,100 ft³/s, Mar. 10, 1964, gage height, 11.59 ft, from rating curve extended above 4,100 ft³/s; no flow parts of June 16, Nov. 10, 1970, due to construction of Foster Joseph Sayers Dam, May 12, 18, 19, 1976, Mar. 6, 1979, result of shutoff at dam.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,360 ft³/s, June 26, gage height, 7.06 ft; minimum daily, 92 ft³/s, June 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	203	152	268	253	300	300	666	256	433	469	370	187
2	243	152	268	281	295	300	896	320	401	487	330	187
3	942	152	268	281	286	304	992	420	356	471	330	187
4	1390	147	268	281	286	304	992	420	344	446	297	187
5	1370	155	243	220	286	304	992	420	340	893	268	187
6	1330	790	225	177	286	379	857	357	359	1250	268	187
7	1290	934	225	177	273	390	694	324	376	874	268	187
8	1250	423	225	275	264	315	656	324	378	483	265	187
9	1440	148	225	411	264	309	588	324	378	441	250	187
10	1460	148	225	493	238	332	530	719	337	433	244	187
11	751	148	225	468	221	345	504	1290	299	433	244	187
12	192	148	198	421	221	345	415	1560	255	370	244	187
13	180	148	158	600	221	446	372	1740	263	388	244	187
14	163	217	159	600	221	467	372	1320	281	420	244	215
15	154	260	193	523	246	495	372	1220	417	420	244	456
16	154	303	183	627	343	470	372	1760	792	420	244	426
17	154	330	177	609	365	336	372	2410	1400	420	244	530
18	154	294	177	495	345	319	350	1960	1520	361	244	530
19	148	273	177	460	345	319	324	1280	867	304	244	433
20	139	420	177	460	345	319	302	1030	1160	715	244	377
21	139	1320	177	460	386	367	277	867	92	1290	244	372
22	193	1090	177	389	481	384	277	715	528	1210	244	372
23	236	503	196	335	487	372	277	698	1870	1000	244	349
24	258	473	318	362	383	725	277	812	2410	865	206	329
25	273	404	583	378	300	1360	260	643	3100	637	183	870
26	273	361	530	361	300	1360	256	487	3240	550	183	1260
27	273	361	530	324	300	1160	256	579	2420	473	183	1260
28	270	358	441	324	300	838	256	565	1870	402	183	1290
29	223	318	389	310	---	614	256	465	1390	389	183	1290
30	196	278	337	300	---	558	256	440	565	389	186	1250
31	169	---	255	300	---	414	---	440	---	389	187	---
TOTAL	15610	11208	8197	11955	8588	15250	14266	26165	28441	18092	7556	14040
MEAN	504	374	264	386	307	492	476	844	948	584	244	468
MAX	1460	1320	583	627	487	1360	992	2410	3240	1290	370	1290
MIN	139	147	158	177	221	300	256	256	92	304	183	187
MEAN‡	158	377	266	388	452	675	475	910	945	576	238	215
CFSM‡	.47	1.11	.78	1.14	1.33	1.99	1.40	2.68	2.79	1.70	.70	.63
IN.‡	.54	1.24	.90	1.31	1.38	2.29	1.56	3.09	3.11	1.96	.81	.70

CAL YR 1988 TOTAL 127190 MEAN 348 MAX 2500 MIN 122 MEAN‡ 348 CFSM‡ 1.03 IN.‡ 13.93
WTR YR 1989 TOTAL 179368 MEAN 491 MAX 3240 MIN 92 MEAN‡ 472 CFSM‡ 1.39 IN.‡ 18.89

‡ Adjusted for change in contents in Foster Joseph Sayers Lake.

WEST BRANCH SUSQUEHANNA RIVER BASIN

01547700 MARSH CREEK AT BLANCHARD, PA

LOCATION.--Lat 41°03'34", long 77°36'22", Centre County, Hydrologic Unit 02050204, on right bank 20 ft downstream from highway bridge on SR 1002, 0.5 mi southwest of Blanchard, 0.6 mi downstream from bridge on State Highway 150, and 0.6 mi upstream from mouth.

DRAINAGE AREA.--44.1 mi².

PERIOD OF RECORD.--October 1955 to current year. Monthly discharge only for October 1955, published in WSP 1722.

REVISED RECORDS.--WDR PA-72-1: 1971 (runoff in (ft³/s)/mi² and inches).

GAGE.--Water-stage recorder. Datum of gage is 586.16 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 31, 1956, nonrecording gage at site 20 ft upstream at same datum.

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

AVERAGE DISCHARGE.--34 years, 58.3 ft³/s, 17.95 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,900 ft³/s, June 18, 1984, gage height, 7.85 ft, from rating curve extended above 4,900 ft³/s; no flow Aug. 30, 31, 1966.

EXTREMES 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)
Mar. 30	0900	540	3.30	June 17	0030	761	3.59
May 11	1300	507	3.25	June 21	0200	*1,220	*4.06

Minimum daily discharge, 3.1 ft³/s, Oct. 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.6	4.7	18	31	35	49	317	23	41	79	22	4.7
2	4.5	4.7	16	31	35	41	224	46	36	66	20	6.9
3	4.6	4.5	15	27	52	37	174	38	31	55	17	4.8
4	4.2	5.0	14	20	e47	35	141	38	42	58	16	4.0
5	3.7	26	13	14	e46	39	118	41	32	200	17	3.7
6	3.4	56	12	20	e45	41	101	54	32	143	14	3.6
7	3.4	36	12	22	e41	32	92	81	27	113	13	3.8
8	3.2	28	11	48	e36	29	84	102	24	88	12	3.8
9	3.2	23	9.9	52	e29	31	81	107	23	71	11	3.8
10	3.2	19	8.4	42	e27	34	69	306	24	60	9.9	3.6
11	3.9	17	7.6	40	e28	39	59	481	19	49	9.3	3.4
12	4.1	14	5.4	60	e26	45	53	349	17	41	9.3	3.4
13	3.7	35	5.8	73	e21	43	50	236	65	40	9.1	3.2
14	3.4	39	7.8	61	e29	43	46	184	52	36	8.3	4.1
15	3.2	32	9.5	85	e50	49	44	192	84	29	7.9	16
16	3.2	28	7.3	79	e60	48	41	325	144	26	7.6	11
17	3.1	26	6.1	74	e47	45	37	354	467	24	7.1	11
18	3.2	21	5.8	69	e45	58	36	270	263	21	6.6	6.8
19	3.5	18	6.4	70	e44	62	33	189	165	19	8.0	5.7
20	4.3	74	7.0	64	e43	63	30	139	381	49	9.2	5.4
21	4.0	120	10	53	164	73	28	109	944	42	7.7	4.9
22	13	81	7.6	46	157	69	26	86	536	44	6.8	4.9
23	10	62	9.5	44	136	64	25	75	315	70	6.2	17
24	10	49	37	42	109	181	23	80	210	66	5.6	17
25	10	40	e66	37	91	283	22	62	156	57	5.1	10
26	7.8	33	e45	37	81	233	22	67	142	47	4.8	8.8
27	6.8	30	e41	41	70	186	21	58	122	40	4.7	7.3
28	6.3	26	48	33	57	149	19	52	139	34	4.7	6.5
29	6.0	22	43	31	---	148	19	50	107	28	4.6	6.1
30	5.4	19	32	35	---	409	18	49	93	25	4.8	5.8
31	5.0	---	31	35	---	448	---	47	---	24	4.1	---
TOTAL	157.9	992.9	568.1	1416	1651	3106	2053	4290	4733	1744	293.4	201.0
MEAN	5.09	33.1	18.3	45.7	59.0	100	68.4	138	158	56.3	9.46	6.70
MAX	13	120	66	85	164	448	317	481	944	200	22	17
MIN	3.1	4.5	5.4	14	21	29	18	23	17	19	4.1	3.2
CFSM	.12	.75	.42	1.04	1.34	2.27	1.55	3.14	3.58	1.28	.21	.15
IN.	.13	.84	.48	1.19	1.39	2.62	1.73	3.62	3.99	1.47	.25	.17

CAL YR 1988	TOTAL 15283.2	MEAN 41.8	MAX 1200	MIN 1.5	CFSM .95	IN. 12.89
WTR YR 1989	TOTAL 21206.3	MEAN 58.1	MAX 944	MIN 3.1	CFSM 1.32	IN. 17.89

e Estimated.

WEST BRANCH SUSQUEHANNA RIVER BASIN
01547950 BEECH CREEK AT MONUMENT, PA

LOCATION.--Lat 41°06'42", long 77°42'09", Centre County, Hydrologic Unit 02050204, on right bank 800 ft downstream from bridge at Monument, 850 ft downstream from Monument Run, 0.6 mi upstream from Twin Run, and 8.7 mi upstream from mouth.

DRAINAGE AREA.--152 mi².

PERIOD OF RECORD.--August 1968 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 750 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

AVERAGE DISCHARGE.--21 years, 272 ft³/s, 24.30 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,740 ft³/s, June 23, 1972, gage height, 15.22 ft, from rating curve extended above 2,000 ft³/s on basis of slope-area measurement of peak flow; minimum, 8.8 ft³/s, Nov. 17, 1980; minimum gage height, 5.08 ft, Oct. 15, 18, 1972.

EXTREMES 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)
Mar. 30	1900	1,780	8.71	June 21	1145	*2,560	*9.56

Minimum daily discharge, 22 ft³/s, Oct. 16, 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	44	135	e105	172	245	1340	120	249	402	119	38
2	32	45	127	e104	173	218	1050	200	228	339	111	43
3	33	44	119	e101	199	201	886	176	205	289	101	38
4	31	48	114	e97	210	191	749	162	232	263	93	34
5	28	108	107	e86	e200	191	665	163	203	462	99	33
6	27	263	104	e93	e180	199	571	191	211	434	87	32
7	26	182	101	e109	e170	173	515	322	184	354	83	32
8	25	161	97	e180	e160	e150	465	388	166	315	77	32
9	25	147	e87	e220	e150	e145	433	423	158	278	72	31
10	24	136	e76	e160	e140	e147	378	850	160	249	67	30
11	28	126	e60	e140	e140	149	331	1320	139	221	64	31
12	28	115	e38	e200	e130	154	299	1220	129	196	63	31
13	26	135	e45	e250	e125	147	276	980	324	185	62	28
14	24	167	e60	e220	e130	144	252	815	276	174	59	36
15	23	151	e76	e300	e180	153	237	788	373	153	60	78
16	22	146	e56	e250	e250	164	223	982	555	141	58	59
17	22	144	e45	e190	e205	154	205	1150	689	134	56	71
18	24	134	e42	186	e195	186	202	1030	640	122	52	43
19	30	123	e44	195	e190	213	187	858	561	117	58	36
20	32	182	e50	197	e185	207	172	711	783	185	63	33
21	32	346	e70	181	e400	227	162	596	2360	210	57	32
22	68	282	e60	e170	470	230	154	497	1920	230	54	33
23	74	262	e64	e160	444	219	146	435	1330	399	53	73
24	70	240	e100	e154	413	345	139	461	967	256	48	91
25	75	217	e180	e150	376	638	133	378	783	219	44	52
26	61	198	e145	e155	352	734	130	399	716	189	43	42
27	55	185	e125	176	319	728	125	360	579	174	42	37
28	53	174	e130	162	277	675	119	323	674	159	42	34
29	52	158	e120	157	---	731	116	302	554	139	40	32
30	47	144	e110	166	---	1350	113	290	475	126	41	32
31	45	---	e105	170	---	1700	---	277	---	123	36	---
TOTAL	1174	4807	2792	5184	6535	11108	10773	17167	16823	7237	2004	1247
MEAN	37.9	160	90.1	167	233	358	359	554	561	233	64.6	41.6
MAX	75	346	180	300	470	1700	1340	1320	2360	462	119	91
MIN	22	44	38	86	125	144	113	120	129	117	36	28
CFSM	.25	1.05	.59	1.10	1.54	2.36	2.36	3.64	3.69	1.54	.43	.27
IN.	.29	1.18	.68	1.27	1.60	2.72	2.64	4.20	4.12	1.77	.49	.31

CAL YR 1988	TOTAL 59946	MEAN 164	MAX 1910	MIN 16	CFSM 1.08	IN. 14.67
WTR YR 1989	TOTAL 86851	MEAN 238	MAX 2360	MIN 22	CFSM 1.57	IN. 21.26

e Estimated.

WEST BRANCH SUSQUEHANNA RIVER BASIN

01548005 BALD EAGLE CREEK NEAR BEECH CREEK STATION, PA

LOCATION.--Lat 41°04'51", long 77°32'59", Clinton County, Hydrologic Unit 02050204, on right bank at abandoned railroad bridge, 1.5 mi downstream from Beech Creek Station, 1.5 mi downstream from Beech Creek, and 4.2 mi downstream from Foster Joseph Sayers Dam.

DRAINAGE AREA.--562 mi².

PERIOD OF RECORD.--July 1910 to current year. Monthly discharge only for some periods, published in WSP 1302. Prior to October 1967, published as North Bald Eagle Creek at Beech Creek Station.

REVISED RECORDS.--WSP 756: Drainage area. WSP 1111: 1936(M). WSP 1302: 1911(M), 1912-15, 1918, 1922, 1923-25(M), 1931. WSP 1502: 1919, 1920(M).

GAGE.--Water-stage recorder. Datum of gage is 560.00 ft above National Geodetic Vertical Datum of 1929. Prior to October 1984 at site 1.2 mi upstream at datum 11.74 ft higher. July 1910, to Jan. 10, 1930, nonrecording gage.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since March 1971 by Foster Joseph Sayers Dam (station 01547480). Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite and landline telemeter at station.

AVERAGE DISCHARGE.--79 years, 813 ft³/s, 19.65 in/yr, adjusted for storage since March 1971.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,600 ft³/s, Mar. 18, 1936, gage height, 14.42 ft, from rating curve extended above 12,000 ft³/s; minimum, 29 ft³/s, Aug. 22, 1930, gage height, 1.21 ft (site and datum then in use); minimum daily, 80 ft³/s, Jan. 16, 24, 25, 1931.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,690 ft³/s, May 17, gage height, 11.20 ft; minimum daily, 160 ft³/s, Oct. 20, 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	241	179	375	445	486	627	2710	396	793	1050	533	222
2	256	179	369	492	486	573	2430	579	730	1020	482	225
3	939	179	362	478	526	564	2290	716	636	929	471	224
4	1570	176	352	455	560	547	2090	683	676	839	429	217
5	1540	185	325	335	546	538	1970	672	599	1590	390	216
6	1490	863	306	306	546	640	1700	649	626	2070	386	216
7	1450	1010	306	312	528	623	1430	762	625	1550	379	216
8	1410	671	298	495	473	482	1330	883	605	1030	369	216
9	1520	290	292	719	468	479	1220	925	576	909	353	216
10	1640	278	273	746	400	510	1090	1880	540	853	332	216
11	941	268	266	717	398	526	1010	3480	476	801	332	216
12	213	253	224	710	397	526	865	3520	412	684	332	216
13	199	280	201	942	354	634	771	3290	675	659	329	214
14	184	378	209	917	393	693	734	2570	695	690	318	241
15	169	423	264	879	468	721	713	2340	882	667	316	557
16	169	434	245	1000	702	741	692	3230	1600	639	313	488
17	169	472	221	998	671	544	672	4330	2870	633	311	643
18	169	425	220	830	611	548	629	3610	2700	547	307	599
19	167	376	220	779	635	613	589	2570	1800	457	308	491
20	160	639	221	779	636	602	546	2030	2390	967	311	413
21	160	1930	232	747	1010	677	488	1730	4350	1650	306	413
22	210	1640	236	627	1240	735	485	1420	3670	1560	303	413
23	286	899	241	551	1180	689	460	1320	3980	1640	304	432
24	296	812	409	590	1000	1290	454	1430	3870	1320	265	451
25	311	685	946	608	809	2500	441	1240	4060	1020	227	951
26	320	589	830	580	786	2490	420	1050	4170	855	225	1460
27	311	563	804	529	743	2270	418	1100	3290	752	225	1450
28	307	544	717	516	678	1810	402	1050	2780	646	225	1480
29	271	485	664	491	---	1580	401	905	2280	586	225	1470
30	233	408	556	467	---	2640	391	848	1270	562	225	1430
31	206	---	455	486	---	3020	---	836	---	548	222	---
TOTAL	17507	16513	11639	19526	17730	31432	29841	52044	54626	29723	10053	16212
MEAN	565	550	375	630	633	1014	995	1679	1821	959	324	540
MAX	1640	1930	946	1000	1240	3020	2710	4330	4350	2070	533	1480
MIN	160	176	201	306	354	479	391	396	412	457	222	214
MEAN‡	219	553	377	632	778	1197	994	1745	1818	951	318	287
CFSM‡	.39	.98	.67	1.12	1.38	2.13	1.77	3.10	3.23	1.69	.57	.51
IN.‡	.45	1.09	.77	1.29	1.44	2.46	1.97	3.57	3.60	1.95	.66	.57

CAL YR 1988 TOTAL 209558 MEAN 573 MAX 4140 MIN 140 MEAN‡ 573 CFSM‡ 1.02 IN.‡ 13.87
WTR YR 1989 TOTAL 306846 MEAN 841 MAX 4350 MIN 160 MEAN‡ 822 CFSM‡ 1.46 IN.‡ 19.82

‡ Adjusted for change in contents in Foster Joseph Sayers Lake.

WEST BRANCH SUSQUEHANNA RIVER BASIN

01548500 PINE CREEK AT CEDAR RUN, PA

LOCATION.--Lat 41°31'18", long 77°26'52", Lycoming County, Hydrologic Unit 02050205, on left bank at upstream side of highway bridge on Township Route 762 at village of Cedar Run, 2,000 ft downstream from Cedar Run, and 1.2 mi upstream from Gamble Run.

DRAINAGE AREA.--604 mi².

PERIOD OF RECORD.--July 1918 to current year. Monthly discharge only for some periods, published in WSP 1302.

GAGE.--Water-stage recorder. Datum of gage is 780.36 ft above National Geodetic Vertical Datum of 1929. Prior to Feb. 13, 1930, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. National Weather Service satellite and landline telemeter at station.

AVERAGE DISCHARGE.--71 years, 831 ft³/s, 18.68 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 66,000 ft³/s, June 23, 1972, gage height, 16.0 ft, from flood-mark, from rating curve extended above 16,000 ft³/s on basis of slope-area measurement of peak flow; minimum, 8.0 ft³/s, Sept. 1, 2, 3, 1939.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,900 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 30	1730	6,830	5.89	June 15	2330	8,300	6.39
May 11	2000	8,710	6.52	June 21	1130	*11,500	*7.33

Minimum daily discharge, 35 ft³/s, Oct. 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	67	246	e230	e320	e390	5500	357	595	658	142	53
2	42	72	233	e220	e300	e350	3850	777	596	562	142	61
3	41	75	217	e220	e270	e320	2920	858	561	485	141	79
4	41	77	201	e220	e220	e290	2480	831	809	435	132	60
5	43	99	178	e190	e210	e370	2730	818	753	603	138	48
6	59	414	196	e160	e220	e600	2570	1010	1100	536	159	43
7	63	350	177	e180	e230	e450	2280	2970	1010	414	122	41
8	63	284	172	e210	e230	e320	1920	3060	908	371	115	39
9	55	259	e150	e270	e220	e270	1620	2610	840	323	107	38
10	41	245	e130	e250	e200	e260	1350	3890	1020	288	97	40
11	43	232	e100	e230	e210	e250	1140	8200	801	262	89	40
12	41	213	e80	e270	e230	e240	989	7400	688	235	88	37
13	46	232	e50	e290	e270	e240	891	4930	1060	219	88	37
14	45	458	e100	e260	e300	e250	853	3490	1320	201	83	42
15	42	375	e130	e310	e360	e280	763	2900	5470	183	79	73
16	38	333	e160	e320	e610	396	709	4460	7880	170	75	102
17	35	317	e150	e280	e540	356	646	4950	6780	167	71	185
18	57	302	e130	e260	e380	546	627	3830	4380	163	68	143
19	50	267	e120	e250	e350	786	614	2850	2990	147	77	97
20	65	290	e120	e200	e330	614	574	2170	3590	239	107	94
21	58	621	e150	e150	e520	612	546	1760	10300	784	140	96
22	127	535	e130	e120	e1400	554	528	1390	7380	408	150	83
23	204	474	e140	e150	e960	506	502	1160	4700	313	118	182
24	171	438	e160	e180	e700	978	477	1500	3610	263	96	341
25	160	396	e320	e190	e640	2570	458	1200	2640	229	78	186
26	137	363	e330	e200	e580	2410	447	1030	1940	200	66	131
27	111	338	e280	e210	e500	2110	423	917	1460	184	59	107
28	96	324	e270	e200	e450	2090	395	788	1230	183	54	92
29	90	300	e310	e180	---	2530	363	679	998	165	53	82
30	84	266	e280	e240	---	4610	368	652	772	151	57	76
31	75	---	e250	e290	---	6350	---	688	---	142	58	---
TOTAL	2264	9016	5660	6930	11750	32898	39533	74125	78181	9683	3049	2728
MEAN	73.0	301	183	224	420	1061	1318	2391	2606	312	98.4	90.9
MAX	204	621	330	320	1400	6350	5500	8200	10300	784	159	341
MIN	35	67	50	120	200	240	363	357	561	142	53	37
CFSM	.12	.50	.30	.37	.69	1.76	2.18	3.96	4.31	.52	.16	.15
IN.	.14	.56	.35	.43	.72	2.03	2.43	4.57	4.82	.60	.19	.17

CAL YR 1988 TOTAL 186072 MEAN 508 MAX 7850 MIN 35 CFSM .84 IN. 11.46
WTR YR 1989 TOTAL 275817 MEAN 756 MAX 10300 MIN 35 CFSM 1.25 IN. 16.99

e Estimated.

WEST BRANCH SUSQUEHANNA RIVER BASIN

01549500 BLOCKHOUSE CREEK NEAR ENGLISH CENTER, PA

LOCATION.--Lat 41°28'25", long 77°13'52", Lycoming County, Hydrologic Unit 02050205, on right bank just downstream from bridge on State Highway 284, 0.7 mi upstream from Blacks Creek, 1.7 mi upstream from confluence with Texas Creek, and 5.0 mi northeast of English Center.

DRAINAGE AREA.--37.7 mi².

PERIOD OF RECORD.--October 1940 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 951: 1941. WSP 1031: 1942-44(M). WSP 1502: 1942. WDR PA-75-2: 1973(P), 1974(P).

GAGE.--Water-stage recorder. Datum of gage is 1,041.85 ft above National Geodetic Vertical Datum of 1929.

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

AVERAGE DISCHARGE.--49 years, 57.8 ft³/s, 20.82 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,260 ft³/s, June 23, 1972, gage height, 9.34 ft, from rating curve extended above 1,200 ft³/s on basis of contracted-opening measurement at gage height 8.81 ft; no flow Aug. 6, 7, 31, Sept. 2, 1962.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 18, 1936 reached a stage of 9.0 ft, from floodmark, discharge, 5,780 ft³/s, from rating curve extended as explained above.

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)
Mar. 30	0900	*734	*4.04				

Minimum daily discharge, 3.2 ft³/s, Sept. 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.8	12	32	e14	e19	e22	294	26	49	35	26	4.2
2	5.7	12	29	e15	e19	e20	209	78	47	30	19	4.7
3	5.7	11	27	e15	e18	e19	177	56	39	26	15	4.1
4	5.4	11	24	e14	e14	22	149	51	76	24	13	3.6
5	5.1	35	22	e12	e13	32	174	51	56	70	14	3.4
6	4.8	72	21	e10	e16	e29	161	115	81	43	11	3.3
7	4.8	53	21	e13	e17	e26	141	260	65	32	10	3.3
8	4.6	45	19	e16	e17	e23	118	215	59	26	9.6	3.3
9	4.6	41	17	e17	e14	25	100	170	60	21	8.6	3.3
10	4.7	38	e15	e16	e13	19	82	289	65	19	7.6	3.3
11	5.1	35	e13	e15	e15	17	68	452	49	17	6.9	3.4
12	5.1	31	e10	e15	e17	16	59	395	43	15	7.0	3.4
13	5.0	64	e7.0	e17	e16	16	55	282	49	15	7.4	3.2
14	4.7	63	e12	e14	e19	14	49	206	54	13	6.8	12
15	4.5	51	e15	e17	e45	18	47	170	132	12	6.5	20
16	4.4	48	e17	e18	e40	20	44	265	159	12	6.2	18
17	4.3	48	e16	e17	e30	16	40	228	404	12	5.8	22
18	4.6	42	e16	e16	e25	68	41	179	264	10	5.3	11
19	4.8	38	e16	e16	e39	50	39	143	174	9.4	16	8.3
20	4.7	90	e17	e15	e56	e37	36	112	136	32	23	32
21	5.5	129	e20	e14	e140	40	36	91	425	49	12	19
22	46	92	e15	e11	66	e32	35	71	294	23	10	14
23	28	79	e12	e14	46	e31	33	63	218	18	8.7	89
24	29	67	e20	e17	e40	176	31	194	155	15	7.0	60
25	27	56	e31	e18	e35	218	30	111	110	29	5.7	38
26	21	49	e22	e18	e30	191	29	99	82	17	5.1	32
27	18	45	e18	e19	e28	157	27	84	64	18	4.6	25
28	16	42	e17	e15	e24	160	25	67	62	15	4.4	21
29	15	37	e20	e14	---	210	24	56	51	12	4.6	19
30	13	34	e17	e16	---	433	23	67	40	11	5.1	16
31	12	---	e14	e18	---	388	---	58	---	12	4.3	---
TOTAL	328.9	1470	572.0	476	871	2545	2376	4704	3562	692.4	296.2	502.8
MEAN	10.6	49.0	18.5	15.4	31.1	82.1	79.2	152	119	22.3	9.55	16.8
MAX	46	129	32	19	140	433	294	452	425	70	26	89
MIN	4.3	11	7.0	10	13	14	23	26	39	9.4	4.3	3.2
CFSM	.28	1.30	.49	.41	.83	2.18	2.10	4.02	3.15	.59	.25	.44
IN.	.32	1.45	.56	.47	.86	2.51	2.34	4.64	3.51	.68	.29	.50
CAL YR 1988	TOTAL 13413.11	MEAN 36.6	MAX 645	MIN .75	CFSM .97	IN. 13.24						
WTR YR 1989	TOTAL 18396.30	MEAN 50.4	MAX 452	MIN 3.2	CFSM 1.34	IN. 18.15						

e Estimated.

WEST BRANCH SUSQUEHANNA RIVER BASIN

01549700 PINE CREEK BELOW LITTLE PINE CREEK NEAR WATERVILLE, PA

LOCATION.--Lat 41°16'25", long 77°19'28", Lycoming County, Hydrologic Unit 02050205, on left bank on State Highway 44, on abutment of abandoned bridge 0.9 mi downstream from Ramsey Run, 4.0 mi downstream from Little Pine Creek, 4.0 mi south of Waterville, and 9.2 mi upstream from mouth.

DRAINAGE AREA.--944 mi².

PERIOD OF RECORD.--October 1957 to current year.

REVISED RECORDS.--WDR PA-72-1: 1964(P).

GAGE.--Water-stage recorder. Datum of gage is 570.62 ft above National Geodetic Vertical Datum of 1929. Prior to June 16, 1982, nonrecording gage at same site and datum.

REMARKS.--Records fair. Flood flows subject to regulation by Little Pine Dam 8.5 mi upstream, capacity 24,900 acre-ft. Several measurements of water temperature were made during the year. National Weather Service satellite telemeter at station.

AVERAGE DISCHARGE.--32 years, 1,390 ft³/s, 20.00 in/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 104,000 ft³/s, June 23, 1972, gage height, 22.76 ft, from floodmarks, from rating curve extended above 22,000 ft³/s on basis of slope-area measurement of peak flow; minimum observed, 25 ft³/s, Sept. 25, 26, 27, 1964; minimum gage height observed, 0.97 ft, Sept. 13, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 9,200 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 30	2115	11,500	7.05	June 17	1345	11,200	6.97
May 11	2330	12,700	7.35	June 21	1600	*16,500	*8.25

Minimum daily discharge, 66 ft³/s, Sept. 9-13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	86	141	502	e320	e420	e620	9760	571	1050	1060	246	94
2	86	132	460	e310	e400	e560	6850	865	957	919	256	94
3	86	130	425	e300	e360	e500	5100	1280	953	803	253	94
4	79	130	370	e300	e300	e460	4310	e1250	1130	727	233	98
5	73	168	356	e250	e280	e560	3970	e1200	1370	1060	224	89
6	69	582	340	e210	e320	e840	4070	e1500	1510	1170	223	78
7	75	782	341	e270	e330	e620	3820	e4800	1710	886	215	73
8	79	603	338	e310	e340	e400	3220	e4900	1500	755	183	71
9	83	520	322	e400	e300	e420	2700	4190	1370	644	172	66
10	86	475	263	e340	e270	e430	2270	5000	1560	551	156	66
11	81	444	e210	e300	e300	e440	1950	11600	1340	496	145	66
12	79	404	e180	e400	e350	e400	1650	11500	1120	435	136	66
13	76	433	e130	e450	e370	e370	1460	8000	1280	409	135	66
14	73	761	e160	e350	e390	e380	1370	5740	1500	379	135	73
15	73	785	e200	e440	e450	e400	1230	4600	5400	339	126	130
16	73	675	e250	e470	e640	525	1160	6260	10100	313	120	169
17	73	628	e210	e440	e600	563	1070	8030	10400	308	114	256
18	75	579	e190	e400	e580	631	1020	6520	7590	296	103	267
19	79	523	e180	e380	e560	1340	995	4930	5140	280	116	194
20	92	563	e170	e360	e520	1090	941	3740	4400	294	164	170
21	85	1260	e200	e310	e1000	1030	889	2950	14100	854	188	188
22	195	1300	e180	e280	e2200	978	842	2340	11900	729	207	178
23	352	1100	e190	e360	e1500	891	811	1890	7500	515	202	219
24	345	983	e210	e380	e1200	1120	771	2310	5700	425	168	615
25	370	879	e250	e360	e1000	4620	746	2110	4090	394	141	434
26	461	780	e430	e350	e900	4480	720	1780	3040	378	118	287
27	298	714	e400	e370	e800	3900	691	1580	2290	366	103	222
28	186	654	e370	e400	e700	3590	648	1370	1920	322	96	184
29	172	607	e420	e360	---	4330	601	1180	1630	293	94	160
30	158	546	e400	e380	---	7500	571	1090	1240	256	94	147
31	149	---	e350	e410	---	10800	---	1170	---	243	94	---
TOTAL	4347	18281	8997	10960	17380	54788	66206	116246	114790	16899	4960	4914
MEAN	140	609	290	354	621	1767	2207	3750	3826	545	160	164
MAX	461	1300	502	470	2200	10800	9760	11600	14100	1170	256	615
MIN	69	130	130	210	270	370	571	571	953	243	94	66
CFSM	.15	.65	.31	.37	.66	1.87	2.34	3.97	4.05	.58	.17	.17
IN.	.17	.72	.35	.43	.68	2.16	2.61	4.58	4.52	.67	.20	.19

CAL YR 1988 TOTAL 304013 MEAN 831 MAX 14300 MIN 29 CFSM .88 IN. 11.96
WTR YR 1989 TOTAL 438768 MEAN 1202 MAX 14100 MIN 66 CFSM 1.27 IN. 17.29

e Estimated.

WEST BRANCH SUSQUEHANNA RIVER BASIN

01550000 LYCOMING CREEK NEAR TROUT RUN, PA

LOCATION.--Lat 41°25'06", long 77°01'59", Lycoming County, Hydrologic Unit 02050206, on right bank 150 ft upstream from bridge on Township Route 840, 0.5 mi downstream from Grays Run, and 2.6 mi northeast of Trout Run.

DRAINAGE AREA.--173 mi².

PERIOD OF RECORD.--December 1913 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 756: Drainage area. WSP 921: 1933, 1934(M), 1935-39. WSP 1302: 1914-16, 1922(M), 1932-25, 1926(M), 1927-28, 1930, 1931(M). WSP 1502: 1920-21(M), 1932(M), 1933.

GAGE.--Water-stage recorder. Datum of gage is 693.95 ft above National Geodetic Vertical Datum of 1929. Prior to June 1, 1939, nonrecording gage at site 150 ft downstream at same datum.

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

AVERAGE DISCHARGE.--75 years, 283 ft³/s, 22.21 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,900 ft³/s, June 22, 1972, gage height, 20.19 ft, from floodmark in gage shelter, from rating curve extended above 5,300 ft³/s on basis of slope-area measurement of peak flow; minimum, 3.2 ft³/s, Sept. 27, 1936; minimum daily, 4.0 ft³/s, Sept. 19-24, 27-28, 1936, Sept. 1, 1968.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,900 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 30	1200	3,360	7.05	June 17	0545	*3,740	*7.40

Minimum daily discharge, 17 ft³/s, Sept. 8, 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	120	190	e100	120	e105	1730	121	199	188	78	21
2	50	115	175	e100	133	e100	1150	306	188	161	73	22
3	48	111	162	e94	138	e98	943	254	157	154	63	21
4	45	108	151	e80	e110	e96	845	210	281	171	54	20
5	43	169	140	e70	e94	e120	858	214	228	428	56	19
6	41	540	136	e80	e94	e150	800	614	331	348	50	18
7	39	386	129	e90	e90	e100	673	1310	276	255	43	18
8	38	330	123	e150	e83	e86	564	1030	243	222	39	17
9	38	300	115	217	e72	e84	490	811	224	183	36	17
10	38	275	106	e140	e64	e78	418	1170	249	153	34	18
11	41	253	e90	e125	e76	e76	356	2010	196	136	32	21
12	42	224	e66	e130	e84	e78	319	1540	163	120	31	22
13	40	448	e70	138	e76	e70	292	1080	187	113	31	22
14	39	531	e85	118	e80	e72	271	809	189	104	30	24
15	38	419	e80	123	e120	87	252	663	554	103	29	58
16	38	368	e72	123	e200	114	237	1340	728	97	28	62
17	37	357	e66	115	e110	97	216	1220	2270	102	26	96
18	37	310	e74	108	e100	258	211	913	1240	89	25	57
19	39	269	70	111	e90	259	204	698	818	79	50	43
20	38	446	68	113	e83	169	185	552	620	189	82	239
21	39	717	77	e90	423	167	173	455	1250	257	49	153
22	206	504	76	e84	352	151	162	367	924	171	38	97
23	205	438	70	e82	e210	145	154	320	749	137	33	312
24	220	385	99	e80	e160	518	147	590	607	112	29	353
25	243	336	221	e78	e150	998	143	396	504	95	26	193
26	195	298	153	e76	e140	882	142	328	415	83	23	145
27	171	275	132	e100	e130	700	134	286	337	78	22	115
28	159	259	136	95	e110	700	127	241	314	72	21	96
29	148	232	167	90	---	915	122	205	287	63	20	85
30	135	207	e120	101	---	2090	119	217	224	56	21	74
31	126	---	e110	127	---	2110	---	231	---	56	21	---
TOTAL	2670	9730	3529	3328	3692	11673	12437	20501	14952	4575	1193	2458
MEAN	86.1	324	114	107	132	377	415	661	498	148	38.5	81.9
MAX	243	717	221	217	423	2110	1730	2010	2270	428	82	353
MIN	37	108	66	70	64	70	119	121	157	56	20	17
CFSM	.50	1.87	.66	.62	.76	2.18	2.40	3.82	2.88	.85	.22	.47
IN.	.57	2.09	.76	.72	.79	2.51	2.67	4.41	3.22	.98	.26	.53

CAL YR 1988 TOTAL 72903 MEAN 199 MAX 2790 MIN 14 CFSM 1.15 IN. 15.68
WTR YR 1989 TOTAL 90738 MEAN 249 MAX 2270 MIN 17 CFSM 1.44 IN. 19.51

e Estimated.

WEST BRANCH SUSQUEHANNA RIVER BASIN

01551500 WEST BRANCH SUSQUEHANNA RIVER AT WILLIAMSPORT, PA

LOCATION.--Lat 41°14'10", long 76°59'49", Lycoming County, Hydrologic Unit 02050206, on right bank 100 ft up-stream from Market Street Bridge at South Williamsport, and 350 ft upstream from Hagermans Run.

DRAINAGE AREA.--5,682 mi².

PERIOD OF RECORD.--March 1895 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 756: Drainage area. WSP 1302: 1925-28. WSP 1502: 1895-1904, 1912-13, 1919.

GAGE.--Water-stage recorder. Datum of gage is 494.98 ft above National Geodetic Vertical Datum of 1929.

Mar. 1, 1895, to Sept. 30, 1928, nonrecording gage at bridge 100 ft downstream at same datum. Prior to July 1980, 100 ft downstream on left bank at same datum.

REMARKS.--No estimated daily discharges. Records good. Flow slightly regulated by 6 flood-control reservoirs which have a combined capacity of 440,200 acre-ft. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter and National Weather Service and city of Williamsport landline telemeters at station.

AVERAGE DISCHARGE.--94 years, 8,934 ft³/s, 21.35 in/yr, adjusted for storage 1961-75.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 279,000 ft³/s, June 23, 1972, gage height, 34.75 ft, from rating curve extended above 210,000 ft³/s on basis of slope-area measurement at gage height 33.57 ft; minimum, 162 ft³/s, Sept. 17, 1943; minimum gage height, -0.78 ft, Sept. 13, 1983; minimum daily discharge, 251 ft³/s, Sept. 13, 1932.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known prior to 1895, 32.4 ft, June 1, 1889, discharge, about 252,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 71,600 ft³/s, Apr. 1, gage height, 15.32 ft; minimum, 888 ft³/s, Sept. 12, 13, gage height, -0.13 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1480	1750	4760	6450	5990	8060	66400	3980	8810	11200	2920	1100
2	1430	1600	4360	6360	6100	7080	50800	4850	8310	9290	2780	1100
3	1390	1410	4000	5920	6420	6320	39100	7370	7700	8110	2670	1100
4	2130	1430	3760	5530	6760	5930	32400	8500	7510	7070	2570	1100
5	2400	1770	3530	4690	6920	5730	27900	8220	9080	8850	2490	1110
6	2320	3800	3340	3910	6970	5900	26700	9360	9750	13000	2370	1120
7	2300	7130	3210	3220	6860	6310	24100	14400	10600	12400	2260	1090
8	2250	7490	3050	4460	6260	5810	21100	21600	9910	10900	2220	1080
9	2230	6200	2910	5920	5310	5570	17600	24100	9080	8440	2150	1020
10	2530	5400	2740	6790	4350	5220	15200	24200	8610	8190	2270	994
11	2400	4530	2510	6160	3790	5100	12900	43700	8130	7200	2100	958
12	1540	4140	1850	6140	4200	4980	11500	54300	7110	6040	1930	904
13	1130	4310	1480	6460	4500	4970	10100	44100	6790	5390	1790	893
14	1130	5690	1570	6370	4550	5190	9380	33700	9180	4920	1720	928
15	1120	6230	1860	6920	4700	5350	8780	26800	13900	4970	1640	1400
16	1070	6270	2250	7170	6350	5540	8180	31500	34400	6320	1590	1790
17	1020	6290	2250	7930	10500	6730	7660	44900	44800	5440	1510	2030
18	1020	5890	2080	7270	11000	7270	7130	42500	37200	4590	1450	2510
19	949	5380	2040	6680	8820	8190	6880	33400	27300	3890	1700	3050
20	936	5650	2030	6350	7990	9310	6580	25500	20700	4980	1930	3090
21	1020	9080	2160	5690	8750	9150	6130	20800	48000	5690	1690	2750
22	1660	12500	2380	5050	15300	8840	5750	17200	58800	7070	1580	2260
23	2210	12700	2540	4490	20100	8500	5360	14300	45000	6280	1680	2300
24	2360	10700	2860	4310	16600	9570	5100	13600	40300	6030	1700	2950
25	2630	8990	4220	4640	13000	20300	4850	13900	33500	5020	1510	2990
26	2670	7710	9350	4600	11200	28500	4720	12400	22900	4190	1390	3360
27	2620	6870	10100	4680	10300	27600	4550	12400	18500	3790	1280	3250
28	2360	6310	8470	5560	9250	24500	4390	12700	15100	3510	1230	3050
29	2180	5850	7870	6170	---	24200	4210	11300	15900	3490	1230	2860
30	1960	5300	7920	6100	---	34400	4010	9680	14400	3180	1210	2640
31	1850	---	6940	5870	---	63200	---	9170	---	3000	1130	---
TOTAL	56295	178370	120390	177860	232840	383320	459460	654430	611270	202440	57690	56777
MEAN	1816	5946	3884	5737	8116	12370	15320	21110	20380	6530	1861	1893
MAX	2670	12700	10100	7930	20100	63200	66400	54300	58800	13000	2920	3360
MIN	936	1410	1480	3220	3790	4970	4010	3980	6790	3000	1130	893
CFSM	.32	1.05	.68	1.01	1.46	2.18	2.70	3.72	3.59	1.15	.33	.33
IN.	.37	1.17	.79	1.16	1.52	2.51	3.01	4.28	4.00	1.33	.38	.37

CAL YR 1988 TOTAL 2260990 MEAN 6178 MAX 69600 MIN 559 CFSM 1.09 IN. 14.79
WTR YR 1989 TOTAL 3191142 MEAN 8743 MAX 66400 MIN 893 CFSM 1.54 IN. 20.89

WEST BRANCH SUSQUEHANNA RIVER BASIN

01552000 LOYALSOCK CREEK AT LOYALSOCKVILLE, PA

LOCATION.--Lat 41°19'31", long 76°54'43", Lycoming County, Hydrologic Unit 02050206, on right bank 30 ft downstream from bridge on State Highway 973 at Loyalsockville, 2.5 mi downstream from Wallis Run, and 7.3 mi upstream from mouth.

DRAINAGE AREA.--443 mi².

PERIOD OF RECORD.--August 1925 to September 1974, October 1975 to current year. Monthly discharge only for some periods, published in WSP 1302. Prior to October 1969, published as "at Loyalsock".

REVISED RECORDS.--WSP 756: Drainage area. WSP 871: 1938(M). WSP 1051: 1926(M), 1933(M), 1936(M). WSP 1302: 1926-30. WSP 1502: 1932-33, 1935(M), 1937(M).

GAGE.--Water-stage recorder. Datum of gage is 585.63 ft above National Geodetic Vertical Datum of 1929. August 1925 to Sept. 16, 1926, nonrecording gage, and Sept. 17, 1926, to June 13, 1988, water-stage recorder at site 500 feet downstream on left bank at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. National Weather Service satellite telemeter at station.

AVERAGE DISCHARGE.--63 years, 757 ft³/s, 23.21 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 88,700 ft³/s, June 23, 1972, gage height, 14.74 ft, from floodmark in gage well, from rating curve extended above 16,000 ft³/s on basis of slope-area measurement of peak flow; minimum, 11 ft³/s, Sept. 25, 26, Nov. 24, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 26, 1975, reached a stage of 14.50 ft, from floodmark, discharge, 84,600 ft³/s, from rating curve extended as explained above.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 30	1500	7,010	7.31	May 7	0500	*8,910	*7.83
Apr. 1	0045	6,410	7.09				

Minimum daily discharge, 44 ft³/s, Sept. 10, 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	193	348	747	e480	346	450	4820	306	518	651	138	58
2	182	344	674	e440	354	396	3000	912	497	547	145	60
3	176	330	617	e400	376	370	2400	1110	464	461	136	58
4	166	319	571	e350	e320	357	2150	781	551	402	124	58
5	154	420	521	e300	e280	383	1960	699	614	1600	131	51
6	145	1910	487	e350	e300	e430	2120	2460	607	2310	123	52
7	136	1670	458	e370	e290	e470	1780	6210	651	1420	113	49
8	130	1340	430	e700	e280	e450	1500	3690	551	1030	101	48
9	127	1110	405	e1200	e240	332	1330	2810	507	770	93	47
10	123	949	e360	703	e210	281	1180	3190	540	617	87	44
11	122	843	e310	e540	e260	269	981	5570	503	514	83	44
12	122	731	e240	e540	e260	270	851	4550	397	425	80	47
13	126	1240	e240	630	e210	237	769	3030	386	383	81	47
14	117	2260	e300	457	e230	247	722	2380	410	347	86	50
15	111	1620	e270	501	e270	260	668	2080	1120	294	84	63
16	109	1310	e250	504	650	353	675	4400	1850	266	77	92
17	104	1350	e250	433	e540	322	656	5510	2260	261	72	142
18	107	1300	e210	401	e450	368	607	3530	1730	248	66	120
19	100	1030	e220	409	341	589	578	2500	1240	215	91	105
20	98	1520	e220	397	292	413	527	1920	956	469	105	1060
21	100	3120	e230	e360	752	401	484	1530	1500	729	89	752
22	451	2180	e230	e360	1520	362	446	1220	1670	430	94	364
23	842	1710	e240	e350	953	341	414	990	1350	330	83	364
24	892	1420	322	342	e800	734	392	1390	1390	270	76	1050
25	1180	1180	1000	320	e700	2570	376	1180	1870	223	76	547
26	832	1000	691	300	e700	2620	370	908	1270	198	73	366
27	627	895	527	334	578	2050	349	790	1000	176	65	289
28	533	922	504	318	524	1920	328	671	912	160	60	231
29	476	1100	616	302	---	2600	312	567	1180	146	58	195
30	420	849	e520	304	---	4940	308	514	826	136	61	172
31	380	---	e500	352	---	4800	---	551	---	125	58	---
TOTAL	9381	36320	13160	13747	13026	30585	33053	67949	29320	16153	2809	6625
MEAN	303	1211	425	443	465	987	1102	2192	977	521	90.6	221
MAX	1180	3120	1000	1200	1520	4940	4820	6210	2260	2310	145	1060
MIN	98	319	210	300	210	237	308	306	386	125	58	44
CFSM	.68	2.73	.96	1.00	1.05	2.23	2.49	4.95	2.21	1.18	.20	.50
IN.	.79	3.05	1.11	1.15	1.09	2.57	2.78	5.71	2.46	1.36	.24	.56

CAL YR 1988 TOTAL 239318 MEAN 654 MAX 20300 MIN 41 CFSM 1.48 IN. 20.09
WTR YR 1989 TOTAL 272128 MEAN 746 MAX 6210 MIN 44 CFSM 1.68 IN. 22.85

e Estimated.

WEST BRANCH SUSQUEHANNA RIVER BASIN
01552500 MUNCY CREEK NEAR SONESTOWN, PA

LOCATION.--Lat 41°21'25", long 76°32'06", Sullivan County, Hydrologic Unit 02050206, on right bank 150 ft downstream from Slip Run, 185 ft downstream from bridge on SR 2002, and 1.2 mi east of Sonestown.

DRAINAGE AREA.--23.8 mi².

PERIOD OF RECORD.--October 1940 to current year.

REVISED RECORDS.--WSP 1502: 1941-42.

GAGE.--Water-stage recorder. Datum of gage is 1,025.01 ft above National Geodetic Vertical Datum of 1929. Prior to Mar. 31, 1941, nonrecording gage at same site and datum.

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

AVERAGE DISCHARGE.--49 years, 48.3 ft³/s, 27.56 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,260 ft³/s, June 22, 1972, gage height, 8.94 ft, from rating curve extended above 3,400 ft³/s; minimum, 0.1 ft³/s, Sept. 11, 12, 13, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1936 reached a stage of about 9.3 ft, discharge not determined.

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)
May 6	2130	*1,480	*4.77	No other peak greater than base discharge.			

Minimum daily discharge, 2.2 ft³/s, Sept. 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	24	46	e27	e22	e23	205	23	25	32	6.9	3.1
2	11	23	42	e24	e23	e21	122	72	21	27	6.4	4.1
3	10	21	39	e21	e25	e20	108	51	18	23	6.2	2.9
4	9.5	20	35	e20	e23	e19	96	43	28	20	5.6	2.5
5	9.0	55	32	e16	e22	e19	110	59	19	53	7.4	2.4
6	8.6	125	30	e18	e21	e18	112	480	22	35	5.6	2.4
7	8.2	95	28	e20	e20	e18	90	459	19	33	5.1	2.5
8	7.9	76	26	e25	e19	e17	74	251	19	26	4.9	2.4
9	8.0	64	23	e30	e17	e17	67	167	18	21	4.6	2.3
10	7.9	57	e21	e36	e16	e16	56	255	22	19	4.2	2.3
11	9.2	50	e18	e28	e18	e16	47	399	16	16	4.1	2.3
12	8.5	42	e14	e38	e17	e13	42	257	14	15	4.9	2.4
13	8.0	117	e16	e36	e15	e14	39	155	17	15	5.8	2.2
14	7.3	98	e17	e49	e22	e13	36	127	18	13	4.5	3.0
15	7.1	76	e16	e41	e64	25	36	139	34	11	4.0	17
16	6.9	65	e14	e34	e52	20	40	486	49	11	3.8	6.0
17	6.7	86	e13	e32	e33	18	35	347	61	11	3.5	6.8
18	7.0	66	e15	e29	e24	36	34	188	45	9.6	3.2	4.7
19	7.1	57	e13	29	e21	27	33	126	36	8.8	4.4	26
20	6.5	141	e14	28	e17	23	30	94	30	29	6.9	111
21	8.1	164	e15	25	e100	21	29	75	80	16	4.7	26
22	67	107	e13	e23	e80	20	26	58	80	13	4.0	20
23	49	85	e12	e19	e54	21	25	55	61	11	4.1	44
24	75	70	e25	e20	e35	145	23	72	90	9.3	5.7	38
25	66	59	56	e19	e32	138	23	51	67	8.5	3.6	26
26	51	51	35	e18	e30	115	22	44	54	8.4	3.1	22
27	41	47	31	e18	e28	94	20	38	45	9.2	2.8	17
28	37	72	39	e19	e25	92	19	32	54	7.7	2.8	14
29	33	59	e36	e17	---	126	18	28	55	6.8	2.9	13
30	29	50	e34	e19	---	181	17	28	38	6.3	3.5	12
31	26	---	e31	e18	---	245	---	27	---	6.6	2.8	---
TOTAL	647.5	2122	799	796	875	1591	1634	4686	1155	531.2	142.0	440.3
MEAN	20.9	70.7	25.8	25.7	31.2	51.3	54.5	151	38.5	17.1	4.58	14.7
MAX	75	164	56	49	100	245	205	486	90	53	7.4	111
MIN	6.5	20	12	16	15	13	17	23	14	6.3	2.8	2.2
CFSM	.88	2.97	1.08	1.08	1.31	2.16	2.29	6.35	1.62	.72	.19	.62
IN.	1.01	3.32	1.25	1.24	1.37	2.49	2.55	7.32	1.81	.83	.22	.69

CAL YR 1988	TOTAL 14952.8	MEAN 40.9	MAX 1200	MIN 1.9	CFSM 1.72	IN. 23.37
WTR YR 1989	TOTAL 15419.0	MEAN 42.2	MAX 486	MIN 2.2	CFSM 1.77	IN. 24.10

e Estimated.

WEST BRANCH SUSQUEHANNA RIVER BASIN

01553500 WEST BRANCH SUSQUEHANNA RIVER AT LEWISBURG, PA
(National stream-quality accounting network station)

LOCATION.--Lat 40°58'05", long 76°52'25", Northumberland County, Hydrologic Unit 02050206, at downstream side of left abutment of Market Street bridge on State Highway 45 at Lewisburg, 0.2 mi downstream from Buffalo Creek, and 7.4 mi upstream from mouth.

DRAINAGE AREA.--6,847 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1939 to current year. Monthly discharge only for some periods, published in WSP 1302. September 1913 to August 1923 (gage heights only), are contained in reports of Water Supply Commission of Pennsylvania or Pennsylvania Department of Forests and Waters.

GAGE.--Water-stage recorder. Datum of gage is 428.20 ft above National Geodetic Vertical Datum of 1929. Sept. 21, 1913, to Aug. 31, 1923, Dec. 7, 1939, to July 2, 1940, and Oct. 20, 1987, to Sept. 30, 1988, nonrecording gage at same site and datum. Since Oct. 1, 1942, water-stage recorder for Susquehanna River at Sunbury (station 01553990) used as an auxiliary gage.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Gage inoperative Oct. 1, 1988, to Dec. 31, 1989, due to bridge construction. Records for this period were determined by downstream routing of daily discharges from West Branch Susquehanna River at Williamsport (station 01551500). Flow slightly regulated by 6 flood-control reservoirs, which have a combined capacity of 440,200 acre-ft. U.S. Army Corps of Engineers satellite telemeter and National Weather Service landline telemeter at station.

AVERAGE DISCHARGE.--50 years, 10,820 ft³/s, 21.46 in/yr, adjusted 1961-75.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 300,000 ft³/s, June 24, 1972, gage height, 34.23 ft, from floodmarks (backwater from Susquehanna River); minimum, 390 ft³/s, Nov. 16, 1964, gage height, 0.57 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 19, 1936, reached a stage of 32.1 ft, from floodmarks (backwater from Susquehanna River), discharge, 287,000 ft³/s from slope-area measurement at Watsontown, 8.0 mi upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 83,600 ft³/s, April 1, gage height 14.96 ft; minimum daily, 1020 ft³/s, Sept. 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e1920	e2530	e6590	7490	6840	9830	81600	5060	10600	14400	3450	1450
2	e1840	e2360	e5990	7270	6900	8500	65400	6370	9730	12000	3330	1420
3	e1780	e2150	e5460	6990	7220	7570	49500	8030	9130	10000	3220	1420
4	e2500	e2140	e5100	6540	7630	6940	42200	10100	8660	8590	3080	1410
5	e2750	e2760	e4740	5870	7650	6640	34800	10000	9620	10900	3010	1390
6	e2650	e8130	e4460	4680	7890	6840	33100	13300	12200	16800	2800	1370
7	e2620	e11000	e4260	3900	7820	6940	30500	25200	11800	16800	2630	1350
8	e2550	e10700	e4030	4760	7230	6680	27100	29600	11600	14300	2570	1290
9	e2540	e8830	e3840	6990	6400	6510	23000	32100	10600	10900	2430	1240
10	e2830	e7640	e3590	7890	5210	6110	19600	32000	10100	9420	2490	1180
11	e2690	e6500	e3340	7800	4510	5900	16800	50100	9440	9090	2450	1160
12	e1830	e5850	e2950	7480	4580	5810	14500	69000	8440	7360	2210	1100
13	e1430	e7240	e2110	8550	4920	5620	13000	59900	7580	6850	2060	1030
14	e1410	e10800	e2460	7880	5170	5770	11700	45100	8540	6140	1940	1020
15	e1390	e9950	e2810	8120	5320	5950	11100	35000	14100	5590	1840	1190
16	e1340	e9320	e2810	8760	7030	6280	10300	43100	30000	6880	1770	1770
17	e1280	e9480	e2910	9080	9560	6980	9770	59100	48200	6860	1670	2170
18	e1280	e8910	e2850	9040	12700	8190	9060	56500	45700	5710	1580	2430
19	e1200	e7800	e2610	8140	10500	8880	8660	45600	33800	4960	1990	3060
20	e1190	e9270	e2640	7740	9130	10500	8340	33500	25600	6050	2710	4190
21	e1280	e16500	e2630	6940	10300	10400	7860	26900	37500	7680	2080	4230
22	e2740	e18100	e2810	6290	16200	10200	7290	22300	70800	8310	1830	3220
23	e4090	e17400	e3020	5600	23800	9640	6870	18700	52000	8690	1900	2920
24	e4390	e14500	e3110	5110	20700	10900	6500	17100	47100	7370	1830	3440
25	e5250	e12100	e6620	5420	16300	23500	6240	17500	41800	6500	1700	3940
26	e4530	e10300	e11300	5290	13800	34100	6070	15700	30700	5460	1510	3690
27	e4040	e9150	e11700	5720	12600	34400	5820	14700	23600	4700	1500	3990
28	e3560	e8660	e9920	5980	11100	31100	5530	15100	20800	4230	1480	3620
29	e3260	e8560	e9520	6930	---	29500	5420	13500	19500	4050	1470	3340
30	e2900	e7400	e9670	7100	---	36800	5180	11700	18200	3770	1470	3170
31	e2690	---	e9470	6900	---	66800	---	10900	---	3570	1470	---
TOTAL	77750	266030	155320	212250	269010	439780	582810	852760	697440	253930	67470	68200
MEAN	2508	8868	5010	6847	9607	14190	19430	27510	23250	8191	2176	2273
MAX	5250	18100	11700	9080	23800	66800	81600	69000	70800	16800	3450	4230
MIN	1190	2140	2110	3900	4510	5620	5180	5060	7580	3570	1470	1020
CFSM	.37	1.30	.73	1.00	1.40	2.07	2.84	4.02	3.40	1.20	.32	.33
IN.	.42	1.45	.84	1.15	1.46	2.39	3.17	4.63	3.79	1.38	.37	.37

CAL YR 1988 TOTAL 2808243 MEAN 7694 MAX 80300 MIN 705 CFSM 1.12 IN. 15.26
WTR YR 1989 TOTAL 3942750 MEAN 10800 MAX 81600 MIN 1020 CFSM 1.58 IN. 21.42

e Estimated.

WEST BRANCH SUSQUEHANNA RIVER BASIN

01553500 WEST BRANCH SUSQUEHANNA RIVER AT LEWISBURG, PA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1945-53, 1956-58, 1960 to current year.

REMARKS.--In March 1989 a bias was discovered in the turbidimetric method for sulfate analysis for those samples analyzed by the U.S. Geological Survey National Water-Quality Laboratory indicating that values below 75 mg/L have a median positive bias of 2 mg/L above the true value for the period between 1982 and 1989. Sulfate values in this report have not been corrected for this bias.

Agency collection codes: 42011 - Susquehanna River Basin Commission, 1028 - U.S. Geological Survey. Agency analyzing codes: 9813 - Pa. Department of Environmental Resources, 80020 - U.S. Geological Survey.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	AGENCY COL- LECTING SAMPLE (CODE NUMBER)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE FIELD (μ S/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)
OCT									
05...	1100	42011	9813	2750	320	8.20	15.0	--	0.620
NOV									
16...	1115	1028	80020	9320	185	7.40	7.5	<0.010	--
DEC									
06...	0920	42011	9813	4460	182	7.20	2.0	--	0.820
JAN									
05...	0915	42011	9813	5950	155	7.30	0.0	--	0.680
FEB									
02...	0845	42011	9813	6840	209	7.40	4.0	--	0.740
21...	1435	42011	9813	10000	180	--	6.0	--	0.780
22...	1040	42011	9813	14400	160	--	4.0	--	0.760
22...	1635	42011	9813	16700	150	--	5.0	--	0.740
23...	0940	42011	9813	23300	245	--	4.0	--	0.680
24...	0750	1028	80020	20700	161	6.80	1.5	<0.010	--
24...	1445	42011	9813	19000	160	--	3.0	--	0.640
25...	1530	42011	9813	14800	140	--	5.0	--	0.640
27...	1435	42011	9813	12100	142	--	4.0	--	0.660
MAR									
16...	0900	42011	9813	6080	235	7.60	4.5	--	0.800
30...	1720	42011	9813	38600	104	7.50	11.0	--	0.620
31...	1200	42011	9813	64200	--	7.60	11.0	--	0.640
APR									
01...	1000	42011	9813	81600	105	6.80	8.5	--	0.580
02...	1100	42011	9813	65400	100	6.80	10.0	--	0.620
03...	1100	42011	9813	48900	100	--	12.0	--	0.620
04...	1540	42011	9813	38500	120	7.20	11.0	--	0.660
05...	1215	42011	9813	33200	128	7.40	11.0	--	0.660
07...	1006	42011	9813	29600	135	7.15	10.0	--	0.680
10...	1030	42011	9813	18600	165	6.55	8.5	--	0.680
12...	1115	42011	9813	13800	183	6.85	9.0	--	0.660
28...	1550	42011	9813	5470	215	7.20	15.0	--	0.510
MAY									
02...	1330	42011	9813	6240	205	7.80	15.0	--	0.660
03...	1215	42011	9813	8140	187	8.00	15.0	--	0.620
04...	1250	42011	9813	10900	220	7.80	14.0	--	0.550
05...	1730	42011	9813	10600	210	7.70	12.0	--	0.460
07...	1250	42011	9813	28800	140	7.70	10.0	--	0.620
08...	1300	42011	9813	30700	140	7.80	9.0	--	0.550
09...	1225	42011	9813	33400	150	7.60	11.0	--	0.480
10...	1130	42011	9813	31300	135	7.50	10.0	--	0.530
11...	1230	42011	9813	51800	125	7.65	9.5	--	0.580
12...	0945	42011	9813	70500	115	7.50	9.0	--	0.550
14...	0645	42011	9813	48800	100	7.00	10.0	--	0.700
15...	1345	42011	9813	34400	120	7.75	15.0	--	0.570
17...	1110	42011	9813	59100	120	7.60	14.0	--	0.640
19...	0945	42011	9813	45100	120	7.70	16.0	--	0.550
21...	0950	42011	9813	27400	130	7.80	18.0	--	0.550
25...	1400	1028	80020	17700	149	7.00	15.5	<0.010	--
JUN									
22...	1105	42011	9813	72900	100	7.80	19.0	--	0.400
23...	1135	42011	9813	51100	127	7.10	20.0	--	0.400
24...	1005	42011	9813	47300	115	7.40	20.0	--	0.420
26...	1120	42011	9813	30900	150	7.60	23.0	--	0.590
28...	1105	42011	9813	21000	178	8.00	22.0	--	0.750
30...	1225	42011	9813	18600	197	7.80	20.0	--	0.640
JUL									
21...	1340	42011	9813	8110	200	7.00	23.0	--	0.680
AUG									
09...	0740	1028	80020	2430	305	7.55	22.0	<0.010	--
SEP									
12...	1010	42011	9813	1100	408	8.30	24.0	--	1.03

< Actual value is known to be less than the value shown.

WEST BRANCH SUSQUEHANNA RIVER BASIN

01553500 WEST BRANCH SUSQUEHANNA RIVER AT LEWISBURG, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)
OCT									
05...	--	0.040	0.040	--	--	<0.20	<0.20	--	0.100
NOV									
16...	0.670	<0.010	0.010	--	--	<0.20	--	--	0.020
DEC									
06...	--	0.040	0.040	--	--	<0.20	<0.20	--	0.060
JAN									
05...	--	0.060	0.060	--	--	<0.20	<0.20	--	0.050
FEB									
02...	--	0.020	0.020	--	--	<0.20	<0.20	--	0.040
21...	--	0.040	0.040	0.51	0.41	0.55	0.45	1.3	0.050
22...	--	0.040	0.040	1.1	0.45	1.1	0.49	1.9	0.060
22...	--	0.020	0.020	0.98	0.69	1.0	0.71	1.7	0.060
23...	--	0.010	0.010	1.2	0.68	1.2	0.69	1.9	0.150
24...	0.610	0.070	0.040	0.63	--	0.70	--	--	0.110
24...	--	0.020	0.020	0.85	0.46	0.87	0.48	1.5	0.100
25...	--	0.020	0.020	0.55	0.36	0.57	0.38	1.2	0.050
27...	--	0.020	0.020	0.25	0.23	0.27	0.25	0.93	0.040
MAR									
16...	--	0.040	0.040	0.19	--	0.23	<0.20	1.0	0.050
30...	--	0.030	0.030	0.31	0.23	0.34	0.26	0.96	0.080
31...	--	0.040	0.040	1.4	0.47	1.4	0.51	2.0	0.040
APR									
01...	--	0.020	0.010	1.3	0.55	1.3	0.56	1.9	0.030
02...	--	<0.010	<0.010	--	--	0.87	0.51	1.5	0.030
03...	--	0.040	0.020	0.22	0.19	0.26	0.21	0.88	0.030
04...	--	0.020	0.020	0.28	0.20	0.30	0.22	0.96	0.040
05...	--	0.030	0.030	0.19	0.19	0.22	0.22	0.88	<0.020
07...	--	0.050	0.050	0.80	0.40	0.85	0.45	1.5	0.030
10...	--	0.060	0.060	--	--	<0.20	<0.20	--	0.020
12...	--	0.060	0.040	0.15	--	0.21	<0.20	0.87	0.030
28...	--	<0.020	<0.020	--	--	0.29	<0.20	0.80	0.040
MAY									
02...	--	0.030	0.030	0.20	--	0.23	<0.20	0.89	0.050
03...	--	0.020	0.020	0.24	--	0.26	<0.20	0.88	0.040
04...	--	0.020	0.020	--	--	<0.20	<0.20	--	0.030
05...	--	<0.020	<0.020	--	--	0.40	0.28	0.86	0.030
07...	--	0.030	0.030	1.1	0.63	1.1	0.66	1.7	0.050
08...	--	0.040	0.040	0.19	--	0.23	<0.20	0.78	0.050
09...	--	0.050	0.050	0.30	--	0.35	<0.20	0.83	0.050
10...	--	0.080	0.060	0.25	0.22	0.33	0.28	0.86	0.060
11...	--	0.030	0.020	0.20	--	0.23	<0.20	0.81	0.060
12...	--	0.060	0.050	0.69	0.20	0.75	0.25	1.3	0.060
14...	--	0.080	0.070	0.45	0.31	0.53	0.38	1.2	0.050
15...	--	<0.020	<0.020	--	--	0.44	0.27	1.0	0.050
17...	--	0.020	0.020	0.48	0.38	0.50	0.40	1.1	0.040
19...	--	<0.020	<0.020	--	--	0.56	0.47	1.1	0.040
21...	--	0.020	0.020	0.32	0.23	0.34	0.25	0.89	0.030
25...	0.590	0.040	0.040	0.17	--	0.20	--	--	<0.010
JUN									
22...	--	0.060	0.040	0.81	0.24	0.87	0.28	1.3	0.230
23...	--	0.050	<0.020	0.32	--	0.37	<0.20	0.77	0.060
24...	--	0.050	<0.020	0.42	--	0.47	0.24	0.89	0.060
26...	--	0.070	0.070	0.34	0.22	0.41	0.29	1.0	0.070
28...	--	0.050	0.050	0.22	--	0.27	<0.20	1.0	0.070
30...	--	0.030	0.030	0.44	0.34	0.47	0.37	1.1	0.050
JUL									
21...	--	0.050	0.050	0.52	0.32	0.57	0.37	1.2	0.080
AUG									
09...	0.940	0.020	0.020	0.28	--	0.30	--	--	0.020
SEP									
12...	--	0.040	<0.020	0.19	--	0.23	0.20	1.3	0.070

< Actual value is known to be less than the value shown.

WEST BRANCH SUSQUEHANNA RIVER BASIN

01553500 WEST BRANCH SUSQUEHANNA RIVER AT LEWISBURG, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORGANIC TOTAL (MG/L AS P)	PHOS- PHOROUS ORGANIC DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT								
05...	0.080	0.040	0.10	0.04	1.9	2	15	--
NOV								
16...	0.010	<0.010	0.02	0.01	--	5	126	92
DEC								
06...	0.030	0.018	0.06	0.01	1.1	3	36	--
JAN								
05...	0.030	0.009	0.05	0.02	1.3	2	32	--
FEB								
02...	0.030	0.003	0.04	0.03	1.3	6	111	--
21...	0.040	0.004	0.05	0.04	1.8	18	486	--
22...	0.040	0.003	0.06	0.04	2.4	40	1560	--
22...	0.040	0.002	0.06	0.04	2.0	39	1760	--
23...	0.030	0.002	0.15	0.03	2.7	86	5410	--
24...	<0.010	<0.010	0.11	--	--	82	4580	82
24...	0.040	0.012	0.10	0.03	2.4	73	3740	--
25...	0.050	0.009	0.05	0.04	1.8	28	1120	--
27...	0.040	0.005	0.04	0.03	1.3	13	425	--
MAR								
16...	0.040	0.005	0.05	0.03	1.1	13	213	--
30...	0.030	0.002	0.08	0.03	1.7	53	5520	--
31...	0.030	0.002	0.04	0.03	4.1	215	37300	--
APR								
01...	0.030	0.002	0.03	0.03	4.5	169	37200	--
02...	0.020	0.002	0.03	0.02	2.3	66	11700	--
03...	0.020	0.002	0.03	0.02	2.0	36	4750	--
04...	0.030	0.003	0.04	0.03	1.7	26	2700	--
05...	<0.020	<0.002	--	--	1.4	23	2060	--
07...	0.020	<0.002	0.03	0.02	1.8	19	1520	--
10...	0.020	0.002	0.02	0.02	1.8	14	703	--
12...	0.030	0.003	0.03	0.03	1.1	11	410	--
28...	0.040	0.003	0.04	0.04	1.0	2	30	--
MAY								
02...	0.040	0.006	0.05	0.03	1.8	7	118	--
03...	0.030	0.003	0.04	0.03	--	3	66	--
04...	0.020	0.003	0.03	0.02	1.5	5	147	--
05...	0.020	0.002	0.03	0.02	1.6	10	286	--
07...	0.020	0.003	0.05	0.02	3.1	100	7780	--
08...	0.050	0.002	0.05	0.05	1.9	31	2570	--
09...	<0.020	0.002	0.05	--	2.0	32	2890	--
10...	0.020	<0.002	0.06	0.02	1.9	23	1940	--
11...	0.020	<0.002	0.06	0.02	2.0	58	8110	--
12...	0.040	0.002	0.06	0.04	2.3	67	12800	--
14...	0.040	0.002	0.05	0.04	2.0	30	3950	--
15...	0.040	0.002	0.05	0.04	1.3	14	1300	--
17...	0.040	<0.002	0.04	0.04	1.9	342	54600	--
19...	0.020	<0.002	0.04	0.02	1.7	23	2800	--
21...	0.020	<0.002	0.03	0.02	1.4	14	1040	--
25...	<0.010	0.010	--	--	--	10	478	--
JUN								
22...	<0.020	<0.002	0.23	--	4.4	220	43300	--
23...	0.030	0.003	0.06	0.03	1.6	43	5930	--
24...	0.030	0.002	0.06	0.03	<1.0	45	5750	--
26...	0.030	<0.002	0.07	0.03	1.6	32	2670	--
28...	0.030	<0.002	0.07	0.03	1.9	42	2380	--
30...	0.020	<0.002	0.05	0.02	1.7	18	904	--
JUL								
21...	0.040	0.004	0.08	0.04	2.8	30	657	--
AUG								
09...	0.020	<0.010	0.02	0.02	--	8	63	74
SEP								
12...	0.060	0.00	0.07	0.06	2.0	2.7	8.7	--

< Actual value is known to be less than the value shown.

WEST BRANCH SUSQUEHANNA RIVER BASIN

01553500 WEST BRANCH SUSQUEHANNA RIVER AT LEWISBURG, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	AGENCY COL- LECTING SAMPLE (CODE NUMBER)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (μ S/CM)	PH (STAND- ARD UNITS)	TUR- BID- ITY (NTU)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 μ M-MF (COLS./ 100 ML)
NOV 16...	1115	1028	80020	9320	185	7.40	2.0	764	11.8	98	22
FEB 24...	0750	1028	80020	20700	161	6.80	35	772	12.6	89	220
MAY 25...	1400	1028	80020	17700	149	7.00	3.0	761	9.8	99	23
AUG 09...	0740	1028	80020	2430	305	7.55	1.2	771	8.0	91	K 16

DATE	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB WH WAT TOT FLD (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER DIS IT FIELD (MG/L AS HCO3)	ALKA- LITY WAT WH TOT FET FIELD (MG/L AS CACO3)
NOV 16...	K 14	74	62	19	6.3	5.8	14	0.3	1.4	12
FEB 24...	370	56	51	14	5.2	4.6	15	0.3	1.3	5
MAY 25...	K 2	65	53	16	6.1	3.4	10	0.2	1.0	12
AUG 09...	270	130	70	32	11	6.7	10	0.3	1.5	56

DATE	ALKA- LITY WAT DIS TOT IT FIELD (MG/L AS CACO3)	ALKA- LITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)
NOV 16...	12	17	* 53	6.8	0.10	4.1	118	107	0.16	2970
FEB 24...	9	7.0	* 49	7.5	0.10	4.7	86	93	0.12	4810
MAY 25...	11	12	* 50	4.3	0.10	5.2	89	97	0.12	4250
AUG 09...	57	33	* 86	9.3	0.10	3.1	176	188	0.24	1390

DATE	ALUM- INUM, DIS- SOLVED (μ G/L AS AL)	ARSENIC DIS- SOLVED (μ G/L AS AS)	BARIUM, DIS- SOLVED (μ G/L AS BA)	BERYL- LIUM, DIS- SOLVED (μ G/L AS BE)	CADMIUM DIS- SOLVED (μ G/L AS CD)	CHRO- MIUM, DIS- SOLVED (μ G/L AS CR)	COBALT, DIS- SOLVED (μ G/L AS CO)	COPPER, DIS- SOLVED (μ G/L AS CU)	IRON, DIS- SOLVED (μ G/L AS FE)	LEAD, DIS- SOLVED (μ G/L AS PB)
NOV 16...	<10	<1	29	1	<1	<1	<3	2	12	<5
FEB 24...	<10	<1	36	<0.5	<1	<1	6	1	8	<5
MAY 25...	30	<1	34	<0.5	<1	<1	6	1	5	<1
AUG 09...	30	<1	31	<0.5	<1	<1	<3	5	8	1

K Results based on non-ideal colony count.

< Actual value is known to be less than the value shown.

* See "REMARKS" paragraph page 96.

WEST BRANCH SUSQUEHANNA RIVER BASIN

01553500 WEST BRANCH SUSQUEHANNA RIVER AT LEWISBURG, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	LITHIUM DIS- SOLVED ($\mu\text{G/L}$ AS LI)	MANGA- NESE, DIS- SOLVED ($\mu\text{G/L}$ AS MN)	MERCURY DIS- SOLVED ($\mu\text{G/L}$ AS HG)	MOLYB- DENUM, DIS- SOLVED ($\mu\text{G/L}$ AS MO)	NICKEL, DIS- SOLVED ($\mu\text{G/L}$ AS NI)	SELE- NIUM, DIS- SOLVED ($\mu\text{G/L}$ AS SE)	SILVER, DIS- SOLVED ($\mu\text{G/L}$ AS AG)	STRON- TIUM, DIS- SOLVED ($\mu\text{G/L}$ AS SR)	VANA- DIUM, DIS- SOLVED ($\mu\text{G/L}$ AS V)	ZINC, DIS- SOLVED ($\mu\text{G/L}$ AS ZN)
NOV 16...	<4	310	<0.1	<10	10	<1	<1.0	100	<6	11
FEB 24...	5	750	--	<10	15	<1	1.0	74	<6	19
MAY 25...	5	490	--	<10	15	<1	<1.0	78	<6	24
AUG 09...	10	93	--	<10	6	<1	<1.0	170	<6	7

CROSS-SECTION ANALYSES, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK)	SPE- CIFIC CON- DUCT- ANCE ($\mu\text{S/CM}$)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV								
16...	1055	900	200	7.40	7.5	11.8	4	81
16...	1100	800	205	7.40	7.5	11.7	7	--
16...	1105	700	194	7.40	7.5	11.8	4	87
16...	1110	600	202	7.40	7.5	11.8	--	--
16...	1120	500	181	7.50	7.5	11.8	2	60
16...	1130	400	168	7.50	8.0	11.8	4	--
16...	1135	300	168	7.50	7.5	11.9	8	61
16...	1140	200	171	7.50	8.0	11.8	7	--
MAY								
25...	1330	1050	158	7.50	14.5	10.0	12	93
25...	1334	950	154	7.30	--	--	9	87
25...	1335	850	154	7.20	15.5	10.0	10	88
25...	1340	750	155	7.10	--	--	8	80
25...	1345	650	154	7.00	15.5	9.9	7	87
25...	1350	550	151	7.10	--	--	7	96
25...	1355	450	148	7.00	15.5	10.0	7	92
25...	1410	250	145	7.00	15.5	9.8	8	88
25...	1420	150	151	7.00	--	--	13	76
25...	1430	50	154	7.10	16.0	9.8	49	84

< Actual value is known to be less than the value shown.

WEST BRANCH SUSQUEHANNA RIVER BASIN

01553700 CHILLISQUAKE CREEK AT WASHINGTONVILLE, PA

LOCATION.--Lat 41°03'42", long 76°40'50", Montour County, Hydrologic Unit 02050206, on left bank 60 ft upstream from bridge on State Highway 54, and 0.7 mi north of U.S. Post Office in Washingtonville.

DRAINAGE AREA.--51.3 mi².

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

REVISED RECORDS.--WDR PA-82-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 503.70 ft above National Geodetic Vertical Datum of 1929 (Pennsylvania Power and Light Co. bench mark).

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow includes diversion from West Branch Susquehanna River. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--10 years, 71.1 ft³/s, 18.82 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,510 ft³/s, June 28, 1983, gage height, 10.82 ft, from rating curve extended above 1,300 ft³/s; minimum daily, 11 ft³/s, Oct. 6-8, 1982.

EXTREMES 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)
May 7	0130	1,800	7.64	May 16	0400	*1,990	*8.06

Minimum daily discharge, 15 ft³/s, Oct. 1, 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	23	e42	e53	46	40	199	25	30	64	25	19
2	16	23	e38	e48	50	35	132	109	29	52	23	18
3	17	23	e35	e43	77	34	110	65	23	44	21	17
4	16	25	e32	e40	e41	34	96	56	38	39	20	16
5	16	77	e30	e38	e37	40	88	61	25	236	21	17
6	15	213	e28	e37	e35	48	102	652	25	118	19	17
7	17	126	e27	e60	e34	35	83	864	23	73	19	19
8	17	88	e26	e110	e34	33	71	300	22	55	19	19
9	18	68	e25	e80	e34	40	70	176	25	44	18	18
10	17	56	e25	e70	e33	48	59	303	31	39	17	18
11	18	49	e24	e60	e33	47	52	386	20	34	17	18
12	19	41	e23	e72	e32	48	45	277	18	30	19	18
13	20	122	e60	e66	e35	41	43	170	32	29	19	18
14	20	121	e58	e105	e40	39	40	185	31	26	17	18
15	20	84	e37	e88	e62	48	40	257	40	24	18	19
16	21	67	e30	e74	e60	57	46	1420	45	25	19	20
17	21	107	e33	e66	e49	51	38	616	79	28	18	21
18	21	74	e40	e62	e47	64	36	314	51	24	18	19
19	20	58	e50	e59	e45	60	33	195	37	22	28	25
20	21	275	e39	59	e45	48	30	105	32	59	27	63
21	22	345	e30	39	e70	76	29	84	114	36	21	30
22	54	160	e25	36	e66	69	27	65	85	30	20	26
23	34	104	e33	34	e61	52	26	58	63	29	21	33
24	36	80	e230	33	e78	322	25	65	126	26	18	36
25	37	64	e250	31	76	407	24	50	114	24	18	27
26	29	55	e130	32	60	195	24	44	70	23	18	31
27	26	51	e86	39	52	131	23	41	149	22	18	27
28	25	71	e90	33	44	106	22	34	326	21	17	25
29	25	57	e80	31	---	112	22	29	167	20	17	24
30	24	46	e70	38	---	136	22	29	91	21	18	24
31	24	---	e60	45	---	191	---	29	---	22	18	---
TOTAL	701	2753	1786	1681	1376	2687	1657	7064	1961	1339	606	700
MEAN	22.6	91.8	57.6	54.2	49.1	86.7	55.2	228	65.4	43.2	19.5	23.3
MAX	54	345	250	110	78	407	199	1420	326	236	28	63
MIN	15	23	23	31	32	33	22	25	18	20	17	16
CFSM	.44	1.79	1.12	1.06	.96	1.69	1.08	4.44	1.27	.84	.38	.45
IN.	.51	2.00	1.30	1.22	1.00	1.95	1.20	5.12	1.42	.97	.44	.51

CAL YR 1988 TOTAL 18666 MEAN 51.0 MAX 664 MIN 13 CFSM .99 IN. 13.54
WTR YR 1989 TOTAL 24311 MEAN 66.6 MAX 1420 MIN 15 CFSM 1.30 IN. 17.63

e Estimated.

WEST BRANCH SUSQUEHANNA RIVER BASIN

RESERVOIRS IN WEST BRANCH SUSQUEHANNA RIVER BASIN

01541180 CURWENSVILLE LAKE.--Lat 40°57'13", long 78°31'40", Clearfield County, Hydrologic Unit 02050201, at Curwensville Dam on West Branch Susquehanna River, 0.7 mi upstream from State Highway 453, 1.2 mi south of Curwensville, and 2.5 mi upstream from Anderson Creek. DRAINAGE AREA, 365 mi². PERIOD OF RECORD, November 1965 to current year. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Reservoir formed by earthfill dam with excavated chute spillway and concrete control sill at elevation 1,228.00 ft. Storage began in November 1965. Capacity at elevation 1,228.00 ft is 124,200 acre-ft. Conservation pool elevation is 1,155.00 ft, capacity, 4,870 acre-ft. Reservoir is used for flood control, recreation and study of water quality. Figures given herein represent total contents. Flow regulated by three gates and low-flow by-pass system. U.S. Army Corps of Engineers satellite and landline telemetry at station.

COOPERATION.--Records provided by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 87,650 acre-ft, June 25, 1972, elevation, 1,214.11 ft; minimum, 252 acre-ft, Nov. 6, 1968, elevation, 1,136.70 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 27,160 acre-ft, Apr. 1, elevation, 1,178.80 ft; minimum, 4,540 acre-ft, Feb. 19, elevation, 1,154.40 ft.

01541340 GLENDALE LAKE.--Lat 40°41'50", long 78°32'15", Cambria County, Hydrologic Unit 02050201, at Glendale Dam on Beaverdam Run, 1.0 mi upstream from Dutch Run, 1.3 mi southwest of Flinton, 1.9 mi above mouth, and 3.4 mi south of Coalport. DRAINAGE AREA, 41.9 mi². PERIOD OF RECORD, January 1963 to current year. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir formed by an earth and rockfill dam with ungated concrete spillway at elevation 1,435.00 ft. Storage began Dec. 1, 1960. Capacity at elevation 1,435.00 ft is 41,200 acre-ft of which 15,900 acre-ft is controlled storage above elevation 1,427.00 ft. Dead storage is 25,300 acre-ft. Reservoir is used for flood control and recreation. Figures given herein represent total contents. Outflow is controlled by 72-inch gate and an 8-inch bypass valve.

COOPERATION.--Records provided by Pennsylvania Department of Environmental Resources.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 33,390 acre-ft, June 24, 1972, elevation, 1,431.63 ft; minimum, 10,640 acre-ft, Nov. 16, 1965, elevation, 1,415.53 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 27,620 acre-ft, May 16, elevation, 1,428.45 ft; minimum, 25,490 acre-ft, Oct. 11, Sept. 12, 13, elevation, 1,427.12 ft.

01543900 FIRST FORK SINNEMAHONING CREEK RESERVOIR.--Lat 41°24'25", long 78°01'10", Cameron County, Hydrologic Unit 02050202, at control tower of George B. Stevenson Dam, on First Fork Sinnemahoning Creek, 8.0 mi northeast of Sinnemahoning, and 8.0 mi upstream from mouth. DRAINAGE AREA, 243 mi². PERIOD OF RECORD, January 1956 to current year. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by an earthfill dam. Storage began Jan. 31, 1956. Capacity, 75,800 acre-ft between elevations 890.00 ft (sill of outlet gates) and 1,026.00 ft (crest of spillway). No dead storage. Ordinary minimum (conservation) pool elevation is 920.00 ft, capacity, 2,000 acre-ft. Reservoir is used for flood control and recreation. Figures given herein represent total contents. U.S. Army Corps of Engineers satellite and landline telemetry at station.

COOPERATION.--Records provided by Pennsylvania Department of Environmental Resources.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 62,030 acre-ft, June 26, 1972, elevation, 1,015.87 ft; minimum, (after first filling), 37 acre-ft many days in October 1973, elevation, 891.84 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 22,700 acre-ft, June 22, elevation, 972.42 ft; minimum, 1,460 acre-ft, Oct. 16, 17, 18, elevation, 915.54 ft.

01544800 KETTLE CREEK LAKE (formerly published as Alvin R. Bush Reservoir).--Lat 41°21'37", long 77°55'27", Clinton County, Hydrologic Unit 02050203, at control tower of dam on Kettle Creek, 1.1 mi downstream from Sugar Camp Run, and 8.5 mi upstream from mouth and Westport. DRAINAGE AREA, 226 mi². PERIOD OF RECORD, February 1962 to current year. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Reservoir formed by an earthfill embankment, rock faced, with ungated concrete spillway at elevation 937.00 ft. Storage began Feb. 7, 1962; water in reservoir first reached conservation pool elevation in March 1962. Total capacity at elevation 937.00 ft is 75,000 acre-ft. No dead storage. Ordinary minimum (conservation) pool elevation is 840.00 ft, capacity, 1,590 acre-ft. Reservoir is used for flood control and recreation. Figures given herein represent total contents. Storage is regulated by three gates and low-flow bypass system. U.S. Army Corps of Engineers satellite and landline telemetry at station.

COOPERATION.--Records provided by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 51,660 acre-ft, June 25, 1972, elevation, 919.13 ft; minimum, no storage, June 7, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 15,250 acre-ft, June 22, elevation, 877.00 ft; minimum, 1,600 acre-ft, Apr. 4, elevation, 840.08 ft.

01547480 FOSTER JOSEPH SAYERS LAKE.--Lat 41°02'53", long 77°36'35", Centre County, Hydrologic Unit 02050204, at Foster Joseph Sayers Dam, on Bald Eagle Creek, 1.0 mi upstream from Marsh Creek, and 1.2 mi south of Blanchard. DRAINAGE AREA, 339 mi². PERIOD OF RECORD, March 1971 to current year. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Reservoir formed by an earthfill dam with ungated concrete ogee weir at elevation 657.00 ft with abutting concrete gravity walls and partially paved exit channel. Storage began in March 1971. Capacity at elevation 657.00 ft is 99,100 acre-ft. Dead storage is 25 acre-ft. Ordinary minimum (conservation) pool elevation is 610.0 ft, capacity, 6,300 acre-ft. Reservoir used for flood control and recreation. Figures given herein represent total contents. Regulation is accomplished by two gates. U.S. Army Corps of Engineers satellite and landline telemetry at station.

COOPERATION.--Records provided by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 103,900 acre-ft, June 25, 1972, elevation, 658.41 ft; minimum, 3,250 acre-ft, Oct. 27, 1987, elevation, 604.45 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 45,630 acre-ft, June 23, elevation, 638.47 ft; minimum, 4,880 acre-ft, Nov. 8, elevation, 607.59 ft.

WEST BRANCH SUSQUEHANNA RIVER BASIN

Reservoirs in West Branch Susquehanna River basin-Continued

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS AT 2400, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

Date	Elevation (feet)	Contents (acre- feet)	Change in contents (equivalent in ft ³ /s/day)	Elevation (feet)	Contents (acre- feet)	Change in contents (equivalent in ft ³ /s/day)
<u>01541180 Curwensville Lake</u>				<u>01541340 Glendale Lake</u>		
Sept. 30.....	1,161.89	9,460	--	1,427.21	25,640	--
Oct. 31.....	1,162.26	9,760	+ 4.9	1,427.18	25,590	- 0.8
Nov. 30.....	1,155.07	4,910	- 81.5	1,427.49	26,080	+ 8.2
Dec. 31.....	1,155.13	4,950	+ 0.7	1,427.49	26,080	0
CAL YR 1988.....	--	--	+ 0.2	--	--	- 0.4
Jan. 31.....	1,155.29	5,040	+ 1.5	1,427.57	26,210	+ 2.1
Feb. 28.....	1,154.93	4,840	- 3.6	1,427.79	26,560	+ 6.5
Mar. 31.....	1,177.77	25,910	+343	1,428.10	27,060	+ 8.1
Apr. 30.....	1,158.79	7,200	-314	1,427.31	25,800	- 21.2
May 31.....	1,162.26	9,760	+ 41.6	1,427.53	26,150	+ 5.7
June 30.....	1,162.58	10,020	+ 4.4	1,427.71	26,440	+ 4.9
July 31.....	1,162.53	9,980	- 0.7	1,427.36	25,880	- 9.1
Aug. 31.....	1,162.42	9,890	- 1.5	1,427.19	25,600	- 4.6
Sept. 30.....	1,162.26	9,760	- 2.2	1,427.13	25,510	- 1.5
WTR YR 1989.....	--	--	+ 0.4	--	--	- 0.2
<u>01543900 F. F. Sinnemahoning Cr. Reservoir</u>				<u>01544800 Kettle Creek Lake</u>		
Sept. 30.....	921.22	2,320	--	841.99	1,900	--
Oct. 31.....	916.08	1,510	- 13.2	840.98	1,740	- 2.6
Nov. 30.....	921.24	2,320	+ 13.6	841.11	1,760	+ 0.3
Dec. 31.....	921.09	2,310	- 0.2	841.42	1,810	+ 0.8
CAL YR 1988	--	--	- 0.1	--	--	+ 0.1
Jan. 31	921.04	2,300	- 0.2	841.20	1,780	- 0.5
Feb. 28	921.16	2,320	+ 0.4	841.07	1,760	- 0.4
Mar. 31	947.08	9,190	+112	841.20	1,780	+ 0.3
Apr. 30	921.18	2,320	-115	841.11	1,760	- 0.3
May 31	921.18	2,320	0	840.98	1,740	- 0.3
June 30	920.99	2,300	- 0.3	841.23	1,780	+ 0.7
July 31	921.26	2,330	+ 0.5	841.01	1,750	- 0.5
Aug. 31	921.17	2,320	- 0.2	841.17	1,770	+ 0.3
Sept. 30	921.18	2,320	0	840.92	1,730	- 0.7
WTR YR 1989.....	--	--	0	--	--	- 0.2
<u>01547480 Foster Joseph Sayers Lake</u>						
Sept. 30	629.10	27,320	--			
Oct. 31	609.55	6,030	-346			
Nov. 30	609.85	6,210	+ 3.0			
Dec. 31	610.05	6,330	+ 2.0			
CAL YR 1988.....	--	--	- 0.3			
Jan. 31	610.20	6,430	+ 1.6			
Feb. 28	619.65	14,470	+145			
Mar. 31	628.12	25,700	+183			
Apr. 30	628.08	25,630	- 1.2			
May 31	630.51	29,710	+ 66.4			
June 30	630.41	29,530	- 3.0			
July 31	630.13	29,030	- 8.1			
Aug. 31	629.93	28,680	- 5.7			
Sept. 30	618.81	13,600	-253			
WTR YR 1989.....	--	--	- 18.9			

SUSQUEHANNA RIVER BASIN

01554000 SUSQUEHANNA RIVER AT SUNBURY, PA

LOCATION.--Lat 40°50'04", long 76°49'37", Snyder County, Hydrologic Unit 02050301, on right bank at borough of Shamokin Dam, on grounds of Pennsylvania Power and Light Co. generating plant, 1.0 mi downstream from Shamokin Creek, 1.5 mi downstream from Sunbury Fabridam, and 1.8 mi south of Sunbury.

DRAINAGE AREA.--18,300 mi², approximately (excluding that of Shamokin Creek).

PERIOD OF RECORD.--October 1937 to current year. June 1918 to September 1918 (gage heights only), in reports of Pennsylvania Department of Forests and Waters.

REVISED RECORDS.--WSP 891: 1936(M). WDR PA-79-2: 1978(M).

GAGE.--Water-stage recorder. Datum of gage is 408.61 ft above National Geodetic Vertical Datum of 1929. See WSP 1903 for history of changes prior to Dec. 13, 1937. Dec. 13, 1937, to Mar. 23, 1967, water-stage recorder at site 1.7 mi upstream at datum 11.05 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow slightly regulated by 14 flood-control reservoirs which have a capacity of about 809,000 acre-ft, and during low flow by Fabridam upstream. U.S. Army Corps of Engineers satellite telemeter and National Weather Service landline telemeter at station.

AVERAGE DISCHARGE.--52 years, 26,450 ft³/s, 19.63 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 620,000 ft³/s, June 24, 1972, gage height, 35.80 ft; minimum, 964 ft³/s, Oct. 16, 1971, gage height, 4.83 ft, result of shutoff at Fabridam.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 176,000 ft³/s, May 13, gage height, 20.17 ft; minimum, 2,830 ft³/s, Oct. 20, gage height, 6.02 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4410	9010	19400	16400	14200	19600	150000	12100	21900	31700	7580	3790
2	4140	8170	19000	17300	14100	17600	146000	14000	21900	26700	7660	3890
3	4050	7610	17900	16300	15300	16000	118000	20800	21900	21200	7860	3750
4	3830	7290	16500	15200	16700	14800	92500	28100	24300	20000	7560	3630
5	4470	7180	15700	12600	17500	14100	79400	32000	26500	21200	7400	3590
6	4720	10300	14800	11500	17400	14300	77600	49300	28600	29400	6880	3630
7	4650	16800	13900	10300	16200	14100	79900	89100	29400	31200	7470	3500
8	4550	23400	13300	10000	15000	15300	73200	109000	29500	28900	7500	3410
9	4390	30900	12700	13700	13400	15700	62400	109000	28500	25500	7040	3410
10	4380	30800	12000	14700	12000	14500	53100	95200	27200	23600	7560	e3900
11	4640	25100	11500	15000	10800	13700	45300	106000	e25000	22800	7790	e3800
12	4580	20900	10300	15300	10200	13000	39200	147000	e22000	18900	7100	e3700
13	4160	19000	7630	17700	10700	12500	34800	166000	e21000	16600	6680	e3400
14	3570	21200	7140	16400	11000	12200	31200	132000	e25000	14800	5980	e3000
15	3330	21800	7420	16300	11200	12400	28600	103000	e40000	13400	5550	e3400
16	3210	21800	6900	17300	13300	12600	27200	109000	e60000	13700	5340	e4500
17	3130	22200	7060	17500	15300	13000	26500	134000	e94000	14500	5080	e6000
18	3130	21900	7950	17400	19300	15500	24500	133000	e85000	13700	4810	e7200
19	3130	19800	8950	16000	18200	20200	23700	99900	e64000	8400	5340	e9000
20	2980	19800	10000	15600	17000	21900	22900	74000	e50000	11600	6360	e11000
21	3010	32400	9270	14500	17600	24000	21600	58500	64500	14200	5580	e12000
22	3710	37000	8630	12500	24300	23300	20300	47300	101000	14700	5180	e10000
23	5630	39700	8550	11600	34200	20900	18900	39900	102000	15600	5070	e8800
24	6820	38900	8600	10900	39600	21000	17600	37300	87400	15800	4750	e8000
25	7510	32800	11200	10700	36200	36000	16600	37900	84400	14500	4490	9050
26	8990	27700	14900	11200	28800	59700	15800	37700	72900	13000	4140	13000
27	12000	24500	19000	11400	24600	74100	14800	34500	57000	11600	4080	14100
28	14100	22600	18500	11800	21800	67000	14100	31600	49400	10400	4060	12400
29	13100	21600	18300	12900	---	59500	13800	30100	42300	9330	4030	9870
30	11200	20200	17800	13100	---	65600	13100	27100	35900	8520	3980	9410
31	9510	---	16300	14100	---	103000	---	24100	---	8070	3880	---
TOTAL	175030	662360	391100	437200	515900	857100	1402600	2168500	1442500	543520	183780	198130
MEAN	5646	22080	12620	14100	18420	27650	46750	69950	48080	17530	5928	6604
MAX	14100	39700	19400	17700	39600	103000	150000	166000	102000	31700	7860	14100
MIN	2980	7180	6900	10000	10200	12200	13100	12100	21000	8070	3880	3000
CFSM	.31	1.21	.69	.77	1.01	1.51	2.55	3.82	2.63	.96	.32	.36
IN.	.36	1.35	.80	.89	1.05	1.74	2.85	4.41	2.93	1.10	.37	.40

CAL YR 1988 TOTAL 6794390 MEAN 18560 MAX 138000 MIN 2120 CFSM 1.01 IN. 13.81
WTR YR 1989 TOTAL 8977720 MEAN 24600 MAX 166000 MIN 2980 CFSM 1.34 IN. 18.25

e Estimated.

SHAMOKIN CREEK BASIN

01554500 SHAMOKIN CREEK NEAR SHAMOKIN, PA

LOCATION.--Lat 40°48'37", long 76°35'04", Northumberland County, Hydrologic Unit 02050301, on right bank at Weigh Scales, 1.0 mi downstream from Trout Run, 1.1 mi upstream from Bennys Run, and 2.0 mi northwest of Shamokin.

DRAINAGE AREA.--54.2 mi².

PERIOD OF RECORD.--November 1939 to current year. Prior to October 1964, published as "at Weigh Scales".

GAGE.--Water-stage recorder and concrete control. Datum of gage is 606.28 ft above National Geodetic Vertical Datum of 1929. Nov. 14, 1939, to Jan. 9, 1967, water-stage recorder at site 0.4 mi upstream at datum 2.00 ft higher, and Jan. 10 to Dec. 10, 1967, nonrecording gage at site 0.4 mi downstream at datum 11.50 ft lower.

REMARKS.--No estimated daily discharges. Records good. Regulation by mine pumps upstream from station. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--49 years, 85.3 ft³/s, 21.37 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,070 ft³/s, June 22, 1972, gage height, 8.72 ft, from rating curve extended above 560 ft³/s on basis of slope-area measurement of peak flow; minimum, 3.2 ft³/s, Feb. 15, 1940, gage height, 0.42 ft, site and datum then in use.

EXTREMES 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)
May 16	1900	*655	*3.92				

Minimum discharge, 27 ft³/s, Oct. 26, 27, 29, gage height 2.12 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	31	42	31	36	45	85	78	123	116	88	53
2	32	31	41	32	36	45	78	105	119	110	83	53
3	31	30	41	33	37	45	80	69	113	106	81	52
4	31	31	40	32	37	45	77	66	134	122	81	51
5	31	59	39	31	36	46	78	135	107	131	82	51
6	31	60	39	32	35	47	76	439	128	110	78	50
7	32	43	39	32	36	45	74	368	107	105	77	50
8	31	38	39	46	37	44	73	304	103	101	75	49
9	31	36	38	37	36	45	73	250	120	98	72	49
10	32	36	38	33	36	46	69	259	109	97	70	48
11	33	35	38	32	37	47	68	279	96	93	72	47
12	32	34	37	43	37	48	67	244	94	91	89	47
13	31	58	35	37	36	47	66	229	95	122	77	46
14	31	42	35	35	39	46	64	227	91	93	68	45
15	31	38	34	50	44	51	69	245	102	88	67	48
16	31	37	33	41	41	49	67	513	101	192	66	48
17	31	45	34	39	37	47	64	539	109	140	64	47
18	31	37	33	39	37	51	64	451	92	115	63	44
19	31	35	33	41	37	49	63	386	91	110	88	92
20	30	85	33	48	37	50	62	340	90	128	68	70
21	37	87	33	46	60	57	61	298	130	106	63	45
22	54	55	32	46	58	53	61	264	163	101	61	45
23	35	52	37	45	50	52	59	245	154	98	61	51
24	38	49	47	45	45	108	59	227	170	95	59	43
25	32	46	39	41	44	100	59	199	146	93	58	41
26	30	45	34	38	47	83	58	180	141	109	58	55
27	29	46	33	40	46	83	57	167	141	94	57	42
28	30	49	36	37	45	84	57	153	153	91	56	41
29	29	44	33	37	---	83	57	143	128	86	56	41
30	29	43	32	38	---	83	56	135	121	87	55	39
31	30	---	32	37	---	89	---	129	---	89	53	---
TOTAL	997	1357	1129	1194	1139	1813	2001	7666	3571	3317	2146	1483
MEAN	32.2	45.2	36.4	38.5	40.7	58.5	66.7	247	119	107	69.2	49.4
MAX	54	87	47	50	60	108	85	539	170	192	89	92
MIN	29	30	32	31	35	44	56	66	90	86	53	39
CFSM	.59	.83	.67	.71	.75	1.08	1.23	4.56	2.20	1.97	1.28	.91
IN.	.68	.93	.77	.82	.78	1.24	1.37	5.26	2.45	2.28	1.47	1.02

CAL YR 1988	TOTAL 23588	MEAN 64.4	MAX 316	MIN 29	CFSM 1.19	IN. 16.19
WTR YR 1989	TOTAL 27813	MEAN 76.2	MAX 539	MIN 29	CFSM 1.41	IN. 19.09

PENNS CREEK BASIN

01555000 PENNS CREEK AT PENNS CREEK, PA

LOCATION.--Lat 40°52'00", long 77°02'55", Union County, Hydrologic Unit 02050301, on left bank 200 ft downstream from bridge on State Highway 104, 0.8 mi northeast of Penns Creek, and 2.9 mi upstream from Sweitzers Run.

DRAINAGE AREA.--301 mi².

PERIOD OF RECORD.--October 1929 to current year. Monthly discharge only for some periods, published in WSP 1302. Prior to October 1965, published as Penn Creek at Penns Creek.

REVISED RECORDS.--WSP 891: 1934(M). WSP 1502: 1933(M), 1934, 1936(M). WDR PA-72-1: 1933-34(M), 1936(M), 1940(M), 1951(M). WDR PA-79-2: 1978.

GAGE.--Water-stage recorder. Datum of gage is 506.72 ft above National Geodetic Vertical Datum of 1929. Prior to Feb. 1, 1930, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. National Weather Service satellite telemeter at station.

AVERAGE DISCHARGE.--60 years, 436 ft³/s, 19.67 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 34,600 ft³/s, June 23, 1972, gage height, 14.85 ft, from floodmark in gage well, from rating curve extended above 6,800 ft³/s on basis of contracted-opening measurement of peak flow; minimum, 7.0 ft³/s, Sept. 27, 1932, gage height, 0.85 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,100 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 20	0700	*6,320	*8.47	No other peak greater than base discharge.			

Minimum discharge, 57 ft³/s, part or all of each day Oct. 14-19, gage height 1.25 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	73	75	240	e160	256	339	1250	246	445	544	451	128
2	78	73	225	e160	247	311	1110	550	414	490	410	142
3	79	75	211	e170	262	298	1050	525	381	449	373	133
4	78	74	199	e150	302	290	998	423	427	465	340	119
5	75	100	190	e130	e240	290	900	426	378	912	332	113
6	73	452	180	e130	e230	338	837	863	363	784	310	110
7	71	364	178	e140	e240	288	744	1160	343	621	285	110
8	64	274	172	e150	e220	e240	677	1140	316	537	269	107
9	62	234	165	e220	e210	e220	640	1040	312	479	253	106
10	62	214	158	e240	e180	e220	593	1660	318	445	239	104
11	62	191	142	276	e200	e250	536	2260	276	406	226	136
12	60	171	e120	333	e250	e300	497	2160	253	370	223	104
13	59	225	e80	495	e270	e320	466	1770	287	449	217	96
14	58	376	e90	449	e280	e330	442	1510	288	493	204	95
15	57	310	e110	394	e410	371	423	1370	308	423	195	102
16	57	261	e120	488	896	492	424	1820	353	965	188	128
17	57	258	e110	438	531	438	394	2280	835	863	182	141
18	57	251	e110	373	453	435	377	1890	742	580	172	118
19	58	220	e110	364	303	457	361	1570	556	482	376	108
20	61	307	e110	361	286	422	336	1340	501	2850	420	142
21	62	659	e130	314	424	443	317	1170	1950	1920	252	124
22	200	537	e150	e260	664	454	304	995	1450	1470	204	113
23	166	456	154	e270	509	408	288	874	1130	1220	182	153
24	147	409	191	306	437	659	278	871	1170	1000	171	193
25	135	370	323	269	e360	1270	267	794	1120	859	160	149
26	118	338	304	263	e350	1170	260	710	894	739	152	130
27	99	319	210	276	e360	1060	253	728	748	648	147	114
28	91	313	192	266	e360	964	241	605	911	611	142	103
29	83	283	192	248	---	933	237	537	764	528	138	97
30	79	256	e180	250	---	980	231	499	614	473	137	91
31	76	---	e190	262	---	1150	---	474	---	469	129	---
TOTAL	2557	8445	5236	8605	9730	16140	15731	34260	18847	23544	7479	3609
MEAN	82.5	281	169	278	347	521	524	1105	628	759	241	120
MAX	200	659	323	495	896	1270	1250	2280	1950	2850	451	193
MIN	57	73	80	130	180	220	231	246	253	370	129	91
CFSM	.27	.94	.56	.92	1.15	1.73	1.74	3.67	2.09	2.52	.80	.40
IN.	.32	1.04	.65	1.06	1.20	1.99	1.94	4.23	2.33	2.91	.92	.45

CAL YR 1988 TOTAL 113135 MEAN 309 MAX 5100 MIN 57 CFSM 1.03 IN. 13.98
WTR YR 1989 TOTAL 154183 MEAN 422 MAX 2850 MIN 57 CFSM 1.40 IN. 19.06

e Estimated.

EAST MAHANTANGO CREEK BASIN

107

01555500 EAST MAHANTANGO CREEK NEAR DALMATIA, PA

LOCATION.--Lat 40°36'40", long 76°54'44", Northumberland County, Hydrologic Unit 02050301, on right bank at bridge on SR 3017, 2.0 mi upstream from mouth, and 3.2 mi south of Dalmatia.

DRAINAGE AREA.--162 mi².

PERIOD OF RECORD.--October 1929 to current year. Monthly discharge only for some periods, published in WSP 1302. Prior to October 1945, published as Mahantango Creek East near Dalmatia.

REVISED RECORDS.--WSP 891: 1933(M). WSP 1302: 1930(M), 1938(M).

GAGE.--Water-stage recorder. Datum of gage is 401.22 ft above National Geodetic Vertical Datum of 1929. Oct. 1, 1929, to Feb. 11, 1930, nonrecording gage, and Feb. 12, 1930, to Nov. 18, 1973, water-stage recorder at present site and datum. Nov. 19, 1973, to June 18, 1974, nonrecording gage at site 2 mi upstream at different datum.

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

AVERAGE DISCHARGE.--60 years, 224 ft³/s, 18.78 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 69,900 ft³/s, June 22, 1972, gage height, 26.62 ft, from floodmark in gage shelter, from rating curve extended above 5,100 ft³/s on basis of slope-area measurement of peak flow; minimum, 1.3 ft³/s, Oct. 7, 1957, Nov. 3, 1964; minimum gage height, 0.84 ft, Sept. 21, 1932.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 7	0315	4,470	8.16	June 23	0715	1,960	5.60
May 17	0130	*5,680	*9.22	June 24	0345	2,740	6.62
June 22	0630	3,560	7.35	July 16	2030	2,480	6.29

Minimum discharge, 14 ft³/s, Oct. 19, gage height, 1.15 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	21	94	e56	81	164	349	90	164	346	140	42
2	20	21	86	e55	78	140	290	256	161	297	133	40
3	20	23	79	e52	78	138	274	242	145	258	116	38
4	20	22	73	e50	e72	125	265	189	179	254	106	36
5	19	28	69	e50	e64	123	245	209	152	585	129	34
6	18	177	63	e52	e60	128	250	3000	154	462	104	33
7	18	160	63	e57	e58	105	228	3300	163	375	92	33
8	17	117	61	e70	e54	134	210	1620	148	310	83	33
9	17	95	57	184	e52	138	204	1030	143	258	75	32
10	17	79	53	155	e50	140	189	913	305	226	71	31
11	17	69	e50	140	e48	147	172	1200	232	199	67	30
12	16	e60	e47	131	e46	205	161	1110	178	174	70	28
13	15	e100	e45	179	e45	252	155	842	176	341	106	28
14	15	e300	e42	184	e44	251	148	698	181	353	93	27
15	15	e250	e40	213	e50	285	150	665	181	241	75	30
16	15	e110	e39	263	108	346	173	3440	1000	1010	69	37
17	15	e140	e45	249	102	286	151	4310	867	1570	75	35
18	15	e160	e40	197	118	275	138	1830	760	774	63	35
19	15	e140	e38	169	117	294	133	1130	544	530	160	34
20	15	e120	e37	149	87	252	123	815	414	536	180	296
21	17	e800	e36	119	132	292	117	638	494	426	114	152
22	73	e600	e37	105	330	304	112	508	1700	344	89	105
23	100	e300	e45	148	461	279	107	434	1400	293	78	119
24	48	239	70	129	363	409	103	404	1870	248	73	124
25	41	188	117	111	277	983	97	348	1030	215	67	94
26	36	155	130	95	270	729	100	295	721	234	58	119
27	29	135	91	100	225	552	95	259	543	196	53	177
28	27	136	72	97	188	457	89	227	669	176	51	126
29	25	124	e66	84	---	392	89	199	534	153	48	108
30	23	102	e63	83	---	347	88	184	410	139	49	95
31	22	---	e59	84	---	346	---	178	---	147	46	---
TOTAL	779	4971	1907	3810	3658	9018	5005	30563	15618	11670	2733	2151
MEAN	25.1	166	61.5	123	131	291	167	986	521	376	88.2	71.7
MAX	100	800	130	263	461	983	349	4310	1870	1570	180	296
MIN	15	21	36	50	44	105	88	90	143	139	46	27
CFSM	.16	1.02	.38	.76	.81	1.80	1.03	6.09	3.21	2.32	.54	.44
IN.	.18	1.14	.44	.87	.84	2.07	1.15	7.02	3.59	2.68	.63	.49

CAL YR 1988 TOTAL 51868 MEAN 142 MAX 2070 MIN 14 CFSM .87 IN. 11.91
WTR YR 1989 TOTAL 91883 MEAN 252 MAX 4310 MIN 15 CFSM 1.55 IN. 21.10

e Estimated.

JUNIATA RIVER BASIN

01556000 FRANKSTOWN BRANCH JUNIATA RIVER AT WILLIAMSBURG, PA

LOCATION.--Lat 40°27'47", long 78°12'00", Blair County, Hydrologic Unit 02050302, on left bank 10 ft downstream from highway bridge on SR 2015 at Williamsburg, and 2.5 mi upstream from Clover Creek.

DRAINAGE AREA.--291 mi².

PERIOD OF RECORD.--October 1916 to current year. Monthly figures only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 756: Drainage area. WDR PA-71-1: 1954(M), 1960(M), 1961(M). WDR PA-77-2: 1936-39(M)

GAGE.--Water-stage recorder. Datum of gage is 831.78 ft above National Geodetic Vertical Datum of 1929 (Penn Central Railroad benchmark). Prior to Aug. 14, 1928, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Some regulation at low flow by mill above station. Several measurements of water temperature were made during the year. National Weather Service satellite telemeter at station.

AVERAGE DISCHARGE.--73 years, 394 ft³/s, 18.39 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,000 ft³/s, Mar. 18, 1936, gage height, 18.58 ft, from floodmark in gage shelter, from rating curve extended above 14,000 ft³/s on basis of slope-area measurement of peak flow; minimum, 13 ft³/s, July 24, 1934, gage height, 0.97 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1, 1889, reached a stage of 19.1 ft, from floodmark, discharge, about 35,500 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,200 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
June 21	0530	*6,280	*11.49	No other peaks greater than base discharge.			

Minimum discharge, 76 ft³/s, Oct. 8, gage height, 2.21 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	99	84	175	213	268	337	2010	222	359	331	415	121
2	101	87	166	203	257	300	1380	573	319	299	337	133
3	102	88	156	197	286	291	1160	410	293	263	289	113
4	98	89	150	261	298	285	968	378	385	253	260	106
5	93	207	142	143	262	357	827	421	299	1210	285	104
6	91	499	139	173	254	784	697	890	292	1240	242	103
7	91	243	137	197	240	586	609	996	238	694	217	102
8	91	195	132	307	220	495	543	894	214	785	203	111
9	89	173	128	418	184	468	558	762	201	546	193	114
10	89	159	121	270	e150	478	476	1940	242	465	182	107
11	97	154	120	250	e170	545	410	2420	196	391	176	106
12	92	141	96	514	e180	724	378	1900	181	333	174	104
13	86	187	98	828	185	686	357	1330	309	2030	172	101
14	84	235	123	515	219	642	335	1090	248	1200	164	104
15	83	184	132	787	723	757	326	1260	368	763	160	152
16	83	174	112	735	1090	887	318	2590	645	1070	157	357
17	82	171	106	574	699	732	287	2820	804	883	152	220
18	85	158	105	496	569	763	279	1770	484	617	146	146
19	91	147	109	464	491	749	266	1270	383	521	144	130
20	87	811	110	428	437	634	243	973	1980	3300	143	120
21	90	1330	128	370	997	815	229	802	5230	2390	142	115
22	139	644	127	321	933	783	220	639	2320	1300	137	118
23	116	464	147	313	706	622	208	568	2330	932	133	157
24	112	371	484	293	570	1520	202	664	1500	689	129	161
25	115	309	892	283	480	1760	196	500	966	560	123	127
26	105	274	472	273	468	1360	192	819	724	484	114	121
27	97	258	360	325	442	1090	189	610	560	424	112	115
28	94	237	327	285	383	932	182	479	699	370	111	108
29	92	211	310	272	---	888	189	423	483	318	112	105
30	91	185	248	277	---	2390	262	392	378	290	126	103
31	87	---	229	279	---	3090	---	389	---	600	113	---
TOTAL	2952	8469	6281	11264	12161	26750	14496	31194	23630	25551	5563	3884
MEAN	95.2	282	203	363	434	863	483	1006	788	824	179	129
MAX	139	1330	892	828	1090	3090	2010	2820	5230	3300	415	357
MIN	82	84	96	143	150	285	182	222	181	253	111	101
CFSM	.33	.97	.70	1.25	1.49	2.97	1.66	3.46	2.71	2.83	.62	.44
IN.	.38	1.08	.80	1.44	1.55	3.42	1.85	3.99	3.02	3.27	.71	.50

CAL YR 1988 TOTAL 111258 MEAN 304 MAX 3510 MIN 55 CFSM 1.04 IN. 14.22
WTR YR 1989 TOTAL 172195 MEAN 472 MAX 5230 MIN 82 CFSM 1.62 IN. 22.01

e Estimated.

JUNIATA RIVER BASIN

01557500 BALD EAGLE CREEK AT TYRONE, PA

LOCATION.--Lat 40°41'01", long 78°14'02", Blair County, Hydrologic Unit 02050302, on left bank 0.2 mi upstream from plant of West Virginia Pulp and Paper Co. at Tyrone, 0.2 mi upstream from Laurel Run, and 1.3 mi upstream from mouth.

DRAINAGE AREA.--44.1 mi².

PERIOD OF RECORD.--October 1944 to current year. Prior to October 1967, published as South Bald Eagle Creek at Tyrone.

REVISED RECORDS.--WSP 1903: 1954(M). WDR PA-75-2: 1974.

GAGE.--Water-stage recorder. Datum of gage is 921.80 ft above National Geodetic Vertical Datum of 1929. Oct. 1, 1944, to Nov. 15, 1950, water-stage recorder, and Nov. 16, 1950, to Nov. 30, 1952, nonrecording gage at site 0.5 mi downstream at datum 17.99 ft lower.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Prior to Nov. 30, 1952, daily discharges were affected by diversion by West Virginia Pulp and Paper Co. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--45 years, 75.5 ft³/s, 23.25 in/yr, adjusted for diversion from October 1950 to November 1952.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,140 ft³/s, Nov. 25, 1950, gage height, 7.5 ft, from flood-marks, site and datum then in use, from rating curve extended above 2,100 ft³/s on basis of contracted-opening measurement of peak flow; minimum, 1.4 ft³/s, Sept. 12, 13, 1973.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, about 15 ft, Mar. 17 or 18, 1936, site and datum in use prior to Dec. 1, 1952.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 940 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
June 20	2015	*1,690	*4.03	No other peak greater than base discharge.			

Minimum discharge, 4.1 ft³/s, Oct. 15, 16, 17, 18, 21, gage height, -0.01 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.9	7.8	31	e44	56	62	411	42	68	56	25	15
2	6.8	8.0	29	e42	55	57	285	77	59	51	23	14
3	7.0	7.8	27	e42	63	53	234	54	55	47	20	9.2
4	6.0	18	25	e38	58	51	190	51	60	45	20	8.3
5	4.9	159	24	e25	e50	57	160	56	56	136	35	7.7
6	5.0	107	23	e26	e48	81	133	97	55	88	21	7.9
7	4.9	54	23	e29	e45	e58	116	148	49	55	19	7.7
8	5.1	40	22	e34	e41	e55	103	174	45	47	17	8.2
9	4.7	34	21	80	e35	e54	95	154	44	43	16	8.1
10	4.8	31	e17	64	e33	e56	81	366	44	40	15	7.3
11	6.9	28	e16	53	e39	e63	71	431	39	37	15	8.2
12	6.8	24	e11	112	e43	82	65	344	39	34	15	7.4
13	5.0	54	e10	127	e41	82	61	260	68	83	15	7.1
14	4.5	50	e12	95	e46	80	57	215	186	47	14	7.9
15	4.3	42	e18	125	e67	139	55	273	231	37	13	31
16	4.1	39	e16	111	136	138	52	548	295	35	13	44
17	4.2	36	e13	95	97	116	49	438	282	34	12	30
18	4.9	31	e13	86	89	123	48	297	191	30	12	20
19	5.2	29	e12	89	79	111	46	216	145	49	11	17
20	5.3	183	e14	84	72	100	43	169	565	77	12	15
21	7.3	170	e17	e70	259	121	41	137	1010	44	13	14
22	16	98	e25	e48	213	110	40	110	526	47	11	14
23	15	72	43	e50	161	99	38	96	331	51	11	25
24	18	60	131	54	126	292	37	92	224	38	10	24
25	15	52	142	52	109	303	36	75	162	34	9.2	19
26	11	47	88	54	94	236	35	118	124	30	8.9	19
27	9.0	44	70	64	83	198	34	80	105	29	8.8	18
28	8.9	41	69	54	71	177	33	66	125	27	8.7	17
29	8.8	37	61	54	---	216	32	62	79	24	9.7	17
30	7.8	34	e53	58	---	559	32	64	64	23	10	16
31	7.4	---	e48	57	---	610	---	93	---	24	8.2	---
TOTAL	231.5	1637.6	1124	2016	2309	4539	2713	5403	5326	1442	451.5	464.0
MEAN	7.47	54.6	36.3	65.0	82.5	146	90.4	174	178	46.5	14.6	15.5
MAX	18	183	142	127	259	610	411	548	1010	136	35	44
MIN	4.1	7.8	10	25	33	51	32	42	39	23	8.2	7.1
CFSM	.17	1.24	.82	1.47	1.87	3.32	2.05	3.95	4.03	1.05	.33	.35
IN.	.20	1.38	.95	1.70	1.95	3.83	2.29	4.56	4.49	1.22	.38	.39
CAL YR 1988	TOTAL 17976.3 MEAN 49.1 MAX 768 MIN 2.3 CFSM 1.11 IN. 15.16											
WTR YR 1989	TOTAL 27656.6 MEAN 75.8 MAX 1010 MIN 4.1 CFSM 1.72 IN. 23.33											

e Estimated.

JUNIATA RIVER BASIN

01558000 LITTLE JUNIATA RIVER AT SPRUCE CREEK, PA

LOCATION.--Lat 40°36'45", long 78°08'27", Huntingdon County, Hydrologic Unit 02050302, on right bank on SR 4006, 150 ft downstream from Penn Central Railroad bridge, 0.5 mi northwest of village of Spruce Creek, and 0.5 mi upstream from Spruce Creek.

DRAINAGE AREA.--220 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 751.15 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Several measurements of water temperature were made during the year. National Weather Service satellite telemeter at station.

AVERAGE DISCHARGE.--51 years, 373 ft³/s, 23.02 in/yr.

EXTREMES PERIOD OF RECORD.--Maximum discharge, 28,600 ft³/s, June 23, 1972, gage height, 16.98 ft, from rating curve extended above 5,600 ft³/s on basis of slope-area measurement at gage height 15.77 ft; minimum, 45 ft³/s, Sept. 26, 1943, Oct. 4, 1949; minimum gage height, 1.41 ft, Sept. 26, 1943.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 18, 1936, reached a stage of 19.1 ft, from floodmarks 175 ft downstream, discharge, 39,800 ft³/s, from rating curve extended as explained above.

EXTREMES 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)
Mar. 30	1545	3,440	6.09	June 20	2145	*5,710	*7.74

Minimum discharge, 85 ft³/s, Oct. 16, 17, 18, gage height, 1.80 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	104	95	229	235	287	350	1860	223	397	451	288	131
2	103	95	214	231	278	315	1370	416	347	408	265	148
3	103	97	201	225	303	293	1150	310	319	374	239	120
4	100	101	193	218	303	287	965	297	345	347	221	113
5	98	364	180	171	275	317	824	304	307	943	288	112
6	96	540	177	194	272	516	704	445	312	851	227	111
7	96	313	173	201	257	391	629	613	276	586	199	111
8	96	245	168	326	238	333	568	688	252	627	185	112
9	93	215	160	348	208	336	548	644	237	481	178	114
10	92	194	153	266	203	344	484	1340	270	434	168	111
11	98	187	148	250	220	381	437	1610	221	389	160	115
12	97	166	112	419	216	482	404	1440	209	343	159	112
13	92	235	122	556	191	477	384	1170	409	1270	155	109
14	90	274	153	421	225	465	356	988	531	799	145	110
15	89	221	157	531	518	615	347	1090	651	562	169	206
16	87	210	130	508	702	685	333	2320	890	524	144	364
17	87	208	127	445	495	594	304	2100	1010	469	136	263
18	90	189	127	415	443	614	299	1500	741	402	130	170
19	95	177	126	419	413	598	282	1150	609	494	129	145
20	92	664	128	402	385	548	261	925	2130	1050	129	134
21	94	992	146	355	914	635	250	777	4010	772	154	129
22	124	600	137	315	843	594	240	638	2260	629	132	129
23	120	491	176	311	681	525	228	568	1780	560	128	212
24	120	425	397	294	563	1130	219	588	1290	479	129	223
25	123	374	582	283	487	1300	215	490	971	484	124	164
26	105	337	379	280	467	1100	212	750	787	410	123	155
27	100	314	323	337	436	950	201	566	652	373	121	143
28	99	290	317	284	385	877	194	475	844	343	120	138
29	99	263	313	275	---	1030	195	438	603	309	122	134
30	98	242	260	295	---	2370	191	422	508	292	124	129
31	96	---	248	295	---	2620	---	446	---	309	119	---
TOTAL	3076	9118	6456	10105	11208	22072	14654	25731	24168	16764	5110	4467
MEAN	99.2	304	208	326	400	712	488	830	806	541	165	149
MAX	124	992	582	556	914	2620	1860	2320	4010	1270	288	364
MIN	87	95	112	171	191	287	191	223	209	292	119	109
CFSM	.45	1.38	.95	1.48	1.82	3.24	2.22	3.77	3.66	2.46	.75	.68
IN.	.52	1.54	1.09	1.71	1.90	3.73	2.48	4.35	4.09	2.83	.86	.76

CAL YR 1988	TOTAL 104527	MEAN 286	MAX 3410	MIN 65	CFSM 1.30	IN. 17.67
WTR YR 1989	TOTAL 152929	MEAN 419	MAX 4010	MIN 87	CFSM 1.90	IN. 25.86

JUNIATA RIVER BASIN

01559000 JUNIATA RIVER AT HUNTINGDON, PA

LOCATION.--Lat 40°29'05", long 78°01'09", Huntingdon County, Hydrologic Unit 02050302, on right bank 170 ft downstream from Smithfield Bridge on State Highway 26 at Huntingdon and 0.8 mi upstream from Standing Stone Creek.

DRAINAGE AREA.--816 mi².

PERIOD OF RECORD.--September 1941 to current year. Gage-height records collected in this vicinity for the period May 1895 to December 1938 are contained in reports of U.S. Weather Bureau. Prior to October 1950, published as Frankstown Branch Juniata River at Huntingdon.

REVISED RECORDS.--WDR PA-73-1: 1936(M). WDR PA-80-2: 1972(M). WDR PA-84-2: 1936(M) 1972(M).

GAGE.--Water-stage recorder. Datum of gage is 599.69 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Several measurements of water temperature were made during the year. Flow regulated September 1941 to June 1972, and since December 1985 by Warrior Ridge Hydroelectric Plant (reservoir capacity 400 acre-ft), 4 mi upstream. National Weather Service satellite telemeter and U.S. Army Corps of Engineers landline telemeter at station.

AVERAGE DISCHARGE.--48 years, 1,097 ft³/s, 18.26 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 57,000 ft³/s, June 23, 1972, gage height, 20.03 ft, from rating curve extended above 22,000 ft³/s on basis of computation of peak discharge at dam, slope-conveyance study, and Pennsylvania Department of Environmental Resources step-backwater study; minimum discharge recorded, 14 ft³/s, Feb. 8, 1948, Aug. 2, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 18, 1936, reached a stage of 21.87 ft, from floodmark, discharge, 81,000 ft³/s, from rating curve extended on basis of computation of peak discharge at dam and runoff comparison with downstream station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 24	2400	6,120	6.12	June 21	1215	*13,500	*9.50
Mar. 30	2245	8,390	7.32	July 13	1845	6,680	6.42
May 17	0930	7,710	6.97	July 21	0930	6,730	6.45

Minimum daily discharge, 231 ft³/s, Oct. 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	333	254	546	603	685	925	5280	699	1090	1180	1220	378
2	316	255	498	575	655	804	3870	1330	920	1090	974	425
3	348	241	492	564	705	748	3190	1150	881	968	880	422
4	316	256	467	568	815	735	2810	1030	964	938	806	388
5	302	411	441	485	688	747	2420	1010	914	2190	954	335
6	312	1700	435	463	630	1510	2100	1580	899	3260	755	344
7	298	873	428	493	661	1290	1870	2060	829	1990	688	318
8	292	657	429	705	579	1050	1640	2070	741	1850	676	399
9	290	576	391	1180	513	1050	1590	1940	686	1520	641	384
10	287	520	374	778	492	1010	1450	3200	756	1310	616	327
11	231	471	350	704	525	1110	1280	4720	694	1140	583	364
12	300	461	301	1010	532	1480	1190	4470	621	1030	592	372
13	291	505	327	2040	496	1560	1090	3420	998	3210	588	341
14	249	754	352	1360	510	1460	1060	2880	1140	3080	580	370
15	272	602	392	1590	1080	1570	1030	2530	1320	1930	545	460
16	254	525	476	1880	2400	2080	996	5640	2350	1710	532	655
17	272	542	313	1460	1650	1740	942	6780	3720	2310	520	985
18	272	492	303	1280	1290	1740	854	4740	2400	1540	481	523
19	264	459	339	1220	1160	1840	913	3520	1810	1340	478	452
20	255	1090	307	1160	1040	1600	766	2760	3450	4600	467	407
21	270	3660	330	1010	2060	1690	738	2330	11600	5210	506	416
22	323	1920	365	846	2650	1940	724	1920	7040	2970	475	415
23	377	1360	349	851	1940	1600	691	1660	5330	2510	462	447
24	356	1140	638	789	1580	2880	677	1740	3970	1930	431	603
25	358	935	2200	727	1280	4710	637	1480	2930	1710	389	464
26	294	884	1200	733	1250	3520	644	1720	2300	1430	450	444
27	280	792	961	800	1170	2960	628	1880	1800	1290	384	405
28	281	737	831	743	990	2600	607	1340	2110	1170	399	402
29	267	645	818	692	---	2640	606	1170	1740	1030	388	377
30	253	604	709	721	---	4760	671	1090	1350	961	385	367
31	239	---	655	725	---	7170	---	1130	---	1120	411	---
TOTAL	9052	24321	17017	28755	30026	62519	42964	74989	67353	59517	18256	12989
MEAN	292	811	549	928	1072	2017	1432	2419	2245	1920	589	433
MAX	377	3660	2200	2040	2650	7170	5280	6780	11600	5210	1220	985
MIN	231	241	301	463	492	735	606	699	621	938	384	318
CFSM	.36	.99	.67	1.14	1.31	2.47	1.76	2.96	2.75	2.35	.72	.53
IN.	.41	1.11	.78	1.31	1.37	2.85	1.96	3.42	3.07	2.71	.83	.59

CAL YR 1988	TOTAL 325921	MEAN 890	MAX 9030	MIN 209	CFSM 1.09	IN. 14.86
WTR YR 1989	TOTAL 447758	MEAN 1227	MAX 11600	MIN 231	CFSM 1.50	IN. 20.41

JUNIATA RIVER BASIN

01560000 DUNNING CREEK AT BELDEN, PA

LOCATION.--Lat 40°04'18", long 78°29'34", Bedford County, Hydrologic Unit 02050303, on left bank 10 ft upstream from highway bridge on SR 1014, 0.8 mi southeast of Belden, 3.8 mi north of Bedford, and 4.3 mi above mouth.

DRAINAGE AREA.--172 mi².

PERIOD OF RECORD.--May 1939 to current year.

REVISED RECORDS.--WSP 971: 1940(M). WSP 1502: 1940-41. WDR PA-72-1: 1967(M).

GAGE.--Water-stage recorder. Datum of gage is 1,051.16 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges in December, January, and February, which are fair. Other estimated daily discharges are poor. Several measurements of water temperature were made during the year. National Weather Service satellite telemeter at station.

AVERAGE DISCHARGE.--50 years, 228 ft³/s, 18.00 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,400 ft³/s, July 20, 1977, gage height, 14.15 ft, from rating curve extended above 9,200 ft³/s on basis of contracted-opening measurement at gage height 12.67 ft and contracted-opening and flow-over-road measurement at gage height 13.03 ft; minimum, 2.6 ft³/s, Sept. 6, 1964, gage height, 1.03 ft; minimum gage height, 0.92 ft, Jan. 8, 1954, result of freeze-up.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 17.8 ft, Mar. 18, 1936, from floodmarks (backwater from Raystown Branch Juniata River), discharge, about 16,900 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
June 21	0345	3,330	8.50	July 16	e1830	e3,100	e8.2
June 23	1315	3,870	9.19	July 20	e0515	e*4,200	e*9.5
July 8	0830	3,470	8.70				

Minimum daily discharge, 18 ft³/s, Oct. 19-21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39	24	83	133	165	160	971	82	94	150	e1000	e44
2	36	25	74	124	153	133	692	198	85	133	e640	e42
3	35	25	67	118	186	127	583	171	80	119	e440	e41
4	31	26	62	108	171	124	472	175	119	108	e280	e40
5	27	68	57	e80	148	183	393	238	102	833	e210	e39
6	25	243	55	e74	142	602	342	738	129	735	e150	e37
7	24	137	53	e70	130	507	295	882	101	524	e128	e36
8	23	113	51	e74	116	412	260	721	84	2950	e110	e39
9	23	97	e40	e90	e90	345	259	517	76	783	e102	e42
10	22	84	e35	e140	e80	324	212	1440	86	e1190	e96	e40
11	23	77	e33	162	e74	380	183	1940	72	e220	e92	e42
12	25	67	e30	494	e70	534	166	1200	64	e200	e88	e39
13	23	82	e28	658	e70	496	157	795	74	e600	e84	e37
14	21	116	e27	425	e90	481	146	654	86	e450	e80	e45
15	20	92	e26	901	420	619	144	668	105	e300	e75	76
16	19	92	e27	754	727	667	141	1330	179	e1540	e72	189
17	19	90	e28	551	569	510	125	1690	337	e1180	e69	136
18	19	81	e30	412	424	452	120	1070	202	e450	e64	e78
19	18	75	e32	357	328	393	124	688	166	e760	e63	57
20	18	508	e40	307	271	336	108	475	954	e3300	e60	49
21	18	813	54	254	567	596	100	373	2570	e1300	e58	50
22	26	484	55	233	500	510	95	278	1250	e800	e56	54
23	40	322	63	210	409	414	88	243	2850	e580	e53	75
24	35	242	312	178	329	970	85	252	1570	e440	e51	65
25	33	191	650	167	267	1000	82	194	585	e500	e46	51
26	31	158	411	162	251	822	82	183	356	e440	e44	55
27	28	137	302	187	228	651	79	163	259	e340	e43	47
28	26	121	251	167	185	499	75	131	286	e260	e40	40
29	25	103	216	171	---	439	86	116	216	e200	e40	38
30	25	90	167	183	---	887	85	107	174	e280	e52	36
31	25	---	147	178	---	1280	---	102	---	e1280	e44	---
TOTAL	802	4783	3506	8122	7160	15853	6750	17814	13311	22945	4430	1659
MEAN	25.9	159	113	262	256	511	225	575	444	740	143	55.3
MAX	40	813	650	901	727	1280	971	1940	2850	3300	1000	189
MIN	18	24	26	70	70	124	75	82	64	108	40	36
CFSM	.15	.93	.66	1.52	1.49	2.97	1.31	3.34	2.58	4.30	.83	.32
IN.	.17	1.03	.76	1.76	1.55	3.43	1.46	3.85	2.88	4.96	.96	.36

CAL YR 1988 TOTAL 58754 MEAN 161 MAX 2060 MIN 12 CFSM .93 IN. 12.71
WTR YR 1989 TOTAL 107135 MEAN 294 MAX 3300 MIN 18 CFSM 1.71 IN. 23.17

e Estimated.

JUNIATA RIVER BASIN

01562000 RAYSTOWN BRANCH JUNIATA RIVER AT SAXTON, PA
(National stream-quality accounting network station)

LOCATION.--Lat 40°12'57", long 78°15'56", Bedford County, Hydrologic Unit 02050303, on left bank 500 ft downstream from bridge on State Highway 913, 0.5 mi west of Saxton, and 1.5 mi upstream from Shoup Run.

DRAINAGE AREA.--756 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1911 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 1302: 1912-13(M), 1914-15. WSP 1502: 1934, 1936.

GAGE.--Water-stage recorder. Datum of gage is 795.77 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1931, nonrecording gage at site 0.8 mi downstream at datum 4.82 ft lower.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. National Weather Service satellite telemeter and U.S. Army Corps of Engineers landline telemeter at station.

AVERAGE DISCHARGE.--78 years, 915 ft³/s, 16.44 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 80,500 ft³/s, Mar. 18, 1936, gage height, 24.54 ft, from floodmark in gage shelter, from rating curve extended above 21,000 ft³/s on basis of slope-area measurement of peak flow; minimum, 39 ft³/s, Sept. 6, 7, 12, 1966, gage height, 0.84 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1, 1889, reached a stage of 23.0 ft at present site and datum, from floodmarks, discharge, about 71,300 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 7,700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 17	0545	9,930	8.93	July 17	0445	12,300	10.15
June 21	1330	*15,600	*11.75	July 20	1900	11,700	9.83

Minimum daily discharge, 101 ft³/s, Oct. 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	158	104	283	390	501	654	3370	390	524	753	3010	243
2	150	104	263	345	444	685	2610	545	465	657	1900	233
3	145	110	285	361	492	499	2160	994	420	581	1440	213
4	139	133	226	333	504	486	1950	786	569	527	1160	208
5	134	168	210	237	e350	495	1650	822	619	1030	944	195
6	128	314	201	e210	e340	969	1490	2260	577	3990	812	186
7	124	607	193	e220	e350	2220	1270	3410	656	2110	705	184
8	119	343	189	e230	e320	1950	1130	2970	528	4080	626	186
9	114	275	185	e330	e220	1410	1020	2330	419	3800	570	200
10	113	237	179	e400	e210	1300	1000	3140	382	2060	520	210
11	113	212	e170	e450	e210	1310	856	5940	373	1460	468	219
12	111	195	e120	e540	e210	1750	713	5260	329	1100	447	197
13	110	195	e120	1890	e220	2110	688	3670	312	1750	427	189
14	109	204	e140	1850	e240	2120	618	2930	344	3060	416	231
15	109	262	e160	1860	513	2410	629	2470	414	2070	381	301
16	108	239	e150	2690	1840	3420	602	4940	534	3780	362	507
17	105	229	e130	2110	1970	2820	612	9040	2760	10200	346	722
18	103	226	e130	1560	1530	2180	515	5800	2020	4680	328	517
19	102	210	e120	1270	1140	1940	500	3810	1280	2930	315	327
20	101	362	e130	1080	1070	1550	520	2690	2020	7510	306	271
21	105	1800	e130	917	1040	1620	443	2050	11600	7170	299	243
22	119	1630	164	731	1940	2140	409	1580	6730	3850	288	227
23	119	1010	203	662	1540	1670	413	1290	4730	3440	279	243
24	124	756	265	804	1420	1990	357	1550	5100	2200	270	258
25	131	634	1050	564	988	4850	338	1340	2870	3120	259	257
26	127	503	1310	514	893	3620	333	1090	2010	2120	246	254
27	117	443	864	495	876	2820	350	993	1520	2030	238	245
28	114	414	690	549	843	2220	315	817	1420	1620	225	254
29	112	352	613	488	---	1770	327	689	1220	1250	221	226
30	112	312	503	497	---	2140	369	613	896	986	247	251
31	106	---	473	504	---	3540	---	566	---	2350	232	---
TOTAL	3681	12583	9849	25081	22214	60658	27557	76775	53641	88264	18287	7997
MEAN	119	419	318	809	793	1957	919	2477	1788	2847	590	267
MAX	158	1800	1310	2690	1970	4850	3370	9040	11600	10200	3010	722
MIN	101	104	120	210	210	486	315	390	312	527	221	184
CFSM	.16	.55	.42	1.07	1.05	2.59	1.22	3.28	2.37	3.77	.78	.35
IN.	.18	.62	.48	1.23	1.09	2.98	1.36	3.78	2.64	4.34	.90	.39

CAL YR 1988 TOTAL 252637 MEAN 690 MAX 12300 MIN 95 CFSM .91 IN. 12.43
WTR YR 1989 TOTAL 406587 MEAN 1114 MAX 11600 MIN 101 CFSM 1.47 IN. 20.01

e Estimated.

JUNIATA RIVER BASIN

01562000 RAYSTOWN BRANCH JUNIATA RIVER AT SAXTON, PA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1950-56, 1958-64, 1966-68, 1972-76, 1987 to current year.

REMARKS.--In March 1989 a bias was discovered in the turbidimetric method for sulfate analysis for those samples analyzed by the U.S. Geological Survey National Water-Quality Laboratory indicating that values below 75 mg/L have a median positive bias of 2 mg/L above the true value for the period between 1982 and 1989. Sulfate values in this report have not been corrected for this bias.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (μS/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 μM-MF (COLS./100 ML)	STREP-TOCOCCHI KF AGAR (COLS. PER 100 ML)
NOV 15...	0720	235	268	7.90	5.5	2.7	762	11.5	91	K 33	69
JAN 04...	0815	317	200	7.80	0.0	1.2	768	14.6	99	K 18	26
FEB 22...	1150	2050	190	7.65	5.0	14	751	11.7	93	260	1800
MAY 25...	0750	1490	172	7.65	14.5	14	753	8.9	88	K 2300	280
JUL 16...	1125	3280	183	8.10	19.5	68	757	8.2	90	K 18000	K 25000
AUG 08...	0730	636	276	8.05	19.0	4.1	753	8.3	91	300	190

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3)	ALKA-LINITY WAT WH TOT FET FIELD (MG/L AS CACO3)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CACO3)
NOV 15...	120	55	32	10	7.3	11	0.3	2.3	83	67	68
JAN 04...	88	57	23	7.4	7.1	15	0.3	1.5	39	31	32
FEB 22...	64	39	17	5.3	8.9	23	0.5	1.7	30	26	24
MAY 25...	80	28	21	6.6	5.8	13	0.3	1.5	63	52	52
JUL 16...	77	23	21	5.9	3.8	9	0.2	2.3	66	54	54
AUG 08...	130	36	33	11	4.6	7	0.2	1.8	113	92	93

DATE	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)
NOV 15...	* 36	12	0.10	3.1	176	149	0.24	112	--	<0.010	1.20
JAN 04...	* 30	12	0.10	1.9	131	108	0.18	112	--	<0.010	1.50
FEB 22...	* 25	14	0.10	4.4	99	99	0.13	548	1.58	0.020	1.60
MAY 25...	* 22	9.0	0.10	6.1	92	107	0.13	370	0.790	0.010	0.800
JUL 16...	* 20	6.6	0.10	6.3	110	106	0.15	974	1.69	0.010	1.70
AUG 08...	* 26	8.6	0.10	4.5	177	155	0.24	304	--	<0.010	2.30

K Results based on non-ideal colony counts.

< Actual value is known to be less than the value shown.

* See "REMARKS" paragraph above.

JUNIATA RIVER BASIN

01562000 RAYSTOWN BRANCH JUNIATA RIVER AT SAXTON, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORGANIC TOTAL (MG/L AS P)	PHOS- PHOROUS ORGANIC DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (MG/L AS AL)	ARSENIC DIS- SOLVED (MG/L AS AS)
NOV 15...	<0.010	0.010	--	0.30	0.020	0.020	<0.010	0.02	0.02	80	<1
JAN 04...	0.010	<0.010	0.29	0.30	0.010	<0.010	<0.010	0.01	--	--	--
FEB 22...	<0.010	<0.010	--	0.60	0.020	<0.010	<0.010	0.02	--	20	<1
MAY 25...	<0.010	0.010	--	0.40	0.020	0.010	<0.010	0.02	0.01	50	<1
JUL 16...	0.050	0.020	0.25	0.30	0.070	0.030	0.020	0.07	0.01	--	--
AUG 08...	<0.010	<0.010	--	0.30	0.020	0.020	<0.010	0.02	0.02	140	<1

DATE	BARIUM, DIS- SOLVED (MG/L AS BA)	BERYL- LIUM, DIS- SOLVED (MG/L AS BE)	CADMIUM DIS- SOLVED (MG/L AS CD)	CHRO- MIUM, DIS- SOLVED (MG/L AS CR)	COBALT, DIS- SOLVED (MG/L AS CO)	COPPER, DIS- SOLVED (MG/L AS CU)	IRON, DIS- SOLVED (MG/L AS FE)	LEAD, DIS- SOLVED (MG/L AS PB)	LITHIUM DIS- SOLVED (MG/L AS LI)	MANGA- NESE, DIS- SOLVED (MG/L AS MN)	MERCURY DIS- SOLVED (MG/L AS HG)
NOV 15...	39	<0.5	3	<1	<3	2	28	<5	<4	36	<0.1
JAN 04...	--	--	--	--	--	--	--	--	--	--	--
FEB 22...	41	<0.5	<1	<1	<3	2	29	<5	4	32	--
MAY 25...	44	<0.5	<1	<1	<3	3	25	1	<4	34	--
JUL 16...	--	--	--	--	--	--	--	--	--	--	--
AUG 08...	45	<0.5	<1	<1	<3	3	22	1	6	26	--

DATE	MOLYB- DENUM, DIS- SOLVED (MG/L AS MO)	NICKEL, DIS- SOLVED (MG/L AS NI)	SELE- NIUM, DIS- SOLVED (MG/L AS SE)	SILVER, DIS- SOLVED (MG/L AS AG)	STRON- TIUM, DIS- SOLVED (MG/L AS SR)	VANA- DIUM, DIS- SOLVED (MG/L AS V)	ZINC, DIS- SOLVED (MG/L AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 15...	<10	7	<1	<1.0	230	<6	8	3	1.9	75
JAN 04...	--	--	--	--	--	--	--	1	0.86	--
FEB 22...	<10	1	<1	<1.0	130	<6	9	35	194	90
MAY 25...	<10	6	<1	<1.0	130	<6	<3	32	129	98
JUL 16...	--	--	--	--	--	--	--	146	1290	95
AUG 08...	<10	2	<1	<1.0	170	<6	7	13	22	89

CROSS-SECTION ANALYSIS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK)	SPE- CIFIC CON- DUCT- ANCE (MS/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	SEDI- MENT, SUS- PENDE (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 15...	0710	40	267	7.95	5.5	11.6	3	--
15...	0715	80	269	7.90	5.5	11.6	3	--
15...	0725	120	267	7.90	5.5	11.5	2	--
15...	0730	160	269	7.95	5.5	11.4	4	--
FEB 22...	1200	40	188	7.65	--	11.7	34	86
22...	1205	80	195	7.70	--	11.8	36	88
22...	1210	120	188	7.65	--	11.8	33	91
22...	1215	160	186	7.65	--	11.7	29	94

(<) Actual value is known to be less than the value shown.

JUNIATA RIVER BASIN

01563100 RAYSTOWN LAKE NEAR HUNTINGDON, PA

LOCATION.--Lat 40°26'06", long 78°00'25", Huntingdon County, Hydrologic Unit 02050303, at Raystown Dam on Raystown Branch Juniata River, 3.5 mi south of Huntingdon, and 5.7 mi upstream from mouth.

DRAINAGE AREA.--959 mi².

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Reservoir is formed by earthfill dam with a gated spillway in right abutment at elevation 768.6 ft and an ungated spillway, separate from embankment, at elevation 812.0 ft. Storage began November 1972. Capacity at elevation 768.6 ft is 383,500 acre-ft. Capacity at elevation 812.0 ft is 762,000 acre-ft. Conservation pool elevation is 786.0 ft and capacity is 514,000 acre-ft. Lake is used for flood control, low-flow augmentation, and recreation. Figures given herein represent total contents. U.S. Army Corps of Engineers satellite tele-meter at station.

COOPERATION.--Records provided by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 589,700 acre-ft, March 7, 1979, elevation, 794.81 ft; minimum, 2,240 acre-ft, March 2, 1973, elevation, 628.80 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 535,000 acre-ft, June 22, elevation, 788.47 ft; minimum, 501,730 acre-ft, Nov. 4, elevation, 784.58 ft.

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS AT 2400, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

Date	Elevation (feet)	Contents (acre- feet)	Change in contents (equivalent in ft ³ /s/day)
Sept. 30	785.46	509,300	--
Oct. 31	784.67	502,490	-111
Nov. 30	786.15	515,280	+215
Dec. 31	785.54	510,000	- 85.9
CAL YR 1988	--	--	- 4.6
Jan. 31	786.48	518,080	+131
Feb. 28	786.46	517,910	- 3.1
Mar. 31	786.65	519,520	+ 26.2
Apr. 30	786.44	517,740	- 29.9
May 31	786.52	518,420	+ 11.1
June 30	786.38	517,230	- 20.0
July 31	786.83	521,060	+ 62.3
Aug. 31	786.17	515,440	- 91.4
Sept. 30	785.90	513,130	- 38.8
WTR YR 1989	--	--	+ 5.3

JUNIATA RIVER BASIN

01563200 RAYSTOWN BRANCH JUNIATA RIVER BELOW RAYSTOWN DAM NEAR HUNTINGDON, PA

LOCATION.--Lat 40°25'44", long 77°59'29", Huntingdon County, Hydrologic Unit 02050303, on left bank 1.0 mi downstream from Raystown Dam on Township Route 430, 4.0 mi south of Huntingdon, and 4.7 mi upstream from mouth.

DRAINAGE AREA.--960 mi².

PERIOD OF RECORD.--January 1946 to current year. Published as "near Huntingdon" prior to Oct. 1, 1969.

GAGE.--Water-stage recorder. Datum of gage is 597.36 ft above National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers benchmark). Prior to Oct. 1, 1969, water-stage recorder at site 4.3 mi upstream at datum 22.72 ft higher.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since October 1972 by Raystown Dam (station 01563100). National Weather Service satellite telemeter and U.S. Army Corps of Engineers landline telemeter at station.

AVERAGE DISCHARGE.--43 years, 1,143 ft³/s, 16.17 in/yr, adjusted for storage since October 1972.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,500 ft³/s, Nov. 25, 1950, gage height, 16.74 ft, site and datum then in use, from rating curve extended above 16,000 ft³/s on basis of computation of peak discharge at dam; maximum gage height at present site and datum, 18.54 ft, Apr. 3, 1970; minimum daily discharge, 5.0 ft³/s, Oct. 30, 1957, May 18, 1973.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 18, 1936, reached a stage of 31.0 ft, discharge, 87,000 ft³/s, at previous site and datum, by computation of peak discharge at dam.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 12,800 ft³/s, July 20, gage height, 13.46 ft; minimum daily, 193 ft³/s, Sept 9, 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	204	204	445	495	630	950	5200	481	497	919	3950	435
2	204	204	444	495	640	796	2920	889	496	830	2850	375
3	206	204	444	495	617	664	2130	1190	499	809	1650	373
4	204	204	442	481	615	566	2460	1180	643	811	1500	374
5	205	207	442	471	617	563	1970	1460	768	1010	1370	580
6	204	203	442	482	663	1190	1700	2450	773	3010	1230	696
7	204	203	449	481	556	1630	1690	3930	976	2750	951	695
8	204	204	463	482	513	2200	1690	3660	883	3480	728	394
9	204	204	482	481	511	2410	1560	3290	811	6020	652	193
10	204	204	490	481	516	2350	1370	3310	660	3140	586	193
11	204	204	490	482	480	2060	1180	6210	528	999	570	205
12	204	204	489	431	484	1430	978	7910	504	916	548	210
13	208	204	489	533	484	1670	820	5510	506	3050	548	210
14	204	315	487	1020	485	3080	808	3320	505	3990	548	210
15	204	456	489	2760	485	2530	806	2490	610	3230	533	210
16	204	444	491	3760	1130	3850	807	4640	726	5860	431	211
17	204	446	488	2820	1780	3790	804	8920	2560	11200	356	210
18	238	444	485	2130	1650	2560	780	8970	3280	6070	337	430
19	216	442	484	1560	1690	2550	862	6550	2660	3750	330	452
20	203	447	484	967	1690	2030	707	2970	2640	8260	332	395
21	204	442	487	904	1640	1690	604	2640	5640	9180	337	333
22	204	442	488	712	1960	2040	548	2040	10500	3830	330	296
23	204	442	491	695	2000	2300	548	1670	9410	4300	326	292
24	204	443	492	1020	1690	2950	548	1700	7300	4810	326	301
25	204	445	495	875	1690	5890	508	1710	4000	3860	325	302
26	204	443	495	799	1470	4990	485	1690	1720	3130	331	303
27	200	442	495	669	1330	3400	485	1690	1440	1700	325	303
28	204	442	495	566	1240	3110	487	1340	2410	1700	328	303
29	204	442	495	566	---	2240	481	978	2010	1690	329	302
30	203	443	495	566	---	2310	512	784	1270	1650	452	302
31	204	---	495	566	---	4760	---	580	---	2060	521	---
TOTAL	6371	10073	14842	29245	29256	74549	36448	96152	67225	108014	23930	10088
MEAN	206	336	479	943	1045	2405	1215	3102	2241	3484	772	336
MAX	238	456	495	3760	2000	5890	5200	8970	10500	11200	3950	696
MIN	200	203	442	431	480	563	481	481	496	809	325	193
MEAN‡	95	551	393	1074	1042	2431	1185	3113	2221	3546	681	297
CFSM‡	.10	.57	.41	1.12	1.09	2.53	1.23	3.24	2.31	3.69	.71	.31
IN.‡	.12	.64	.47	1.29	1.14	2.92	1.37	3.74	2.58	4.25	.82	.35
CAL YR 1988	TOTAL 324575			MEAN 887	MAX 12800	MIN 185	MEAN‡ 882	CFSM‡ .92	IN.‡ 12.51			
WTR YR 1989	TOTAL 506193			MEAN 1387	MAX 11200	MIN 193	MEAN‡ 1392	CFSM‡ 1.45	IN.‡ 19.69			

‡ Adjusted for change in contents in Raystown Lake.

JUNIATA RIVER BASIN

01563500 JUNIATA RIVER AT MAPLETON DEPOT, PA

LOCATION.--Lat 40°23'32", long 77°56'07", Huntingdon County, Hydrologic Unit 02050304, on right bank 0.2 mi downstream from Scrub Run, and 0.3 mi downstream from bridge on State Highway 655 at Mapleton Depot.

DRAINAGE AREA.--2,030 mi².

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

REVISED RECORDS.--WDR PA-73-1: 1936(M).

GAGE.--Water-stage recorder. Datum of gage is 557.31 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since October 1972 by Raystown Dam (station 01563100) 12 mi upstream. One measurement of water temperature was made during the year. National Weather Service satellite telemeter and U.S. Army Corps of Engineers and National Weather Service landline telemeters at station.

AVERAGE DISCHARGE.--52 years, 2,518 ft³/s, 16.84 in/yr, adjusted for storage since October 1972.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 125,000 ft³/s, June 23, 1972, gage height, 33.07 ft, from rating curve extended above 39,000 ft³/s on basis of runoff comparison with upstream and downstream stations; minimum, 68 ft³/s, Sept. 13, 1964, gage height, 1.15 ft; minimum daily, 101 ft³/s, Aug. 21, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 18, 1936, reached a stage of 38.2 ft, from floodmark, discharge, 165,000 ft³/s from rating curve extended as explained above.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 26,300 ft³/s, July 21, gage height, 14.85 ft; minimum, 302 ft³/s, Oct. 18, gage height, 1.88 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	609	536	1200	1350	1670	2450	11900	1450	1950	2680	5440	945
2	591	515	1170	1310	1680	2080	8050	2820	1740	2400	4710	912
3	583	516	1120	1280	1700	1910	6120	3050	1640	2220	2880	911
4	597	544	1070	1240	1900	1700	6070	2750	1930	2160	2680	860
5	562	763	1070	1190	1720	1740	5260	2980	2030	3900	2630	965
6	530	2370	1030	1100	1710	3110	4540	4700	2040	7020	2410	1180
7	554	1500	1030	1170	1630	3690	4230	7320	2060	5730	2000	1130
8	558	1110	1030	1530	1410	3710	3990	6720	1960	5430	1660	993
9	546	971	982	2290	1280	4210	3810	6170	1780	7870	1520	666
10	508	892	968	1750	1270	3900	3410	7810	1700	5370	1380	580
11	511	840	947	1530	1310	4020	3040	12000	1440	2770	1330	662
12	549	795	876	2060	1330	3800	2660	13800	1310	2120	1300	664
13	540	828	826	3650	1250	4020	2400	10300	1680	6940	1290	624
14	529	1300	927	3010	1290	5260	2280	7340	1930	4230	1280	640
15	511	1340	996	4900	1870	5070	2250	5940	2240	5980	1240	724
16	526	1210	937	6630	4240	6570	2250	11400	3620	7480	1130	914
17	505	1180	898	5310	4170	6670	2140	17800	7990	14800	1020	1430
18	547	1160	889	4190	3610	5110	2070	15500	7220	8750	944	1000
19	564	1090	879	3600	3470	5230	2180	11600	5340	5670	944	1060
20	544	1790	896	2730	3330	4510	1730	6770	6560	13000	938	899
21	552	4850	941	2530	4260	4170	1690	5790	18800	19400	968	864
22	591	2960	950	2000	5670	4800	1540	4770	19900	8710	989	799
23	689	2250	968	1990	4880	4700	1500	3990	16800	8220	935	845
24	691	1960	1340	2220	4020	6700	1450	4050	12300	8060	923	1040
25	643	1700	3270	2130	3640	12500	1420	3790	9330	5210	816	893
26	618	1630	2280	1960	3460	10000	1350	3950	5120	5720	893	842
27	586	1520	1810	1940	3090	7390	1340	4280	4260	3650	808	812
28	552	1460	1660	1710	2870	6700	1300	3300	5300	3470	830	785
29	537	1350	1660	1610	---	5800	1300	2660	4820	3280	831	764
30	546	1260	1430	1620	---	7440	1340	2320	3430	3120	906	761
31	542	---	1380	1640	---	13100	---	2110	---	3440	1050	---
TOTAL	17511	42190	37430	73170	73730	162060	94610	199230	158220	189800	48675	26164
MEAN	565	1406	1207	2360	2633	5228	3154	6427	5274	6123	1570	872
MAX	691	4850	3270	6630	5670	13100	11900	17800	19900	19400	5440	1430
MIN	505	515	826	1100	1250	1700	1300	1450	1310	2120	808	580
MEAN‡	454	1621	1121	2491	2630	5254	3124	6438	5254	6185	1479	833
CFSM‡	.22	.80	.55	1.23	1.30	2.59	1.54	3.17	2.59	3.05	.74	.41
IN.‡	.25	.89	.63	1.42	1.35	2.99	1.72	3.66	2.89	3.52	.84	.46

CAL YR 1988 TOTAL 754992 MEAN 2063 MAX 21400 MIN 417 MEAN‡ 2058 CFSM‡ 1.01 IN.‡ 13.80
WTR YR 1989 TOTAL 1122790 MEAN 3076 MAX 19900 MIN 505 MEAN‡ 3081 CFSM‡ 1.52 IN.‡ 20.61

‡ Adjusted for change in contents in Raystown Lake.

JUNIATA RIVER BASIN

01564500 AUGHWICK CREEK NEAR THREE SPRINGS, PA

LOCATION.--Lat 40°12'45", long 77°55'32", Huntingdon County, Hydrologic Unit 02050304, on right bank 10 ft downstream from bridge on State Highway 994, 300 ft upstream from East Broad Top Railroad bridge, 350 ft upstream from Three Springs Creek, and 3.5 mi northeast of Three Springs. Records include flow of Three Springs Creek.

DRAINAGE AREA.--205 mi², includes that of Three Springs Creek.

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

GAGE.--Water-stage recorder. Datum of gage is 618.65 ft above National Geodetic Vertical Datum of 1929, unadjusted.

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

AVERAGE DISCHARGE.--51 years, 244 ft³/s, 16.16 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,700 ft³/s, June 22, 1972, gage height, 19.20 ft, from rating curve extended above 7,100 ft³/s on basis of contracted-opening measurement at gage height 18.04 ft; minimum, 0.8 ft³/s, Sept. 2, 3, 4, 11, 12, 13, 1966, gage height, 1.74 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1, 1889, reached a stage of about 19.3 ft, discharge, about 24,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,100 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 17	0200	4,280	10.35	July 16	2400	6,750	12.70
June 21	1000	*7,630	*13.44	July 20	1330	3,630	9.64
July 5	2200	2,210	7.86	July 23	0700	2,840	8.69

Minimum discharge, 11 ft³/s, Oct. 20, gage height, 2.34 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	14	63	e72	96	e150	761	95	156	205	793	37
2	15	15	60	e66	89	141	600	240	132	172	541	32
3	14	15	54	e60	92	134	530	247	117	149	402	30
4	14	15	51	e54	116	127	469	189	181	144	309	28
5	14	37	47	e51	e96	146	409	212	164	1270	252	26
6	13	198	44	e49	e85	382	396	1010	173	1570	206	25
7	12	109	43	57	e73	e350	328	1040	143	787	171	25
8	12	66	42	103	e69	e320	293	717	119	560	150	26
9	13	49	41	270	e65	e310	283	536	102	398	132	26
10	13	41	e34	198	e63	e300	246	880	106	309	116	26
11	13	36	e29	147	e62	357	209	1340	95	239	104	26
12	14	33	e27	359	e62	500	188	1140	77	186	99	25
13	14	39	e26	783	64	601	174	819	77	862	95	25
14	14	65	e25	438	89	566	161	714	99	970	86	25
15	13	68	e33	479	183	665	163	677	133	692	78	51
16	16	52	e31	531	475	839	203	1990	278	2500	74	88
17	25	49	e27	414	372	595	162	3190	682	3460	70	112
18	23	53	e24	335	299	486	146	1550	400	1290	62	64
19	15	49	e22	285	257	416	144	966	246	781	58	43
20	12	207	e24	242	228	331	134	695	289	2070	58	36
21	13	776	e26	184	356	383	122	550	4820	1100	56	33
22	19	325	e32	e160	486	367	117	426	1460	781	52	33
23	23	196	47	e140	400	305	109	358	906	1600	48	34
24	27	145	98	e130	314	785	103	499	747	850	44	41
25	22	117	276	e120	e240	1610	98	405	782	594	41	36
26	18	99	201	e110	e210	919	96	490	511	516	37	39
27	17	88	143	e110	e190	656	94	380	379	394	35	58
28	16	92	117	106	e170	528	89	291	499	339	34	49
29	16	87	101	94	---	446	92	232	352	265	34	42
30	15	71	e86	96	---	508	103	199	256	217	39	39
31	15	---	e80	107	---	755	---	179	---	1010	40	---
TOTAL	496	3206	1954	6350	5301	14978	7022	22256	14481	26280	4316	1180
MEAN	16.0	107	63.0	205	189	483	234	718	483	848	139	39.3
MAX	27	776	276	783	486	1610	761	3190	4820	3460	793	112
MIN	12	14	22	49	62	127	89	95	77	144	34	25
CFSM	.08	.52	.31	1.00	.92	2.36	1.14	3.50	2.35	4.14	.68	.19
IN.	.09	.58	.35	1.15	.96	2.72	1.27	4.04	2.63	4.77	.78	.21
CAL YR 1988	TOTAL 61627	MEAN 168	MAX 4330	MIN 10	CFSM .82	IN. 11.18						
WTR YR 1989	TOTAL 107820	MEAN 295	MAX 4820	MIN 12	CFSM 1.44	IN. 19.57						

e Estimated.

JUNIATA RIVER BASIN

01567000 JUNIATA RIVER AT NEWPORT, PA

LOCATION.--Lat 40°28'42", long 77°07'46", Perry County, Hydrologic Unit 02050304, on right bank at downstream side of bridge on State Highway 34 at Newport and 1,000 ft upstream from Little Buffalo Creek.

DRAINAGE AREA.--3,354 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1899 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 756: Drainage area. WSP 781: 1902(M). WSP 1302: 1915-17. WSP 1502: 1899-1908, 1914, 1924, 1936. WSP 1722: 1916.

GAGE.--Water-stage recorder. Datum of gage is 363.93 ft above National Geodetic Vertical Datum of 1929. Prior to July 16, 1929, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated since October 1972 by Raystown Dam (station 01563100) about 75 mi upstream. National Weather Service satellite and landline telemeters at station.

AVERAGE DISCHARGE.--90 years, 4,288 ft³/s, 17.36 in/yr, adjusted for storage since October 1972.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 190,000 ft³/s, Mar. 19, 1936, gage height, 34.24 ft, from floodmark in gage shelter, from rating curve extended above 100,000 ft³/s; minimum, 195 ft³/s, July 27, 1966, gage height, 2.81 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1, 1889, reached a stage of 35.9 ft, from floodmarks, discharge, 209,000 ft³/s, from rating curve extended above 100,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 41,400 ft³/s, July 21, gage height, 15.21 ft; minimum daily, 792 ft³/s, Oct 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1040	872	2090	2130	2680	4110	17100	2130	3560	5680	6100	1550
2	959	870	1960	2060	2640	3680	14500	2900	3270	4710	7770	1620
3	927	852	1850	2010	2680	3260	10600	3880	2930	4220	6880	1500
4	905	848	1770	1910	2700	3090	8660	4480	3260	3960	4980	1440
5	882	897	1690	e1600	2800	2870	8350	4180	3380	8120	4850	1410
6	866	1660	1650	e1600	2730	3060	7470	7460	3500	9540	4340	1350
7	843	2960	1610	e1700	2630	3880	6540	12500	3380	11600	4170	1520
8	827	3060	1580	e2300	2560	4850	6050	13000	3230	8760	3440	1620
9	827	2100	1560	3050	2180	4740	5730	10900	3230	7810	3020	1600
10	829	1690	1520	3870	1890	5190	5520	11300	2820	9750	2740	1360
11	833	1510	1470	3220	1830	5080	5110	17100	2680	7110	2470	1080
12	814	1380	1450	3080	2280	5610	4660	20600	2360	4680	2320	1010
13	792	1440	1170	5320	2220	5770	4230	19100	2200	5920	2230	1040
14	825	1890	1340	6760	2160	5980	3860	14600	2380	16300	2170	1050
15	810	1900	1700	5870	2350	7280	3650	11500	3120	12400	2090	1040
16	815	2200	1670	8050	3280	7730	3600	14500	3880	13200	2040	1100
17	803	2140	e1500	9600	5140	9340	3580	27500	6120	25500	1980	1260
18	805	2100	e1450	7810	5530	9010	3460	28200	11500	23000	1810	1680
19	800	1950	e1400	6200	4800	7200	3330	21400	9080	13400	2850	1640
20	798	2550	e1500	5510	4480	6930	3250	15800	6970	16900	2880	1530
21	919	5550	1590	4470	4600	6330	2980	10700	21000	37000	2100	1420
22	1280	8080	1710	3940	6580	6110	2840	8910	32000	25800	1960	1300
23	1170	5340	1600	3420	8100	6430	2700	7490	25100	23500	1830	1300
24	1130	4040	1580	3250	6830	6890	2560	6530	21100	17800	1710	1290
25	1190	3410	2700	3270	5560	15200	2420	6450	17200	13800	1630	1310
26	1150	3010	4350	3380	4980	18600	2340	6080	12500	10800	1540	1390
27	1050	2680	3730	3150	4840	14000	2230	5930	8110	9420	1480	1210
28	1010	2630	3000	3070	4380	10900	2140	6110	8150	6830	1510	1200
29	947	2470	2740	2780	---	9670	2060	5150	9130	6100	1460	1190
30	905	2260	2530	2700	---	8450	2060	4340	7340	5600	1450	1120
31	884	---	2240	2680	---	11400	---	3870	---	5310	1460	---
TOTAL	28635	74339	59700	119760	105430	222640	153580	334590	244480	374520	89260	40130
MEAN	924	2478	1926	3863	3765	7182	5119	10790	8149	12080	2879	1338
MAX	1280	8080	4350	9600	8100	18600	17100	28200	32000	37000	7770	1680
MIN	792	848	1170	1600	1830	2870	2060	2130	2200	3960	1450	1010
MEAN‡	813	2693	1840	3994	3762	7208	5089	10801	8129	12142	2788	1299
CFSM‡	.24	.80	.55	1.19	1.12	2.15	1.52	3.22	2.42	3.62	.83	.39
IN.‡	.28	.89	.63	1.37	1.17	2.48	1.70	3.71	2.70	4.17	.96	.44

CAL YR 1988 TOTAL 1144734 MEAN 3128 MAX 33800 MIN 697 MEAN‡ 3123 CFSM‡ .93 IN.‡ 12.68
WTR YR 1989 TOTAL 1847064 MEAN 5060 MAX 37000 MIN 792 MEAN‡ 5066 CFSM‡ 1.51 IN.‡ 20.51

e Estimated.

‡ Adjusted for change in contents in Raystown Lake.

JUNIATA RIVER BASIN

01567000 JUNIATA RIVER AT NEWPORT, PA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1945 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1964 to current year.

WATER TEMPERATURE: October 1944 to September 1953, April 1958 to September 1962, October 1964 to current year.

SUSPENDED-SEDIMENT DISCHARGE: January 1951 to current year.

INSTRUMENTATION.--Sediment sampler and shelter attached to downstream bridge rail about 447 ft from left bank.

REMARKS.--Once-daily water temperatures and laboratory specific conductance values obtained from suspended-sediment samples.

COOPERATION.--Water-quality samples collected by Susquehanna River Basin Commission and analyzed by the Pa. Department of Environmental Resources. Suspended-sediment samples analyzed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: (Water years 1965-86) Maximum daily, 558 microsiemens, Oct. 27, 1969; minimum daily, 107 microsiemens, Dec. 2, 1984.

WATER TEMPERATURE: Maximum daily, 33.0°C, July 23, 24, 1987, Aug. 2, 1988; minimum daily, 0.0°C on many days during winter periods based on unpublished records.

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,130 mg/L, Mar. 2, 1954; minimum daily mean, <1 mg/L on many days.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 365,000 tons, June 23, 1972; minimum daily, <.01 ton on many days.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum daily, 27.0°C several days in August; minimum daily, 0.0°C several days during December, January, and possibly February based on unpublished records.

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum daily mean, 691 mg/L, June 21; minimum daily mean, 1 mg/L on many days.

SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 38,100 tons, June 21; minimum daily, 2.2 tons, several days in August.

JUNIATA RIVER BASIN

01567000 JUNIATA RIVER AT NEWPORT, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE FIELD (μ S/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)
OCT										
05...	1150	883	300	9.10	17.0	0.780	0.020	0.020	0.23	0.23
NOV										
16...	1355	2230	270	--	10.0	1.24	0.020	0.020	--	--
DEC										
06...	1300	1630	240	9.00	6.0	1.32	0.020	0.020	--	--
JAN										
05...	1200	1600	230	8.40	1.0	1.12	0.020	0.020	--	--
FEB										
01...	1130	2670	255	8.85	6.0	1.46	0.020	0.020	--	--
21...	1400	4560	182	8.80	5.0	1.28	0.020	0.020	--	--
21...	1930	4820	180	8.80	6.0	1.36	0.020	0.020	--	--
22...	0030	5400	205	8.25	5.5	1.36	0.020	0.020	--	--
22...	0330	5600	220	8.25	5.5	1.34	0.040	0.040	--	--
22...	0600	5890	230	8.15	4.5	1.38	0.050	0.050	0.27	--
22...	1030	6070	190	8.40	5.0	1.34	0.040	0.040	0.38	0.19
23...	1100	8090	170	7.35	4.5	1.42	0.040	0.040	0.57	0.20
24...	1045	6980	175	7.55	4.5	1.38	0.020	0.020	0.83	0.68
27...	0940	4900	188	8.05	3.5	1.36	0.010	0.010	0.24	--
MAR										
16...	1000	7770	210	7.50	7.0	1.46	0.010	0.010	0.37	0.22
APR										
27...	1130	2230	240	8.80	17.0	1.01	<0.020	<0.020	--	--
MAY										
02...	1100	2900	252	8.70	16.0	1.25	0.070	0.070	0.19	0.19
03...	0915	3620	235	8.30	14.0	1.28	0.060	0.060	0.23	--
04...	1430	4430	240	8.00	16.0	1.12	0.040	0.040	0.25	--
05...	1250	4080	210	7.80	14.0	1.21	0.040	0.040	0.74	0.44
06...	0850	6670	180	7.10	14.0	1.23	0.060	0.050	1.1	0.53
07...	1340	12400	165	7.30	13.0	1.17	0.040	0.040	0.92	0.29
08...	1045	13100	190	7.70	11.0	1.23	0.040	0.040	0.58	0.19
09...	1000	10900	175	7.50	11.0	1.19	0.060	0.060	0.23	--
10...	1115	10300	165	7.65	11.0	1.12	0.050	0.050	0.26	0.23
11...	1130	17400	155	7.90	10.0	1.24	0.030	0.030	0.37	0.17
12...	1300	21500	154	7.60	10.0	1.23	0.070	0.070	0.68	0.38
14...	0915	14500	--	--	--	1.36	0.060	0.060	0.67	0.47
15...	1430	10700	160	7.60	14.0	1.36	0.030	0.020	0.22	--
17...	1230	28800	145	7.30	16.0	1.34	0.050	0.040	0.65	0.31
19...	0940	21600	180	7.80	16.0	1.47	0.030	0.030	0.26	--
21...	1120	10600	170	7.50	19.0	1.56	0.020	0.020	0.25	--
23...	1005	7260	190	7.70	17.0	1.58	0.030	0.030	0.33	0.22
JUN										
21...	1035	21900	140	7.30	20.0	1.52	0.090	0.090	1.3	0.42
22...	1030	34000	140	--	19.0	1.21	0.120	0.110	1.5	0.30
23...	1535	24400	170	7.80	20.0	1.41	0.030	0.020	0.64	0.30
24...	1100	21900	175	7.80	19.0	1.43	0.020	<0.020	0.52	--
25...	1100	17200	175	7.80	19.0	1.50	0.040	0.040	0.43	--
26...	1040	12600	180	7.80	20.0	1.61	0.040	0.040	0.50	0.32
28...	1000	7540	190	7.60	21.0	1.76	0.030	0.030	0.32	0.19
30...	1220	7230	190	7.80	25.0	1.54	0.040	0.030	0.64	0.47
JUL										
05...	1330	9610	195	7.25	22.0	1.69	0.040	0.040	0.68	0.17
06...	1230	9640	200	7.70	21.0	1.65	0.080	0.080	0.44	0.44
14...	1100	17600	190	7.05	20.0	1.61	0.090	0.060	1.2	0.29
15...	1230	11900	170	7.65	20.0	1.54	0.080	0.080	0.40	0.22
17...	1120	25700	165	7.65	20.0	1.39	0.070	0.050	0.68	0.24
21...	1045	39500	150	6.90	20.0	1.17	0.070	0.070	1.4	0.55
21...	1645	41300	160	7.20	20.0	1.17	0.080	0.080	1.5	0.47
22...	1345	23100	170	7.10	20.0	1.32	0.080	0.060	0.52	0.31
23...	1015	25400	160	7.20	20.0	1.28	0.100	0.050	1.1	0.16
24...	0915	18600	170	7.50	22.0	1.78	0.040	0.040	0.55	0.29
25...	1100	14400	195	7.60	23.0	1.67	0.040	0.040	0.29	0.21
27...	1040	9880	200	8.00	23.0	1.74	0.030	0.030	0.34	0.18
AUG										
15...	1150	2070	240	8.90	25.0	1.45	0.020	<0.020	0.35	--
SEP										
11...	1110	1010	282	7.00	25.0	1.23	0.030	0.030	0.23	0.17

< Actual value is known to be less than the value shown.

JUNIATA RIVER BASIN

01567000 JUNIATA RIVER AT NEWPORT, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT									
05...	0.25	0.25	1.0	0.080	0.080	0.045	3.4	3	7.2
NOV									
16...	<0.20	<0.20	--	0.080	0.060	0.037	3.3	4	24
DEC									
06...	<0.20	<0.20	--	0.040	0.020	0.017	2.2	3	13
JAN									
05...	<0.20	<0.20	--	0.030	0.020	0.003	2.5	1	4.3
FEB									
01...	<0.20	<0.20	--	0.050	0.040	0.011	2.6	3	22
21...	<0.20	<0.20	--	0.060	0.040	0.002	2.6	21	259
21...	<0.20	<0.20	--	0.050	0.050	<0.002	2.6	17	221
22...	<0.20	<0.20	--	0.060	0.050	<0.002	2.7	16	233
22...	<0.20	<0.20	--	0.070	0.060	<0.002	2.8	16	242
22...	0.32	<0.20	1.7	0.070	0.050	<0.002	2.9	26	413
22...	0.42	0.23	1.8	0.100	0.040	<0.002	3.5	34	557
23...	0.61	0.24	2.0	0.080	0.040	0.004	3.0	41	896
24...	0.85	0.70	2.2	0.090	0.060	0.008	3.1	22	415
27...	0.25	<0.20	1.6	0.050	0.050	0.008	2.2	5	66
MAR									
16...	0.38	0.23	1.8	0.080	0.040	0.002	2.5	24	503
APR									
27...	0.68	0.53	1.7	0.060	0.040	0.007	3.3	9	54
MAY									
02...	0.26	0.26	1.5	0.060	0.040	0.011	2.8	12	94
03...	0.29	<0.20	1.6	0.080	0.040	0.005	3.1	14	137
04...	0.29	<0.20	1.4	0.060	0.040	0.013	3.4	154	1840
05...	0.78	0.48	2.0	0.070	0.030	0.017	3.2	19	209
06...	1.2	0.58	2.4	0.090	0.030	0.011	4.4	115	2070
07...	0.96	0.33	2.1	0.120	0.030	0.021	4.0	86	2880
08...	0.62	0.23	1.8	0.090	0.060	0.013	3.2	61	2160
09...	0.29	<0.20	1.5	0.080	0.030	0.014	3.7	58	1710
10...	0.31	0.28	1.4	0.090	0.030	0.002	2.2	36	1000
11...	0.40	0.20	1.6	0.110	0.050	<0.002	3.2	64	3010
12...	0.75	0.45	2.0	0.150	0.060	0.020	3.0	75	4350
14...	0.73	0.53	2.1	0.070	0.050	0.012	2.2	28	1100
15...	0.25	<0.20	1.6	0.070	0.050	0.009	2.2	24	693
17...	0.70	0.35	2.0	0.070	0.060	0.017	3.8	136	10600
19...	0.29	<0.20	1.8	0.050	0.030	0.002	2.5	42	2450
21...	0.27	<0.20	1.8	0.050	0.030	0.004	2.3	30	859
23...	0.36	0.25	1.9	0.050	0.040	0.005	2.2	26	510
JUN									
21...	1.4	0.51	2.9	0.390	0.060	0.034	9.5	389	23000
22...	1.6	0.41	2.8	0.500	0.020	0.020	7.2	355	32600
23...	0.67	0.32	2.1	0.110	0.050	<0.002	1.5	69	4550
24...	0.54	0.42	2.0	0.100	0.040	<0.002	1.6	65	3840
25...	0.47	<0.20	2.0	0.140	0.050	0.009	2.9	71	3300
26...	0.54	0.36	2.1	0.110	0.040	0.010	2.8	62	2110
28...	0.35	0.22	2.1	0.120	0.050	0.025	2.6	47	957
30...	0.68	0.50	2.2	0.100	0.040	0.002	2.9	49	957
JUL									
05...	0.72	0.21	2.4	0.240	0.070	0.010	5.0	187	4850
06...	0.52	0.52	2.2	0.160	0.050	0.023	3.4	80	2080
14...	1.3	0.35	2.9	0.180	0.060	0.035	4.5	126	5990
15...	0.48	0.30	2.0	0.120	0.060	0.025	4.2	57	1830
17...	0.75	0.29	2.1	0.200	0.050	0.021	5.2	176	12200
21...	1.5	0.62	2.7	0.300	0.050	0.003	7.9	278	29600
21...	1.6	0.55	2.8	0.320	0.060	0.004	8.0	272	30300
22...	0.60	0.37	1.9	0.140	0.040	0.005	4.0	89	5550
23...	1.2	0.21	2.5	0.400	0.060	0.004	7.6	375	25700
24...	0.59	0.33	2.4	0.180	0.090	0.006	4.2	96	4820
25...	0.33	0.25	2.0	0.100	0.040	0.008	3.3	57	2220
27...	0.37	0.21	2.1	0.100	0.040	0.002	3.1	45	1200
AUG									
15...	0.37	0.26	1.8	0.040	0.040	0.002	2.7	4	22
SEP									
11...	0.26	0.20	1.5	0.090	0.040	0.008	4.3	5	14

< Actual value is known to be less than the value shown.

JUNIATA RIVER BASIN

01567000 JUNIATA RIVER AT NEWPORT, PA--Continued

SPECIFIC CONDUCTANCE, $\mu\text{S}/\text{CM}$ @ 25° CENTIGRADE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	293	311	219	263	227	206	186	---	---	---	228	303
2	294	311	226	233	229	208	185	---	---	---	218	289
3	300	302	220	219	---	211	187	---	---	---	204	309
4	303	305	222	---	247	219	190	---	---	---	212	271
5	297	291	223	---	202	223	193	---	---	---	229	275
6	289	283	236	---	224	---	200	---	---	---	231	310
7	297	245	303	---	218	---	205	---	---	---	241	320
8	308	251	350	239	245	---	205	---	---	---	259	321
9	293	261	268	273	---	214	205	---	---	---	240	291
10	290	278	291	222	---	205	205	---	---	---	255	280
11	294	280	239	250	---	204	210	---	---	---	253	280
12	310	255	---	218	229	210	216	---	---	---	250	302
13	306	244	---	194	225	218	217	---	---	---	250	321
14	304	246	292	---	280	202	217	---	---	---	251	350
15	308	251	315	232	227	195	217	---	---	---	245	346
16	305	255	332	210	221	195	220	---	---	---	245	351
17	286	260	---	206	---	198	223	---	---	---	250	334
18	302	245	---	202	226	193	227	---	---	---	247	327
19	315	235	269	---	---	195	229	---	---	---	232	332
20	311	222	318	---	199	195	229	---	---	---	249	343
21	311	188	281	---	---	202	230	---	---	---	252	336
22	294	203	376	257	195	202	238	---	---	---	266	323
23	297	186	346	197	---	200	---	---	---	---	274	290
24	288	181	259	254	---	---	---	---	---	---	278	278
25	296	189	242	211	---	182	---	---	---	---	287	280
26	305	199	320	215	199	171	---	---	---	---	279	280
27	307	203	276	251	229	183	---	---	---	---	281	307
28	314	204	234	214	---	184	---	---	---	---	281	326
29	317	205	230	228	---	188	---	---	---	---	306	329
30	310	215	206	253	---	192	---	---	---	---	294	310
31	313	---	193	264	---	191	---	---	---	---	283	---
MEAN	302	243	270	231	225	199	211	---	---	---	254	310

WATER TEMPERATURE, (°C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.5	8.0	5.0	2.0	8.0	4.0	8.0	16.0	24.0	21.0	19.5	24.5
2	20.0	8.0	4.5	2.5	7.0	4.0	8.0	15.5	24.0	24.0	21.0	24.5
3	20.0	9.0	5.5	2.0	6.5	4.0	9.0	14.0	24.0	---	24.0	22.5
4	20.0	10.5	3.5	---	4.0	4.0	10.5	15.5	24.0	---	25.0	23.0
5	17.0	12.0	4.0	---	3.0	4.0	10.0	14.0	22.0	21.5	25.0	23.0
6	15.0	10.5	5.0	---	3.0	---	10.0	14.0	21.0	22.0	26.0	23.0
7	14.0	9.5	4.5	---	3.0	---	10.0	---	19.5	22.5	25.0	23.0
8	12.0	9.0	4.5	.5	2.0	---	9.0	11.0	22.0	---	22.5	23.0
9	13.0	9.5	4.0	.5	---	3.0	9.5	11.5	20.5	23.5	23.0	25.0
10	15.0	9.0	3.0	1.0	---	4.0	9.0	11.0	21.0	---	23.0	26.0
11	15.0	9.0	1.0	1.5	---	4.5	10.0	10.5	22.0	25.5	22.0	25.0
12	13.0	7.0	---	1.0	2.0	4.5	10.5	10.0	---	---	21.5	24.5
13	11.0	8.5	---	1.5	.5	5.0	10.5	11.0	---	---	25.0	24.0
14	12.0	9.5	1.0	---	1.5	5.0	11.5	11.5	---	---	25.0	24.0
15	12.5	9.0	1.0	2.0	2.5	8.0	10.0	12.0	---	20.0	25.0	23.0
16	11.0	9.5	.5	3.0	2.5	8.0	13.0	12.5	20.0	20.0	26.0	20.0
17	16.5	9.5	---	3.0	2.0	9.5	13.5	14.0	20.0	20.5	26.0	21.0
18	15.5	9.0	---	4.0	2.5	9.0	15.0	15.5	21.0	20.0	25.0	20.0
19	13.0	6.0	1.5	4.0	3.5	6.0	15.0	16.0	21.5	21.0	21.5	18.5
20	13.5	7.0	2.0	4.0	4.5	5.0	16.0	16.0	21.0	21.5	23.5	20.0
21	10.5	7.0	2.0	2.0	---	5.5	14.0	18.0	20.0	19.5	25.0	22.0
22	9.5	7.0	1.5	1.0	5.0	6.0	13.5	18.0	20.0	19.0	27.0	23.0
23	11.5	7.0	1.0	2.5	---	6.0	14.0	16.0	19.0	21.0	27.0	21.0
24	12.0	5.0	1.0	3.5	3.0	---	15.5	16.0	19.5	22.0	27.0	18.0
25	11.0	5.0	2.0	2.0	2.5	7.5	17.0	18.0	21.0	23.0	26.0	17.5
26	10.0	6.0	2.5	3.0	2.5	8.0	17.0	19.0	22.0	24.5	26.0	18.0
27	10.0	7.5	3.0	4.0	3.0	10.5	19.0	19.0	24.0	24.5	25.0	18.0
28	9.5	7.0	3.0	4.0	3.5	12.5	18.0	19.5	23.0	24.5	27.0	17.5
29	9.5	6.5	2.0	4.0	---	13.0	15.0	20.0	---	24.0	25.0	19.0
30	8.5	6.0	1.0	5.5	---	10.5	15.0	21.0	20.5	22.0	27.0	17.5
31	8.0	---	2.0	5.5	---	10.0	---	21.0	---	19.5	27.0	---
MEAN	13.2	8.1	2.6	2.7	3.4	6.7	12.5	15.2	21.5	21.9	24.6	21.6

JUNIATA RIVER BASIN

01567000 JUNIATA RIVER AT NEWPORT, PA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
OCTOBER			NOVEMBER			DECEMBER			
1	1040	2	5.6	872	1	2.4	2090	3	17
2	959	6	16	870	1	2.3	1960	2	11
3	927	3	7.5	852	1	2.3	1850	1	5.0
4	905	3	7.3	848	1	2.3	1770	1	4.8
5	882	3	7.1	897	1	2.4	1690	1	4.6
6	866	4	9.4	1660	5	22	1650	5	22
7	843	2	4.6	2960	10	90	1610	6	26
8	827	2	4.5	3060	8	68	1580	6	26
9	827	1	2.2	2100	7	40	1560	8	34
10	829	1	2.2	1690	4	18	1520	8	33
11	833	1	2.2	1510	5	20	1470	12	48
12	814	4	8.8	1380	6	22	1450	12	47
13	792	3	6.4	1440	4	16	1170	9	28
14	825	1	2.2	1890	4	20	1340	8	29
15	810	1	2.2	1900	6	31	1700	9	41
16	815	1	2.2	2200	7	42	1670	8	36
17	803	2	4.3	2140	4	23	1500	8	32
18	805	3	6.5	2100	1	5.7	1450	10	39
19	800	2	4.3	1950	1	5.3	1400	12	45
20	798	2	4.3	2550	4	41	1500	10	40
21	919	2	5.0	5550	38	579	1590	9	39
22	1280	5	17	8080	48	1060	1710	10	46
23	1170	4	13	5340	28	404	1600	10	43
24	1130	3	9.2	4040	15	164	1580	10	43
25	1190	2	6.4	3410	6	55	2700	10	73
26	1150	2	6.2	3010	8	65	4350	13	159
27	1050	1	2.8	2680	4	29	3730	10	101
28	1010	1	2.7	2630	2	14	3000	5	40
29	947	1	2.6	2470	2	13	2740	4	30
30	905	1	2.4	2260	2	12	2530	4	27
31	884	1	2.4	---	---	---	2240	4	24
TOTAL	28635	---	179.5	74339	---	2870.7	59700	---	1193.4
JANUARY			FEBRUARY			MARCH			
1	2130	5	29	2680	8	58	4110	5	55
2	2060	5	28	2640	8	57	3680	4	40
3	2010	5	27	2680	9	65	3260	4	35
4	1910	5	26	2700	9	66	3090	3	25
5	1600	5	22	2800	10	76	2870	3	23
6	1600	5	22	2730	8	59	3060	3	25
7	1700	6	28	2630	7	50	3880	9	95
8	2300	7	43	2560	8	55	4850	9	118
9	3050	10	82	2180	9	53	4740	8	102
10	3870	9	94	1890	9	46	5190	7	98
11	3220	7	61	1830	10	49	5080	6	82
12	3080	5	42	2280	11	68	5610	9	136
13	5320	40	594	2220	9	54	5770	9	140
14	6760	37	673	2160	8	47	5980	10	161
15	5870	15	238	2350	12	76	7280	16	314
16	8050	23	531	3280	9	80	7730	19	397
17	9600	24	612	5140	20	288	9340	34	881
18	7810	18	382	5530	17	254	9010	26	633
19	6200	10	167	4800	11	143	7200	18	350
20	5510	9	134	4480	6	73	6930	12	225
21	4470	8	97	4600	9	114	6330	8	137
22	3940	8	85	6580	27	515	6110	8	132
23	3420	6	55	8100	27	600	6430	7	122
24	3250	6	53	6830	16	295	6890	15	305
25	3270	4	35	5560	11	165	15200	77	3670
26	3380	7	64	4980	6	81	18600	96	4870
27	3150	9	77	4840	7	91	14000	36	1400
28	3070	7	58	4380	6	71	10900	29	853
29	2780	6	45	---	---	---	9670	27	705
30	2700	7	51	---	---	---	8450	24	548
31	2680	13	94	---	---	---	11400	46	1660
TOTAL	119760	---	4549	105430	---	3649	222640	---	18337

JUNIATA RIVER BASIN

01567000 JUNIATA RIVER AT NEWPORT, PA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
APRIL			MAY			JUNE			
1	17100	109	5040	2130	5	29	3560	15	144
2	14500	54	2140	2900	7	55	3270	14	124
3	10600	23	658	3880	13	141	2930	13	103
4	8660	18	421	4480	18	218	3260	14	123
5	8350	19	428	4180	15	169	3380	17	155
6	7470	20	403	7460	60	1330	3500	18	170
7	6540	19	336	12500	79	2710	3380	16	146
8	6050	15	245	13000	56	2000	3230	14	122
9	5730	15	232	10900	27	795	3230	15	131
10	5520	14	209	11300	21	641	2820	12	91
11	5110	12	166	17100	48	2220	2680	9	65
12	4660	9	113	20600	69	3890	2360	9	57
13	4230	9	103	19100	40	2110	2200	9	53
14	3860	7	73	14600	24	946	2380	9	58
15	3650	8	79	11500	23	714	3120	10	84
16	3600	7	68	14500	44	1950	3880	18	189
17	3580	7	68	27500	108	8080	6120	52	937
18	3460	7	65	28200	86	6610	11500	139	4460
19	3330	7	63	21400	41	2370	9080	74	1850
20	3250	8	70	15800	30	1280	6970	54	1020
21	2980	6	48	10700	28	809	21000	691	38100
22	2840	7	54	8910	32	770	32000	269	23600
23	2700	4	29	7490	26	526	25100	74	5040
24	2560	1	6.9	6530	24	423	21100	52	2960
25	2420	1	6.5	6450	24	418	17200	66	3070
26	2340	3	19	6080	25	410	12500	62	2140
27	2230	4	24	5930	27	432	8110	47	1030
28	2140	5	29	6110	26	429	8150	49	1100
29	2060	5	28	5150	24	334	9130	68	1680
30	2060	4	22	4340	20	234	7340	48	951
31	---	---	---	3870	16	167	---	---	---
TOTAL	153580	---	11246.4	334590	---	43210	244480	---	89753
JULY			AUGUST			SEPTEMBER			
1	5680	34	521	6100	15	266	1550	7	29
2	4710	28	356	7770	31	652	1620	6	26
3	4220	25	285	6880	25	473	1500	5	20
4	3960	23	246	4980	18	242	1440	6	23
5	8120	61	1430	4850	20	262	1410	6	23
6	9540	74	1950	4340	21	246	1350	5	18
7	11600	91	2870	4170	16	180	1520	5	21
8	8760	42	1010	3440	12	111	1620	4	17
9	7810	30	653	3020	9	73	1600	5	22
10	9750	37	998	2740	7	52	1360	6	22
11	7110	34	664	2470	8	53	1080	5	15
12	4680	23	291	2320	4	25	1010	5	14
13	5920	29	503	2230	4	24	1040	6	17
14	16300	107	4960	2170	3	18	1050	6	17
15	12400	76	2630	2090	4	23	1040	3	8.4
16	13200	65	2900	2040	3	17	1100	2	5.9
17	25500	156	11000	1980	4	21	1260	2	6.8
18	23000	68	4390	1810	4	20	1680	4	18
19	13400	29	1050	2850	6	49	1640	5	22
20	16900	97	5470	2880	8	62	1530	4	17
21	37000	263	26700	2100	5	28	1420	4	15
22	25800	95	6990	1960	8	42	1300	3	11
23	23500	210	13500	1830	8	40	1300	6	21
24	17800	105	5080	1710	6	28	1290	5	17
25	13800	63	2350	1630	8	35	1310	6	21
26	10800	47	1370	1540	7	29	1390	8	30
27	9420	38	966	1480	6	24	1210	7	23
28	6830	29	535	1510	5	20	1200	5	16
29	6100	23	379	1460	5	20	1190	5	16
30	5600	19	287	1450	8	31	1120	4	12
31	5310	17	244	1460	11	43	---	---	---
TOTAL	374520	---	102578	89260	---	3209	40130	---	544.1
YEAR	1847064		281319.1						

SHERMAN CREEK BASIN

01567500 BIXLER RUN NEAR LOYSVILLE, PA

LOCATION.--Lat 40°22'15", long 77°24'09", Perry County, Hydrologic Unit 02050305, on right bank 400 ft upstream from bridge on State Highway 850 at Bixler, 2.3 mi upstream from mouth, and 3.6 mi west of Loysville.

DRAINAGE AREA.--15.0 mi².

PERIOD OF RECORD.--January 1954 to current year.

GAGE.--Water-stage recorder. Datum of gage is 601.22 ft above National Geodetic Vertical Datum of 1929. Prior to May 14, 1954, nonrecording gage and crest-stage gage 400 ft downstream at same datum.

REMARKS.--Records good except those for estimated daily discharges which are fair, and the period June 30 to July 6, which is poor. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--35 years, 19.0 ft³/s, 17.20 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,000 ft³/s, June 20, 1989, gage height, 12.19 ft, from rating curve extended above 2,700 ft³/s on basis of contracted-opening and flow-over-road measurement of peak flow; minimum, 1.5 ft³/s, Feb. 2, 1959.

EXTREMES 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)
May 6	2030	329	5.58	July 5	Unknown	Unknown	Unknown
May 10	1500	269	5.33	July 13	0700	949	7.25
May 16	1630	423	5.92	July 16	1415	1,540	8.23
June 20	2230	*16,000	*12.19	July 20	0330	601	6.45
June 27	2345	919	7.19	July 20	2215	344	5.64

Minimum discharge, 1.7 ft³/s, Feb. 9, result of freeze-up.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.2	4.4	7.9	e5.6	11	e10	31	10	19	e52	e34	7.5
2	4.2	4.7	7.2	e5.2	10	e9.8	27	20	23	e45	e31	7.3
3	4.2	5.6	7.0	e4.9	12	e9.6	28	13	23	e40	e28	6.8
4	4.1	6.1	6.5	e4.7	11	12	26	12	25	e150	e26	6.3
5	3.9	14	6.2	e4.5	9.8	14	25	27	26	e450	e25	6.2
6	3.9	11	6.2	e4.4	e8.0	19	23	165	26	e100	e23	6.2
7	3.9	8.0	6.2	5.7	e7.3	e13	20	118	26	63	e22	6.8
8	3.8	6.4	5.8	20	e6.8	e11	19	65	24	50	e20	7.2
9	3.7	5.8	5.5	18	e6.4	e9.8	19	46	23	43	e19	7.2
10	3.6	5.5	5.3	14	e6.1	e9.4	17	160	23	39	e18	6.8
11	3.7	5.2	5.3	12	e5.8	e16	16	152	22	34	e18	6.9
12	3.5	4.8	4.6	41	e5.6	29	15	93	20	31	e17	7.0
13	3.2	11	e4.1	35	e5.4	28	15	65	22	394	e16	6.5
14	3.4	9.0	e3.9	25	9.4	27	14	63	24	120	e15	6.2
15	3.4	7.1	e3.8	43	19	31	16	61	29	73	15	6.5
16	3.4	6.5	e3.6	37	21	30	16	254	38	450	14	7.6
17	3.5	8.3	e3.7	32	16	27	14	203	37	203	14	7.3
18	3.6	6.7	e3.9	28	e11	25	13	108	28	107	13	5.8
19	3.8	6.1	e4.3	27	e10	21	13	73	29	84	14	6.1
20	3.7	49	4.9	24	e9.5	19	12	57	797	247	13	7.8
21	5.3	42	5.6	20	28	24	11	46	698	147	12	6.3
22	9.3	22	5.1	18	24	20	11	37	208	114	11	7.0
23	5.3	17	8.1	17	21	18	10	34	139	92	11	7.4
24	5.6	15	18	16	18	78	9.8	34	122	e68	9.7	6.4
25	4.9	13	20	15	16	67	9.5	28	96	e57	9.3	6.2
26	4.3	12	12	15	e14	47	9.6	25	73	48	9.0	9.8
27	4.1	11	10	16	e12	36	9.2	22	119	42	8.7	6.1
28	4.3	13	10	13	e11	31	8.6	20	199	37	8.7	5.6
29	4.4	9.3	8.7	12	---	28	8.9	18	82	32	8.6	5.5
30	4.3	8.4	7.2	13	---	30	8.5	18	e60	32	8.7	5.4
31	4.2	---	e6.2	12	---	36	---	18	---	e40	7.3	---
TOTAL	130.7	347.9	216.8	558.0	345.1	785.6	475.1	2065	3080	3484	499.0	201.7
MEAN	4.22	11.6	6.99	18.0	12.3	25.3	15.8	66.6	103	112	16.1	6.72
MAX	9.3	49	20	43	28	78	31	254	797	450	34	9.8
MIN	3.2	4.4	3.6	4.4	5.4	9.4	8.5	10	19	31	7.3	5.4
CFSM	.28	.77	.47	1.20	.82	1.69	1.06	4.44	6.84	7.49	1.07	.45
IN.	.32	.86	.54	1.38	.86	1.95	1.18	5.12	7.64	8.64	1.24	.50

CAL YR 1988 TOTAL 4773.7 MEAN 13.0 MAX 160 MIN 3.1 CFSM .87 IN. 11.84
WTR YR 1989 TOTAL 12188.9 MEAN 33.4 MAX 797 MIN 3.2 CFSM 2.23 IN. 30.23

e Estimated.

SHERMAN CREEK BASIN

01568000 SHERMAN CREEK AT SHERMANS DALE, PA

LOCATION.--Lat 40°19'24", long 77°10'09", Perry County, Hydrologic Unit 02050305, on left bank on downstream side of bridge on State Highway 34 at Shermans Dale, and 1.2 mi upstream from Fishing Run.

DRAINAGE AREA.--200 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1929 to current year. Monthly discharge only for some months, published in WSP 1302. Prior to October 1962, published as "at Shermandale".

REVISED RECORDS.--WSP 1302: 1930(M). WSP 1502: 1933, 1934(M), 1935-36.

GAGE.--Water-stage recorder. Datum of gage is 422.63 ft above National Geodetic Vertical Datum of 1929. Prior to Jan. 29, 1930, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. National Weather Service satellite telemeter at station.

AVERAGE DISCHARGE.--60 years, 287 ft³/s, 19.49 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,500 ft³/s, June 23, 1972, gage height, 18.09 ft, from rating curve extended above 18,000 ft³/s; minimum, 3.9 ft³/s, Dec. 1, 1930; minimum gage height, 0.62 ft, Sept. 11, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 22, 1927, reached a stage of 20.34 ft, from floodmark, discharge, about 44,000 ft³/s.

EXTREMES 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)
May 17	0145	5,160	8.03	July 13	1515	7,140	9.45
June 21	1130	11,900	12.25	July 16	2130	*12,500	*12.57
July 5	1015	3,260	6.39	July 21	0200	4,380	7.40

Minimum discharge, 27 ft³/s, Oct. 16, gage height, 0.92 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	39	110	e88	144	e160	605	131	202	287	487	66
2	41	36	100	e82	134	154	448	281	174	254	359	65
3	41	38	93	e75	136	147	444	239	158	230	294	63
4	38	39	89	e66	158	143	425	184	225	245	256	59
5	36	56	84	63	137	151	391	252	192	1930	232	57
6	34	114	81	133	130	237	391	2030	194	817	210	57
7	32	118	80	155	126	e200	330	1950	174	560	204	58
8	32	87	78	215	109	e180	302	1030	158	410	185	58
9	32	65	74	382	99	e160	302	720	144	323	165	60
10	32	60	70	238	e92	e150	273	1710	158	290	153	58
11	32	56	75	180	e87	e160	245	2400	131	247	143	55
12	32	50	e60	226	e85	e200	229	1530	111	215	144	54
13	32	113	e56	522	e87	e300	218	1050	123	3910	140	54
14	31	170	e54	319	e120	335	207	957	144	1830	127	53
15	32	123	e51	443	186	463	216	880	323	826	120	56
16	32	96	e51	541	270	599	261	2990	407	4120	116	74
17	33	106	e66	411	208	449	213	3690	444	5490	107	85
18	34	106	e61	338	177	404	195	1670	294	1590	100	69
19	33	82	e58	308	178	360	189	1100	207	1030	331	62
20	33	289	e56	283	172	308	175	835	185	1980	193	74
21	55	554	e54	247	257	388	166	685	6610	2580	135	74
22	143	375	e56	e210	353	403	161	547	2260	1380	112	71
23	84	264	78	e200	283	318	152	471	1110	1730	100	82
24	59	217	128	e180	244	951	146	490	1100	947	90	84
25	52	183	251	e160	208	1580	140	413	667	750	82	66
26	48	159	159	169	e200	912	137	341	509	581	78	96
27	43	151	123	181	e180	668	133	305	410	481	76	89
28	43	153	115	161	e170	557	126	261	854	417	75	74
29	42	140	114	147	---	481	123	234	457	341	75	63
30	39	120	96	152	---	467	126	217	339	310	82	59
31	40	---	e92	159	---	551	---	208	---	701	77	---
TOTAL	1333	4159	2713	7034	4730	12536	7469	29801	18464	36802	5048	1995
MEAN	43.0	139	87.5	227	169	404	249	961	615	1187	163	66.5
MAX	143	554	251	541	353	1580	605	3690	6610	5490	487	96
MIN	31	36	51	63	85	143	123	131	111	215	75	53
CFSM	.21	.69	.44	1.13	.84	2.02	1.24	4.81	3.08	5.94	.81	.33
IN.	.25	.77	.50	1.31	.88	2.33	1.39	5.54	3.43	6.85	.94	.37

CAL YR 1988 TOTAL 71958 MEAN 197 MAX 2960 MIN 27 CFSM .98 IN. 13.38
WTR YR 1989 TOTAL 132084 MEAN 362 MAX 6610 MIN 31 CFSM 1.81 IN. 24.57

e Estimated.

SHERMAN CREEK BASIN

01568000 SHERMAN CREEK AT SHERMANS DALE, PA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1962, 1964, 1969, 1985 to current year.

COOPERATION.--Water-quality samples collected by Susquehanna River Basin Commission and analyzed by the Pa. Department of Environmental Resources.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE FIELD (μ S/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)
OCT										
05...	1050	36	230	8.50	16.0	1.00	0.030	<0.020	--	--
NOV										
16...	1445	95	185	--	9.0	1.22	0.020	0.020	--	--
DEC										
06...	1215	80	200	8.35	5.0	1.56	0.020	0.020	--	--
JAN										
05...	1115	63	170	8.10	1.0	1.36	0.040	0.030	--	--
FEB										
01...	1100	144	160	8.45	6.0	1.40	0.020	0.020	--	--
21...	1330	258	127	8.70	5.0	1.30	0.020	0.020	--	--
21...	1600	288	123	8.80	6.0	1.30	0.020	0.020	--	--
21...	2100	340	127	8.60	5.0	1.36	0.020	0.020	--	--
21...	2350	373	205	8.30	6.0	1.40	0.020	0.020	--	--
22...	0245	376	145	7.85	5.5	1.42	0.020	0.020	0.47	0.47
22...	0530	380	140	7.80	5.0	1.48	0.030	0.030	0.31	0.31
22...	1130	365	130	8.50	5.0	1.44	0.020	0.020	--	--
23...	1000	288	130	7.50	5.5	1.58	0.020	0.020	0.26	0.26
24...	0945	247	115	7.60	2.5	1.62	<0.020	<0.020	--	--
MAR										
16...	0900	652	140	7.60	7.0	1.94	0.010	0.010	0.37	0.19
APR										
27...	1100	134	150	8.00	15.0	0.880	<0.020	<0.020	--	--
MAY										
02...	1015	275	100	9.00	15.0	0.990	0.040	0.040	0.19	--
05...	1130	201	135	7.50	13.0	0.750	0.020	0.020	0.56	0.44
06...	0800	2220	105	6.55	13.0	0.950	0.050	0.050	1.4	0.58
07...	1255	1810	95	7.50	11.0	1.21	0.050	0.040	0.93	0.66
08...	1130	1030	110	7.75	10.0	1.32	0.020	0.020	0.31	--
09...	0900	726	115	7.55	11.0	0.950	0.030	0.030	--	--
10...	1035	1510	100	7.80	11.0	1.21	0.050	0.050	0.38	0.26
11...	1015	2490	98	8.40	9.0	1.36	0.030	0.030	0.35	0.22
12...	1145	1510	98	7.60	10.0	1.45	0.040	0.040	0.51	0.41
14...	1000	954	109	8.20	12.0	1.47	0.060	0.060	0.41	0.41
16...	0935	2610	100	7.60	12.0	1.23	0.040	0.040	0.54	0.29
17...	1100	3760	78	7.10	14.0	1.30	0.030	0.030	0.47	0.39
18...	1020	1700	100	7.50	14.0	1.47	0.020	0.020	0.33	0.28
19...	1040	1120	115	7.70	17.0	1.47	0.030	0.020	--	--
23...	0945	464	130	7.80	16.0	1.56	0.020	0.020	0.34	0.29
JUN										
21...	0940	10900	77	8.00	20.0	1.56	0.190	0.190	4.7	0.76
21...	1120	11900	75	7.50	20.0	1.36	0.180	0.170	4.0	0.73
21...	1324	11100	60	7.20	--	1.14	0.100	0.100	2.9	0.64
21...	1555	8550	62	7.10	--	1.14	0.070	<0.020	1.7	--
22...	0945	2130	100	--	--	1.56	0.080	0.080	0.56	0.26
23...	1430	1040	128	8.00	20.0	1.69	0.020	<0.020	0.57	--
24...	0940	1330	130	7.50	20.0	1.61	0.040	0.040	1.4	0.38
25...	0945	676	140	7.50	19.0	1.74	0.040	0.040	0.30	--
JUL										
05...	1230	2680	110	7.55	20.0	1.10	0.120	0.120	1.1	0.68
06...	1130	804	140	7.70	19.0	1.69	0.070	0.070	0.35	0.35
13...	1120	5660	105	7.70	19.0	1.52	0.080	0.080	1.9	0.39
13...	1320	6650	--	--	--	1.47	0.070	0.070	1.4	0.35
13...	1425	7070	105	7.80	20.0	1.45	0.180	0.180	1.3	0.36
13...	1800	6310	100	7.50	18.0	1.47	0.080	0.080	0.72	0.44
14...	1015	1670	110	7.30	19.0	1.85	0.060	0.050	0.64	0.50
15...	1150	820	150	7.60	18.0	2.05	0.060	0.060	0.27	0.22
19...	1355	1010	117	7.20	19.0	1.58	0.040	0.040	0.23	--
AUG										
13...	1015	140	190	8.50	21.0	1.56	0.040	0.030	0.17	0.18
SEP										
11...	1230	55	230	7.00	24.0	1.45	0.050	0.040	0.26	--

< Actual value is known to be less than the value shown.

SHERMAN CREEK BASIN

01568000 SHERMAN CREEK AT SHERMANS DALE, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT									
05...	<0.20	<0.20	--	0.030	0.030	<0.002	2.3	3	0.29
NOV									
16...	<0.20	<0.20	--	0.040	0.030	0.007	3.8	8	2.1
DEC									
06...	<0.20	<0.20	--	0.020	0.020	0.006	1.7	2	0.43
JAN									
05...	<0.20	<0.20	--	<0.020	<0.020	0.002	1.8	2	0.34
FEB									
01...	<0.20	<0.20	--	0.040	0.030	0.004	1.9	1	0.39
21...	<0.20	<0.20	--	0.050	0.040	<0.002	2.2	6	4.2
21...	<0.20	<0.20	--	0.050	0.050	<0.002	2.3	8	6.2
21...	<0.20	<0.20	--	0.060	0.050	<0.002	2.3	12	11
21...	<0.20	<0.20	--	0.050	0.050	<0.002	2.5	18	18
22...	0.49	0.49	1.9	0.060	0.050	<0.002	2.5	37	38
22...	0.34	0.34	1.8	0.060	0.060	<0.002	2.5	24	25
22...	<0.20	<0.20	--	0.050	0.040	<0.002	3.1	10	9.9
23...	0.28	0.28	1.9	0.040	0.030	0.004	3.0	9	7.0
24...	0.35	0.28	2.0	0.050	0.050	0.011	2.3	4	2.7
MAR									
16...	0.38	0.20	2.3	0.070	0.040	0.003	2.7	24	42
APR									
27...	0.44	0.39	1.3	0.030	0.030	0.009	2.1	4	1.4
MAY									
02...	0.23	<0.20	1.2	0.040	0.030	0.011	3.2	17	13
05...	0.58	0.46	1.3	0.050	0.030	0.003	2.6	7	3.8
06...	1.4	0.63	2.4	0.110	0.070	0.006	5.3	149	893
07...	0.98	0.70	2.2	0.090	0.070	0.026	5.3	69	337
08...	0.33	<0.20	1.6	0.050	<0.020	0.004	2.5	22	61
09...	<0.20	<0.20	--	0.050	0.030	0.004	2.2	13	25
10...	0.43	0.31	1.6	0.100	0.030	<0.002	2.7	45	183
11...	0.38	0.25	1.7	0.120	0.050	0.004	4.2	51	343
12...	0.55	0.45	2.0	0.050	0.050	0.007	2.6	24	98
14...	0.47	0.47	1.9	0.050	0.050	0.004	2.0	24	62
16...	0.58	0.33	1.8	0.100	0.090	0.036	4.6	82	578
17...	0.50	0.42	1.8	0.060	0.060	0.003	4.6	94	954
18...	0.35	0.30	1.8	0.050	0.050	0.005	2.7	30	138
19...	<0.20	<0.20	--	0.030	0.020	0.006	2.2	23	70
23...	0.36	0.31	1.9	0.030	0.030	<0.002	2.1	12	15
JUN									
21...	4.9	0.95	6.5	1.70	0.080	0.060	26	1530	45000
21...	4.2	0.90	5.6	0.110	0.080	0.066	22	1220	39200
21...	3.0	0.74	4.1	0.570	0.070	0.029	16	689	20600
21...	1.8	0.67	2.9	0.320	0.050	0.013	13	306	7060
22...	0.64	0.34	2.2	0.160	<0.020	<0.020	5.6	81	466
23...	0.59	0.39	2.3	0.080	0.040	0.002	1.3	34	95
24...	1.4	0.42	3.0	0.290	0.090	0.058	4.9	174	625
25...	0.34	<0.20	2.1	0.090	0.050	0.021	1.6	31	57
JUL									
05...	1.2	0.80	2.3	0.400	0.100	0.050	9.7	303	2190
06...	0.42	0.42	2.1	0.080	0.050	0.004	3.9	28	61
13...	2.0	0.47	3.5	0.510	0.110	0.063	11	353	5390
13...	1.5	0.42	3.0	0.470	0.140	0.088	11	297	5330
13...	1.5	0.54	2.9	0.420	0.120	0.088	11	295	5630
13...	0.80	0.52	2.3	0.320	0.120	0.067	10	197	3360
14...	0.70	0.55	2.5	0.090	0.060	0.007	4.6	30	135
15...	0.33	0.28	2.4	0.060	0.050	0.008	2.9	15	33
19...	0.27	<0.20	1.8	0.040	0.030	0.007	2.2	10	27
AUG									
13...	0.21	0.21	1.8	0.040	0.040	<0.002	2.1	5	1.6
SEP									
11...	0.31	<0.20	1.8	0.050	0.040	0.007	2.4	5	0.74

< Actual value is known to be less than the value shown.

CLARK CREEK BASIN

01568400 DeHART RESERVOIR NEAR CARSONVILLE, PA

LOCATION.--Lat 40°27'50", long 76°44'50", Dauphin County, Hydrologic Unit 02050305, at DeHart Dam on Clark Creek, 1.8 mi southeast of Carsonville, and 15.3 mi upstream from mouth.

DRAINAGE AREA.--21.7 mi².

PERIOD OF RECORD.--October 1940 to current year.

GAGE.--Staff. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by city of Harrisburg).

REMARKS.--Reservoir formed by earthfill dam with ungated concrete spillway at elevation 644.00 ft. Crest of spillway raised 4 ft in November 1954. Storage began Jan. 21, 1940. Capacity at elevation 644.00 ft is 18,480 acre-ft. Reservoir is used for municipal water supply. Figures given herein represent total contents. Regulation is controlled by valves on pipe through dam.

COOPERATION.--Records provided by city of Harrisburg.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 19,460 acre-ft, Sept. 27, 1975, elevation, 645.75 ft; minimum (after first filling), 4,680 acre-ft, Jan. 2, 1966, elevation, 613.33 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 19,270 acre-ft, May 18, elevation 645.42 ft; minimum, 10,660 acre-ft, Feb. 21, elevation, 630.08 ft.

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS AT 2400, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

Date	Elevation (feet)	Contents (acre- feet)	Change in contents (equivalent in ft ³ /s/day)
Sept. 30	636.58	14,120	--
Oct. 31	634.08	12,690	- 23.3
Nov. 30	633.33	12,290	- 6.7
Dec. 31	631.75	11,480	- 13.2
CAL YR 1988	--	--	- 9.8
Jan. 31	630.75	10,990	- 7.8
Feb. 28	630.42	10,820	- 3.1
Mar. 31	633.50	12,380	+ 25.4
Apr. 30	635.50	13,490	+ 18.7
May 31	644.08	18,520	+ 81.8
June 30	644.08	18,520	0
July 31	644.08	18,520	0
Aug. 31	643.17	17,990	- 8.6
Sept. 30	642.17	17,410	- 9.8
WTR YR 1989	--	--	+ 4.5

CLARK CREEK BASIN

01568500 CLARK CREEK NEAR CARSONVILLE, PA

LOCATION.--Lat 40°27'37", long 76°45'06", Dauphin County, Hydrologic Unit 02050305, on right bank 0.3 mi downstream from DeHart Dam, 1.8 mi southeast of Carsonville, and 15.0 mi upstream from mouth.

DRAINAGE AREA.--22.5 mi².

PERIOD OF RECORD.--September 1937 to current year.

REVISED RECORDS.--WSP 1302: 1940(M). WSP 1702: 1942 (monthly mean).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 552.32 ft above National Geodetic Vertical Datum of 1929. Prior to Jan. 6, 1939, water-stage recorder at site 1,700 ft upstream at datum 9.49 ft higher. Jan. 6, 1939, to July 27, 1940, nonrecording gage at site 100 ft downstream at different datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since 1941 by DeHart Dam (station 01568400). Diversion from reservoir to city of Harrisburg. Several measurements of water temperature were made during the year.

COOPERATION.--Records of diversion and change in reservoir contents provided by city of Harrisburg.

AVERAGE DISCHARGE.--51 years, 39.9 ft³/s, 24.08 in/yr, adjusted for storage and diversion since 1941.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,800 ft³/s, June 22, 1972, gage height, 10.98 ft, from rating curve extended above 2,400 ft³/s on basis of computation of peak discharge at dam; minimum daily, 0.2 ft³/s, Jan. 29 to Feb. 3, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 729 ft³/s, May 16, gage height, 4.35 ft; minimum daily, 2.3 ft³/s, Feb. 20, Mar. 2-5, 8, 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.0	3.5	4.2	2.7	3.0	2.4	3.6	2.9	15	28	7.2	4.0
2	4.1	3.5	4.2	2.7	3.0	2.3	3.4	4.0	12	23	6.2	4.0
3	4.0	3.3	4.2	2.7	2.9	2.3	3.4	3.0	10	36	6.0	4.0
4	4.0	3.1	3.3	2.7	2.9	2.3	3.3	2.9	9.6	35	5.9	4.0
5	4.0	4.0	3.1	2.7	3.0	2.3	3.3	8.0	8.1	58	5.9	4.0
6	4.0	3.6	3.1	2.7	2.9	2.5	3.3	21	7.3	40	5.8	4.0
7	4.0	3.3	3.1	2.7	2.9	2.4	3.2	10	8.7	19	4.1	4.0
8	4.0	3.2	3.1	3.2	2.9	2.3	3.1	7.1	8.7	52	2.8	4.0
9	4.0	3.1	3.1	2.9	2.7	2.3	3.2	5.8	18	6.8	2.8	4.0
10	4.0	3.1	3.1	2.9	2.4	2.4	3.0	7.3	32	6.5	2.8	4.0
11	4.0	3.1	3.1	2.8	2.4	2.4	3.0	7.2	22	6.5	2.9	4.0
12	4.0	3.1	2.9	3.0	2.4	2.5	2.9	5.8	14	6.3	2.8	4.0
13	4.1	3.6	2.7	3.0	2.4	2.5	2.8	5.2	11	25	2.8	4.0
14	4.2	3.3	2.7	3.0	2.6	2.6	2.8	5.0	12	33	23	4.0
15	4.2	3.2	2.6	3.2	2.6	3.0	2.9	16	16	23	7.2	4.0
16	4.2	3.2	2.6	3.1	2.6	3.0	2.8	405	36	48	6.3	4.0
17	4.7	3.3	2.5	3.1	2.5	2.8	2.7	608	43	70	6.3	4.0
18	4.7	3.1	2.5	3.0	2.5	2.8	2.7	356	36	47	5.3	4.0
19	4.8	3.1	2.5	3.0	2.5	2.7	2.7	217	27	34	4.9	4.6
20	4.7	4.9	2.6	3.0	2.3	2.7	2.6	148	23	43	4.2	4.3
21	5.0	4.2	2.7	2.9	2.9	3.4	2.5	110	49	40	4.2	4.1
22	4.7	3.4	2.7	2.9	3.1	3.2	2.6	84	169	30	4.2	4.2
23	4.4	3.4	2.7	2.9	2.8	3.0	2.5	71	117	26	4.1	4.1
24	4.4	3.7	2.9	2.9	2.5	4.5	2.5	56	122	33	4.1	4.0
25	3.8	4.2	2.8	3.0	2.4	4.6	2.5	47	100	50	4.0	4.0
26	3.5	4.2	2.7	3.0	2.5	3.8	2.5	39	114	6.8	4.0	4.4
27	3.6	4.2	2.7	3.0	2.4	3.7	2.4	34	96	7.2	4.0	4.0
28	3.5	4.2	2.7	3.0	2.4	3.7	2.4	28	50	7.7	4.0	4.0
29	3.5	4.2	2.7	3.0	---	3.6	2.4	23	39	6.6	4.0	4.0
30	3.5	4.2	2.7	3.0	---	3.7	2.4	19	33	6.9	4.0	4.0
31	3.5	---	2.7	3.0	---	3.9	---	18	---	12	4.0	---
TOTAL	127.1	107.5	91.2	90.7	74.4	91.6	85.4	2374.2	1258.4	866.3	159.8	121.7
MEAN	4.10	3.58	2.94	2.93	2.66	2.95	2.85	76.6	41.9	27.9	5.15	4.06
MAX	5.0	4.9	4.2	3.2	3.1	4.6	3.6	608	169	70	23	4.6
MIN	3.5	3.1	2.5	2.7	2.3	2.3	2.4	2.9	7.3	6.3	2.8	4.0
(†)	19.8	18.4	19.1	19.4	19.1	19.3	18.2	18.9	19.7	20.0	20.5	19.3
MEAN‡	.60	15.3	8.84	30.3	18.7	47.6	39.8	17.7	61.6	47.9	17.0	13.6
CFSM‡	.03	.68	.39	1.35	.83	2.12	1.77	7.87	2.74	2.13	.76	.60
IN.‡	.04	.76	.45	1.56	.86	2.44	1.98	9.07	3.06	2.46	.88	.67

CAL YR 1988 TOTAL 5762.5 MEAN 15.7 MAX 455 MIN 2.5 MEAN‡ 27.3 CFSM‡ 1.21 IN.‡ 16.50
WTR YR 1989 TOTAL 5448.3 MEAN 14.9 MAX 608 MIN 2.3 MEAN‡ 38.8 CFSM‡ 1.72 IN.‡ 23.41

† Diversion for municipal supply of city of Harrisburg, equivalent in cubic feet per second.
‡ Adjusted for diversion and change in reservoir contents.

CONODOGUINET CREEK BASIN

01569800 LETORT SPRING RUN NEAR CARLISLE, PA

LOCATION.--Lat 40°14'05", long 77°08'23", Cumberland County, Hydrologic Unit 02050305, on right bank 320 ft downstream from bridge on U.S. Highway 11, 0.2 mi upstream from mouth, 3.1 mi west of New Kingstown, and 3.7 mi east of Carlisle.

DRAINAGE AREA.--21.6 mi².

PERIOD OF RECORD.--June 1976 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 410 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

AVERAGE DISCHARGE.--13 years, 42.8 ft³/s, 26.91 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,400 ft³/s, Jan. 24, 1979, gage height, 6.53 ft, from rating curve extended above 680 ft³/s on basis of slope-area measurement at gage height 6.43 ft; no flow part of Aug. 15, 1976.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1936 reached a stage of 8.8 ft, discharge not determined, and flood in June 1972 reached a stage of 8.4 ft, from information by local resident, discharge not determined.

EXTREMES 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)
May 16	1545	160	4.63	Aug. 19	1345	*267	*5.07
July 13	1130	172	4.69				

Minimum daily discharge, 20 ft³/s, Oct. 8, 12, 16, Feb. 7-13, 19, 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	21	25	24	21	24	36	32	44	40	68	37
2	22	21	24	24	21	24	35	32	43	39	65	36
3	22	21	24	23	22	24	35	28	42	38	63	35
4	22	21	24	23	21	24	34	26	45	52	63	35
5	22	30	24	23	21	24	35	42	43	70	62	34
6	22	24	24	23	21	26	33	84	42	52	e62	34
7	21	23	24	23	20	24	32	62	40	49	e60	35
8	20	22	24	28	20	24	32	53	39	47	e58	34
9	21	21	24	26	20	24	31	49	39	46	e57	34
10	21	21	23	26	20	25	30	58	38	44	e56	33
11	21	21	23	25	20	26	31	55	37	42	e55	33
12	20	21	23	29	20	29	30	52	36	42	e53	33
13	21	31	23	25	20	32	30	49	38	110	e52	33
14	21	23	23	24	21	32	28	50	39	67	e54	32
15	21	23	23	29	22	33	31	69	42	56	e56	35
16	20	22	23	27	22	33	29	126	40	74	53	40
17	21	23	23	27	21	32	28	99	44	59	51	35
18	21	22	23	26	21	31	28	80	38	54	45	33
19	21	22	23	25	20	30	29	71	37	51	125	33
20	21	47	23	25	20	31	27	66	38	76	69	37
21	24	36	23	24	29	31	27	62	46	82	53	33
22	36	32	22	23	27	29	27	58	50	67	47	34
23	24	30	27	23	26	28	26	58	55	79	44	35
24	23	29	29	23	26	44	26	56	48	65	42	33
25	22	28	26	22	26	37	26	53	46	60	41	31
26	22	27	25	22	26	36	25	51	43	56	40	41
27	22	27	24	22	25	35	25	51	42	53	39	35
28	22	27	25	22	25	34	25	49	50	52	38	34
29	22	26	24	22	---	34	25	48	42	51	42	33
30	22	25	24	22	---	42	24	46	41	52	40	33
31	21	---	24	21	---	39	---	46	---	79	37	---
TOTAL	683	767	743	751	624	941	880	1761	1267	1804	1690	1033
MEAN	22.0	25.6	24.0	24.2	22.3	30.4	29.3	56.8	42.2	58.2	54.5	34.4
MAX	36	47	29	29	29	44	36	126	55	110	125	41
MIN	20	21	22	21	20	24	24	26	36	38	37	31
CFSM	1.02	1.18	1.11	1.12	1.03	1.41	1.36	2.63	1.96	2.69	2.52	1.59
IN.	1.18	1.32	1.28	1.29	1.07	1.62	1.52	3.03	2.18	3.11	2.91	1.78

CAL YR 1988	TOTAL 11425	MEAN 31.2	MAX 76	MIN 20	CFSM 1.45	IN. 19.68
WTR YR 1989	TOTAL 12944	MEAN 35.5	MAX 126	MIN 20	CFSM 1.64	IN. 22.29

e Estimated.

CONODOGUINET CREEK BASIN

01570000 CONODOGUINET CREEK NEAR HOGESTOWN, PA

LOCATION.--Lat 40°15'08", long 77°01'17", Cumberland County, Hydrologic Unit 02050305, on left bank 1,000 ft upstream from highway bridge on Township Route 596 (Sample Bridge Road), 0.4 mi downstream from Hogestown Run, and 1.0 mi northeast of Hogestown.

DRAINAGE AREA.--470 mi².

PERIOD OF RECORD.--October 1911 to September 1917, October 1929 to September 1958, June 1967 to current year. Monthly discharges only for some periods, published in WSP 1302. October 1917 to December 1919 (gage heights and discharge measurements only), in reports of Water Supply Commission of Pennsylvania. Published as "at Brysons Bridge" 1912-17.

REVISED RECORDS.--WSP 1722: 1913, 1917.

GAGE.--Water-stage recorder. Datum of gage is 351.00 ft above National Geodetic Vertical Datum of 1929. Prior to December 1919, nonrecording gage at site 2 mi downstream at different datum. Oct. 1, 1929, to Aug. 3, 1931, nonrecording gage at site 1,000 ft downstream at present datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since June 1969 the Pa. American Water Co. has diverted water upstream from station for municipal supply. Diversion for the year was equivalent to a mean daily discharge of about 5.8 ft³/s. Several measurements of water temperature were made during the year. National Weather Service satellite and landline telemeters at station.

AVERAGE DISCHARGE.--57 years (1911-17, 1929-58, 1967-89), 584 ft³/s, 16.87 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,700 ft³/s, June 23, 1972, gage height, 17.01 ft, from floodmark in gage shelter; minimum, 24 ft³/s, Dec. 16, 1930; minimum daily, 26 ft³/s, Dec. 23, 1930.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 17	1615	5,740	7.73	July 17	1800	*6,130	*7.97

Minimum daily discharge, 83 ft³/s, Oct. 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	98	92	223	204	280	380	1050	241	449	433	1380	223
2	98	93	207	e190	260	340	926	347	412	375	958	212
3	100	97	194	e180	250	313	791	431	370	334	762	203
4	99	98	184	e150	264	299	745	358	377	411	634	193
5	101	106	170	e135	257	298	676	355	411	915	543	188
6	93	157	160	e120	247	367	670	2030	399	1260	479	187
7	88	168	155	e140	236	442	606	2720	381	872	446	184
8	88	194	150	e300	222	501	545	1800	354	680	397	182
9	89	158	146	608	e180	e410	514	1280	337	547	358	184
10	87	136	138	697	e150	e340	494	1340	333	467	326	181
11	89	122	e130	423	e140	e350	439	2580	338	402	309	179
12	85	115	e125	464	e145	e500	399	2060	296	345	303	169
13	84	150	e130	847	e150	931	e380	1570	285	1570	299	166
14	83	260	e160	893	e160	994	e360	1320	302	1530	287	163
15	86	311	e130	896	277	987	e350	1380	359	973	275	175
16	84	240	e115	1170	461	1190	e420	3340	786	1140	268	189
17	84	210	e125	1010	565	1090	e400	5540	991	5170	257	215
18	84	204	e120	781	484	846	e350	4060	943	3310	246	207
19	84	191	e125	657	429	728	e360	2200	650	1500	953	191
20	86	350	e120	576	396	621	e350	1620	509	1600	646	203
21	89	1390	e120	498	478	640	e310	1310	983	2820	405	188
22	192	1090	e115	383	741	696	e290	1080	2650	1740	330	184
23	166	673	e130	355	770	590	276	941	1780	1610	295	191
24	168	515	e170	363	638	709	262	883	1410	1330	273	209
25	140	423	317	333	523	2070	255	902	1090	1050	253	203
26	122	358	443	317	474	1570	249	761	982	876	244	235
27	108	317	344	317	477	1100	243	719	730	756	235	232
28	103	304	290	302	434	886	235	635	708	676	227	226
29	100	286	279	275	---	759	229	551	707	610	221	198
30	95	249	247	272	---	726	229	492	527	537	243	182
31	92	---	214	288	---	877	---	469	---	860	237	---
TOTAL	3165	9057	5676	14144	10088	22550	13403	45315	20849	36699	13089	5842
MEAN	102	302	183	456	360	727	447	1462	695	1184	422	195
MAX	192	1390	443	1170	770	2070	1050	5540	2650	5170	1380	235
MIN	83	92	115	120	140	298	229	241	285	334	221	163
CFSM	.22	.64	.39	.97	.77	1.55	.95	3.11	1.48	2.52	.90	.41
IN.	.25	.72	.45	1.12	.80	1.78	1.06	3.59	1.65	2.90	1.04	.46

CAL YR 1988 TOTAL 133942 MEAN 366 MAX 3740 MIN 83 CFSM .78 IN. 10.60
WTR YR 1989 TOTAL 199877 MEAN 548 MAX 5540 MIN 83 CFSM 1.17 IN. 15.82

e Estimated.

SUSQUEHANNA RIVER BASIN

01570500 SUSQUEHANNA RIVER AT HARRISBURG, PA
(National stream-quality accounting network, radiochemical and tritium program)

LOCATION.--Lat 40°15'17", long 76°53'11", Dauphin County, Hydrologic Unit 02050305, on east bank of City Island, 60 ft downstream from Market Street Bridge in Harrisburg, 3,670 ft upstream from sanitary dam, and 1.7 mi upstream from Paxton Creek.
DRAINAGE AREA.--24,100 mi², approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1890 to current year.

REVISED RECORDS.--WSP 711: 1929. WSP 1502: 1891-1923, 1926(M), 1928. WSP 1702: 1953 (total runoff in inches), 1958 (1957 calendar year mean discharge).

GAGE.--Water-stage recorder. Concrete control since Aug. 29, 1916. Datum of gage is 290.01 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1928, nonrecording gage at Walnut Street Bridge 600 ft upstream, and Oct. 1, 1928, to Aug. 31, 1975, water-stage recorder at site 3,170 ft downstream, all gages at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow slightly regulated by 15 flood-control reservoirs, which have a combined capacity of 1,571,000 acre-ft. National Weather Service satellite and landline telemeters at station.

COOPERATION.--Daily discharges through Safe Harbor Dam provided by Safe Harbor Water Power Corporation.

AVERAGE DISCHARGE.--99 years, 34,200 ft³/s, 19.27 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,020,000 ft³/s, June 24, 1972, gage height, 32.57 ft, from floodmark; minimum, 1,600 ft³/s, Nov. 29, 1930, gage height, 2.48 ft, result of freezeup. Minimum daily discharge since construction of sanitary dam and not affected by freezeup, 1,700 ft³/s, Sept. 18, 1964; minimum gage height, 1.83 ft, Sept. 13, 1964 (result of repairs to sanitary dam).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known during period 1786 to 1890, 26.8 ft at Walnut Street Bridge, June 2, 1889, discharge, 654,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 180,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 2	0800	182,000	11.95	May 18	0215	201,000	12.78
May 13	0915	*210,000	*13.14				

Minimum discharge, 4,500 ft³/s, Oct. 17, 18, 19, 20, 21, gage height, 3.10 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6160	10400	22200	18800	17100	26700	156000	15800	29400	41700	17000	6240
2	6040	9760	21300	18900	17100	23900	177000	16400	25600	36600	17800	6170
3	5890	9020	20600	19700	17200	21300	152000	19800	25900	31700	17900	6120
4	5610	8700	19200	e18000	18400	19600	118000	28600	26700	27200	15200	5930
5	5430	8690	17900	e14000	19700	18300	96300	35800	29800	36300	14100	5740
6	5380	9030	17100	e11000	20500	e17000	87500	53400	31700	40300	13600	5610
7	6010	12800	16200	e10000	19900	e17000	87700	107000	33400	46800	12800	5470
8	5940	20600	15400	e11000	18500	e18000	85400	130000	33800	43100	12200	5680
9	5830	27100	14800	e13000	e15000	e19000	74600	136000	33500	37600	11900	5720
10	5700	33300	14100	e15000	e12000	e20000	63700	123000	32200	36200	11100	5630
11	5710	30400	e12000	e19000	e11000	e20000	54900	130000	30700	33900	11100	5320
12	5650	24900	e10000	e23000	e10000	20080	47900	172000	29000	28500	11300	5070
13	5800	21800	e9000	e26000	e11000	21000	42700	206000	27100	30600	10800	5050
14	5640	21100	e7600	e29000	e12000	21200	38500	176000	27700	37600	10300	4920
15	5210	24100	e7100	e32000	e13000	21800	35600	139000	29800	33400	9640	4860
16	4790	24000	e6800	e33000	15000	23300	33300	136000	38700	29500	9010	5090
17	4630	24200	e6500	31000	19000	24100	32300	188000	84500	60800	8680	5860
18	4510	24400	e6200	28500	23100	25400	31000	196000	122000	52800	8360	6680
19	4500	23600	e6600	25500	25100	26200	28800	156000	117000	36300	10900	7300
20	4500	22500	e7400	23400	23200	29800	27800	114000	87300	29000	15200	8510
21	4590	32300	e8600	21700	22600	31400	26500	84000	84400	56900	12600	10600
22	5480	46000	e10000	19600	26900	32800	24800	67200	131000	53000	10300	11200
23	6140	45200	e11000	16900	38000	31400	23200	55400	146000	43700	9100	11300
24	7080	44600	e11000	16100	45200	30300	21500	48300	128000	39900	8540	12500
25	8380	40800	e12000	15200	46800	44300	20200	47000	113000	35000	8040	14300
26	8660	34600	e14000	15100	39700	69400	19200	46900	101000	29700	7630	13900
27	9740	30100	e18000	15300	34000	90000	18300	44700	77600	26800	7200	14500
28	12300	27200	e23000	15200	29900	86600	17400	41900	65100	21700	6900	15200
29	14400	25200	22200	15200	---	75000	16500	38100	57100	19300	6800	13700
30	13400	23900	21300	16100	---	70800	16200	35200	51000	17400	6620	11600
31	11800	---	20000	16200	---	92400	---	31900	---	17000	6350	---
TOTAL	210900	740300	429100	602400	620900	1088800	1674800	2819400	1850000	1110300	338970	245770
MEAN	6803	24680	13840	19430	22170	35120	55830	90950	61670	35820	10930	8192
MAX	14400	46000	23000	33000	46800	92400	177000	206000	146000	60800	17900	15200
MIN	4500	8690	6200	10000	10000	17000	16200	15800	25600	17000	6350	4860
CFSM	.28	1.02	.57	.81	.92	1.46	2.32	3.77	2.56	1.49	.45	.34
IN.	.33	1.14	.66	.93	.96	1.68	2.59	4.35	2.86	1.71	.52	.38
CAL YR 1988	TOTAL	8433360	MEAN	23040	MAX	178000	MIN	3980	CFSM	.96	IN.	13.02
WTR YR 1989	TOTAL	11731640	MEAN	32140	MAX	206000	MIN	4500	CFSM	1.33	IN.	18.11

e Estimated.

SUSQUEHANNA RIVER BASIN

01570500 SUSQUEHANNA RIVER AT HARRISBURG, PA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1945-53, 1956 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May 1974 to August 1979.

pH: May 1974 to June 1979.

WATER TEMPERATURE: May 1974 to August 1979.

DISSOLVED OXYGEN: May 1974 to August 1979.

SUSPENDED SEDIMENT DISCHARGE: October 1963 to September 1968, April 1970 to September 1979, April 1980 to March 1981.

INSTRUMENTATION.--Water-quality monitor May 1974 to August 1979.

REMARKS.--In March 1989 a bias was discovered in the turbidimetric method for sulfate analysis for those samples analyzed by the U.S. Geological Survey National Water-Quality Laboratory indicating that values below 75 mg/L have a median positive bias of 2 mg/L above the true value for the period between 1982 and 1989. Sulfate values in this report have not been corrected for this bias.

Agency collection codes: 42011 - Susquehanna River Basin Commission, 1028 - U.S. Geological Survey. Agency analyzing codes: 9813 - Pa. Department of Environmental Resources, 80020 - U.S. Geological Survey.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (µS/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 µM-MF (COLS./100 ML)	STREP-TOCOCCI, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CaCO3)
NOV 15...	1250	24800	251	8.00	8.5	8.5	776	11.4	96	K 37	K 7	99
JAN 04...	1330	18100	210	8.10	0.0	2.0	770	13.6	92	K 4	K 6	87
FEB 23...	0840	36100	232	7.70	2.0	17	770	12.8	92	83	220	92
MAY 24...	1410	48400	188	7.80	17.5	8.7	763	9.1	95	47	280	87
JUL 11...	1115	34000	231	8.70	27.5	9.7	770	10.0	125	35	160	100
AUG 08...	1420	12100	290	8.70	24.0	1.8	767	9.1	108	K 15	120	130

DATE	HARD-NESS NONCARB WH WAT TOT FLD (MG/L AS CaCO3)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3)	CAR-BONATE WATER DIS IT FIELD (MG/L AS CO3)	ALKA-LINITY WAT WH TOT FET (MG/L AS CaCO3)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CaCO3)
NOV 15...	51	28	7.0	8.6	16	0.4	2.2	58	--	48	48
JAN 04...	58	24	6.5	8.8	18	0.4	1.3	36	--	29	30
FEB 23...	61	26	6.5	9.4	18	0.4	1.8	37	--	31	31
MAY 24...	45	24	6.5	6.3	13	0.3	1.4	51	--	42	42
JUL 11...	41	28	7.6	6.7	12	0.3	1.9	67	12	60	55
AUG 08...	54	35	9.2	8.4	13	0.3	1.9	89	--	72	73

DATE	ALKA-LINITY LAB (MG/L AS CaCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)
NOV 15...	40	* 42	13	0.10	3.6	154	139	0.21	10300	1.19	0.010
JAN 04...	48	* 37	13	0.10	1.3	129	113	0.18	6300	--	<0.010
FEB 23...	45	* 36	14	0.10	3.0	136	123	0.18	13300	1.57	0.030
MAY 24...	42	* 35	8.4	0.10	5.7	121	119	0.16	15800	1.39	0.010
JUL 11...	56	* 41	10	0.10	4.3	146	141	0.20	13400	--	<0.010
AUG 08...	71	* 47	11	0.10	2.1	168	164	0.23	5490	--	<0.010

K Results based on non-ideal colony counts.

< Actual value is known to be less than the value shown.

* See "REMARKS" paragraph above.

SUSQUEHANNA RIVER BASIN

01570500 SUSQUEHANNA RIVER AT HARRISBURG, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, NO ₂ +NO ₃ DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORGANIC TOTAL (MG/L AS P)	PHOS- PHOROUS ORGANIC DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (MG/L AS AL)
NOV 15...	1.20	0.050	0.050	0.45	0.50	0.030	0.021	<0.010	0.03	0.02	10
JAN 04...	0.700	0.020	0.010	0.18	0.20	0.040	0.020	0.020	0.04	0.0	--
FEB 23...	1.60	0.050	0.021	1.0	1.1	0.110	0.010	<0.010	0.11	0.01	<10
MAY 24...	1.40	0.020	0.020	0.28	0.30	0.021	0.010	<0.010	0.02	0.01	40
JUL 11...	1.30	0.050	<0.010	0.45	0.50	0.020	0.020	<0.010	0.02	0.02	--
AUG 08...	1.40	<0.010	<0.010	--	0.40	0.020	0.020	<0.010	0.02	0.02	30

DATE	ARSENIC DIS- SOLVED (MG/L AS AS)	BARIUM, DIS- SOLVED (MG/L AS BA)	BERYL- LIUM, DIS- SOLVED (MG/L AS BE)	CADMIUM DIS- SOLVED (MG/L AS CD)	CHRO- MIUM, DIS- SOLVED (MG/L AS CR)	COBALT, DIS- SOLVED (MG/L AS CO)	COPPER, DIS- SOLVED (MG/L AS CU)	IRON, DIS- SOLVED (MG/L AS FE)	LEAD, DIS- SOLVED (MG/L AS PB)	LITHIUM DIS- SOLVED (MG/L AS LI)	MANGA- NESE, DIS- SOLVED (MG/L AS MN)
NOV 15...	<1	28	2	3	<1	<3	1	72	<5	5	50
JAN 04...	--	--	--	--	--	--	--	--	--	--	--
FEB 23...	<1	32	<0.5	<1	<1	<3	2	38	<5	7	180
MAY 24...	<1	34	<0.5	<1	<1	<3	2	48	1	<4	88
JUL 11...	--	--	--	--	--	--	--	--	--	--	--
AUG 08...	<1	33	<0.5	<1	<1	<3	5	7	2	7	3

DATE	MERCURY DIS- SOLVED (MG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (MG/L AS MO)	NICKEL, DIS- SOLVED (MG/L AS NI)	SELE- NIUM, DIS- SOLVED (MG/L AS SE)	SILVER, DIS- SOLVED (MG/L AS AG)	STRON- TIUM, DIS- SOLVED (MG/L AS SR)	VANA- DIUM, DIS- SOLVED (MG/L AS V)	ZINC, DIS- SOLVED (MG/L AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 15...	<0.1	<10	4	<1	<1.0	150	<6	3	18	1210	91
JAN 04...	--	--	--	--	--	--	--	--	4	195	--
FEB 23...	<0.1	<10	5	<1	<1.0	140	<6	6	42	4090	85
MAY 24...	<0.1	<10	5	<1	<1.0	120	<6	7	26	3400	--
JUL 11...	--	--	--	--	--	--	--	--	24	2200	97
AUG 08...	<0.1	<10	2	<1	<1.0	220	<6	<3	5	163	--

< Actual value is known to be less than the value shown.

SUSQUEHANNA RIVER BASIN

01570500 SUSQUEHANNA RIVER AT HARRISBURG, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	AGENCY COL- LECTING SAMPLE (CODE NUMBER)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE FIELD (μ S/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)
OCT									
05...	1240	42011	9813	5440	340	8.82	17.0	--	--
NOV									
15...	1250	42011	9813	24800	251	8.00	8.5	1.19	0.010
DEC									
06...	0935	42011	9813	17300	240	8.10	4.5	--	--
JAN									
04...	1330	1028	80020	18100	--	8.10	0.0	--	<0.010
FEB									
02...	1415	42011	9813	17000	270	8.80	5.5	--	--
23...	0840	42011	9813	36100	232	7.70	2.0	1.57	0.030
24...	1215	42011	9813	45100	168	8.55	--	--	--
25...	1335	42011	9813	45900	207	8.20	1.0	--	--
26...	0835	42011	9813	40300	210	7.50	--	--	--
27...	1035	42011	9813	34200	220	7.60	--	--	--
MAR									
01...	0735	42011	9813	27300	207	7.70	0.5	--	--
15...	1500	42011	9813	22000	240	8.40	7.0	--	--
30...	1440	42011	9813	70600	171	7.50	--	--	--
31...	1324	42011	9813	92900	160	7.60	--	--	--
APR									
01...	1105	42011	9813	155000	150	7.80	--	--	--
02...	1030	42011	9813	181000	128	7.80	--	--	--
03...	0800	42011	9813	158000	135	7.80	--	--	--
04...	0810	42011	9813	122000	142	7.90	--	--	--
05...	1240	42011	9813	94800	153	7.90	9.0	--	--
06...	1330	42011	9813	87100	159	7.80	--	--	--
07...	1440	42011	9813	88200	167	8.00	--	--	--
08...	1920	42011	9813	82900	164	7.40	7.5	--	--
10...	1305	42011	9813	63000	172	8.00	6.5	--	--
27...	0745	42011	9813	18600	253	8.40	14.0	--	--
MAY									
03...	1005	42011	9813	19300	251	7.90	14.0	--	--
04...	0835	42011	9813	27300	248	8.00	13.0	--	--
05...	1115	42011	9813	35900	240	7.60	13.0	--	--
07...	1105	42011	9813	111000	176	7.40	12.0	--	--
08...	0705	42011	9813	127000	152	7.50	7.5	--	--
09...	1050	42011	9813	137000	147	7.40	12.0	--	--
10...	1300	42011	9813	122000	129	--	11.0	--	--
11...	1315	42011	9813	131000	129	--	11.0	--	--
12...	1345	42011	9813	175000	122	--	13.0	--	--
13...	1610	42011	9813	206000	113	--	14.0	--	--
14...	1230	42011	9813	174000	114	--	15.0	--	--
15...	1340	42011	9813	136000	121	--	14.0	--	--
16...	1345	42011	9813	133000	129	--	13.0	--	--
18...	1345	42011	9813	197000	129	--	23.0	--	--
19...	1330	42011	9813	152000	129	--	23.0	--	--
22...	1400	42011	9813	65900	151	--	22.0	--	--
24...	1410	42011	9813	48400	188	7.80	17.5	1.39	0.010
JUN									
17...	0905	42011	9813	80200	200	8.00	--	--	--
18...	1020	42011	9813	123000	146	8.10	--	--	--
19...	1010	42011	9813	121000	131	7.90	--	--	--
21...	1010	42011	9813	81400	145	7.20	--	--	--
22...	1610	42011	9813	144000	132	7.30	--	--	--
23...	1235	42011	9813	147000	127	7.70	--	--	--
24...	0750	42011	9813	131000	138	7.60	--	--	--
25...	0750	42011	9813	113000	123	7.80	--	--	--
26...	0835	42011	9813	105000	148	8.00	20.0	--	--
28...	0820	42011	9813	65500	148	8.10	--	--	--
JUL									
03...	1420	42011	9813	31200	199	8.00	26.0	--	--
11...	1115	1028	80020	34000	--	8.70	27.5	--	<0.010
22...	0910	42011	9813	55400	180	7.50	21.0	--	--
24...	0920	42011	9813	39300	208	7.80	26.0	--	--
27...	1035	42011	9813	27500	--	8.00	27.0	--	--
31...	0910	42011	9813	17000	273	8.00	23.0	--	--
AUG									
08...	1420	1028	80020	12100	290	8.70	24.0	--	<0.010
SEP									
11...	1020	42011	9813	5340	385	8.20	--	--	--

< Actual value is known to be less than the value shown.

SUSQUEHANNA RIVER BASIN

01570500 SUSQUEHANNA RIVER AT HARRISBURG, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
OCT									
05...	0.800	--	0.020	0.020	--	--	<0.20	<0.20	--
NOV									
15...	--	1.20	0.050	0.050	0.45	--	0.50	--	--
DEC									
06...	1.38	--	0.040	0.040	--	--	<0.20	<0.20	--
JAN									
04...	--	0.70	0.020	0.010	0.18	--	0.20	--	--
FEB									
02...	1.42	--	0.020	0.020	--	--	<0.20	<0.20	--
23...	--	1.60	0.050	0.021	1.0	--	1.1	--	--
24...	1.62	--	0.040	0.040	0.91	0.45	0.95	0.49	2.6
25...	1.62	--	0.020	0.020	1.3	0.65	1.3	0.67	2.9
26...	1.62	--	0.020	0.020	0.69	0.27	0.71	0.29	2.3
27...	1.70	--	0.020	0.020	0.72	0.54	0.74	0.56	2.4
MAR									
01...	1.50	--	0.050	0.050	0.19	--	0.24	<0.20	1.7
15...	1.92	--	0.020	0.020	0.18	0.18	0.20	0.20	2.1
30...	1.30	--	0.020	0.020	0.84	0.47	0.86	0.49	2.2
31...	1.19	--	0.020	0.020	0.67	0.42	0.69	0.44	1.9
APR									
01...	1.01	--	0.020	0.020	1.4	0.44	1.4	0.46	2.4
02...	0.840	--	0.020	0.020	1.6	0.44	1.6	0.46	2.4
03...	0.770	--	0.020	0.020	1.2	0.42	1.2	0.44	2.0
04...	1.06	--	<0.020	<0.020	--	--	0.78	0.47	1.8
05...	1.14	--	0.020	0.020	0.68	0.63	0.70	0.65	1.8
06...	1.17	--	<0.020	<0.020	--	--	0.67	0.43	1.8
07...	1.17	--	<0.020	<0.020	--	--	0.65	0.48	1.8
08...	1.14	--	<0.020	<0.020	--	--	0.58	0.45	1.7
10...	1.21	--	0.040	0.040	0.50	0.37	0.54	0.41	1.7
27...	1.01	--	0.020	0.020	0.75	0.43	0.77	0.45	1.8
MAY									
03...	1.06	--	0.030	0.030	0.57	0.37	0.60	0.40	1.7
04...	1.14	--	0.040	0.040	0.76	0.36	0.80	0.40	1.9
05...	1.32	--	0.020	0.020	0.98	0.37	1.0	0.39	2.3
07...	1.63	--	0.070	0.070	1.4	0.55	1.5	0.62	3.1
08...	1.56	--	0.080	0.080	1.2	0.64	1.3	0.72	2.9
09...	1.32	--	0.080	0.060	1.1	0.53	1.2	0.59	2.5
10...	1.15	--	0.060	0.050	0.36	0.16	0.42	0.21	1.6
11...	1.22	--	0.030	0.030	0.30	--	0.33	<0.20	1.5
12...	1.23	--	0.100	0.090	0.40	0.16	0.50	0.25	1.7
13...	0.860	--	0.100	0.090	0.50	0.24	0.60	0.33	1.5
14...	0.840	--	0.100	0.100	0.35	0.18	0.45	0.28	1.3
15...	0.880	--	0.020	0.020	0.36	--	0.38	<0.20	1.3
16...	0.970	--	0.040	0.040	0.39	--	0.43	<0.20	1.4
18...	1.17	--	0.020	0.020	0.45	0.26	0.47	0.28	1.6
19...	0.920	--	0.030	0.030	0.37	0.32	0.40	0.35	1.3
22...	0.920	--	0.020	0.020	0.30	0.25	0.32	0.27	1.2
24...	--	1.40	0.020	0.020	0.28	--	0.30	--	--
JUN									
17...	1.21	--	0.020	0.020	0.78	0.37	0.80	0.39	2.0
18...	0.770	--	<0.020	<0.020	--	--	0.87	0.41	1.6
19...	1.13	--	<0.020	<0.020	--	--	0.74	0.41	1.9
21...	0.790	--	0.020	0.020	0.66	0.30	0.68	0.32	1.5
22...	0.970	--	0.020	0.020	1.3	0.48	1.3	0.50	2.3
23...	1.14	--	0.030	0.020	1.2	0.50	1.2	0.52	2.3
24...	1.19	--	0.040	0.030	0.65	0.45	0.69	0.48	1.9
25...	1.30	--	0.050	0.040	0.95	0.36	1.0	0.40	2.3
26...	1.32	--	0.050	0.040	0.40	0.18	0.45	0.22	1.8
28...	1.23	--	0.050	0.030	0.40	0.31	0.45	0.34	1.7
JUL									
03...	1.26	--	<0.020	<0.020	--	--	0.75	0.35	2.0
11...	--	1.30	0.050	<0.010	0.45	--	0.50	--	--
22...	1.45	--	0.050	0.040	0.72	0.24	0.77	0.28	2.2
24...	1.74	--	0.020	0.020	0.54	0.31	0.56	0.33	2.3
27...	1.74	--	0.020	0.020	0.29	--	0.31	<0.20	2.0
31...	1.76	--	<0.020	<0.020	--	--	0.35	<0.20	2.1
AUG									
08...	--	1.40	<0.010	<0.010	--	--	0.40	--	--
SEP									
11...	1.30	--	0.020	0.020	0.24	--	0.26	<0.20	1.6

< Actual value is known to be less than the value shown.

SUSQUEHANNA RIVER BASIN

01570500 SUSQUEHANNA RIVER AT HARRISBURG, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORGANIC TOTAL (MG/L AS P)	PHOS- PHOROUS ORGANIC DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT									
05...	0.050	0.030	<0.002	0.05	0.03	3.2	4	59	--
NOV									
15...	0.030	0.021	<0.010	0.03	0.02	--	18	1210	91
DEC									
06...	0.040	0.030	0.008	0.04	0.02	2.1	4	187	--
JAN									
04...	0.040	0.020	0.020	0.04	0.0	--	4	195	--
FEB									
02...	0.040	0.020	0.020	0.04	0.0	2.3	3	138	--
23...	0.110	0.010	<0.010	0.11	0.01	--	42	4090	85
24...	0.060	0.050	0.004	0.06	0.05	3.3	47	5720	--
25...	0.110	0.050	0.002	0.11	0.05	3.3	57	7060	--
26...	0.090	0.040	<0.002	0.09	0.04	3.4	31	3370	--
27...	0.070	0.050	<0.002	0.07	0.05	3.3	17	1570	--
MAR									
01...	0.060	0.050	<0.004	0.06	0.05	2.3	6	442	--
15...	0.060	0.040	<0.002	0.06	0.04	2.7	12	713	--
30...	0.030	0.030	0.003	0.03	0.03	2.4	46	8770	--
31...	0.040	0.030	0.005	0.04	0.02	2.3	52	13000	--
APR									
01...	0.120	0.030	0.003	0.12	0.03	3.7	150	62800	--
02...	0.040	0.030	0.002	0.04	0.03	4.6	199	97300	--
03...	0.040	0.030	0.002	0.04	0.03	3.5	99	42200	--
04...	0.040	0.030	<0.002	0.04	0.03	2.9	63	20800	--
05...	0.080	0.020	<0.002	0.08	0.02	3.0	40	10200	--
06...	0.060	0.020	0.002	0.06	0.02	3.0	31	7290	--
07...	0.060	0.020	0.002	0.06	0.02	2.9	25	5950	--
08...	0.080	0.020	0.002	0.08	0.02	2.2	28	6270	--
10...	0.060	0.030	0.007	0.06	0.02	2.3	27	4590	--
27...	0.050	0.020	0.006	0.05	0.01	3.0	12	603	--
MAY									
03...	0.050	0.020	0.002	0.05	0.02	3.4	9	469	--
04...	0.070	0.020	<0.002	0.07	0.02	2.5	17	1250	--
05...	0.060	0.020	<0.002	0.06	0.02	2.9	28	2710	--
07...	0.230	0.020	<0.002	0.23	0.02	4.6	187	56000	--
08...	0.140	0.030	<0.002	0.14	0.03	4.2	149	51100	--
09...	0.170	0.020	0.002	0.17	0.02	3.3	102	37700	--
10...	0.150	0.020	<0.002	0.15	0.02	3.5	89	29300	--
11...	0.100	0.030	<0.002	0.10	0.03	3.0	62	21900	--
12...	0.110	0.040	0.003	0.11	0.04	2.8	80	37800	--
13...	0.180	0.040	0.002	0.18	0.04	3.4	148	82300	--
14...	0.140	0.040	0.003	0.14	0.04	3.3	104	48900	--
15...	0.080	0.040	0.002	0.08	0.04	2.9	58	21300	--
16...	0.060	0.050	0.003	0.06	0.05	3.0	62	22300	--
18...	0.090	0.040	0.003	0.09	0.04	3.0	76	40400	--
19...	0.080	0.030	<0.002	0.08	0.03	3.1	59	24200	--
22...	0.070	0.020	<0.002	0.07	0.02	2.6	32	5690	--
24...	0.021	0.010	<0.010	0.02	0.01	--	26	3400	--
JUN									
17...	0.050	0.040	0.002	0.05	0.04	2.7	76	16500	--
18...	0.060	0.040	0.002	0.06	0.04	3.3	89	29600	--
19...	0.140	0.030	0.012	0.14	0.02	2.8	75	24500	--
21...	0.110	0.040	0.007	0.11	0.03	1.9	67	14700	--
22...	0.190	0.040	0.010	0.19	0.03	4.0	136	52900	--
23...	0.140	0.040	0.004	0.14	0.04	3.4	115	45600	--
24...	0.100	0.030	0.006	0.10	0.02	3.0	84	29700	--
25...	0.120	0.040	0.006	0.12	0.03	2.8	142	43300	99
26...	0.070	0.040	0.007	0.07	0.03	2.8	80	22700	--
28...	0.140	0.040	0.008	0.14	0.03	3.2	81	14300	--
JUL									
03...	0.060	0.030	<0.002	0.06	0.03	2.4	25	2110	--
11...	0.020	0.020	<0.010	0.02	0.02	--	24	2200	97
22...	0.200	0.050	0.008	0.20	0.04	5.5	148	22100	--
24...	0.150	0.040	0.003	0.15	0.04	4.7	110	11700	--
27...	0.070	0.060	0.005	0.07	0.05	2.5	25	1860	--
31...	0.060	0.030	<0.002	0.06	0.03	2.6	11	505	--
AUG									
08...	0.020	0.020	<0.010	0.02	0.02	--	5	163	--
SEP									
11...	0.070	0.020	0.003	0.07	0.02	3.3	11	159	--

< Actual value is known to be less than the value shown.

SUSQUEHANNA RIVER BASIN

01570500 SUSQUEHANNA RIVER AT HARRISBURG, PA--Continued

RADIOCHEMICAL ANALYSIS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	AGENCY COL- LECTING SAMPLE (CODE NUMBER)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	DIS- CHARGE, INST. CUBIC FEET PER SECOND	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	GROSS ALPHA, DIS- SOLVED (μG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (μG/L AS U-NAT)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L)
NOV 15...	1250	42011	9813	24800	2.2	<0.4	0.5	2.2	0.7	1.8	0.7	0.03
FEB 23...	0840	42011	9813	36100	1.8	<0.4	1.1	2.7	1.6	2.2	1.5	0.03
APR 03...	0801	1028	80020	158000	--	<0.4	4.3	<0.4	7.0	<0.4	5.5	0.13

PARTICLE-SIZE ANALYSIS OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	AGENCY COL- LECTING SAMPLE (CODE NUMBER)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	
^a JUN 25...	0750	42011	9813	113000	142	43300	31	
DATE		SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM
JUN 25...	56	81	92	93	99	99	100	

< Actual value is known to be less than the value shown.

^a Composite sample taken from churn.

YELLOW BREECHES CREEK BASIN

01571500 YELLOW BREECHES CREEK NEAR CAMP HILL, PA

LOCATION.--Lat 40°13'29", long 76°53'54", Cumberland County, Hydrologic Unit 02050305, on left bank 50 ft downstream from single-span highway bridge, 150 ft downstream from Olmsted Mill dam, 1.0 mi southeast of Camp Hill, and 3.1 mi upstream from mouth.

DRAINAGE AREA.--216 mi².

PERIOD OF RECORD.--April 1909 to December 1919, June 1954 to current year. Monthly discharge only for some periods published in WSP 1302. Prior to June 1954, published as "at Olmsted Mill".

REVISED RECORDS.--WSP 1302: 1910, 1912-13, 1914(M), 1916.

GAGE.--Water-stage recorder. Datum of gage is 307.49 ft above National Geodetic Vertical Datum of 1929. March 1909 to December 1919, nonrecording gage at site 50 ft upstream at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. The Mechanicsburg Water Co. diverts water about 4 mi upstream from station, for municipal supply. Diversion for the year was equivalent to a mean daily discharge of 1.8 ft³/s. Several measurements of water temperature were made during the year. National Weather Service satellite and landline telemeters at station.

AVERAGE DISCHARGE.--45 years (1909-1919, 1954-89), 289 ft³/s, 18.17 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,300 ft³/s, Sept. 26, 1975, gage height, 18.77 ft, from floodmarks; minimum, 23 ft³/s, Sept. 12, 1966, gage height, 0.17 ft; minimum daily, 67 ft³/s, Sept. 13, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 22, 1953, reached a stage of 9.4 ft, from floodmarks, discharge, 3,940 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,250 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 6	0445	2,040	6.01	July 5	0215	1,580	4.98
May 11	0400	1,290	4.31	July 13	2115	1,920	5.74
May 17	0230	2,300	6.57	July 22	0315	*2,790	*7.59
June 16	0515	1,310	4.36	Aug. 19	1845	1,480	4.76
June 25	0215	1,580	4.98				

Minimum discharge, 73 ft³/s, Dec. 13, gage height, 0.59 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	107	107	132	124	140	166	417	196	298	235	331	165
2	111	108	130	124	134	159	342	458	313	221	289	158
3	110	104	127	124	136	157	326	302	316	211	261	151
4	108	105	128	124	139	152	321	233	310	333	242	145
5	108	127	124	118	138	156	304	300	e280	1390	229	140
6	110	155	125	118	132	197	309	1710	e250	791	228	138
7	114	148	124	123	131	197	282	1320	e230	545	243	135
8	110	130	123	136	126	180	265	823	e220	431	218	134
9	112	124	125	165	122	167	260	640	237	357	206	134
10	117	121	123	152	115	169	245	819	275	321	201	132
11	116	120	123	139	122	175	233	1230	215	294	200	129
12	114	116	113	147	119	196	221	979	194	265	205	126
13	114	134	108	178	122	233	214	809	195	785	202	124
14	113	155	121	163	130	235	208	700	204	e780	193	123
15	116	144	121	190	146	275	209	970	265	e510	185	121
16	115	134	120	214	174	334	235	1840	846	e450	182	123
17	114	134	117	185	167	275	213	2130	526	e560	177	135
18	111	132	117	165	146	255	201	1510	349	444	170	137
19	106	126	116	163	141	259	211	1100	274	356	817	140
20	104	227	119	165	142	239	206	883	248	332	489	168
21	111	346	120	155	173	269	190	732	327	916	360	184
22	165	211	122	144	244	262	183	606	508	1170	314	190
23	143	164	126	143	241	231	181	554	579	531	269	187
24	126	152	139	143	200	356	175	599	480	429	233	184
25	118	148	156	142	173	626	172	505	719	391	207	177
26	112	141	145	147	174	444	170	434	358	351	191	179
27	110	139	131	145	182	384	166	409	301	325	183	186
28	109	146	129	141	173	356	163	361	365	295	178	182
29	111	139	130	137	---	326	162	327	320	272	177	175
30	106	134	126	140	---	343	167	306	259	342	181	167
31	106	---	126	144	---	468	---	296	---	426	174	---
TOTAL	3547	4371	3886	4598	4282	8241	6951	24081	10261	15059	7735	4569
MEAN	114	146	125	148	153	266	232	777	342	486	250	152
MAX	165	346	156	214	244	626	417	2130	846	1390	817	180
MIN	104	104	108	118	115	152	162	196	194	211	170	121
CFSM	.53	.67	.58	.69	.71	1.23	1.07	3.60	1.58	2.25	1.16	.71
IN.	.61	.75	.67	.79	.74	1.42	1.20	4.15	1.77	2.59	1.33	.79

CAL YR 1988 TOTAL 80248 MEAN 219 MAX 1230 MIN 93 CFSM 1.02 IN. 13.82
WTR YR 1989 TOTAL 97581 MEAN 267 MAX 2130 MIN 104 CFSM 1.24 IN. 16.81

e Estimated.

SWATARA CREEK BASIN

01572025 SWATARA CREEK NEAR PINE GROVE, PA

LOCATION.--Lat 40°31'57", 76°24'09", Schuylkill County, Hydrologic Unit 02050305, on left bank 1.0 mi downstream from Lower Little Swatara Creek, 1.3 mi southwest of Pine Grove, and 1.6 mi upstream from bridge on Interstate Highway 81.

DRAINAGE AREA.--116 mi².

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

GAGE.--Water-stage recorder. Elevation of gage is 490 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,940 ft³/s, May 18, 1989, gage height, 11.88 ft, from rating curve extended above 1,900 ft³/s on basis of step-backwater analysis; minimum daily discharge, 18 ft³/s, Oct. 18, 1988.

EXTREMES 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)
May 7	1100	2,610	9.94	July 16	2000	1,850	8.55
May 18	0300	*3,940	*11.88				

Minimum daily discharge, 18 ft³/s, Oct. 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e24	e41	126	e70	97	156	279	73	210	274	200	42
2	e24	e40	115	e62	92	137	240	77	192	237	172	41
3	e25	e39	108	e70	96	129	244	382	190	207	145	37
4	e26	e37	101	e80	91	121	236	267	167	378	130	35
5	e26	e54	93	e110	e80	125	225	213	163	807	218	34
6	e28	e130	90	e140	e76	139	232	291	146	571	145	34
7	e26	e100	87	138	e72	138	207	2020	152	429	124	34
8	e23	e74	e80	189	e70	112	192	1580	162	340	112	33
9	e23	e60	e70	181	e66	107	195	985	194	288	102	31
10	e21	e54	e62	135	e64	108	174	718	352	256	94	30
11	e22	e52	e60	120	e62	123	160	837	378	224	94	29
12	e25	e48	e60	154	e62	158	151	1030	261	194	110	28
13	e30	e100	e55	213	63	174	144	869	229	540	127	28
14	e36	e200	e55	168	65	177	137	676	223	359	96	29
15	e28	e154	e50	295	82	239	145	557	246	267	87	28
16	e20	132	e50	300	104	293	158	640	547	838	84	29
17	e19	169	e50	248	79	256	135	1970	557	1150	95	37
18	e18	154	e50	212	66	248	132	3230	425	647	73	31
19	e19	130	e50	192	64	232	130	1470	343	452	114	130
20	e20	569	e50	176	64	204	128	969	292	534	122	236
21	e60	886	e50	146	250	271	113	734	309	390	89	107
22	e140	441	e56	142	418	256	106	582	313	289	77	132
23	e120	312	58	118	372	228	101	462	388	181	72	141
24	e90	260	112	110	293	417	93	389	512	147	88	97
25	e90	219	165	104	243	593	90	614	370	126	67	75
26	e70	188	104	103	223	465	86	403	310	115	58	165
27	e56	172	83	124	204	375	83	336	302	142	55	129
28	e52	200	86	104	176	332	80	313	508	189	54	97
29	e50	161	95	97	---	301	75	283	456	166	53	86
30	e49	138	78	104	---	293	73	247	323	154	54	76
31	e44	---	74	106	---	305	---	223	---	199	46	---
TOTAL	1304	5314	2423	4511	3694	7212	4544	23440	9220	11090	3157	2061
MEAN	42.1	177	78.2	146	132	233	151	756	307	358	102	68.7
MAX	140	886	165	300	418	593	279	3230	557	1150	218	236
MIN	18	37	50	62	62	107	73	73	146	115	46	28
CFSM	.36	1.53	.67	1.25	1.14	2.01	1.31	6.52	2.65	3.08	.88	.59
IN.	.42	1.70	.78	1.45	1.18	2.31	1.46	7.52	2.96	3.56	1.01	.66

WTR YR 1989 TOTAL 77970 MEAN 214 MAX 3230 MIN 18 CFSM 1.84 IN. 25.00

e Estimated.

SWATARA CREEK BASIN

01572190 SWATARA CREEK NEAR INWOOD, PA

LOCATION.--Lat 40°28'45", long 76°31'52", Lebanon County, Hydrologic Unit 02050305, on right bank 20 feet downstream from single-span steel-truss bridge on Appalachian Trail, 0.4 mi upstream from steel-truss bridge at Inwood, 0.5 mi downstream from Trout Run, and 2.0 mi north of Lickdale.

DRAINAGE AREA.--167 mi².

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

GAGE.--Water-stage recorder. Elevation of gage is 430 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. National Weather Service satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,030 ft³/s, May 17, 1989, gage height, 13.02 ft, from rating curve extended above 2,800 ft³/s; minimum, 48 ft³/s, Sept. 13, 15, 16, 1989, gage height, 2.00 ft.

EXTREMES 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)
May 6	0915	4,180	11.18	July 16	2315	2,600	8.64
May 17	0545	*6,030	*13.02				

Minimum discharge, 48 ft³/s, Sept. 13, 15, 16, gage height, 2.00 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e39	e55	173	98	155	248	448	129	283	396	288	62
2	e39	e56	155	98	145	219	379	583	274	345	254	61
3	e40	e52	143	98	144	204	372	440	239	305	207	58
4	e42	e54	132	94	142	193	368	347	246	436	180	56
5	e44	e84	132	126	128	e180	347	525	216	1380	288	55
6	e46	e110	148	103	126	e170	355	3470	242	972	211	55
7	e43	e140	141	111	121	e170	326	2630	242	720	165	55
8	e39	e110	109	212	109	e170	302	1640	276	557	144	55
9	e37	e94	99	312	102	e170	306	1130	377	451	129	53
10	e35	74	e92	229	115	e160	280	1290	771	392	117	52
11	e35	71	e88	192	115	e190	255	1560	433	343	114	50
12	e40	67	e84	208	105	e220	238	1280	332	298	138	50
13	e50	142	e80	314	101	267	228	992	338	765	242	49
14	e60	268	e80	258	111	274	218	840	314	618	148	50
15	e47	194	e78	428	123	328	222	1080	370	419	121	50
16	e31	158	e74	481	161	449	257	3470	804	1020	113	50
17	e30	191	e72	392	129	396	222	4790	845	1820	120	58
18	e29	191	e70	335	107	374	206	2140	691	977	99	53
19	e29	152	e70	304	106	362	206	1400	541	705	144	90
20	e30	640	e70	278	105	318	184	1050	447	780	197	424
21	e31	1330	e74	221	288	394	171	846	488	638	129	182
22	e59	682	e80	187	617	408	162	695	550	534	107	147
23	e235	471	e95	202	572	358	151	619	588	462	95	214
24	e180	378	158	187	447	536	145	826	804	399	103	133
25	e132	315	281	168	360	997	140	581	621	365	85	101
26	e120	271	163	163	346	783	136	495	507	373	76	188
27	e90	243	120	198	319	633	131	459	427	324	74	202
28	e74	274	115	172	279	546	124	401	705	286	72	130
29	e68	230	132	154	---	460	122	354	667	245	71	110
30	e62	192	111	163	---	436	121	326	478	224	70	95
31	e58	---	104	168	---	493	---	310	---	294	69	---
TOTAL	1894	7289	3523	6654	5678	11106	7122	36698	14116	17843	4370	2988
MEAN	61.1	243	114	215	203	358	237	1184	471	576	141	99.6
MAX	235	1330	281	481	617	997	448	4790	845	1820	288	424
MIN	29	52	70	94	101	160	121	129	216	224	69	49
CFSM	.37	1.45	.68	1.29	1.21	2.15	1.42	7.09	2.82	3.45	.84	.60
IN.	.42	1.62	.78	1.48	1.26	2.47	1.59	8.17	3.14	3.97	.97	.67

WTR YR 1989 TOTAL 119281 MEAN 327 MAX 4790 MIN 29 CFSM 1.96 IN. 26.57

e Estimated.

SWATARA CREEK BASIN

01573000 SWATARA CREEK AT HARPER TAVERN, PA

LOCATION.--Lat 40°24'09", long 76°34'39", Lebanon County, Hydrologic Unit 02050305, on left bank 100 ft downstream from bridge on State Highway 934 at Harper Tavern, 6.0 mi northwest of Annville, and 8.5 mi downstream from Little Swatara Creek.

DRAINAGE AREA.--337 mi².

PERIOD OF RECORD.--January 1919 to current year. Monthly discharge only for some periods, published in WSP 1302. Prior to October 1927, published as "at Harpers".

REVISED RECORDS.--WSP 1202: 1948. WSP 1302: 1920(M), 1921, 1924-25(M), 1927-28(M), 1930(M). WSP 1903: Drainage area. WDR PA-72-1: 1889 (M). WDR PA-85-2: 1984(P).

GAGE.--Water-stage recorder. Datum of gage is 356.68 ft above National Geodetic Vertical Datum of 1929. Prior to July 16, 1931, nonrecording gage at same site and datum.

REMARKS.--Records good except those for May 3-24, June 29 to July 12, and estimated daily discharges, which are fair. The Pa. American Water Co. diverts water upstream from station for municipal supply of city of Lebanon. Diversion for the year was equivalent to a mean daily discharge of 10.2 ft³/s. Several measurements of water temperature were made during the year. National Weather Service satellite and landline telemeters at station.

AVERAGE DISCHARGE.--70 years, 569 ft³/s, 22.93 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 66,700 ft³/s, June 23, 1972, gage height, 23.72 ft, from floodmark mark in gage shelter, from rating curve extended above 25,000 ft³/s on basis of slope-area measurement of peak flow; minimum, 6.0 ft³/s, Aug. 21, 1965, gage height, -0.10 ft; minimum observed gage height, -0.32 ft, Sept. 24, 1980.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1, 1889, reached a stage of 25.6 ft, from floodmark, discharge, 88,000 ft³/s, from rating curve extended as explained above.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,800 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 6	1530	7,790	9.79	July 17	0200	5,330	7.72
May 17	0800	*10,800	*11.68				

Minimum discharge, 52 ft³/s, Oct. 17, 18, gage height, -0.01 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71	97	323	e190	306	438	793	219	458	642	471	107
2	71	99	292	e170	284	391	630	879	419	539	420	106
3	79	100	269	e150	283	366	594	732	383	474	356	98
4	78	94	250	e130	282	347	606	533	392	1020	314	92
5	87	105	225	e110	248	351	565	812	364	3130	358	88
6	83	226	238	e110	e230	422	583	6460	382	1810	348	88
7	74	236	239	e120	e200	379	532	4980	409	1260	289	88
8	69	174	214	365	e170	342	484	2910	446	941	254	87
9	65	142	183	646	e150	e320	485	2160	649	762	231	87
10	62	131	e150	435	e140	e290	456	2530	1650	672	211	86
11	65	124	e140	370	e140	e310	400	2910	761	562	207	83
12	81	113	e120	498	e140	535	380	2380	553	494	232	77
13	113	202	e110	835	e150	600	364	1880	551	2270	367	80
14	98	509	e105	538	e160	551	355	1590	513	1590	282	77
15	60	329	e100	1190	e210	584	349	1870	710	898	255	79
16	56	262	e96	1080	321	715	408	6100	2400	2040	214	78
17	54	296	e94	772	277	631	365	9860	1910	3670	201	90
18	53	356	e94	639	208	595	329	4110	1340	1840	182	94
19	56	272	e94	577	208	595	329	2590	999	1310	231	141
20	56	1380	e98	525	211	512	304	1950	809	1460	309	634
21	68	2820	e110	426	637	751	284	1570	781	1210	242	334
22	425	1300	145	339	1440	756	275	1280	1070	953	192	275
23	324	853	148	376	1160	600	253	1120	1390	825	176	364
24	228	664	267	346	812	880	238	1550	1580	684	166	248
25	232	549	523	332	620	1780	233	1030	1140	618	160	188
26	172	469	352	311	617	1280	226	835	870	648	138	285
27	146	418	269	361	570	1030	222	766	746	592	128	396
28	128	531	235	331	504	886	207	670	1880	489	120	241
29	120	445	283	294	---	754	203	568	1170	413	125	195
30	109	355	236	311	---	716	202	517	827	375	127	177
31	103	---	212	345	---	863	---	494	---	536	117	---
TOTAL	3486	13651	6214	13222	10678	19570	11654	67855	27552	34727	7423	5063
MEAN	112	455	200	427	381	631	388	2189	918	1120	239	169
MAX	425	2820	523	1190	1440	1780	793	9860	2400	3670	471	634
MIN	53	94	94	110	140	290	202	219	364	375	117	77
CFSM	.33	1.35	.59	1.27	1.13	1.87	1.15	6.50	2.73	3.32	.71	.50
IN.	.38	1.51	.69	1.46	1.18	2.16	1.29	7.49	3.04	3.83	.82	.56

CAL YR 1988 TOTAL 154053 MEAN 421 MAX 7950 MIN 51 CFSM 1.25 IN. 17.01
WTR YR 1989 TOTAL 221095 MEAN 606 MAX 9860 MIN 53 CFSM 1.80 IN. 24.41

e Estimated.

SWATARA CREEK BASIN

01573160 QUITTAPAHILLA CREEK NEAR BELLEGROVE, PA

LOCATION.--Lat 40°20'34", long 76°33'46", Lebanon County, Hydrologic Unit 02050305, on right bank 210 ft downstream from bridge on SR 4008, 0.7 mi downstream from Killinger Creek, and 1.8 mi south of Bellegrove.

DRAINAGE AREA.--74.2 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 361.88 ft above National Geodetic Vertical Datum of 1929 (levels by Susquehanna River Basin Commission).

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Slight regulation from Millard limestone quarry 0.7 mi upstream. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--13 years, 105 ft³/s, 19.22 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,800 ft³/s, Jan. 24, 1979, gage height, 13.27 ft, from rating curve extended above 1,900 ft³/s; minimum, 28 ft³/s, Oct. 26, 27, 28, 29, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 787 ft³/s, July 13, gage height, 7.37 ft; minimum daily, 39 ft³/s, Dec. 21-23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66	e46	e65	e44	e54	e63	96	e70	122	137	166	88
2	66	e45	e62	e43	e53	e62	96	133	112	103	151	104
3	65	e44	e59	e42	e52	e60	92	103	119	100	135	91
4	61	e43	e57	e41	e52	e58	91	98	125	222	141	71
5	70	55	e55	e40	e51	e65	91	118	103	270	143	80
6	61	59	e53	e41	e50	e80	e90	335	116	169	139	82
7	59	55	e52	e45	e50	e75	e87	281	119	138	136	84
8	63	51	e50	73	e49	e72	e85	196	117	121	142	84
9	58	e47	e49	68	e49	e69	e82	178	145	134	128	80
10	58	e44	e48	e61	e48	e68	e78	216	161	90	116	92
11	53	e41	e47	e58	e48	e66	e76	215	115	108	125	64
12	53	e40	e46	77	e47	e65	e74	173	106	88	154	83
13	54	74	e44	e66	e47	e66	e72	178	126	481	106	77
14	54	61	e43	e64	e46	e72	e70	159	111	291	193	97
15	49	57	e42	100	e46	e80	e80	155	145	233	148	81
16	53	55	e42	87	e45	e76	e79	406	336	291	119	105
17	51	63	e41	83	e45	e73	e75	600	230	255	128	85
18	49	59	e41	79	e45	e70	e72	365	173	208	106	74
19	52	56	e40	76	e47	e72	e69	306	143	192	180	145
20	47	156	e40	73	e72	82	e68	278	136	217	131	171
21	57	131	e39	72	98	92	e66	231	154	190	108	107
22	113	93	e39	70	95	84	e66	187	181	182	98	115
23	57	82	e39	69	89	83	e65	191	205	185	134	113
24	60	81	e64	e66	86	108	e64	224	239	139	98	109
25	54	73	e68	e64	e77	122	e63	177	175	170	97	71
26	56	69	e62	e63	e72	108	e62	167	125	230	110	138
27	54	69	e56	e62	e69	95	e60	167	149	172	90	102
28	50	88	e52	e60	e65	100	e59	142	237	152	95	92
29	52	72	e48	e59	---	94	e58	127	142	155	78	88
30	50	e70	e47	e57	---	95	e57	133	132	141	100	114
31	47	---	e45	e56	---	111	---	129	---	252	91	---
TOTAL	1792	1979	1535	1959	1647	2486	2243	6438	4599	5816	3886	2887
MEAN	57.8	66.0	49.5	63.2	58.8	80.2	74.8	208	153	188	125	96.2
MAX	113	156	68	100	98	122	96	600	336	481	193	171
MIN	47	40	39	40	45	58	57	70	103	88	78	64
CFSM	.78	.89	.67	.85	.79	1.08	1.01	2.80	2.07	2.53	1.69	1.30
IN.	.90	.99	.77	.98	.83	1.25	1.12	3.23	2.31	2.92	1.95	1.45
CAL YR 1988	TOTAL 30627											
WTR YR 1989	TOTAL 37267											
	MEAN 83.7	MEAN 102	MAX 646	MIN 39	CFSM 1.13	IN. 15.35						
	MEAN 102	MAX 600	MIN 39	CFSM 1.38	IN. 18.68							

e Estimated.

SWATARA CREEK BASIN

01573560 SWATARA CREEK NEAR HERSHEY, PA

LOCATION.--Lat 40°17'54", long 76°40'05", Dauphin County, Hydrologic Unit 02050305, on left bank, 0.4 mi downstream from Manada Creek, 0.5 mi upstream from State Highway 39, and 1.5 mi northwest of Hershey.

DRAINAGE AREA.--483 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder and gated concrete control. Datum of gage is 325.94 ft above National Geodetic Vertical Datum of 1929 (levels by Susquehanna River Basin Commission).

REMARKS.--Records good except those for estimated daily discharges, which are fair. Daily discharge adjusted during periods of diversion which occur intermittently throughout the year. National Weather Service satellite and landline telemeters at station.

COOPERATION.--Records of daily diversion furnished by Hershey Chocolate U.S.A.

AVERAGE DISCHARGE.--14 years, 779 ft³/s, 21.90 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,400 ft³/s, Sept. 27, 1975, gage height, 15.36 ft; minimum daily, 59 ft³/s, Sept. 21, 24, 1985.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,900 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 7	0030	9,280	7.35	May 17	1545	*11,300	*8.33

Minimum daily discharge, 99 ft³/s, Oct. 18, 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	136	138	413	e240	384	553	1080	299	592	987	677	250
2	141	136	367	e210	359	494	861	1100	532	799	582	222
3	147	137	341	e180	350	465	775	1090	511	698	513	227
4	142	135	313	e160	360	433	786	658	518	1220	490	231
5	146	149	293	e120	319	429	731	976	492	4150	478	217
6	145	252	286	e120	e290	514	735	6950	499	2510	584	205
7	135	300	293	e150	e250	537	685	7160	545	1780	496	232
8	131	233	278	424	e230	450	585	3800	560	1350	463	234
9	121	189	244	852	e210	e350	582	2680	776	1100	419	229
10	118	170	224	620	e190	e330	547	2970	2010	907	392	231
11	103	161	202	517	e185	e400	485	3610	1070	788	386	230
12	106	154	147	657	e180	e540	453	2880	732	667	372	226
13	137	245	e130	1190	e180	855	428	2260	700	2990	425	222
14	144	567	e120	832	e170	778	418	1910	655	2660	408	230
15	112	414	e110	1540	e270	792	420	2290	913	1460	410	194
16	102	313	e110	1560	391	945	478	6420	3020	2140	352	196
17	105	334	e105	1130	372	860	443	10700	2550	4600	350	234
18	99	409	e100	914	305	786	401	6430	1900	2480	350	201
19	99	326	e100	787	290	792	413	3400	1390	1820	438	197
20	106	1360	e100	694	288	674	382	2560	1140	1820	464	793
21	114	3540	e105	551	623	976	358	2050	1100	1770	405	454
22	444	1820	e110	418	1810	1080	344	1650	1280	1340	349	350
23	487	1210	e130	448	1580	826	330	1440	1880	1200	330	396
24	302	947	e160	425	1160	1140	319	1880	1910	988	319	341
25	288	760	642	424	835	2220	308	1450	1580	888	310	262
26	235	629	464	399	832	1740	303	1170	1170	1050	321	350
27	200	544	366	434	769	1410	303	1080	1010	841	303	465
28	171	685	317	423	666	1220	283	950	2580	725	248	331
29	156	610	351	376	---	1040	272	771	1660	592	261	276
30	150	461	304	385	---	962	288	705	1230	525	281	261
31	140	---	273	429	---	1170	---	653	---	784	273	---
TOTAL	5162	17328	7498	17609	13848	25761	14796	83942	36505	47629	12449	8487
MEAN	167	578	242	568	495	831	493	2708	1217	1536	402	283
MAX	487	3540	642	1560	1810	2220	1080	10700	3020	4600	677	793
MIN	99	135	100	120	170	330	272	299	492	525	248	194
CFSM	.34	1.20	.50	1.18	1.02	1.72	1.02	5.61	2.52	3.18	.83	.59
IN.	.40	1.33	.58	1.36	1.07	1.98	1.14	6.47	2.81	3.67	.96	.65

CAL YR 1988 TOTAL 205691 MEAN 562 MAX 9360 MIN 84 CFSM 1.16 IN. 15.84
WTR YR 1989 TOTAL 291014 MEAN 797 MAX 10700 MIN 99 CFSM 1.65 IN. 22.41

e Estimated.

SWATARA CREEK BASIN

01573560 SWATARA CREEK NEAR HERSHEY, PA--Continued

WATER-QUALITY RECORDS

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

REMARKS.--Samples collected from bridge on State Highway 39.

COOPERATION.--Water-quality samples collected by Susquehanna River Basin Commission and analyzed by the Pa. Department of Environmental Resources.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE FIELD (μ S/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)
OCT										
05...	0950	132	380	8.60	16.0	3.96	0.040	0.020	--	--
NOV										
16...	1220	313	240	--	8.5	2.64	0.030	0.030	0.29	--
DEC										
06...	1100	282	315	7.80	4.0	4.08	0.080	0.080	--	--
JAN										
05...	1100	120	290	7.90	1.0	4.44	0.060	0.060	0.24	0.21
FEB										
01...	1010	354	275	8.20	5.5	3.84	0.060	0.060	--	--
21...	1200	428	250	8.30	5.0	3.36	0.040	0.040	--	--
21...	1745	900	220	--	6.0	2.76	0.080	0.080	0.78	--
21...	2245	1300	230	7.60	6.5	2.64	0.160	0.160	0.57	0.32
22...	0145	1710	230	7.50	5.5	2.76	0.140	0.120	1.8	0.17
22...	0430	1960	220	7.45	5.5	3.36	0.240	0.240	1.4	0.08
22...	1430	1730	180	8.50	5.0	2.52	0.230	0.180	1.2	0.24
23...	1240	1540	180	7.20	5.5	3.48	0.160	0.160	0.54	0.24
24...	1220	1120	190	7.45	6.0	3.96	0.050	0.050	0.85	0.70
27...	0945	760	225	7.80	2.0	4.32	0.060	0.060	0.27	0.19
MAR										
16...	1115	960	240	7.40	8.5	4.08	0.040	0.040	0.26	0.19
APR										
27...	0950	297	250	7.90	15.0	2.51	0.020	0.020	0.55	0.47
MAY										
02...	1200	1110	170	8.50	16.0	2.00	0.110	0.110	0.56	0.43
03...	1100	1020	182	8.50	15.0	1.67	0.100	0.100	0.47	0.24
05...	1030	600	200	7.70	14.0	1.76	0.040	0.040	0.64	0.61
06...	1000	6870	135	6.80	14.0	1.32	0.160	0.150	2.6	0.70
07...	1140	7340	150	7.70	12.0	1.85	0.100	0.080	1.3	0.75
08...	0930	3870	170	7.70	10.0	2.64	0.050	0.050	0.45	0.15
09...	1100	2650	170	7.45	12.0	2.90	0.050	0.050	0.24	--
10...	0935	2700	160	7.40	11.0	2.77	0.070	0.070	0.31	0.26
11...	1315	3450	140	7.60	10.0	2.88	0.060	0.060	0.37	--
12...	0940	2910	168	7.60	10.0	3.17	0.080	0.080	0.85	0.52
14...	0800	1900	187	7.90	12.0	3.43	0.090	0.090	0.49	0.46
16...	1045	5550	140	7.60	13.0	2.00	0.100	0.090	1.0	0.19
17...	0925	10700	120	7.10	14.0	2.02	0.090	0.080	0.90	0.30
18...	0910	6740	150	7.20	15.0	2.64	0.020	0.020	0.55	0.31
19...	1135	3410	190	7.60	18.0	3.17	0.040	0.030	0.45	0.19
23...	1400	1400	210	7.50	17.0	4.62	0.050	0.050	0.28	0.26
JUN										
16...	1050	3660	180	7.70	28.0	2.77	0.130	0.130	3.2	1.1
17...	0935	2860	170	7.90	23.0	2.90	0.040	0.040	0.88	0.58
19...	1440	1320	220	8.00	20.0	3.70	0.050	0.050	0.44	0.29
JUL										
05...	1000	4780	155	6.90	22.0	2.11	0.160	0.160	1.6	0.66
06...	1045	2530	180	7.35	19.0	2.38	0.090	0.090	0.51	0.28
13...	1000	3450	160	7.90	19.0	1.85	0.080	0.080	1.4	0.21
13...	1350	4040	155	7.70	19.0	1.76	0.070	0.070	1.7	0.30
13...	1920	4200	160	7.60	18.0	2.09	0.130	0.130	1.1	0.47
14...	1235	2340	190	7.20	20.0	3.15	0.080	0.080	1.1	0.78
15...	1100	1460	240	7.45	18.0	4.11	0.070	0.050	0.26	0.20
17...	0925	5460	140	7.40	--	2.13	0.100	0.060	1.0	0.30
24...	1035	1040	230	7.50	23.0	3.96	0.030	0.030	0.30	0.27
AUG										
15...	1500	399	270	8.40	22.0	3.20	0.070	0.060	0.19	0.15
SEP										
11...	1400	216	430	7.00	24.0	4.36	0.040	0.040	0.19	--
22...	1015	363	272	7.60	21.0	2.66	0.130	0.110	0.97	0.67

SWATARA CREEK BASIN

01573560 SWATARA CREEK NEAR HERSHEY, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT									
05...	<0.20	<0.20	--	0.120	0.080	0.035	2.6	2	0.68
NOV									
16...	0.32	<0.20	3.0	0.070	0.030	0.014	3.9	11	9.3
DEC									
06...	<0.20	<0.20	--	0.040	0.030	0.014	1.8	4	3.0
JAN									
05...	0.30	0.27	4.7	<0.020	<0.020	0.004	2.0	3	0.65
FEB									
01...	<0.20	<0.20	--	0.030	0.030	0.022	2.3	22	21
21...	<0.20	<0.20	--	0.070	0.050	0.004	2.8	8	9.2
21...	0.86	<0.20	3.6	0.060	0.060	0.002	4.2	267	649
21...	0.73	0.48	3.4	0.100	0.080	0.017	5.6	111	390
22...	1.9	0.29	4.7	0.100	0.070	0.005	5.2	160	739
22...	1.6	0.32	5.0	0.130	0.060	0.002	5.8	215	1140
22...	1.4	0.42	3.9	0.150	0.050	<0.002	7.8	217	1010
23...	0.70	0.40	4.2	0.140	0.050	0.013	4.1	52	216
24...	0.90	0.75	4.9	0.070	0.060	0.015	3.1	20	60
27...	0.33	0.25	4.6	0.050	0.050	0.006	2.3	13	27
MAR									
16...	0.30	0.23	4.4	0.060	0.040	0.003	2.4	12	31
APR									
27...	0.57	0.49	3.1	0.050	0.040	0.011	2.3	8	5.9
MAY									
02...	0.67	0.54	2.7	0.100	0.050	0.017	--	48	144
03...	0.57	0.34	2.2	0.110	0.030	0.009	5.0	35	96
05...	0.68	0.65	2.4	0.060	0.060	0.002	2.6	12	19
06...	2.8	0.85	4.1	0.150	0.060	0.010	6.7	526	9760
07...	1.4	0.83	3.2	0.160	0.070	0.022	5.8	263	5210
08...	0.50	0.20	3.1	0.080	0.030	0.006	3.3	72	752
09...	0.29	<0.20	3.2	0.090	0.030	0.006	3.5	51	365
10...	0.38	0.33	3.1	0.120	0.030	0.003	2.7	61	445
11...	0.43	<0.20	3.3	0.110	0.050	0.007	3.7	68	633
12...	0.93	0.60	4.1	0.100	0.050	0.012	2.7	52	409
14...	0.58	0.55	4.0	0.070	0.050	0.008	2.0	37	190
16...	1.1	0.28	3.1	0.130	0.070	0.018	6.8	201	3010
17...	0.99	0.38	3.0	0.200	0.070	0.014	6.1	596	17200
18...	0.57	0.33	3.2	0.100	0.050	0.008	3.2	57	1040
19...	0.49	0.22	3.7	0.050	0.030	0.003	2.4	444	4090
23...	0.31	0.31	4.9	0.060	0.030	0.004	2.1	30	113
JUN									
16...	3.3	1.2	6.1	0.470	0.110	0.005	7.1	437	4320
17...	0.92	0.62	3.8	0.180	0.060	0.010	5.6	134	1030
19...	0.49	0.34	4.2	0.090	0.050	0.012	2.2	33	118
JUL									
05...	1.8	0.82	3.9	0.410	0.090	0.055	8.3	381	4920
06...	0.60	0.37	3.0	0.150	0.050	0.003	4.2	82	570
13...	1.5	0.29	3.3	0.450	0.080	0.035	7.5	613	5610
13...	1.8	0.37	3.6	0.430	0.080	0.025	7.9	309	3370
13...	1.2	0.60	3.3	0.400	0.060	0.013	5.9	254	2880
14...	1.2	0.86	4.3	0.190	0.060	0.008	5.3	94	594
15...	0.33	0.25	4.4	0.090	0.050	0.023	3.2	36	142
17...	1.1	0.36	3.2	0.270	0.070	0.035	7.2	187	2760
24...	0.33	0.30	4.3	0.090	0.060	0.006	2.4	20	56
AUG									
15...	0.26	0.21	3.5	0.090	0.060	0.025	2.9	16	17
SEP									
11...	0.23	<0.20	4.6	0.080	0.050	0.019	2.3	5	2.9
22...	1.1	0.78	3.8	0.090	0.050	0.029	3.7	34	33

(<) Actual value is known to be less than the value shown.

WEST CONEWAGO CREEK BASIN

01573808 BRUSH RUN, SITE 1, NEAR McSHERRYSTOWN, PA

LOCATION.--Lat 39°49'06", long 77°06'26", Adams County, Hydrologic Unit 02050306, 5 ft upstream of private culvert, 15 ft upstream from Brush Run, Site 2, near McSherrystown (station 01573810), 1.0 mi upstream from small left-bank tributary, and 4.7 mi west of McSherrystown.

DRAINAGE AREA.--0.35 mi².

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (μS/CM)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)
NOV 14...	1230	0.30	338	1.50	1.50	0.090	0.090	1.3
JAN 27...	1310	0.44	405	4.30	3.90	0.230	0.190	1.3
FEB 28...	0805	0.57	225	1.20	0.930	0.100	0.070	0.80
MAR 17...	1015	0.66	295	1.60	--	0.050	--	1.1
APR 14...	1400	0.34	324	2.60	2.60	0.500	0.140	1.4
MAY 22...	0935	0.0	257	0.740	0.740	0.080	0.080	1.6
JUN 20...	0935	0.03	355	1.20	1.20	0.120	0.120	1.7
JUL 24...	1000	0.03	353	3.00	2.80	0.070	0.070	2.2
AUG 15...	0950	0.02	339	0.400	0.200	0.260	0.260	1.4
SEP 06...	1100	0.0	325	0.630	0.630	0.380	0.300	1.6
29...	1155	0.0	458	0.550	0.550	0.080	0.080	1.1

DATE	NITRO-GEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHOROUS TOTAL (MG/L AS P)	PHOS-PHOROUS DIS-SOLVED (MG/L AS P)	PHOS-PHOROUS ORTHO, DIS-SOLVED (MG/L AS P)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
NOV 14...	1.3	2.8	0.290	0.250	0.180	19	0.02
JAN 27...	1.1	5.6	0.220	0.170	0.150	6	0.01
FEB 28...	0.80	2.0	0.100	0.080	0.060	4	0.01
MAR 17...	--	2.7	0.140	--	--	6	0.01
APR 14...	1.0	4.0	0.110	0.110	0.080	9	0.01
MAY 22...	1.1	2.3	0.210	0.160	0.130	37	--
JUN 20...	1.7	2.9	0.260	0.210	0.190	6	0.00
JUL 24...	1.7	5.2	0.280	0.280	0.260	3	0.00
AUG 15...	1.4	1.8	0.160	0.120	0.110	3	0.00
SEP 06...	1.6	2.2	0.220	0.130	0.080	6	--
29...	1.0	1.6	0.180	0.150	0.130	5	--

WEST CONEWAGO CREEK BASIN

394906077062601 TILE DRAIN TO BRUSH RUN NEAR McSHERRYSTOWN, PA

LOCATION.--Lat 39°49'06", long 77°06'26", Adams County, Hydrologic Unit 02050306, on right bank, 1 ft upstream from private culvert, 11 ft above Brush Run, Site 2, near McSherrystown (station 01573810), 1.0 mi upstream from small left-bank tributary, and 4.7 mi west of McSherrystown.

DRAINAGE AREA.--Under pasture lands and croplands, unable to determine.

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (μS/CM)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)
OCT 24...	1145	<0.01	--	37.0	--	9.40	--
NOV 14...	1240	<0.01	1300	68.0	67.0	0.410	0.410
JAN 17...	1455	<0.01	773	37.0	--	1.10	--
27...	1245	<0.01	1050	36.0	36.0	0.730	0.680
FEB 28...	0815	<0.01	895	41.0	41.0	0.900	0.870
MAR 17...	1005	<0.01	389	40.0	27.0	4.20	3.20
APR 14...	1350	<0.01	845	43.0	40.0	1.70	1.60
MAY 22...	0940	<0.01	1000	44.0	39.0	0.900	0.870
JUN 20...	0940	<0.01	842	29.0	25.0	1.60	1.50
JUL 24...	1005	<0.01	11700	0.010	--	730	--
AUG 15...	0945	<0.01	--	0.110	0.110	93.0	93.0
SEP 06...	1050	<0.01	--	0.200	0.100	400	330
29...	1145	<0.01	1330	21.0	20.0	0.210	0.210

DATE	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHOROUS TOTAL (MG/L AS P)	PHOS-PHOROUS DIS-SOLVED (MG/L AS P)	PHOS-PHOROUS ORTHO, DIS-SOLVED (MG/L AS P)	SEDI-MENT, SUS-PENDED (MG/L)
OCT 24...	20	--	57	5.20	--	--	--
NOV 14...	4.0	3.8	72	1.80	1.60	1.40	13
JAN 17...	2.4	--	39	1.00	--	--	--
27...	1.9	1.6	38	0.690	0.640	0.610	5
FEB 28...	2.4	2.4	43	0.620	0.610	0.550	3
MAR 17...	6.2	5.4	46	0.900	0.620	0.590	6
APR 14...	2.9	2.3	46	0.610	0.500	0.450	--
MAY 22...	2.6	2.2	47	0.750	0.680	0.610	7
JUN 20...	2.8	2.7	32	0.650	0.610	0.570	8
JUL 24...	1100	--	1100	160	--	--	796
AUG 15...	150	130	--	9.10	6.40	5.00	63
SEP 06...	960	560	960	46.0	23.0	0.450	814
29...	3.1	0.40	24	3.70	3.20	2.40	12

(<) Actual value is known to be less than the value shown.

WEST CONEWAGO CREEK BASIN

01573810 BRUSH RUN, SITE 2, NEAR McSHERRYSTOWN, PA

LOCATION.--Lat 39°49'06", long 77°06'26", Adams County, Hydrologic Unit 02050306, on right bank 10 ft downstream of private culvert, 700 ft downstream from Spook Lane (Township Route 485), 1.0 mi upstream from small left-bank tributary, and 4.7 mi west of McSherrystown.

DRAINAGE AREA.--0.38 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder and wooden control. Elevation of gage is 600 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 175 ft³/s, July 20, 1989, gage height, 3.56 ft, from rating curve extended above 40 ft³/s on basis of computation of peak flow through culvert and over road; no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 60 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 1	1830	78	2.89	July 20	2345	*175	*3.56
May 6	0030	93	3.02				

No flow many days during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.34	.31	.41	.55	1.1	13	<.01	<.01	.10	<.01
2	.00	.00	.26	.41	.37	.52	.72	9.6	<.01	<.01	.02	<.01
3	.13	.00	.22	.46	.66	.51	.88	.94	<.01	<.01	.01	<.01
4	.00	.00	.22	.38	.70	.53	.78	.63	<.01	.08	.01	<.01
5	.00	.22	.18	.27	.54	.68	1.0	14	<.01	.29	.01	<.01
6	.00	.27	.18	.25	.51	2.6	1.2	27	<.01	.88	.01	<.01
7	.00	.27	.18	.25	.46	1.1	.75	1.2	.02	.45	.01	<.01
8	.00	.25	.15	2.1	.37	.81	.65	.25	.01	.03	<.01	<.01
9	.00	.19	.15	1.9	.26	.72	.64	.15	.25	<.01	<.01	<.01
10	.00	.16	.15	.82	e.00	.89	.54	2.5	.18	<.01	<.01	<.01
11	.00	.12	.13	.90	.26	2.8	.48	1.5	.01	<.01	.03	<.01
12	.00	.00	.10	6.5	.26	7.7	.44	.43	<.01	<.01	.02	<.01
13	.00	.31	e.00	2.4	.23	1.9	.39	.15	<.01	1.5	.01	<.01
14	.00	.29	e.00	.74	.49	1.4	.36	.33	.01	.26	.01	<.01
15	.00	.21	e.00	9.5	.87	1.3	.51	9.9	<.01	.02	.00	.00
16	.00	.20	e.00	1.3	1.3	.80	.58	21	.16	4.3	<.01	<.01
17	.00	.32	e.00	.74	.74	.65	.51	1.6	1.6	.37	<.01	<.01
18	.00	.28	e.00	.64	.61	5.9	.48	.29	.08	.04	<.01	<.01
19	.00	.34	.00	.59	.55	1.4	.58	.13	.01	.02	4.9	<.01
20	.00	1.6	.14	.53	.60	.97	.48	.07	.02	6.5	.01	<.01
21	.00	.63	.18	.37	6.1	1.8	.41	.05	.03	12	<.01	<.01
22	.45	.37	.12	<.01	6.5	.85	.39	.01	.03	.05	<.01	<.01
23	.30	.31	.32	<.01	1.4	.69	.38	.05	1.3	.01	<.01	<.01
24	.32	.28	.78	.34	.73	16	.37	.88	.10	.02	<.01	<.01
25	.28	.26	.75	.37	.55	1.8	.35	.18	.02	.03	<.01	<.01
26	.28	.28	.45	.44	.60	.93	.34	.10	<.01	.02	<.01	.02
27	.25	.35	.39	.47	.64	.76	.33	.08	<.01	.01	<.01	<.01
28	.22	.68	.47	.38	.59	.68	.30	.02	2.5	.01	<.01	<.01
29	.20	.41	.45	.38	---	.63	.44	<.01	.13	<.01	<.01	<.01
30	.11	.43	.34	.50	---	1.5	.54	<.01	.02	.03	<.01	<.01
31	.00	---	.30	.47	---	1.9	---	<.01	---	.40	<.01	---
TOTAL	2.54	9.03	6.95	34.73	27.30	61.27	16.92	106.07	6.59	27.40	5.32	0.30
MEAN	.082	.30	.22	1.12	.97	1.98	.56	3.42	.22	.88	.17	.010
MAX	.45	1.6	.78	9.5	6.5	16	1.2	27	2.5	12	4.9	.02
MIN	.00	.00	.00	.01	.00	.51	.30	.01	.01	.01	.00	.00
CFSM	.22	.79	.59	2.95	2.57	5.20	1.48	9.00	.58	2.33	.45	.03
IN.	.25	.88	.68	3.40	2.67	6.00	1.66	10.38	.65	2.68	.52	.03

CAL YR 1988 TOTAL 150.55 MEAN .41 MAX 16 MIN .00 CFSM 1.08 IN. 14.74
WTR YR 1989 TOTAL 304.42 MEAN .83 MAX 27 MIN .00 CFSM 2.19 IN. 29.80

e Estimated.

< Actual value is known to be less than the value shown.

WEST CONEWAGO CREEK BASIN

01573810 BRUSH RUN, SITE 2, NEAR McSHERRYSTOWN, PA--Continued

WATER-QUALITY RECORDS

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

INSTRUMENTATION.--Automatic sediment pumping sampler since November 1985.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (μ S/CM)	NITRO- GEN, NO ₂ +NO ₃ TOTAL (MG/L AS N)	NITRO- GEN, NO ₂ +NO ₃ DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)
OCT								
17...	1110	0.0	3130	0.200	0.180	110	100	150
21...	2145	0.39	--	8.60	--	23.0	--	49
21...	2345	0.83	--	9.50	--	4.90	--	8.2
22...	0530	0.44	--	12.0	--	3.40	--	5.8
22...	1130	0.50	--	15.0	--	4.10	--	5.7
NOV								
14...	1210	0.30	476	9.20	9.40	0.770	0.740	2.5
19...	1030	0.25	--	7.10	--	4.70	--	13
19...	1900	0.44	--	7.20	--	1.40	--	5.2
20...	0330	1.1	--	6.30	--	1.30	--	5.0
20...	0500	0.87	--	6.40	--	0.730	--	3.3
20...	0800	1.2	--	6.30	--	1.20	--	4.3
20...	0900	2.0	--	6.60	--	1.10	--	4.9
20...	1100	3.0	--	7.10	--	0.900	--	4.5
20...	1230	3.4	--	7.40	--	0.940	--	5.2
20...	1700	1.3	--	8.80	--	0.580	--	4.5
20...	2400	0.96	--	10.0	--	0.670	--	3.7
21...	0930	0.66	--	14.0	--	0.900	--	4.8
DEC								
14...	1415	0.18	--	14.0	14.0	7.70	7.30	10
JAN								
08...	1030	0.79	758	23.0	--	3.70	--	4.9
08...	1500	2.5	474	7.50	--	2.10	--	3.5
08...	2000	4.5	465	7.10	--	1.90	--	3.8
08...	2230	5.5	371	6.40	--	0.880	--	2.6
09...	0100	4.4	319	5.70	--	0.740	--	2.2
09...	0600	2.1	314	5.90	--	0.640	--	1.8
09...	1000	1.5	328	6.30	--	0.620	--	1.9
14...	0800	0.66	268	7.70	--	1.90	--	2.8
14...	2130	0.79	254	6.90	--	1.80	--	2.6
14...	2300	1.3	233	5.60	--	1.40	--	2.4
14...	2400	2.6	206	5.10	--	1.10	--	3.3
15...	0100	10	173	3.50	--	0.420	--	1.4
15...	0200	23	146	2.90	--	0.300	--	1.6
15...	0230	26	147	3.10	--	0.310	--	1.2
15...	0400	20	159	3.60	--	0.290	--	1.4
15...	0530	14	150	3.90	--	0.270	--	1.2
15...	0800	8.3	185	4.40	--	0.260	--	1.6
15...	1000	6.6	184	5.10	--	0.290	--	1.4
15...	1330	10	213	5.90	--	0.320	--	1.6
15...	1430	10	206	6.00	--	0.290	--	1.8
17...	1450	0.75	243	5.70	--	0.340	--	1.3
27...	1300	0.44	486	7.40	7.40	2.50	2.40	3.2
FEB								
16...	0001	1.5	304	3.20	--	0.600	--	2.6
16...	0200	1.6	--	2.60	--	0.530	--	2.4
16...	0500	1.5	--	2.40	--	0.440	--	1.8
16...	0730	1.4	241	2.50	--	0.400	--	1.9
16...	1230	1.2	--	3.30	--	0.550	--	2.1
16...	1500	1.2	--	3.70	--	0.500	--	1.9
16...	1630	1.1	--	3.60	--	0.450	--	1.9
21...	1100	1.6	--	5.60	--	2.30	--	3.4
21...	1200	13	--	5.60	--	0.900	--	5.8
21...	1300	23	--	4.60	--	0.470	--	4.1
21...	1330	25	--	4.20	--	0.460	--	3.6
21...	1530	16	--	4.20	--	0.300	--	2.4
21...	1800	7.7	--	4.30	--	0.290	--	2.3
21...	2300	3.4	--	4.30	--	0.240	--	2.0
22...	0400	2.5	--	5.30	--	0.350	--	2.1
22...	0630	5.0	--	6.10	--	0.460	--	2.8
22...	1000	15	--	4.80	--	0.270	--	2.5
22...	1400	9.8	--	4.60	--	0.230	--	2.3
22...	2300	2.6	--	4.20	--	0.270	--	1.7
28...	0830	0.57	277	4.70	4.20	0.580	0.560	2.2

WEST CONEWAGO CREEK BASIN

01573810 BRUSH RUN, SITE 2, NEAR McSHERRYSTOWN, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT							
17...	140	150	12.0	9.10	6.00	146	--
21...	--	58	11.0	--	--	--	--
21...	--	18	3.90	--	--	--	--
22...	--	18	1.60	--	--	--	--
22...	--	21	1.60	--	--	--	--
NOV							
14...	2.5	12	0.330	0.330	0.290	13	0.01
19...	--	20	4.00	--	--	--	--
19...	--	12	1.60	--	--	--	--
20...	--	11	2.10	--	--	--	--
20...	--	9.7	1.30	--	--	--	--
20...	--	11	2.00	--	--	--	--
20...	--	12	2.00	--	--	--	--
20...	--	12	2.10	--	--	--	--
20...	--	13	2.10	--	--	--	--
20...	--	13	1.30	--	--	--	--
20...	--	14	1.30	--	--	--	--
21...	--	19	1.30	--	--	--	--
DEC							
14...	10	24	0.820	0.630	0.540	--	--
JAN							
08...	--	28	1.10	--	--	32	0.07
08...	--	11	1.20	--	--	57	0.38
08...	--	11	1.50	--	--	45	0.55
08...	--	9.0	1.20	--	--	42	0.62
09...	--	7.9	0.950	--	--	31	0.37
09...	--	7.7	0.810	--	--	31	0.18
09...	--	8.2	0.760	--	--	32	0.13
14...	--	10	1.10	--	--	37	0.07
14...	--	9.5	0.980	--	--	31	0.07
14...	--	8.0	1.10	--	--	--	--
14...	--	8.4	1.30	--	--	108	0.76
15...	--	4.9	0.860	--	--	172	4.6
15...	--	4.5	0.680	--	--	148	9.2
15...	--	4.3	0.720	--	--	101	7.1
15...	--	5.0	0.690	--	--	64	3.5
15...	--	5.1	0.640	--	--	51	1.9
15...	--	6.0	0.630	--	--	52	1.2
15...	--	6.5	0.700	--	--	42	0.75
15...	--	7.5	0.790	--	--	87	2.3
15...	--	7.8	0.770	--	--	79	2.1
17...	--	7.0	0.510	--	--	27	0.05
27...	3.0	11	0.570	0.490	0.430	7	0.01
FEB							
16...	--	5.8	0.560	--	--	50	0.20
16...	--	5.0	0.490	--	--	--	--
16...	--	4.2	0.470	--	--	--	--
16...	--	4.4	0.440	--	--	15	0.06
16...	--	5.4	0.510	--	--	--	--
16...	--	5.6	0.470	--	--	--	--
16...	--	5.5	0.460	--	--	--	--
21...	--	9.0	2.70	--	--	--	--
21...	--	11	1.70	--	--	--	--
21...	--	8.7	1.20	--	--	--	--
21...	--	7.8	1.00	--	--	--	--
21...	--	6.6	0.800	--	--	--	--
21...	--	6.6	0.650	--	--	--	--
21...	--	6.3	0.540	--	--	--	--
22...	--	7.4	0.630	--	--	--	--
22...	--	8.9	0.880	--	--	--	--
22...	--	7.3	0.730	--	--	--	--
22...	--	6.9	0.640	--	--	--	--
22...	--	5.9	0.490	--	--	--	--
28...	2.2	6.9	0.190	0.150	0.140	7	0.01

WEST CONEWAGO CREEK BASIN

01573810 BRUSH RUN, SITE 2, NEAR McSHERRYSTOWN, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (μ S/CM)	NITRO- GEN, NO ₂ +NO ₃ TOTAL (MG/L AS N)	NITRO- GEN, NO ₂ +NO ₃ DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)
MAR								
17...	1000	0.66	335	5.00	5.00	0.240	0.240	1.1
30...	1815	3.2	--	3.70	--	0.430	--	2.0
30...	1945	4.4	--	1.80	--	0.430	--	2.0
30...	2345	2.6	--	1.40	--	0.120	--	1.7
31...	0500	1.8	--	1.20	--	0.250	--	1.7
APR								
14...	1405	0.34	434	6.10	6.10	0.840	0.840	1.8
MAY								
01...	1700	24	--	4.80	--	0.910	--	3.3
01...	1830	78	--	1.20	--	1.30	--	2.8
01...	1930	66	--	0.800	--	1.50	--	4.4
01...	2000	49	--	0.810	0.810	1.50	1.50	4.8
01...	2230	23	--	1.00	--	2.60	--	5.3
02...	0230	24	--	1.30	--	3.60	--	6.0
02...	0400	30	--	1.30	--	2.40	--	5.2
02...	0430	30	--	1.20	1.20	2.30	2.20	5.4
02...	0800	12	--	0.900	--	3.00	--	5.6
02...	1030	6.4	--	1.00	--	2.80	--	6.2
02...	1200	5.5	--	0.900	--	2.20	--	4.1
02...	1430	3.0	--	1.00	--	0.520	--	2.0
02...	1800	1.9	--	1.00	--	0.240	--	1.7
05...	0700	0.54	--	1.40	--	1.00	--	3.2
05...	0730	0.54	--	0.800	--	0.590	--	2.5
05...	0930	0.75	--	0.510	0.510	0.200	0.190	1.7
05...	1030	0.87	--	0.400	--	0.180	--	1.6
06...	0001	91	--	0.400	--	0.250	--	1.4
06...	0030	93	--	0.400	--	0.310	--	1.4
06...	0100	92	--	0.410	0.410	0.360	0.340	1.7
06...	0130	90	--	0.300	--	0.440	--	1.4
06...	0200	87	--	0.300	--	0.690	--	1.7
06...	0230	76	--	0.300	--	0.730	--	1.8
06...	0500	30	--	0.400	--	1.30	--	2.7
06...	0730	7.9	--	0.500	--	2.50	--	3.8
06...	1500	1.1	--	0.700	--	0.710	--	1.8
06...	1800	53	--	1.10	--	0.730	--	2.3
06...	1900	56	--	0.500	0.370	0.530	0.370	1.6
06...	1930	53	--	0.300	--	0.390	--	2.0
06...	2000	42	--	0.300	--	0.370	--	2.0
06...	2230	11	--	0.400	--	0.390	--	1.6
07...	0100	4.4	--	0.400	--	0.490	--	1.8
07...	0700	1.1	--	0.700	--	1.70	--	2.9
22...	0925	0.0	396	13.0	13.0	1.10	1.10	2.4
JUN								
20...	0920	0.03	1140	9.90	9.90	46.0	44.0	83
JUL								
15...	0700	0.03	250	6.50	--	3.20	--	12
15...	0730	0.03	276	11.0	--	5.40	--	14
15...	0930	0.03	230	8.30	--	3.90	--	9.7
15...	1300	0.02	224	6.60	--	6.70	--	8.3
16...	0700	1.0	283	3.90	--	3.90	--	8.1
20...	0355	2.1	--	8.00	--	0.100	--	3.5
20...	0525	5.3	--	7.60	--	0.700	--	4.1
20...	0655	5.0	--	5.80	--	0.050	--	3.1
20...	1055	1.1	--	5.20	--	0.050	--	2.6
20...	2225	0.25	--	3.70	--	0.040	--	2.0
20...	2255	4.0	--	3.70	--	0.040	--	2.8
20...	2325	159	--	3.40	--	0.050	--	3.1
20...	2355	151	--	3.20	--	0.070	--	2.1
21...	0025	106	--	3.90	--	0.030	--	2.5
21...	0225	47	--	3.60	--	0.030	--	2.2
21...	0455	8.8	--	3.00	--	0.620	--	2.8
21...	0955	0.79	--	1.90	--	5.30	--	5.0
24...	0945	0.03	1310	7.50	6.20	63.0	53.0	110
AUG								
15...	0940	0.02	--	7.80	7.80	14.0	14.0	21
SEP								
06...	1040	0.0	683	0.700	0.150	56.0	56.0	990
29...	1215	0.0	647	11.0	5.30	1.60	1.60	2.9

WEST CONEWAGO CREEK BASIN

01573810 BRUSH RUN, SITE 2, NEAR McSHERRYSTOWN, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
MAR							
17...	0.80	6.1	0.150	0.150	0.140	7	0.01
30...	--	5.7	0.920	--	--	--	--
30...	--	3.8	1.10	--	--	--	--
30...	--	3.1	0.660	--	--	--	--
31...	--	2.9	0.460	--	--	--	--
APR							
14...	1.7	7.9	0.160	0.120	0.100	8	0.01
MAY							
01...	--	8.1	4.00	--	--	--	--
01...	--	4.0	1.50	--	--	--	--
01...	--	5.2	1.70	--	--	--	--
01...	2.4	5.6	1.50	1.10	0.980	--	--
01...	--	6.3	1.20	--	--	--	--
02...	--	7.3	1.30	--	--	--	--
02...	--	6.5	1.30	--	--	--	--
02...	4.1	6.6	1.40	1.10	1.00	--	--
02...	--	6.5	1.10	--	--	--	--
02...	--	7.2	0.910	--	--	51	0.88
02...	--	5.0	0.790	--	--	42	0.62
02...	--	3.0	0.590	--	--	78	0.63
02...	--	2.7	0.360	--	--	37	0.19
05...	--	4.6	1.20	--	--	83	0.12
05...	--	3.3	1.10	--	--	321	0.47
05...	1.3	2.2	0.880	0.630	0.580	--	--
05...	--	2.0	0.850	--	--	--	--
06...	--	1.8	0.770	--	--	208	51
06...	--	1.8	0.730	--	--	231	58
06...	1.7	2.1	0.850	0.630	0.560	--	--
06...	--	1.7	0.800	--	--	258	63
06...	--	2.0	1.20	--	--	219	51
06...	--	2.1	0.840	--	--	190	39
06...	--	3.1	0.670	--	--	138	11
06...	--	4.3	0.660	--	--	101	2.2
06...	--	2.5	0.430	--	--	46	0.14
06...	--	3.4	1.00	--	--	2080	298
06...	2.1	2.1	1.00	0.620	0.550	--	--
06...	--	2.3	1.00	--	--	414	59
06...	--	2.3	0.910	--	--	298	34
06...	--	2.0	0.640	--	--	142	4.2
07...	--	2.2	0.560	--	--	103	1.2
07...	--	3.6	0.520	--	--	49	0.15
22...	2.4	15	0.430	0.380	0.320	7	--
JUN							
20...	83	93	5.20	5.20	4.20	35	0.00
JUL							
15...	--	18	2.60	--	--	399	0.03
15...	--	25	1.50	--	--	260	0.02
15...	--	18	0.870	--	--	152	0.01
15...	--	15	0.680	--	--	65	0.00
16...	--	12	0.710	--	--	61	0.16
20...	--	12	3.20	--	--	--	--
20...	--	12	2.60	--	--	--	--
20...	--	8.9	1.30	--	--	--	--
20...	--	7.8	0.790	--	--	--	--
20...	--	5.7	0.570	--	--	--	--
20...	--	6.5	0.500	--	--	--	--
20...	--	6.5	0.510	--	--	--	--
20...	--	5.3	0.490	--	--	--	--
21...	--	6.4	0.500	--	--	--	--
21...	--	5.8	0.480	--	--	--	--
21...	--	5.8	0.530	--	--	--	--
21...	--	6.9	0.920	--	--	--	--
24...	62	120	14.0	11.0	8.10	57	0.00
AUG							
15...	19	29	2.00	1.50	1.20	43	0.00
SEP							
06...	990	990	7.60	4.30	0.130	125	--
29...	2.8	14	0.350	0.350	0.340	1	--

WEST CONEWAGO CREEK BASIN

01573810 BRUSH RUN, SITE 2, NEAR McSHERRYSTOWN, PA--Continued

INSTANTANEOUS SUSPENDED-SEDIMENT DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (μ S/CM)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT					
17...	1110	0.0	3130	146	--
21...	2245	0.70	--	83	0.16
22...	0045	0.79	--	38	0.08
22...	0430	0.44	--	14	0.02
22...	0630	0.39	--	15	0.02
NOV					
05...	1715	0.30	621	754	0.61
05...	1745	0.25	620	310	0.21
05...	1815	0.25	509	144	0.10
05...	2245	0.54	339	51	0.07
13...	0915	0.30	602	103	0.08
13...	1245	0.61	319	26	0.04
14...	1210	0.30	476	13	0.01
19...	1100	0.25	--	30	0.02
20...	0130	0.57	--	45	0.07
20...	0300	0.83	--	132	0.30
20...	0730	1.3	--	50	0.18
20...	1030	2.6	--	83	0.58
20...	1200	2.8	--	73	0.55
20...	1300	3.6	--	78	0.76
20...	1730	1.2	--	43	0.14
20...	2130	1.1	--	42	0.12
21...	0800	0.66	--	28	0.05
DEC					
24...	0915	0.30	650	550	0.45
24...	1100	0.96	390	134	0.35
24...	1330	0.92	530	66	0.16
24...	1830	1.1	470	76	0.23
25...	0430	0.87	410	25	0.06
25...	1430	0.70	494	18	0.03
25...	1800	0.66	--	19	0.03
JAN					
08...	1030	0.79	758	32	0.07
08...	1500	2.5	474	57	0.38
08...	2000	4.5	465	45	0.55
08...	2230	5.5	371	42	0.62
09...	0100	4.4	319	31	0.37
09...	0600	2.1	314	31	0.18
09...	1000	1.5	328	32	0.13
14...	0800	0.66	268	37	0.07
14...	2130	0.79	254	31	0.07
14...	2330	1.6	233	86	0.37
14...	2400	2.6	206	108	0.76
15...	0100	10	173	172	4.6
15...	0200	23	146	148	9.2
15...	0230	26	147	101	7.1
15...	0400	20	159	64	3.5
15...	0530	14	150	51	1.9
15...	0800	8.3	185	52	1.2
15...	1000	6.6	184	42	0.75
15...	1330	10	213	87	2.3
15...	1430	10	206	79	2.1
17...	1450	0.75	243	27	0.05
27...	1300	0.44	486	7	0.01
FEB					
16...	0001	1.5	304	50	0.20
16...	0430	1.5	263	28	0.11
16...	0730	1.4	241	15	0.06
16...	1300	1.2	249	11	0.04
16...	1530	1.1	261	11	0.03
21...	1130	5.5	340	544	8.1
21...	1230	19	284	570	29
21...	1430	22	238	249	15
21...	1500	19	236	211	11
21...	2230	3.6	234	38	0.37
22...	0430	2.7	267	38	0.28
22...	0700	6.2	288	79	1.3
22...	0930	14	252	82	3.1
22...	1430	9.1	240	43	1.1
22...	2230	2.7	228	22	0.16
28...	0830	0.57	277	7	0.01

WEST CONEWAGO CREEK BASIN

01573810 BRUSH RUN, SITE 2, NEAR McSHERRYSTOWN, PA--Continued

INSTANTANEOUS SUSPENDED-SEDIMENT DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (μ S/CM)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
MAR					
06...	0710	5.7	339	148	2.3
06...	0840	5.6	307	164	2.5
06...	1240	3.5	279	62	0.59
06...	1610	1.5	260	43	0.17
11...	1800	8.3	330	71	1.6
11...	2030	6.0	212	92	1.5
11...	2330	4.0	230	30	0.32
12...	0300	2.2	250	22	0.13
12...	0700	2.0	265	19	0.10
12...	1430	24	280	79	5.1
12...	1700	20	220	422	23
12...	1800	16	205	227	9.8
17...	1000	0.66	335	7	0.01
18...	1400	5.6	299	2090	32
18...	1430	13	287	2090	73
18...	1600	35	--	1120	106
18...	1630	30	227	968	78
18...	1900	11	236	273	8.1
18...	2400	3.0	247	74	0.60
21...	0115	2.0	330	51	0.28
21...	1115	1.9	306	18	0.09
24...	0530	4.8	332	91	1.2
24...	0800	33	266	241	21
24...	1000	36	197	337	33
24...	1300	29	157	160	13
24...	1530	23	159	117	7.3
24...	1800	15	159	93	3.8
24...	2300	4.7	192	44	0.56
25...	0400	2.5	183	21	0.14
25...	0900	1.8	171	15	0.07
APR					
14...	1405	0.34	434	8	0.01
MAY					
01...	1730	49	--	311	41
01...	1900	76	--	558	115
01...	2300	22	--	121	7.2
02...	0330	31	--	123	10
02...	1030	6.4	--	51	0.88
02...	1200	5.5	--	42	0.62
02...	1430	3.0	--	78	0.63
02...	1800	1.9	--	37	0.19
05...	0700	0.54	--	83	0.12
05...	0730	0.54	--	321	0.47
06...	0001	91	--	208	51
06...	0030	93	--	231	58
06...	0130	90	--	258	63
06...	0200	87	--	219	51
06...	0230	76	--	190	39
06...	0500	30	--	138	11
06...	0730	7.9	--	101	2.2
06...	1500	1.1	--	46	0.14
06...	1800	53	--	2080	298
06...	1930	53	--	414	59
06...	2000	42	--	298	34
06...	2230	11	--	142	4.2
07...	0100	4.4	--	103	1.2
07...	0700	1.1	--	49	0.15
10...	0200	1.6	--	115	0.50
10...	0400	5.3	--	149	2.1
10...	0630	3.8	--	73	0.75
10...	1400	1.5	--	40	0.16
10...	2130	2.5	--	35	0.24
11...	0715	2.1	--	34	0.19
14...	2200	2.6	202	843	5.9
14...	2300	1.7	200	386	1.8
15...	1830	22	192	173	10
16...	0001	42	169	192	22
16...	0500	28	149	134	10
16...	1500	32	132	98	8.5
16...	2000	19	134	59	3.0
16...	2300	12	133	62	2.0
22...	0925	0.0	396	7	--
24...	0500	0.92	282	163	0.40
24...	0600	2.3	226	212	1.3
24...	0930	1.8	230	107	0.52
24...	1700	0.66	198	30	0.05

WEST CONEWAGO CREEK BASIN

01573810 BRUSH RUN, SITE 2, NEAR McSHERRYSTOWN, PA--Continued

INSTANTANEOUS SUSPENDED-SEDIMENT DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (μ S/CM)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
JUN					
09...	1412	0.50	--	110	0.15
09...	1645	0.54	--	62	0.09
09...	1845	2.0	--	319	1.7
09...	1945	0.83	--	179	0.40
10...	0115	0.10	--	54	0.02
10...	1245	0.04	--	42	0.00
11...	0315	0.03	--	19	0.00
16...	2200	0.34	--	39	0.04
17...	0230	1.5	--	200	0.81
17...	0330	5.0	--	265	3.6
17...	0500	4.7	--	143	1.8
17...	0600	6.2	--	131	2.2
17...	1030	1.4	--	50	0.19
18...	0430	0.13	--	19	0.01
20...	0920	0.03	1140	35	0.00
JUL					
06...	1830	1.0	501	151	0.41
06...	2030	5.5	345	101	1.5
06...	2100	5.2	313	86	1.2
07...	0900	0.54	399	30	0.04
13...	0300	0.01	206	32	0.00
13...	0530	0.11	220	27	0.01
13...	0915	0.66	262	36	0.06
13...	1130	2.8	248	89	0.67
13...	1230	7.4	202	78	1.6
15...	0700	0.03	250	399	0.03
15...	0730	0.03	276	260	0.02
15...	0930	0.03	230	152	0.01
15...	1300	0.02	224	65	0.00
16...	0700	1.0	283	61	0.16
24...	0945	0.03	1310	57	0.00
AUG					
15...	0940	0.02	--	43	0.00
SEP					
06...	1040	0.0	683	125	--
29...	1215	0.0	647	1	--

WEST CONEWAGO CREEK BASIN

01573811 BRUSH RUN, SITE 3, NEAR McSHERRYSTOWN, PA

LOCATION.--Lat 39°49'11", long 77°06'25", Adams County, Hydrologic Unit 02050306, 400 ft downstream from Brush Run, Site 2, near McSherrystown (station 01573810), 410 ft downstream of private culvert, 1.0 mi upstream from small left-bank tributary, and 4.7 mi west of McSherrystown.

DRAINAGE AREA.--0.44 mi².

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (μS/CM)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
OCT								
17...	1120	0.0	4830	1.50	--	35.0	--	48
NOV								
14...	1205	0.30	648	8.70	5.80	2.20	2.10	5.0
JAN								
27...	1335	0.44	593	9.40	8.40	5.60	4.50	6.6
FEB								
28...	0830	0.57	313	5.60	4.30	1.30	1.10	2.8
MAR								
17...	0930	0.66	386	5.90	5.90	0.690	0.650	1.9
APR								
14...	1335	0.34	672	7.60	7.40	5.80	5.70	9.4
MAY								
22...	0920	0.0	627	7.30	5.70	4.40	1.60	10
JUN								
20...	1010	0.03	766	7.90	7.90	6.80	6.50	12
JUL								
24...	1040	0.03	1660	0.410	0.410	20.0	19.0	40
AUG								
15...	0955	0.02	--	1.50	1.40	56.0	56.0	67
SEP								
06...	1120	0.0	--	1.50	1.50	18.0	18.0	32
29...	1140	0.0	--	0.700	0.650	8.60	7.40	14

DATE	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT							
17...	36	50	7.70	6.70	--	198	--
NOV							
14...	4.5	14	1.10	1.10	0.960	10	0.01
JAN							
27...	5.4	16	0.910	0.690	0.630	4	0.00
FEB							
28...	2.3	8.4	0.380	0.330	0.280	21	0.03
MAR							
17...	1.1	7.8	0.320	0.280	0.260	9	0.02
APR							
14...	8.2	17	0.730	0.620	0.540	7	0.01
MAY							
22...	7.7	18	0.990	0.990	0.820	9	--
JUN							
20...	11	20	1.30	1.20	0.990	9	0.00
JUL							
24...	24	40	5.30	3.90	3.60	26	0.00
AUG							
15...	67	69	4.00	2.90	2.40	40	0.00
SEP							
06...	25	34	3.20	2.30	1.80	38	--
29...	12	15	2.40	1.50	1.10	10	--

WEST CONEWAGO CREEK BASIN

01573815 BRUSH RUN, SITE 4, NEAR McSHERRYSTOWN, PA

LOCATION.--Lat 39°49'35", long 77°06'08", Adams County, Hydrologic Unit 02050306, 0.5 mi downstream of private culvert, 0.5 mi upstream from small left-bank tributary, and 4.9 mi west of McSherrystown.

DRAINAGE AREA.--0.63 mi² (revised).

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (μS/CM)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)
NOV 14...	1220	0.30	632	5.80	5.80	0.990	0.990	4.6
JAN 27...	1320	0.44	702	21.0	21.0	2.10	2.10	3.6
FEB 28...	0810	0.57	353	11.0	10.0	0.450	0.460	2.1
MAR 17...	0920	0.66	388	12.0	12.0	0.110	0.110	1.1
APR 14...	1320	0.34	543	14.0	13.0	3.40	3.40	4.5
MAY 22...	0935	0.0	408	14.0	14.0	2.50	1.60	4.5
JUN 20...	1020	0.03	444	15.0	15.0	5.10	4.90	7.1
JUL 24...	1020	0.03	560	14.0	11.0	8.00	8.00	12
AUG 15...	0935	0.02	--	25.0	25.0	0.220	0.220	1.7
SEP 06...	1140	0.0	--	27.0	1.40	87.0	85.0	150
29...	1145	0.0	--	7.90	6.60	0.950	0.950	2.8

DATE	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHOROUS TOTAL (MG/L AS P)	PHOS-PHOROUS DIS-SOLVED (MG/L AS P)	PHOS-PHOROUS ORTHO, DIS-SOLVED (MG/L AS P)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
NOV 14...	3.0	10	2.20	1.70	1.40	13	0.01
JAN 27...	2.9	25	0.620	0.510	0.460	4	0.00
FEB 28...	2.1	13	0.310	0.260	0.220	3	0.00
MAR 17...	1.1	13	0.250	0.210	0.190	6	0.01
APR 14...	4.3	18	0.420	0.330	0.290	13	0.01
MAY 22...	3.6	18	0.600	0.560	0.490	7	--
JUN 20...	7.1	22	0.690	0.690	0.640	8	0.00
JUL 24...	12	26	1.50	1.42	1.30	6	0.00
AUG 15...	1.7	27	0.490	0.450	0.430	17	0.00
SEP 06...	4.6	180	4.30	2.70	0.090	38	--
29...	2.7	11	0.720	0.650	0.590	9	--

WEST CONEWAGO CREEK BASIN

01574000 WEST CONEWAGO CREEK NEAR MANCHESTER, PA

LOCATION.--Lat 40°04'56", long 76°43'13", York County, Hydrologic Unit 02050306, on left bank 500 ft upstream from bridge on State Highway 181, 0.6 mi downstream from Little Conewago Creek, and 1.5 mi north of Manchester.

DRAINAGE AREA.--510 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1928 to current year. Monthly discharge only for October 1928, published in WSP 1302. Prior to October 1931, published as Conewago Creek near Manchester.

REVISED RECORDS.--WSP 741: Drainage area. WSP 1502: 1930, 1936.

GAGE.--Water-stage recorder. Datum of gage is 263.68 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Occasional slight regulation since October 1959 by Conewago Lake about 13 miles upstream, capacity, 3,570 acre-ft. Pa. Department of Environmental Resources satellite telemeter at station.

AVERAGE DISCHARGE.--61 years, 586 ft³/s, 15.60 in/yr. The figure published in the 1988 report was in error; the correct figure is 60 years, 585 ft³/s, 15.58 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 96,200 ft³/s, Sept. 26, 1975, gage height, 32.11 ft, from floodmarks, from rating curve extended above 45,000 ft³/s on basis of slope-area measurement at gage height 30.26 ft; minimum, 1.9 ft³/s, Oct. 13, 1941; minimum gage height, 1.03 ft, Aug. 9, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 10,800 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 6	1445	*17,800	*14.21	May 17	0230	14,200	12.60

Minimum daily discharge, 36 ft³/s, Oct. 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	65	189	125	243	316	1470	248	430	431	513	184
2	47	67	130	120	207	275	1010	3180	382	364	382	149
3	49	63	114	131	188	252	816	1840	335	318	288	130
4	47	61	103	118	195	237	807	823	320	434	240	119
5	44	67	95	101	235	237	811	725	333	3790	202	109
6	41	88	89	120	204	355	869	12800	318	2020	177	102
7	45	158	85	e94	e170	651	827	11000	325	1090	241	98
8	50	250	84	176	e140	483	741	2890	392	734	331	91
9	44	163	82	448	e120	381	e620	1670	400	538	228	97
10	39	125	80	684	103	377	e540	2220	739	447	173	98
11	38	107	67	449	113	509	e480	4590	534	384	157	94
12	38	96	56	514	120	1060	e440	2790	336	328	160	89
13	38	105	e52	1330	115	1490	e420	1730	286	1840	165	83
14	39	135	57	868	125	937	e400	1260	281	1890	225	79
15	36	177	84	1230	147	804	e420	1920	450	979	389	78
16	37	207	112	1660	277	760	e500	10700	2600	1310	220	81
17	38	186	77	871	402	586	e440	10900	2260	1220	177	97
18	39	173	62	565	290	498	e360	3620	1510	793	151	124
19	43	163	61	462	226	775	e390	2030	755	592	899	142
20	41	465	56	400	207	599	358	1390	e500	636	2780	159
21	45	1180	62	322	366	689	327	1130	e380	950	670	220
22	148	664	62	239	1400	790	285	934	1130	781	436	203
23	133	360	82	216	1630	532	266	817	3920	551	351	161
24	216	272	112	207	810	1300	244	1830	1940	438	284	144
25	137	229	195	206	483	4240	228	1790	1370	372	237	129
26	99	204	316	214	402	1670	221	965	812	344	205	157
27	83	193	219	218	410	1110	221	927	595	298	185	183
28	83	217	179	231	373	899	213	803	950	295	171	208
29	79	237	161	207	---	776	205	605	1000	259	171	151
30	68	236	148	196	---	786	208	512	565	227	269	117
31	64	---	137	229	---	1560	---	466	---	328	201	---
TOTAL	2000	6713	3408	12951	9701	25934	15137	89105	26148	24981	11278	3876
MEAN	64.5	224	110	418	346	837	505	2874	872	806	364	129
MAX	216	1180	316	1660	1630	4240	1470	12800	3920	3790	2780	220
MIN	36	61	52	94	103	237	205	248	281	227	151	78
CFSM	.13	.44	.22	.82	.68	1.64	.99	5.64	1.71	1.58	.71	.25
IN.	.15	.49	.25	.94	.71	1.89	1.10	6.50	1.91	1.82	.82	.28

CAL YR 1988 TOTAL 141136 MEAN 386 MAX 3970 MIN 31 CFSM .76 IN. 10.29
WTR YR 1989 TOTAL 231232 MEAN 634 MAX 12800 MIN 36 CFSM 1.24 IN. 16.87

e Estimated.

WEST CONEWAGO CREEK BASIN

01574000 WEST CONEWAGO CREEK NEAR MANCHESTER, PA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1956, 1962-73, 1975-77, 1985 to current year.

REMARKS.--Samples collected from bridge on State Highway 181.

COOPERATION.--Water-quality samples collected by Susquehanna River Basin Commission and analyzed by the Pa. Department of Environmental Resources.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE FIELD (μ S/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NO ₂ +NO ₃ TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)
OCT										
05...	0845	47	300	7.91	16.0	0.840	0.040	0.040	0.44	0.44
NOV										
16...	1120	213	325	--	9.0	1.22	0.040	0.040	0.23	--
DEC										
06...	0900	95	270	8.00	2.5	1.92	0.020	0.020	0.25	0.25
JAN										
05...	0915	60	300	7.90	1.0	3.24	0.030	0.030	0.29	0.24
FEB										
01...	0915	262	285	8.50	5.0	4.32	0.030	0.030	--	--
21...	1410	340	275	8.30	7.0	3.24	0.060	0.060	--	0.21
21...	1840	679	273	7.35	7.0	3.60	0.120	0.110	1.4	0.53
22...	0115	585	235	7.25	7.0	2.88	0.120	0.100	0.54	0.24
22...	0400	987	230	7.55	9.0	2.76	0.090	0.060	0.54	0.21
22...	0700	1170	245	7.55	6.0	2.76	0.080	0.060	0.50	0.21
22...	0955	1270	245	7.05	7.0	3.00	0.090	0.080	0.60	0.39
22...	1200	1480	240	6.90	6.0	3.00	0.090	0.090	0.80	0.63
22...	1650	1740	230	6.90	7.0	3.00	0.140	0.110	0.96	0.34
23...	1030	1780	240	7.35	6.0	4.20	0.200	0.200	0.90	0.53
24...	0935	848	237	7.00	5.5	3.96	0.160	0.140	1.1	1.1
25...	1120	492	230	7.30	2.5	3.84	0.180	0.180	1.2	1.1
26...	0830	415	250	7.60	3.5	4.32	0.110	0.100	0.89	0.85
MAR										
16...	1300	779	220	7.30	9.5	4.68	0.040	0.040	0.45	0.30
APR										
28...	1320	213	270	7.80	17.0	1.25	<0.020	<0.020	--	--
MAY										
02...	0910	2770	200	8.10	--	1.23	0.060	0.050	1.8	0.63
02...	1015	3330	200	--	16.0	1.39	0.090	0.070	1.4	0.21
02...	1105	4000	210	8.00	--	1.39	0.090	0.080	2.1	0.73
02...	2220	4040	179	8.00	--	1.63	0.140	0.140	2.2	1.2
03...	0550	2340	179	7.80	--	1.74	0.170	0.170	1.8	1.2
03...	1135	1660	184	7.90	--	1.69	0.190	0.170	1.6	1.0
03...	1330	1530	180	7.65	17.0	1.74	0.190	0.190	1.1	0.60
04...	1040	827	198	7.50	17.0	1.54	0.120	0.120	0.64	0.49
05...	0925	616	200	7.90	15.0	1.69	0.080	0.080	0.83	0.75
06...	0610	7970	156	7.20	--	1.47	0.100	0.100	2.2	0.32
06...	1100	3010	140	6.70	16.0	1.34	0.180	0.130	3.5	1.1
07...	1030	13800	140	7.30	14.0	1.39	0.190	0.090	2.0	0.89
08...	1425	2580	170	7.45	14.0	2.51	0.080	0.060	0.61	0.41
09...	1410	1600	185	7.50	15.0	2.77	0.070	0.070	0.40	0.25
10...	1320	1830	175	7.70	11.0	2.90	0.070	0.060	0.37	0.20
11...	1345	4470	180	7.70	13.0	1.84	0.080	0.060	0.70	0.24
12...	1325	2620	185	7.45	14.0	2.20	0.080	0.060	1.0	0.74
14...	1305	1250	205	7.50	17.0	3.04	0.040	0.020	0.31	0.28
16...	1120	11400	158	7.20	15.0	1.47	0.070	0.070	1.2	0.46
17...	1400	12800	150	7.20	16.0	1.61	0.060	0.050	0.66	0.42
18...	1120	3450	168	7.40	20.0	2.20	0.030	0.030	0.44	0.34
19...	1420	1960	180	7.50	23.0	2.64	0.030	0.020	0.76	0.57
21...	1330	1120	190	7.60	24.0	3.04	0.020	0.020	0.38	0.33
23...	1230	806	200	7.70	19.0	4.22	0.020	0.020	0.26	0.26
JUN										
16...	1220	3440	195	7.80	21.0	1.89	0.080	0.080	2.4	1.1
17...	1110	1780	220	7.90	20.0	2.24	0.070	0.060	1.4	0.73
19...	1345	718	220	7.90	23.0	2.20	0.060	0.060	0.61	0.43
23...	0955	3610	170	7.40	21.0	1.80	<0.020	<0.020	--	--
24...	1235	1670	175	7.30	24.0	1.69	<0.020	<0.020	--	--
25...	1205	1900	210	7.40	19.0	2.09	0.020	0.020	0.80	0.39
26...	1240	786	200	7.60	25.0	2.13	0.050	0.050	0.75	0.49
27...	1000	604	215	7.10	25.0	2.51	0.090	0.040	0.52	0.31
JUL										
05...	1108	3620	145	7.40	22.0	1.91	0.130	0.130	2.7	1.1
06...	0940	1890	160	7.10	20.0	1.65	0.080	0.060	1.1	0.52
13...	1245	2180	150	7.60	20.0	1.94	0.070	0.070	1.4	0.41
13...	2010	3850	160	7.50	21.0	1.69	0.150	0.150	1.7	0.81
14...	0915	2100	165	7.45	20.0	1.54	0.100	0.100	1.2	0.83
15...	0945	935	210	7.40	20.0	2.24	0.070	0.070	0.40	0.16
19...	0940	598	255	7.70	21.0	2.24	0.020	0.020	0.27	--
AUG										
17...	1000	180	230	8.20	25.0	1.69	<0.050	<0.050	--	--
SEP										
12...	1415	88	320	6.90	24.0	1.61	0.020	0.020	0.37	0.26
22...	1400	198	340	8.00	24.0	2.13	0.020	0.020	0.79	0.66

< Actual value is known to be less than the value shown.

WEST CONEWAGO CREEK BASIN

01574000 WEST CONEWAGO CREEK NEAR MANCHESTER, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, AM- MONIA + ORGANIC (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT									
05...	0.48	0.48	1.3	0.230	0.180	0.081	4.7	17	2.2
NOV									
16...	0.27	<0.20	1.5	0.070	0.050	0.027	5.3	9	5.2
DEC									
06...	0.27	0.27	2.2	0.050	0.050	0.026	4.8	6	1.5
JAN									
05...	0.32	0.27	3.6	0.050	0.040	0.025	4.5	1	0.16
FEB									
01...	<0.20	<0.20	--	0.060	0.050	0.051	3.5	6	4.2
21...	0.27	0.27	--	0.100	0.100	0.024	3.9	19	17
21...	1.5	0.64	5.1	0.350	0.150	0.053	6.9	244	447
22...	0.66	0.34	3.5	0.260	0.110	0.054	6.2	156	246
22...	0.63	0.27	3.4	0.250	0.090	0.054	6.0	150	400
22...	0.58	0.27	3.3	0.180	0.090	0.034	5.4	107	338
22...	0.69	0.47	3.7	0.140	0.100	0.043	6.6	89	305
22...	0.89	0.72	3.9	0.150	0.110	0.054	6.8	100	400
22...	1.1	0.45	4.1	0.200	0.120	0.051	9.0	134	630
23...	1.1	0.73	5.3	0.250	0.130	0.073	8.2	78	375
24...	1.3	1.2	5.3	0.180	0.170	0.110	7.2	33	76
25...	1.4	1.3	5.2	0.180	0.160	0.120	6.5	19	25
26...	1.0	0.95	5.3	0.150	0.140	0.048	5.6	8	9.0
MAR									
16...	0.49	0.34	5.2	0.120	0.090	0.062	4.6	17	74
APR									
28...	0.88	0.34	2.1	0.080	0.040	0.011	4.5	14	7.2
MAY									
02...	1.9	0.68	3.1	0.310	0.070	0.026	8.4	332	2480
02...	1.5	0.28	2.9	0.190	0.140	0.100	8.5	351	3160
02...	2.2	0.81	3.6	0.370	0.090	0.054	9.5	347	3750
02...	2.3	1.3	3.9	0.330	0.180	0.120	15	166	1810
03...	2.0	1.4	3.7	0.360	0.220	0.140	16	114	720
03...	1.8	1.2	3.5	0.320	0.200	0.130	15	77	345
03...	1.3	0.79	3.0	0.320	0.160	0.130	9.7	25	103
04...	0.76	0.61	2.3	0.200	0.140	0.120	5.8	34	76
05...	0.91	0.83	2.6	0.150	0.150	0.038	6.9	25	42
06...	2.3	0.42	3.8	0.730	0.090	0.063	9.2	707	15200
06...	3.7	1.2	5.0	0.320	0.160	0.094	12	649	5270
07...	2.2	0.98	3.6	0.370	0.170	0.089	11	421	15700
08...	0.69	0.47	3.2	0.190	0.100	0.076	6.4	66	460
09...	0.47	0.32	3.2	0.110	0.080	0.055	5.1	29	125
10...	0.44	0.26	3.3	0.140	0.070	0.031	4.4	49	242
11...	0.78	0.30	2.6	0.210	0.140	0.092	8.2	84	1010
12...	1.1	0.80	3.3	0.170	0.120	0.079	6.0	39	276
14...	0.35	0.30	3.4	0.100	0.080	0.029	3.9	90	304
16...	1.3	0.53	2.8	0.260	0.180	0.110	13	293	9020
17...	0.72	0.47	2.3	0.220	0.170	0.130	9.0	98	3390
18...	0.47	0.37	2.7	0.180	0.110	0.060	5.7	43	401
19...	0.79	0.59	3.4	0.090	0.070	0.036	4.5	28	148
21...	0.40	0.35	3.4	0.080	0.060	0.030	3.8	21	64
23...	0.28	0.28	4.5	0.080	0.060	0.011	3.4	15	33
JUN									
16...	2.5	1.2	4.4	0.570	0.200	0.037	8.2	423	3930
17...	1.5	0.79	3.7	0.240	0.140	0.060	6.2	109	524
19...	0.67	0.49	2.9	0.210	0.150	0.090	7.0	41	79
23...	1.9	0.69	3.7	0.500	0.180	0.130	8.6	373	3640
24...	1.4	0.69	3.1	0.350	0.130	0.068	6.0	144	649
25...	0.82	0.41	2.9	0.320	0.130	0.087	4.7	148	759
26...	0.80	0.54	2.9	0.190	0.140	0.098	6.7	69	146
27...	0.61	0.35	3.1	0.200	0.120	0.080	5.4	44	72
JUL									
05...	2.8	1.2	4.7	1.10	0.240	0.028	15	923	9020
06...	1.2	0.58	2.9	0.360	0.160	0.090	10	169	862
13...	1.5	0.48	3.4	0.580	0.170	0.100	10	471	2770
13...	1.9	0.96	3.6	0.400	0.100	0.063	8.3	310	3220
14...	1.3	0.93	2.8	0.320	0.160	0.100	10	124	703
15...	0.47	0.23	2.7	0.150	0.100	0.059	5.6	38	96
19...	0.29	<0.20	2.5	0.140	0.080	0.042	4.3	32	52
AUG									
17...	1.4	0.39	3.1	0.200	0.120	0.090	4.7	31	15
SEP									
12...	0.39	0.28	2.0	0.130	0.090	0.072	3.9	21	5.0
22...	0.81	0.68	2.9	0.150	0.110	0.100	4.0	21	10

(<) Actual value is known to be less than the value shown.

CODORUS CREEK BASIN

165

01574500 CODORUS CREEK AT SPRING GROVE, PA

LOCATION.--Lat 39°52'43", long 76°51'13", York County, Hydrologic Unit 02050306, on right bank 15 ft downstream from county highway bridge No. 132 on Township Route 452, 0.1 mi downstream from small left-bank tributary, 0.3 mi downstream from east boundary of Spring Grove, and 7.0 mi southwest of York.

DRAINAGE AREA.--75.5 mi².

PERIOD OF RECORD.--May 1929 to September 1964, November 1965 to current year. Monthly discharge only for some periods, published in WSP 1302. October 1962 to September 1968, published as West Branch Codorus Creek at Spring Grove.

REVISED RECORDS.--WSP 1302: 1929-30. WSP 1502: 1932(M), 1933, 1935(M), 1940, 1942(M), 1943, 1944-46(M), 1951(M), 1955(m).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 430.86 ft above National Geodetic Vertical Datum of 1929. Prior to Jan. 18, 1930, nonrecording gage, Jan. 18, 1930, to Sept. 9, 1941, water-stage recorder at site 0.9 mi upstream, and Sept. 10, 1941, to Sept. 30, 1964, water-stage recorder at site 0.8 mi upstream, all at datum 5.64 ft higher. Nov. 1 to Dec. 20, 1965, nonrecording gage about 40 ft downstream at unknown datum, Dec. 21, 1965, to Mar. 31, 1966, nonrecording gage at present site and datum.

REMARKS.--No estimated daily discharges. Records good. Daily discharges include water diverted around station by waste treatment plant of P.H. Glatfelter Company. Flow regulated by dam on Lake Marburg (station 01574390) about 20 miles upstream. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemeter at station.

COOPERATION.--Records of change in lake contents and daily diversion furnished by P.H. Glatfelter Company.

AVERAGE DISCHARGE.--58 years (1929-64, 1966-89), 78.1 ft³/s, 14.05 in/yr, adjusted for diversion since March 1961, and for storage since 1966.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,400 ft³/s, June 22, 1972, gage height, 15.57 ft, from floodmark in gage shelter, from rating curve extended above 1,400 ft³/s on basis of computations of peak discharge at dam at gage height 6.80 ft and at peak flow; no flow for part of Oct. 26, 1947; minimum daily, 0.6 ft³/s, Sept. 4, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,240 ft³/s, May 6, gage height, 5.90 ft; minimum daily, 36 ft³/s, Mar. 5, April 23, 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	46	51	42	42	39	53	55	56	46	50	51
2	51	44	50	42	42	41	45	134	60	47	53	51
3	56	44	49	43	44	42	49	50	49	50	51	48
4	48	44	48	43	44	41	55	41	51	75	49	48
5	48	51	48	41	40	36	62	74	45	71	50	50
6	47	54	46	41	42	64	66	754	51	109	61	51
7	47	40	48	42	43	42	52	339	80	66	70	50
8	46	42	46	62	43	41	47	158	50	56	56	52
9	44	43	47	66	41	39	45	107	67	47	51	53
10	43	44	47	48	42	42	41	140	56	46	49	49
11	45	44	44	40	42	46	38	148	41	43	52	50
12	44	43	43	61	41	57	40	102	39	47	50	53
13	44	53	43	58	41	50	40	80	45	112	47	54
14	45	47	42	41	44	43	39	71	47	68	49	55
15	46	43	45	130	46	43	44	98	45	81	49	51
16	45	43	42	60	48	40	45	434	45	73	52	59
17	44	45	44	41	43	40	39	344	47	57	49	54
18	45	44	42	39	39	70	39	179	46	51	48	49
19	46	44	42	38	39	57	45	130	45	48	189	56
20	44	122	41	41	45	46	39	102	50	57	68	89
21	49	60	43	39	78	58	38	84	54	85	54	62
22	80	44	43	42	89	43	38	70	57	52	46	43
23	38	51	38	43	58	39	36	76	114	50	50	52
24	45	53	57	43	49	206	36	246	86	53	50	56
25	44	52	46	40	49	141	38	108	49	58	50	53
26	44	53	43	42	54	82	39	99	54	59	53	74
27	44	54	41	44	51	64	38	84	51	55	50	54
28	44	66	43	42	46	54	36	63	105	58	49	47
29	43	55	43	41	---	48	38	57	55	54	50	49
30	42	57	41	46	---	60	37	54	46	55	92	50
31	44	---	42	45	---	78	---	53	---	70	53	---
TOTAL	1447	1525	1388	1486	1325	1792	1297	4534	1686	1899	1790	1613
MEAN	46.7	50.8	44.8	47.9	47.3	57.8	43.2	146	56.2	61.3	57.7	53.8
MAX	80	122	57	130	89	206	66	754	114	112	189	89
MIN	38	40	38	38	39	36	36	41	39	43	46	43
MEAN‡	12.2	27.0	14.1	43.5	47.3	108	65.4	269	87.3	63.6	40.6	27.1
CFSM‡	.16	.36	.19	.58	.63	1.43	.87	3.56	1.16	.84	.54	.36
IN.‡	.18	.40	.22	.67	.66	1.65	.97	4.10	1.29	.97	.62	.40

CAL YR 1988 TOTAL 22389 MEAN 61.2 MAX 446 MIN 24 MEAN‡ 51.5 CFSM‡ .68 IN.‡ 9.28
WTR YR 1989 TOTAL 21782 MEAN 59.7 MAX 754 MIN 36 MEAN‡ 67.4 CFSM‡ .89 IN.‡ 12.13

‡ Adjusted for change in contents in Lake Marburg.

CODORUS CREEK BASIN

01575000 SOUTH BRANCH CODORUS CREEK NEAR YORK, PA

LOCATION.--Lat 39°55'14", long 76°44'57", York County, Hydrologic Unit 02050306, on right bank 100 ft downstream from dam at pumping station of York Water Co., 200 ft upstream from Conrail bridge, 0.5 mi upstream from mouth, and 3.0 mi southwest of York.

DRAINAGE AREA.--117 mi².

PERIOD OF RECORD.--October 1927 to current year. Monthly discharge only prior to October 1931, published in WSP 1302. May 1925 to September 1927 (gage heights and discharge measurements only), in reports of Pennsylvania Department of Forests and Waters.

REVISED RECORDS.--WSP 1302: 1931. WSP 1502: 1932-33, 1941, 1948.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 373.03 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 21, 1928, nonrecording gage at site 180 ft upstream at datum 5.00 ft higher. June 22, 1972, to Jan. 12, 1973, nonrecording gage at present site.

REMARKS.--No estimated daily discharges. Records good. Regulation at low flow by pumping station upstream. Some regulation during entire period of record by reservoirs of York Water Co., combined capacity, 8,092 acre-ft. Diversion upstream for municipal supply of city of York. Several measurements of water temperature were made during the year.

COOPERATION.--Records of diversion provided by York Water Co.

AVERAGE DISCHARGE.--62 years, 135 ft³/s, 15.67 in/yr, adjusted for diversion and, since October 1966, for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,700 ft³/s, June 22, 1972, gage height, 22.62 ft, from floodmarks, from rating curve extended above 6,300 ft³/s on basis of contracted-opening measurement at gage height 17.97 ft, and contracted-opening and flow-over-road measurement at peak flow; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,810 ft³/s, May 6, gage height, 8.09 ft; minimum daily, 1.2 ft³/s, Oct. 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	6.9	30	30	36	66	196	77	166	61	60	14
2	13	15	24	32	35	61	151	268	150	62	49	14
3	31	11	25	33	40	61	157	125	137	57	41	19
4	14	10	24	26	53	54	149	84	165	109	37	18
5	6.3	22	20	12	42	63	131	135	125	211	37	10
6	3.8	94	20	24	36	154	179	2880	153	191	37	14
7	1.2	37	20	33	34	123	142	1130	174	124	61	13
8	7.4	18	17	69	30	77	126	548	159	76	37	13
9	7.1	16	20	93	22	72	127	402	156	78	29	13
10	3.9	15	21	52	23	78	111	465	185	68	28	13
11	4.4	13	20	42	31	93	102	510	121	57	34	12
12	3.2	6.9	6.2	76	27	127	96	384	113	53	43	12
13	2.9	31	6.8	129	27	123	88	334	107	139	43	10
14	2.4	45	17	73	39	108	84	303	112	123	35	14
15	1.5	21	15	223	51	108	99	318	110	83	35	12
16	2.6	18	12	149	98	96	115	712	112	103	48	16
17	4.9	33	7.7	99	57	90	86	996	141	104	31	36
18	4.1	36	13	81	46	116	77	580	103	73	24	22
19	4.8	23	13	68	45	164	86	455	89	65	92	20
20	3.9	257	13	63	42	115	73	388	86	123	67	76
21	2.0	197	19	50	111	168	71	327	95	88	39	114
22	204	62	32	45	234	132	62	293	97	77	35	70
23	43	40	28	46	181	116	65	303	111	69	35	44
24	23	38	56	43	118	368	60	577	184	58	25	42
25	21	37	87	40	96	382	56	316	93	53	20	27
26	12	32	44	42	102	262	56	286	79	54	19	61
27	10	30	32	44	98	223	56	273	72	48	25	43
28	16	77	32	37	77	190	53	229	124	49	24	27
29	7.0	48	36	40	---	173	60	206	86	39	24	24
30	15	36	26	41	---	180	72	193	66	46	41	18
31	11	---	29	41	---	199	---	179	---	77	21	---
TOTAL	488.2	1325.8	765.7	1876	1831	4342	2986	14276	3671	2618	1176	841
MEAN	15.7	44.2	24.7	60.5	65.4	140	99.5	461	122	84.5	37.9	28.0
MAX	204	257	87	223	234	382	196	2880	185	211	92	114
MIN	1.2	6.9	6.2	12	22	54	53	77	66	39	19	10
(†)	28.4	28.5	29.0	28.9	28.8	29.0	29.0	29.3	30.4	29.2	30.8	31.0
MEAN‡	44.1	72.7	53.7	89.4	94.2	169	128	490	152	114	687	590
CFSM‡	.38	.62	.46	.76	.81	1.44	1.09	4.19	1.30	.97	.59	.50
IN.‡	.44	.69	.53	.88	.84	1.66	1.22	4.83	1.45	1.12	.68	.56
CAL YR 1988	TOTAL 31905.56		MEAN 87.2	MAX 2010	MIN .86	MEAN‡ 116	CFSM‡ 1.00	IN.‡ 13.55				
WTR YR 1989	TOTAL 36196.7		MEAN 99.2	MAX 2880	MIN 1.2	MEAN‡ 129	CFSM‡ 1.10	IN.‡ 14.92				

† Diversion for municipal supply of city of York, equivalent in cubic feet per second.

‡ Adjusted for diversion and change in reservoir contents.

CODORUS CREEK BASIN

01575500 CODORUS CREEK NEAR YORK, PA

LOCATION.--Lat 39°56'46", long 76°45'20", York County, Hydrologic Unit 02050306, on left bank 0.5 mi upstream from bridge on Richland Avenue (SR 3054), 2.0 mi downstream from South Branch Codorus Creek, and 2.0 mi southwest of York.

DRAINAGE AREA.--222 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1940 to current year. October 1915 to August 1923, and August 1926 to September 1932 (gage heights and discharge measurements only), in reports of Pennsylvania Department of Forests and Waters. Published as "at York" 1915-32.

REVISED RECORDS.--WDR PA-83-2: 1982(M).

GAGE.--Water-stage recorder. Datum of gage is 356.39 ft above National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers bench mark). Prior to Sept. 30, 1932, nonrecording gage at site 1.6 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records good. Regulation at low flows by mills and pumping station of York Water Co. Diversion upstream for municipal supply of city of York. Flood flows regulated by Indian Rock Dam (station 01574700) and by 3 reservoirs, combined capacity, 65,650 acre-ft. U.S. Army Corps of Engineers satellite and landline telemeters at station.

COOPERATION.--Records of diversion provided by York Water Co.

AVERAGE DISCHARGE.--49 years, 244 ft³/s, 14.93 in/yr, adjusted for storage and diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,000 ft³/s, June 22, 1972, gage height, 26.36 ft, from floodmark in gage shelter, from rating curve extended above 6,600 ft³/s on basis of slope-area measurement at gage height 20.11 ft; minimum, 3.0 ft³/s, Oct. 25, 1966, gage height, 1.40 ft, result of upstream shutoff.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,330 ft³/s, May 6, gage height, 9.76 ft; minimum daily, 28 ft³/s, Sept. 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65	56	113	72	90	128	310	137	248	122	129	71
2	69	60	104	75	89	118	242	477	240	123	115	68
3	94	57	88	77	95	121	251	216	212	120	105	72
4	65	58	75	73	114	112	242	152	242	183	97	70
5	54	72	71	61	97	116	250	202	199	328	96	64
6	54	153	70	70	89	235	299	3030	225	303	101	73
7	53	80	71	74	85	194	244	1540	275	228	169	54
8	56	61	69	123	79	139	218	715	256	148	111	31
9	63	62	71	192	68	131	217	480	224	146	95	31
10	59	63	70	122	73	143	189	677	293	134	91	29
11	60	64	70	96	80	160	171	767	187	120	98	28
12	60	62	70	139	76	212	167	572	174	112	108	37
13	64	84	70	235	71	209	163	479	170	254	106	80
14	63	104	70	138	92	183	156	430	177	238	133	95
15	67	69	70	397	103	179	170	455	179	175	112	67
16	66	67	70	263	164	161	199	1170	184	191	119	69
17	63	80	70	177	118	152	160	1520	207	186	100	93
18	64	86	69	149	100	199	148	892	165	142	85	76
19	64	70	70	130	95	290	164	677	153	129	265	75
20	61	372	70	123	97	195	146	565	156	191	215	164
21	67	322	77	107	186	269	137	473	166	201	117	400
22	302	126	90	100	382	216	127	413	181	156	102	145
23	90	104	80	105	286	188	125	419	220	138	104	101
24	60	112	130	101	197	605	118	927	317	128	92	107
25	59	110	172	96	165	704	115	523	166	129	86	86
26	54	111	104	97	181	433	117	439	151	129	83	138
27	54	104	83	105	174	349	110	419	141	118	93	118
28	58	170	76	94	148	296	104	344	237	117	88	83
29	52	141	83	95	---	267	109	298	168	105	86	81
30	56	123	69	99	---	292	126	278	130	111	131	74
31	56	---	72	102	---	344	---	261	---	160	87	---
TOTAL	2172	3203	2537	3887	3594	7340	5294	19947	6043	5065	3519	2680
MEAN	70.1	107	81.8	125	128	237	176	643	201	163	114	89.3
MAX	302	372	172	397	382	704	310	3030	317	328	265	400
MIN	52	56	69	61	68	112	104	137	130	105	83	28
(†)	28.4	28.5	29.0	28.9	28.8	29.0	29.0	29.3	30.4	29.2	30.8	31.0
CFSM†	64.0	112	80.1	150	157	316	227	796	262	195	128	94.0
CFSM‡	.29	.50	.36	.68	.71	1.42	1.02	3.58	1.18	.88	.58	.42
IN.‡	.33	.56	.42	.78	.74	1.64	1.14	4.13	1.32	1.02	.67	.47

CAL YR 1988 TOTAL 61655 MEAN 168 MAX 2400 MIN 46 MEAN‡ 188 CFSM‡ .85 IN.‡ 11.53
WTR YR 1989 TOTAL 65281 MEAN 179 MAX 3030 MIN 28 MEAN‡ 216 CFSM‡ .97 IN.‡ 13.21

† Diversion for municipal supply of city of York, equivalent in cubic feet per second.
‡ Adjusted for diversion and change in reservoir contents.

CODORUS CREEK BASIN

01575500 CODORUS CREEK NEAR YORK, PA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964, 1966-67, 1985 to current year.

REMARKS.--Samples collected from Richland Avenue Bridge.

COOPERATION.--Water-quality samples collected by Susquehanna River Basin Commission and analyzed by the Pa. Department of Environmental Resources.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE FIELD (μ S/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)
OCT										
05...	1320	56	1250	7.90	17.0	1.54	0.060	0.020	1.2	1.0
NOV										
16...	0940	66	1270	--	12.0	1.44	0.060	0.050	1.3	0.25
DEC										
06...	1315	72	1000	8.00	8.0	1.86	0.050	0.050	1.1	0.94
JAN										
05...	1400	54	1000	7.90	4.0	1.62	0.040	0.040	1.0	0.86
FEB										
02...	0920	82	950	7.80	9.0	2.88	0.020	0.020	1.1	0.96
21...	1300	156	690	8.10	10.0	2.76	0.050	0.050	1.2	0.71
21...	1820	243	625	7.60	10.0	3.36	0.060	0.060	0.84	0.70
21...	2300	437	485	7.30	10.0	3.00	0.120	0.120	1.3	0.56
22...	0245	434	445	7.55	10.0	3.00	0.150	0.150	1.4	0.51
22...	0510	358	403	7.55	10.0	2.76	0.140	0.140	0.72	0.37
22...	1055	314	350	6.60	8.0	3.00	0.170	0.170	0.62	0.23
22...	1540	370	390	6.90	9.0	3.24	0.190	0.190	0.72	0.33
23...	1130	285	410	7.75	7.0	3.84	0.130	0.130	0.62	0.42
24...	1030	196	535	7.25	4.5	3.84	0.060	0.060	0.94	0.94
MAR										
16...	1245	164	498	8.40	12.0	4.44	0.020	0.020	0.80	0.62
APR										
28...	1130	104	840	7.60	17.0	3.17	<0.020	<0.020	--	--
MAY										
06...	0155	2090	285	7.20	--	2.77	0.170	0.160	5.2	0.40
06...	0503	3370	220	7.20	--	2.77	0.200	0.200	3.5	0.26
06...	0835	4300	174	7.20	--	2.77	0.200	0.170	2.1	0.25
08...	1310	687	265	7.85	14.0	4.22	0.100	0.100	0.40	0.32
09...	1250	458	255	7.65	15.0	4.22	0.120	0.100	0.28	0.12
10...	1145	531	240	7.50	11.0	4.22	0.100	0.100	0.33	0.23
11...	1250	783	285	7.45	14.0	3.72	0.080	0.080	0.27	0.15
12...	1215	575	295	7.50	14.0	4.22	0.050	0.050	0.79	0.67
14...	1140	424	320	7.50	17.0	4.49	0.060	0.060	0.41	0.28
16...	1000	1180	295	7.50	14.0	3.43	0.070	0.070	1.0	0.26
17...	1530	1370	225	7.50	19.0	3.70	0.080	0.050	0.59	0.33
18...	1000	924	240	7.60	19.0	4.22	0.040	0.040	0.35	0.28
19...	1145	720	265	7.20	21.0	4.36	0.020	0.020	0.80	0.52
23...	1325	402	355	7.50	17.0	4.49	0.030	0.030	0.34	0.34
JUN										
29...	1100	173	480	7.75	22.0	3.84	0.060	0.050	0.69	0.50
JUL										
05...	1640	215	376	7.60	--	3.04	0.030	0.030	0.57	0.29
19...	1040	127	460	8.30	21.0	3.83	0.040	0.040	0.50	0.50
AUG										
16...	1000	120	570	7.50	--	3.70	0.040	0.030	0.57	0.37
SEP										
12...	1240	43	380	6.80	22.0	2.90	0.030	0.030	0.25	0.20
22...	1310	136	710	7.70	24.0	2.09	0.050	0.050	0.92	0.40

< Actual value is known to be greater than the value shown.

CODORUS CREEK BASIN

01575500 CODORUS CREEK NEAR YORK, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT									
05...	1.2	1.0	2.8	0.100	0.070	0.050	35	15	2.3
NOV									
16...	1.4	0.30	2.8	0.100	0.060	0.045	39	13	2.3
DEC									
06...	1.2	0.99	3.0	0.080	0.070	0.051	6.6	7	1.4
JAN									
05...	1.1	0.90	2.7	0.050	0.030	0.026	40	4	0.58
FEB									
02...	1.1	0.98	4.0	0.060	0.030	0.020	27	9	2.0
21...	1.3	0.76	4.1	0.060	0.050	0.009	25	24	10
21...	0.90	0.76	4.3	0.200	0.060	0.004	18	80	52
21...	1.4	0.68	4.4	0.210	0.070	<0.002	13	171	202
22...	1.6	0.66	4.6	0.190	0.070	<0.002	12	193	226
22...	0.86	0.51	3.6	0.210	0.070	<0.002	10	120	116
22...	0.79	0.40	3.8	0.100	0.060	0.015	8.4	76	64
22...	0.91	0.52	4.1	0.120	0.070	0.003	9.6	62	62
23...	0.75	0.55	4.6	0.140	0.060	0.015	9.1	40	31
24...	1.0	1.0	4.8	0.060	0.060	0.015	11	16	8.5
MAR									
16...	0.82	0.64	5.3	0.080	0.040	0.012	9.6	11	4.9
APR									
28...	0.93	0.72	4.1	0.140	0.110	0.076	21	10	2.8
MAY									
06...	5.4	0.56	8.2	0.730	0.070	0.037	13	2020	11400
06...	3.7	0.46	6.5	0.800	0.020	0.011	9.8	1100	10000
06...	2.3	0.42	5.1	0.310	0.050	0.014	7.1	572	6640
08...	0.50	0.42	4.7	0.090	0.040	0.021	4.8	42	78
09...	0.40	0.22	4.6	0.090	0.040	0.010	4.3	33	41
10...	0.43	0.33	4.6	0.110	0.040	0.002	4.4	52	75
11...	0.35	0.23	4.1	0.080	0.050	0.008	5.6	51	108
12...	0.84	0.72	5.1	0.090	0.060	0.007	5.5	33	51
14...	0.47	0.34	5.0	0.070	0.050	0.010	5.5	34	39
16...	1.1	0.33	4.5	0.120	0.080	0.031	8.7	160	510
17...	0.67	0.38	4.4	0.090	0.070	0.031	5.1	76	281
18...	0.39	0.32	4.6	0.120	0.060	0.018	4.5	48	120
19...	0.82	0.54	5.2	0.050	0.030	0.005	5.0	38	74
23...	0.37	0.37	4.9	0.060	0.050	0.006	6.4	28	30
JUN									
29...	0.75	0.55	4.6	0.160	0.080	0.041	12	49	23
JUL									
05...	0.60	0.32	3.6	0.160	0.070	0.040	9.3	45	26
19...	0.54	0.54	4.4	0.100	0.070	0.006	5.6	16	5.5
AUG									
16...	0.61	0.40	4.3	0.140	0.110	0.072	10	23	7.5
SEP									
12...	0.28	0.23	3.2	0.100	0.060	0.033	4.2	18	2.1
22...	0.97	0.45	3.1	0.140	0.070	0.068	17	23	8.4

< Actual value is known to be less than the value shown.

CODORUS CREEK BASIN

01575585 CODORUS CREEK AT PLEASUREVILLE, PA

LOCATION.--Lat 40°01'07", long 76°41'36", York County, Hydrologic Unit 02050306, on right bank at downstream side of Sherman Street bridge on State Highway 24, 1.0 mi northeast of Pleasureville, 2.0 mi upstream from Dee Run, and 5.0 mi upstream from mouth.

DRAINAGE AREA.--267 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1984 to September 1989 (discontinued).

REVISED RECORDS.--WDR PA-86-2: 1985 (adjusted mean, (ft³/s)/mi², and inches).

GAGE.--Water-stage recorder. Elevation of gage is 330 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Regulation at low flows by mills and pumping station of York Water Co. Flood flows regulated by Indian Rock Dam (station 01574700) and by 3 reservoirs, combined capacity, 65,650 acre-ft.

AVERAGE DISCHARGE.--5 years, 254 ft³/s, 12.92 in/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,800 ft³/s, Feb. 12, 1985, gage height, 11.55 ft, from rating curve extended above 3,300 ft³/s on basis of slope-area measurement of peak flow; minimum, 38 ft³/s, July 18, 1988; minimum daily, 49 ft³/s, July 15, 17, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,370 ft³/s, May 6, gage height, 7.93 ft; minimum, 50 ft³/s, Sept. 11; minimum daily, 55 ft³/s, Sept. 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	86	89	154	125	123	176	409	278	316	140	219	127
2	101	104	136	129	118	160	330	637	299	138	187	127
3	136	93	132	126	138	163	340	317	265	134	171	119
4	112	94	129	132	153	151	339	227	293	308	158	117
5	88	193	126	102	127	161	350	416	271	407	155	113
6	80	237	122	115	117	314	385	3630	272	363	159	121
7	99	147	122	128	113	290	327	2090	329	304	309	112
8	83	97	119	248	106	198	295	1090	330	187	181	63
9	78	93	116	309	91	189	292	756	303	176	134	60
10	71	92	119	207	87	207	265	975	361	160	139	56
11	73	91	116	168	101	229	245	1110	248	141	145	55
12	75	80	97	269	100	282	235	748	226	130	168	59
13	77	176	94	375	92	281	231	595	226	581	158	98
14	77	170	110	244	139	252	219	528	239	409	238	163
15	76	114	110	583	162	250	243	675	274	281	241	110
16	73	102	104	361	237	227	267	1610	311	388	189	130
17	70	135	97	253	164	212	226	1920	287	326	153	142
18	76	141	101	214	134	310	197	1180	235	244	133	123
19	78	119	116	188	125	372	235	874	217	218	527	171
20	73	623	99	171	125	276	205	703	205	361	383	271
21	130	569	122	149	281	370	190	578	197	342	197	466
22	530	230	138	132	497	297	178	507	238	256	170	305
23	187	173	149	139	385	260	165	527	235	217	167	173
24	116	167	237	137	273	727	164	1200	357	215	148	162
25	111	159	257	129	224	899	160	659	202	201	136	132
26	92	151	159	134	245	516	162	530	174	216	132	261
27	87	151	132	145	240	430	157	509	164	211	136	187
28	88	274	144	126	202	381	151	427	304	189	133	133
29	86	197	145	122	---	346	160	372	214	173	248	124
30	83	162	120	155	---	457	179	348	154	177	252	122
31	84	---	123	138	---	467	---	325	---	301	155	---
TOTAL	3276	5223	4045	5953	4899	9850	7301	26341	7746	7894	6021	4402
MEAN	106	174	130	192	175	318	243	850	258	255	194	147
MAX	530	623	257	583	497	899	409	3630	361	581	527	466
MIN	70	80	94	102	87	151	151	227	154	130	132	55
MEAN‡	72	150	99	188	175	368	265	973	289	258	177	121
CFSM‡	.27	.56	.37	.70	.66	1.38	.99	3.64	1.08	.97	.66	.45
IN.‡	.31	.62	.43	.81	.69	1.59	1.10	4.20	1.21	1.12	.76	.50
CAL YR 1988	TOTAL 89026		MEAN 243	MAX 2820	MIN 49	MEAN‡ 234	CFSM‡ .88	IN.‡ 11.91				
WTR YR 1989	TOTAL 92951		MEAN 255	MAX 3630	MIN 55	MEAN‡ 262	CFSM‡ .98	IN.‡ 13.34				

‡ Adjusted for change in reservoir contents.

CODORUS CREEK BASIN

01575585 CODORUS CREEK AT PLEASUREVILLE, PA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1985 to September 1989 (discontinued).

INSTRUMENTATION.--Automatic pumping sampler since November 1986.

COOPERATION.--Water-quality samples collected by Susquehanna River Basin Commission and analyzed by Pa. Department of Environmental Resources.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE FIELD (μ S/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NO ₂ +NO ₃ TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)
OCT										
05...	1410	88	1000	7.20	18.0	2.28	2.04	2.04	1.5	1.5
NOV										
16...	1020	91	1080	--	12.0	2.64	1.14	1.14	1.7	1.6
DEC										
06...	1415	119	1000	7.80	8.0	2.28	1.14	1.14	1.3	1.1
JAN										
05...	1500	101	1000	7.60	3.0	2.40	0.510	0.510	1.5	1.2
15...	0330	618	470	7.70	--	2.28	0.120	0.120	2.2	0.39
15...	0430	585	395	7.70	--	2.00	0.120	0.120	1.4	0.39
15...	1206	486	525	7.70	--	2.76	0.100	0.100	1.2	0.51
15...	1400	574	570	7.70	--	2.88	0.120	0.120	1.2	0.53
15...	1600	624	580	7.80	--	3.00	0.170	0.170	1.9	0.73
15...	1800	591	570	7.80	--	3.00	0.120	0.120	1.9	0.73
15...	2100	513	500	7.80	--	3.00	0.180	0.180	1.7	0.43
16...	0100	444	420	7.80	--	3.24	0.180	0.180	0.82	0.36
16...	0825	386	440	7.70	--	3.24	0.160	0.160	0.82	0.35
FEB										
01...	1400	126	700	7.70	11.0	3.48	0.780	0.780	1.3	1.3
21...	1318	524	770	7.50	--	2.88	0.600	0.600	2.9	1.1
21...	1430	624	715	--	--	2.76	0.780	0.780	2.7	1.0
21...	1600	449	455	7.60	--	1.90	0.380	0.380	2.1	0.92
21...	1900	371	495	--	--	2.40	0.480	0.480	2.1	0.82
22...	0200	465	660	--	--	3.00	0.480	0.480	1.8	1.0
22...	0430	519	580	7.60	--	3.00	0.390	0.390	2.1	1.1
22...	0850	519	440	7.60	--	3.12	0.300	0.300	1.6	0.80
22...	1300	519	400	--	--	2.52	0.450	0.450	1.6	0.75
22...	1800	481	380	--	--	2.40	0.420	0.420	1.5	0.88
22...	2200	507	430	--	--	2.76	0.420	0.420	1.9	0.68
23...	0330	433	465	7.60	--	3.00	0.360	0.360	1.3	0.84
23...	0930	376	470	--	--	3.36	0.330	0.330	1.3	0.97
23...	2330	330	485	7.70	--	3.48	0.780	0.780	1.1	0.52
MAR										
16...	1330	235	545	7.65	12.0	4.56	0.750	0.720	0.39	0.35
24...	1529	884	365	7.90	--	2.77	0.110	0.080	1.7	0.51
24...	1715	1020	376	7.90	--	2.77	0.110	0.100	2.1	0.82
24...	1915	1270	410	7.90	--	3.04	0.130	0.110	2.7	0.71
24...	2115	1400	436	7.80	--	3.43	0.150	0.140	3.6	0.53
24...	2300	1410	392	7.90	--	3.43	0.160	0.150	4.3	0.77
25...	0115	1360	333	7.90	--	3.56	0.150	0.140	3.5	0.65
25...	0415	1210	320	7.90	--	3.43	0.160	0.140	2.4	0.73
25...	0845	965	299	7.90	--	3.56	0.200	0.170	1.9	0.77
25...	1555	722	322	7.80	--	2.51	0.120	0.100	1.4	0.85
APR										
28...	1230	143	775	7.70	17.0	3.30	0.090	0.090	1.1	0.81
MAY										
01...	2145	1080	566	7.90	--	3.17	0.580	0.580	3.6	0.82
01...	2300	971	335	8.00	--	1.87	0.280	0.280	2.7	0.69
02...	0420	475	333	8.00	--	2.00	0.250	0.220	1.9	0.65
02...	0600	746	455	7.90	--	2.51	0.170	0.150	1.7	0.65
02...	0800	965	479	7.80	--	2.77	0.160	0.160	1.5	0.66
02...	1004	872	415	7.90	--	2.64	0.280	0.220	1.9	0.63
02...	1230	722	483	7.80	--	2.60	0.240	0.200	1.6	0.42
02...	1430	619	505	7.80	--	2.77	0.260	0.260	1.8	0.94
02...	1630	579	332	7.80	--	2.90	0.250	0.230	1.5	0.73
02...	1830	557	373	7.80	--	3.17	0.240	0.240	1.7	1.1
02...	2030	524	359	7.90	--	3.17	0.240	0.220	1.5	0.88
02...	2330	438	362	7.80	--	3.17	0.210	0.210	1.6	0.89
03...	0430	371	397	7.80	--	3.17	0.210	0.200	1.3	0.74
03...	1235	320	410	7.80	--	3.43	0.190	0.170	1.2	0.83
05...	2230	1260	477	7.50	--	2.64	0.230	0.210	2.0	0.65
06...	0100	2680	228	7.40	--	1.50	0.210	0.190	8.2	0.52
06...	0246	3200	221	7.30	--	1.56	0.190	0.160	4.2	0.43
06...	0530	3620	254	7.20	--	2.38	0.190	0.180	4.4	0.66
06...	0900	4080	227	7.20	--	2.77	0.210	0.200	2.9	0.29
06...	1200	4360	187	7.30	--	2.64	0.230	0.230	2.4	0.23
06...	1430	3930	174	7.10	--	2.24	0.230	0.220	1.5	0.29
06...	1605	3550	182	7.20	--	2.64	0.200	0.200	1.2	0.24
06...	1930	3430	206	7.10	--	2.64	0.180	0.150	1.3	0.29
06...	2330	3380	208	7.20	--	2.64	0.150	0.150	1.3	0.24
07...	0430	2870	234	7.20	--	3.04	0.120	0.120	1.2	0.24
07...	1030	2180	226	7.20	--	2.51	0.140	0.130	1.1	0.26
07...	1745	1540	267	7.20	--	3.43	0.100	0.100	0.59	0.24

CODORUS CREEK BASIN

01575585 CODORUS CREEK AT PLEASUREVILLE, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT									
05...	3.6	3.5	5.8	0.180	0.120	0.086	22	11	2.6
NOV									
16...	2.9	2.7	5.5	0.180	0.100	0.071	27	18	4.4
DEC									
06...	2.5	2.3	4.7	0.160	0.130	0.089	5.7	8	2.6
JAN									
05...	2.0	1.8	4.4	0.090	0.060	0.050	24	7	1.9
15...	2.3	0.51	4.6	0.500	0.070	0.021	43	276	461
15...	1.5	0.51	3.5	0.420	0.070	0.024	9.0	196	310
15...	1.3	0.61	4.1	0.250	0.070	0.028	11	103	135
15...	1.3	0.65	4.2	0.290	0.080	0.033	12	119	184
15...	2.1	0.90	5.1	0.400	0.070	0.030	16	188	317
15...	2.0	0.85	5.0	0.380	0.060	0.017	15	191	305
15...	1.9	0.61	4.9	0.360	0.060	0.021	14	157	217
16...	1.0	0.54	4.2	0.240	0.050	0.018	7.5	110	132
16...	0.98	0.51	4.2	0.200	0.070	0.018	9.3	88	92
FEB									
01...	2.1	2.0	5.6	0.180	0.160	0.120	18	13	4.4
21...	3.5	1.7	6.4	0.570	0.070	0.012	18	349	494
21...	3.5	1.8	6.3	0.570	0.110	0.079	16	298	502
21...	2.5	1.3	4.4	0.470	0.070	0.051	11	241	292
21...	2.6	1.3	5.0	0.360	0.070	0.036	12	180	180
22...	2.3	1.5	5.3	0.280	0.070	0.029	15	125	157
22...	2.5	1.5	5.5	0.330	0.060	0.023	15	140	196
22...	1.9	1.1	5.0	0.390	0.090	0.053	13	144	202
22...	2.1	1.2	4.6	0.280	0.080	0.043	12	117	164
22...	1.9	1.3	4.3	0.300	0.070	0.017	8.5	102	132
22...	2.3	1.1	5.1	0.280	0.080	0.035	9.6	95	130
23...	1.7	1.2	4.7	0.260	0.080	0.031	9.3	79	92
23...	1.6	1.3	5.0	0.210	0.080	0.033	9.1	65	66
23...	1.9	1.3	5.4	0.160	0.080	0.032	8.4	30	27
MAR									
16...	1.1	1.1	5.7	0.110	0.070	0.031	9.4	20	13
24...	1.8	0.59	4.6	0.270	0.070	0.039	9.4	349	833
24...	2.2	0.92	5.0	0.390	0.070	0.040	12	250	688
24...	2.8	0.82	5.8	0.580	0.070	0.035	15	362	1240
24...	3.8	0.67	7.2	0.740	0.060	0.032	16	484	1830
24...	4.5	0.92	7.9	0.400	0.060	0.025	18	568	2160
25...	3.7	0.79	7.3	0.760	0.060	0.023	14	501	1840
25...	2.6	0.87	6.0	0.610	0.060	0.021	14	374	1220
25...	2.1	0.94	5.7	0.380	0.060	0.022	9.9	229	597
25...	1.5	0.95	4.0	0.250	0.060	0.035	8.5	122	238
APR									
28...	1.2	0.90	4.5	0.110	0.060	0.035	16	28	11
MAY									
01...	4.2	1.4	7.4	1.30	0.310	0.250	14	510	1490
01...	3.0	0.97	4.9	0.510	0.170	0.084	9.4	393	1030
02...	2.2	0.87	4.2	0.430	0.090	0.058	11	316	405
02...	1.9	0.80	4.4	0.310	0.090	0.062	11	229	461
02...	1.7	0.82	4.5	0.450	0.110	0.094	12	260	677
02...	2.2	0.85	4.8	0.430	0.080	0.028	9.5	257	605
02...	1.8	0.62	4.4	0.330	0.080	0.020	10	233	454
02...	2.1	1.2	4.9	0.360	0.080	0.043	12	191	319
02...	1.7	0.96	4.6	0.290	0.090	0.054	10	153	239
02...	1.9	1.3	5.1	0.310	0.130	0.080	8.2	138	208
02...	1.7	1.1	4.9	0.260	0.080	0.041	7.7	125	177
02...	1.8	1.1	5.0	0.230	0.090	0.022	7.0	107	127
03...	1.5	0.94	4.7	0.240	0.090	0.060	9.1	85	85
03...	1.4	1.0	4.8	0.170	0.070	0.023	6.7	51	44
05...	2.2	0.86	4.8	0.420	0.150	0.130	10	416	1420
06...	8.4	0.71	9.9	0.380	0.060	0.030	15	2690	19500
06...	4.4	0.59	6.0	0.630	0.090	0.054	13	1320	11400
06...	4.6	0.84	7.0	1.30	0.070	0.039	14	1330	13000
06...	3.1	0.49	5.9	0.520	0.060	0.019	10	824	9080
06...	2.6	0.46	5.2	0.410	0.060	0.018	8.5	560	6590
06...	1.7	0.51	3.9	0.550	0.060	0.024	9.5	367	3890
06...	1.4	0.44	4.0	0.290	0.060	0.004	8.8	275	2640
06...	1.5	0.44	4.1	0.360	0.070	0.025	9.1	328	3040
06...	1.5	0.39	4.1	0.380	0.070	0.034	8.8	296	2700
07...	1.3	0.36	4.3	0.330	0.080	0.048	8.0	272	2110
07...	1.2	0.39	3.7	0.260	0.080	0.047	8.0	244	1440
07...	0.69	0.34	4.1	0.260	0.060	0.033	6.2	157	653

CODORUS CREEK BASIN

01575585 CODORUS CREEK AT PLEASUREVILLE, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE FIELD (μ S/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)
MAY										
10...	1140	811	288	--	--	3.83	0.090	0.090	0.35	0.17
16...	2130	2080	250	7.60	--	2.90	0.150	0.150	0.75	0.19
16...	2300	2140	248	7.70	--	2.90	0.140	0.130	0.83	0.34
17...	0100	2160	260	7.50	--	3.04	0.160	0.150	0.94	0.37
17...	0300	2260	258	7.60	--	3.17	0.160	0.160	0.74	0.36
17...	0500	2320	230	7.60	--	3.17	0.150	0.140	0.85	0.40
17...	0700	2280	230	7.70	--	3.17	0.120	0.120	0.88	0.35
17...	0900	2200	240	7.60	--	3.17	0.130	0.130	0.69	0.34
17...	1100	2100	245	7.70	--	3.17	0.140	0.140	0.76	0.38
17...	1300	1970	255	7.80	--	3.43	0.180	0.180	0.64	0.26
17...	1500	1860	255	7.60	--	3.56	0.260	0.260	0.61	0.23
19...	1300	884	310	7.40	23.0	4.49	0.030	0.030	0.87	0.54
23...	1425	552	390	7.25	17.0	4.36	0.090	0.080	0.37	0.28
JUN										
29...	1155	205	455	7.80	22.0	4.60	0.110	0.100	0.51	0.32
JUL										
05...	1120	459	337	7.80	--	3.40	0.150	0.130	0.78	0.31
16...	1230	740	311	7.50	--	3.63	0.120	0.120	0.98	0.17
16...	1417	574	252	7.50	--	2.90	0.130	0.120	0.67	0.14
20...	1410	325	390	7.85	23.0	3.04	0.030	0.030	0.46	--
AUG										
07...	0045	596	840	7.80	--	3.56	0.140	0.140	1.1	0.73
07...	0230	428	580	7.50	--	3.17	0.200	0.200	1.3	0.56
07...	1230	300	635	7.70	--	3.30	0.090	0.080	0.67	0.42
07...	1630	257	690	7.80	--	3.17	0.090	0.090	2.7	0.62
07...	2115	228	655	7.70	--	3.43	0.130	0.130	1.2	0.84
14...	1500	140	745	8.00	--	3.04	0.120	0.120	0.98	0.59
14...	1745	642	735	8.00	--	3.17	0.120	0.120	2.3	0.88
14...	1945	497	570	7.90	--	3.04	0.260	0.260	2.2	0.65
14...	2300	355	520	7.90	--	2.51	0.180	0.180	1.2	0.78
15...	0545	205	570	8.00	--	2.64	0.110	0.110	0.85	0.60
16...	0715	173	615	7.80	--	3.17	0.110	0.100	0.89	0.56
19...	0515	940	590	7.70	--	2.90	0.160	0.140	2.1	0.77
19...	0715	1120	300	7.90	--	1.58	0.100	0.080	1.9	0.43
19...	0915	806	240	7.80	--	1.41	0.100	0.080	1.5	0.63
19...	1049	557	222	7.70	--	1.36	0.080	0.080	1.1	0.48
20...	0030	693	550	7.70	--	2.77	0.040	0.040	1.5	0.72
20...	0430	557	525	7.70	--	2.90	0.030	0.030	1.4	0.58
21...	1353	185	525	7.80	--	3.17	0.040	0.030	1.1	0.68
SEP										
12...	1400	60	--	--	--	4.88	0.240	0.240	0.35	0.35

CODORUS CREEK BASIN

01575585 CODORUS CREEK AT PLEASUREVILLE, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
MAY									
10...	0.44	0.26	4.3	0.190	0.050	0.027	5.1	107	234
16...	0.90	0.34	3.8	0.210	0.080	0.008	6.6	196	1100
16...	0.97	0.47	3.9	0.230	0.070	0.041	6.8	196	1130
17...	1.1	0.52	4.1	0.130	0.070	0.019	7.0	167	974
17...	0.90	0.52	4.1	0.190	0.070	0.022	6.6	187	1140
17...	1.0	0.54	4.2	0.330	0.080	0.006	6.5	193	1210
17...	1.0	0.47	4.2	0.340	0.070	0.005	6.4	--	--
17...	0.82	0.47	4.0	0.300	0.070	0.004	6.4	150	891
17...	0.90	0.52	4.1	0.280	0.060	0.002	6.4	123	697
17...	0.82	0.44	4.2	0.100	0.060	0.003	5.8	106	564
17...	0.87	0.49	4.4	0.140	0.060	0.003	5.6	94	472
19...	0.90	0.57	5.4	0.060	0.030	0.005	4.7	45	107
23...	0.46	0.36	4.8	0.070	0.060	0.005	6.1	55	82
JUN									
29...	0.62	0.42	5.2	0.180	0.090	0.066	7.0	48	27
JUL									
05...	0.93	0.44	4.3	0.290	0.160	0.150	7.3	112	139
16...	1.1	0.29	4.7	0.380	0.100	0.071	5.6	192	384
16...	0.80	0.26	3.7	0.290	0.090	0.052	5.2	143	222
20...	0.49	<0.20	3.5	0.170	0.070	0.047	6.3	48	42
AUG									
07...	1.2	0.87	4.8	0.510	0.270	0.210	12	197	317
07...	1.5	0.76	4.7	0.470	0.240	0.180	14	117	135
07...	0.76	0.50	4.1	0.290	0.170	0.120	15	66	53
07...	2.8	0.71	6.0	0.320	0.210	0.170	16	41	28
07...	1.3	0.97	4.7	0.400	0.280	0.230	16	35	21
14...	1.1	0.71	4.1	0.160	0.100	0.088	14	23	8.7
14...	2.4	1.0	5.6	0.470	0.140	0.110	15	210	364
14...	2.5	0.91	5.5	0.440	0.160	0.140	10	133	178
14...	1.4	0.96	3.9	0.260	0.110	0.100	11	70	67
15...	0.96	0.71	3.6	0.210	0.100	0.098	12	41	23
16...	1.0	0.66	4.2	0.200	0.110	0.098	11	45	21
19...	2.3	0.91	5.2	0.650	0.150	0.130	9.7	372	944
19...	2.0	0.51	3.6	0.590	0.120	0.090	6.7	351	1060
19...	1.6	0.71	3.0	0.440	0.110	0.080	6.7	253	551
19...	1.2	0.56	2.6	0.380	0.110	0.080	4.5	189	284
20...	1.5	0.76	4.3	0.260	0.080	0.063	9.0	113	211
20...	1.4	0.61	4.3	0.330	0.080	0.074	8.4	149	224
21...	1.1	0.71	4.3	0.150	0.080	0.072	6.1	41	20
SEP									
12...	0.59	0.59	5.5	0.190	0.140	0.100	6.8	12	1.9

< Actual value is known to be less than the value shown.

CODORUS CREEK BASIN

RESERVOIRS IN CODORUS CREEK BASIN

01574390 LAKE MARBURG.--Lat 39°48'26", long 76°52'58", York County, Hydrologic Unit 02050306, at dam on West Branch Codorus Creek, 0.7 mi upstream from Codorus Creek, and 4.5 mi south of Spring Grove. DRAINAGE AREA, 23.2 mi². PERIOD OF RECORD, October 1972 to current year in reports of Geological Survey; July 1972 to September 1974 in files of P. H. Glatfelter Co., Spring Grove. Records for period December 1966 to June 1972 were lost in the flood of June 1972. GAGE, Nonrecording. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Lake is formed by earthfill dam with two bascule spillway gates. Each is 7 ft high and 106.50 ft long. Elevation of top of gates is 623.00 ft. Top of dam is at elevation 627.00 ft. Storage began in December 1966. The capacity at elevation 627.00 ft is 53,210 acre-ft, and at normal pool elevation of 623.00 ft the capacity is 47,680 acre-ft. At the spillway crest the elevation is 616.00 ft and the capacity is 39,430 acre-ft. The lake is used for water supply and recreation. An average of about 3,380 acre-ft is diverted from Codorus Creek into the lake each year.

COOPERATION.--Records provided by P.H. Glatfelter Company.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 47,680 acre-ft many times most years, elevation, 623.00 ft; minimum, 32,190 acre-ft, Feb. 13, 14, 15, 1989, elevation, 608.79 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 47,020 acre-ft, July 21, 22, 23, elevation, 622.50 ft; minimum, 32,190 acre-ft, Feb. 13, 14, 15, elevation, 608.79 ft.

01574700 INDIAN ROCK DAM.--Lat 39°55'22", long 76°45'14", York County, Hydrologic Unit 02050306, at dam on Codorus Creek, 0.1 mi upstream from mouth of South Branch Codorus Creek, 0.3 mi west of York Water Co. pumping station, and 3.0 mi southwest of York. DRAINAGE AREA, 93.7 mi². PERIOD OF RECORD, September 1962 to current year in reports of Geological Survey, September 1942 to August 1962 in files of Baltimore District, U.S. Army Corps of Engineers. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Reservoir formed by an earth and rockfill dam with ungated concrete spillway at elevation 435.00 ft. Reservoir completed in June 1942; storage began in June 1946. Capacity at elevation 435.00 ft is 28,000 acre-ft. No dead storage. Reservoir is used for flood control. Figures given herein represent total contents. Flood storage is regulated by three vertical-lift tractor gates. Water is stored only during high flows and released when downstream conditions warrant. U.S. Army Corps of Engineers satellite telemeter at station.

COOPERATION.--Records provided by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 30,200 acre-ft, June 23, 1972, elevation, 436.44 ft; minimum, no storage many times most years.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 913 acre-ft, Sept. 13, elevation, 391.12 ft; minimum, 7.0 acre-ft, Oct. 28, elevation, 371.85 ft.

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS AT 2400, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

Date	Elevation (feet)	Contents (acre- feet)	Change in contents (equivalent in ft ³ /s/day)	Elevation (feet)	Contents (acre- feet)	Change in contents (equivalent in ft ³ /s/day)
01574390 LAKE MARBURG				01574700 INDIAN ROCK DAM		
Sept. 30	615.00	38,360	--	371.97	8.9	--
Oct. 31	612.90	36,240	- 34.5	371.96	8.9	0
Nov. 30	611.50	34,820	- 23.8	372.87	11.6	+ 0.05
Dec. 31	609.60	32,930	- 30.7	372.12	9.4	- 0.04
CAL YR 1988	--	--	- 9.7	--	--	- 0.03
Jan. 31	609.30	32,660	- 4.4	372.39	10.2	+ 0.01
Feb. 28	609.30	32,660	0	372.53	10.6	+ 0.01
Mar. 31	612.40	35,730	+ 49.9	373.68	14.0	+ 0.06
Apr. 30	613.70	37,050	+ 22.2	372.70	11.1	- 0.05
May 31	620.70	44,630	+123	374.94	23.5	+ 0.20
June 30	622.10	46,480	+ 31.1	374.70	21.3	- 0.04
July 31	622.20	46,620	+ 2.3	376.53	37.5	+ 0.26
Aug. 31	621.40	45,560	- 17.1	375.42	27.8	- 0.16
Sept. 30	620.20	43,970	- 26.7	377.84	48.6	+ 0.35
WTR YR 1989	--	--	+ 7.8	--	--	+ 0.05

SUSQUEHANNA RIVER BASIN

01576000 SUSQUEHANNA RIVER AT MARIETTA, PA

LOCATION.--Lat 40°03'16", long 76°31'52", Lancaster County, Hydrologic Unit 02050306, on left bank 420 ft upstream from Chickies Creek, and 1.0 mi downstream from Marietta. Records include flow of Chickies Creek.

DRAINAGE AREA.--25,990 mi², approximately, includes that of Chickies Creek.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1931 to current year.

REVISED RECORDS.--WSP 781: 1933(M). WSP 1502: 1937.

GAGE.--Water-stage recorder. Datum of gage is 200.56 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow slightly regulated by 16 flood-control reservoirs, which have a combined capacity of 1,599,000 acre-ft. Some diurnal fluctuation below 8,000 ft³/s caused by hydroelectric plant 9.7 mi upstream. National Weather Service satellite telemeter at station.

AVERAGE DISCHARGE.--58 years, 36,710 ft³/s, 19.18 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,080,000 ft³/s, June 23, 1972, gage height, 64.54 ft, from floodmarks; minimum, 618 ft³/s, Sept. 26, 1932, gage height, 30.89 ft, when York Haven powerplant was shut down to obtain current-meter measurements of low flow; minimum daily, 1,380 ft³/s, Sept. 26, 1932.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 2, 1889, reached a stage of 58.2 ft, from floodmark, discharge, about 630,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 230,000 ft³/s, May 18, gage height, 46.76 ft; minimum, 4,550 ft³/s, Oct. 21, gage height, 32.45 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6510	11500	24600	18900	18200	30700	153000	17700	33900	49700	19200	6900
2	6460	10400	23000	19200	18700	27300	186000	21800	31100	43100	19400	6790
3	6420	9610	22300	20200	18500	24400	163000	23800	28800	36900	19800	6620
4	6210	8960	21100	19700	19100	22100	129000	27900	28900	31700	18200	6520
5	6200	8920	19500	16200	20800	20600	108000	37800	31000	42900	15800	6320
6	5650	9650	18500	13700	21800	20700	97400	77300	34200	49500	15200	6160
7	5540	10400	17600	11300	21800	20800	96100	128000	36500	52100	14600	6030
8	6210	16700	16700	12300	20500	21600	94900	143000	37200	51300	13500	5920
9	6080	25400	15900	14800	17300	23300	85400	149000	37400	44700	13100	5990
10	6120	33000	15300	17800	12800	24500	74000	138000	38500	40300	12400	6070
11	6090	34100	14500	21100	e12000	23500	64200	144000	35500	38600	11700	6020
12	5880	28400	11200	22600	e11000	23900	55800	177000	33100	34300	12100	5630
13	6000	24200	9490	25500	e12000	25300	49300	218000	30700	36200	12000	5410
14	5910	22700	8460	29800	e13000	24900	44300	193000	29800	47200	11500	5630
15	5810	24000	e8000	31400	16000	24700	40600	156000	31800	43100	11300	5380
16	5360	25700	e7500	33200	17500	26600	38100	157000	43400	35100	10300	5310
17	5030	25800	e7000	35200	20300	27300	36000	214000	81400	62000	9540	5850
18	4910	25800	e6800	33200	23700	28800	34700	223000	126000	67100	9220	6320
19	4920	25900	e7600	30200	27300	28800	32600	177000	129000	47800	10900	7220
20	4790	26300	8700	26800	26300	32800	30900	132000	101000	34300	19200	8980
21	4820	33800	9980	24900	25300	35500	29900	99900	88500	53800	16600	10500
22	6580	49900	11500	21900	29900	37400	28100	81300	127000	67500	13400	12100
23	6730	51700	11400	19400	41500	36400	26300	67900	157000	49400	11300	12100
24	7090	50200	12100	17700	50500	35600	24600	60400	141000	48200	9930	12300
25	8250	47200	12800	17200	52700	49400	22900	57200	123000	40700	9240	12900
26	8840	40300	14600	16500	47700	75800	21700	55400	112000	35600	8670	13700
27	9390	34300	19800	16800	40000	96600	20700	53500	90100	31000	8190	14500
28	11100	31000	24400	16600	34700	98400	19700	49700	76400	26500	7740	15400
29	13800	28200	23500	16700	---	87200	18800	45000	68600	22500	7440	15800
30	14700	26400	22200	17200	---	80300	18000	41700	59700	20000	7620	14100
31	13200	---	21400	17700	---	94100	---	37900	---	19500	7250	---
TOTAL	220600	800440	467430	656700	690900	1229300	1844000	3205200	2022500	1302600	386340	258470
MEAN	7116	26680	15080	21180	24670	39650	61470	103400	67420	42020	12460	8616
MAX	14700	51700	24600	35200	52700	98400	186000	223000	157000	67500	19800	15800
MIN	4790	8920	6800	11300	11000	20600	18000	17700	28800	19500	7250	5310
CFSM	.27	1.03	.58	.82	.95	1.53	2.37	3.98	2.59	1.62	.48	.33
IN.	.32	1.15	.67	.94	.99	1.76	2.64	4.59	2.89	1.86	.55	.37

CAL YR 1988 TOTAL 9219590 MEAN 25190 MAX 192000 MIN 4280 CFSM .97 IN. 13.20
WTR YR 1989 TOTAL 13084480 MEAN 35850 MAX 223000 MIN 4790 CFSM 1.38 IN. 18.73

e Estimated.

SUSQUEHANNA RIVER BASIN

01576000 SUSQUEHANNA RIVER AT MARIETTA, PA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1961-74, 1976, 1987 to current year.

REMARKS.--Samples collected from bridge on State Highway 30, 1.5 miles downstream from gage.

COOPERATION.--Water-quality samples collected by Susquehanna River Basin Commission and analyzed by the Pa. Department of Environmental Resources.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE PER FIELD (μ S/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)
OCT										
05...	1040	6110	355	8.30	19.0	0.640	0.030	<0.020	0.19	--
NOV										
17...	1130	25700	220	7.20	11.0	1.06	0.080	0.080	0.35	--
DEC										
06...	1120	18600	265	8.60	7.0	1.18	0.050	0.050	--	--
JAN										
05...	1130	14900	273	8.35	2.0	1.34	0.090	0.090	0.23	0.23
FEB										
01...	1130	18100	240	8.50	5.0	1.36	0.030	0.030	--	--
21...	1345	25200	235	7.60	7.0	1.16	0.040	0.040	--	--
21...	2045	26600	252	7.50	7.0	1.26	0.040	0.040	--	--
22...	1351	30100	245	7.30	9.0	1.28	0.060	0.060	0.31	--
23...	1310	42500	230	7.10	4.0	1.46	0.090	0.090	0.61	0.21
24...	1240	51200	225	6.95	2.0	1.62	0.060	0.060	1.6	0.34
25...	1000	51300	200	7.30	1.0	1.34	0.050	0.050	1.5	0.62
26...	1015	48000	195	7.20	3.5	1.28	0.040	0.040	1.3	0.58
27...	1135	39900	200	7.35	4.0	1.38	0.080	0.080	0.40	0.15
MAR										
01...	1010	31100	200	7.70	6.0	1.36	0.060	0.060	0.21	0.18
16...	1045	26600	245	8.00	9.0	1.78	0.060	0.060	0.19	0.14
31...	1300	92700	163	7.00	10.0	1.14	0.060	0.050	0.91	0.56
31...	1730	101000	160	7.00	10.0	1.12	0.050	0.040	1.2	0.62
APR										
01...	0945	148000	142	7.50	10.0	1.01	0.040	0.040	1.5	0.70
02...	1030	189000	143	7.70	10.0	0.880	0.040	0.030	1.9	0.84
03...	1010	167000	135	7.80	9.0	0.940	0.030	0.020	1.5	0.53
04...	1145	130000	143	7.45	15.0	0.970	0.060	0.040	0.54	0.33
05...	1340	106000	130	7.70	11.0	1.04	0.060	0.060	0.39	0.24
06...	1020	97700	145	7.70	10.0	1.08	0.050	0.050	0.30	0.22
07...	1300	95800	163	7.40	10.0	1.08	0.070	0.070	0.83	0.55
10...	1130	74800	165	7.70	9.0	1.08	0.050	0.050	0.23	0.20
12...	1000	56400	170	7.60	10.0	1.17	0.070	0.070	0.25	0.17
27...	1300	20700	220	7.60	22.0	0.790	<0.020	<0.020	--	--
MAY										
02...	1300	20300	220	7.60	22.0	0.880	<0.020	<0.020	--	--
03...	1100	23800	225	7.70	19.0	0.990	<0.020	<0.020	--	--
04...	1000	26200	230	7.70	18.0	0.900	<0.020	<0.020	--	--
05...	1130	36200	222	7.60	15.0	0.550	<0.020	<0.020	--	--
06...	1300	79900	--	--	--	1.03	0.070	0.050	1.8	0.50
07...	1340	131000	165	7.90	15.0	1.28	0.110	0.110	1.2	0.17
08...	1055	142000	158	7.50	16.0	1.74	0.130	0.120	1.4	0.50
09...	1100	149000	130	7.15	14.0	1.28	0.070	0.070	0.69	0.15
10...	1000	138000	125	7.15	9.0	1.08	0.080	0.070	0.45	0.24
11...	1030	142000	145	7.30	12.0	1.12	0.050	0.030	0.30	--
12...	1005	169000	135	7.00	13.0	1.19	0.080	0.080	0.82	0.42
14...	0920	200000	175	6.70	13.0	0.970	0.090	0.090	0.44	0.21
15...	1115	157000	125	7.30	14.0	0.990	0.030	0.030	0.27	--
17...	1645	222000	130	7.40	18.0	1.61	0.070	0.070	0.93	0.45
19...	0940	183000	134	7.50	19.0	1.32	<0.020	<0.020	--	--
21...	1430	97700	150	7.50	21.0	1.25	0.030	0.030	0.26	--
23...	1140	66700	175	7.00	18.0	1.34	0.030	0.030	0.28	0.25
JUN										
16...	1355	45100	203	8.40	25.0	1.06	<0.020	<0.020	--	--
17...	1230	85600	220	8.30	22.0	1.21	<0.020	<0.020	--	--
19...	1035	132000	160	8.00	21.0	0.920	0.070	0.070	0.45	0.25
20...	0945	103000	150	7.80	20.0	0.860	0.030	0.030	0.38	0.20
22...	1250	128000	155	--	22.0	1.25	0.080	0.060	0.72	0.22
23...	1130	157000	140	7.70	21.0	0.990	<0.020	<0.020	--	--
24...	1405	139000	155	7.90	22.0	1.06	<0.020	<0.020	--	--
26...	1415	112000	160	7.70	24.0	1.21	0.070	0.040	0.47	0.32
28...	1245	75800	170	7.50	24.0	1.21	0.050	0.030	0.37	0.24
30...	0955	60300	187	7.55	26.0	1.30	0.030	0.030	0.70	0.55

< Actual value is known to be less than the value shown.

SUSQUEHANNA RIVER BASIN

01576000 SUSQUEHANNA RIVER AT MARIETTA, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT									
05...	0.22	<0.20	0.86	0.070	0.040	0.002	3.3	9	148
NOV									
17...	0.43	<0.20	1.5	0.080	0.040	0.011	3.5	18	1250
DEC									
06...	<0.20	<0.20	--	0.070	0.060	0.041	2.3	7	352
JAN									
05...	0.32	0.32	1.7	<0.020	<0.020	0.003	2.5	5	201
FEB									
01...	<0.20	<0.20	--	0.020	0.020	0.002	2.4	5	244
21...	<0.20	<0.20	--	0.070	0.050	0.002	2.6	11	748
21...	<0.20	<0.20	--	0.030	0.030	0.002	2.6	12	862
22...	0.37	<0.20	1.7	0.050	0.040	0.002	3.3	28	2280
23...	0.70	0.30	2.2	0.080	0.040	0.005	3.7	49	5620
24...	1.7	0.40	3.3	0.130	0.040	0.007	3.6	76	10500
25...	1.5	0.67	2.8	0.060	0.050	0.009	3.3	78	10800
26...	1.3	0.62	2.6	0.080	0.050	0.005	3.4	56	7260
27...	0.48	0.23	1.9	0.050	0.050	0.002	3.3	42	4520
MAR									
01...	0.27	0.24	1.6	0.060	0.050	0.004	2.7	--	--
16...	0.25	0.20	2.0	0.060	0.040	<0.002	2.8	42	3020
31...	0.97	0.61	2.1	0.080	0.050	0.004	2.9	72	18000
31...	1.2	0.66	2.3	0.070	0.040	<0.002	2.9	79	21500
APR									
01...	1.5	0.74	2.5	0.140	0.030	0.003	3.3	168	67100
02...	1.9	0.87	2.8	0.140	0.040	0.008	4.0	228	116000
03...	1.5	0.55	2.4	0.050	0.030	0.004	4.0	167	75300
04...	0.60	0.37	1.6	0.060	0.030	0.004	3.1	105	36900
05...	0.45	0.30	1.5	0.030	0.030	0.002	3.2	64	18300
06...	0.35	0.27	1.4	0.080	0.030	0.002	2.8	53	14000
07...	0.90	0.62	2.0	0.050	0.030	0.002	3.1	45	11600
10...	0.28	0.25	1.4	0.060	0.020	<0.002	3.2	39	7880
12...	0.32	0.24	1.5	0.050	0.030	0.008	2.7	30	4570
27...	0.82	0.39	1.6	0.040	0.030	0.006	3.5	9	503
MAY									
02...	0.36	<0.20	1.2	0.050	0.030	0.005	3.1	16	877
03...	0.44	<0.20	1.4	0.120	0.030	<0.002	4.2	31	1990
04...	0.53	0.21	1.4	0.060	0.020	<0.002	3.8	20	1410
05...	0.98	0.38	1.5	0.050	0.040	<0.002	3.4	30	2930
06...	1.9	0.55	2.9	0.140	0.060	0.008	5.0	259	55900
07...	1.3	0.28	2.6	0.110	0.060	0.011	5.1	250	88400
08...	1.5	0.62	3.2	0.230	0.040	0.009	5.3	170	65200
09...	0.76	0.22	2.0	0.200	0.030	0.005	5.2	133	53500
10...	0.53	0.31	1.6	0.210	0.030	0.002	3.6	116	43200
11...	0.35	<0.20	1.5	0.120	0.030	<0.002	3.1	75	28800
12...	0.90	0.50	2.1	0.090	0.050	0.003	3.2	82	37400
14...	0.53	0.30	1.5	0.190	0.050	0.002	3.4	120	64800
15...	0.30	<0.20	1.3	0.110	0.040	0.002	3.0	91	38600
17...	1.0	0.52	2.6	0.080	0.050	0.003	5.0	143	85700
19...	0.93	0.51	2.2	0.050	0.020	<0.002	2.9	74	36600
21...	0.29	<0.20	1.5	0.040	0.020	0.002	2.4	39	10300
23...	0.31	0.28	1.6	0.040	0.030	0.003	2.5	34	6120
JUN									
16...	0.80	0.45	1.9	0.140	0.040	0.006	3.3	71	8650
17...	0.95	0.95	2.2	0.220	0.030	0.004	3.0	88	20300
19...	0.52	0.32	1.4	0.140	0.040	0.003	3.3	89	31700
20...	0.41	0.23	1.3	0.140	0.030	0.002	3.4	73	20300
22...	0.80	0.28	2.0	0.260	<0.020	0.012	4.3	179	61900
23...	1.2	0.37	2.2	0.190	0.040	0.003	5.2	155	65700
24...	0.57	0.24	1.6	0.160	0.040	0.002	2.5	91	34200
26...	0.54	0.36	1.7	0.110	0.040	0.003	3.0	94	28400
28...	0.42	0.27	1.6	0.160	0.040	<0.002	3.4	90	18400
30...	0.73	0.58	2.0	0.140	0.040	0.009	3.5	85	13800

< Actual value is known to be less than the value shown.

SUSQUEHANNA RIVER BASIN

01576000 SUSQUEHANNA RIVER AT MARIETTA, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE FIELD (μ S/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)
JUL										
18...	1300	67000	190	7.30	22.0	1.94	0.060	0.050	0.58	0.17
19...	1230	48200	195	7.60	22.0	1.91	0.040	0.040	0.33	0.18
20...	1045	34500	215	7.50	22.0	1.94	0.030	0.030	--	--
22...	1000	87100	180	7.00	22.0	1.32	0.080	0.080	1.3	0.57
23...	1210	46700	190	7.00	25.0	1.41	0.070	0.070	0.42	0.21
25...	1300	40400	245	7.90	23.0	1.54	0.040	0.040	0.30	0.17
AUG										
16...	1000	10400	360	8.30	28.0	1.28	0.020	<0.020	0.33	--
SEP										
12...	1130	5780	380	7.20	25.0	0.860	0.020	0.020	0.42	0.26
22...	1200	12100	420	8.20	24.0	1.32	0.030	0.030	1.1	0.63

DATE	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
JUL									
18...	0.64	0.22	2.6	0.170	0.040	0.016	4.7	109	19700
19...	0.37	0.22	2.3	0.120	0.040	0.002	3.8	54	7030
20...	<0.20	<0.20	--	0.070	0.030	0.013	3.0	23	2140
22...	1.4	0.65	2.7	0.230	0.050	0.003	5.8	169	39700
23...	0.49	0.28	1.9	0.130	0.050	0.007	4.1	65	8200
25...	0.34	0.21	1.9	0.100	0.030	0.003	3.4	51	5560
AUG									
16...	0.35	<0.20	1.6	0.060	0.040	0.011	3.0	9	253
SEP									
12...	0.44	0.28	1.3	0.060	0.030	0.003	3.7	13	203
22...	1.1	0.66	2.4	0.090	0.030	0.003	4.1	31	1010

< Actual value is known to be less than the value shown.

CONESTOGA RIVER BASIN

01576083 AGRICULTURAL FIELD RUNOFF SITE NO. 1 NEAR CHURCHTOWN, PA

LOCATION.--Lat 40°07'42", long 75°58'40", Lancaster County, Hydrologic Unit 02050306, on left bank of drainage ditch below cornfield, 500 ft west of small left-bank tributary to Conestoga River, 0.3 mi south of State Highway 23, 1.1 mi southwest of Churchtown, and 1.9 mi north of State Highway 322.

DRAINAGE AREA.--0.03 mi².

PERIOD OF RECORD.--Water years 1983 to current year.

INSTRUMENTATION.--Automatic sediment pumping sampler since January 1983.

COOPERATION.--Water-quality samples collected by Pa. Department of Environmental Resources, and U.S. Geological Survey. Chemical samples analyzed by Pa. Department of Environmental Resources, Bureau of Laboratories.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)
OCT								
21...	2110	0.28	--	--	1.90	--	--	--
21...	2135	0.64	--	--	1.60	--	--	--
21...	2150	0.70	--	--	1.40	--	--	--
21...	2220	0.87	--	--	1.20	--	--	--
22...	0020	0.35	--	--	1.60	--	--	--
NOV								
05...	1630	0.28	0.100	--	2.00	--	0.780	--
05...	1640	1.6	0.050	--	1.20	--	0.400	--
05...	1645	2.0	0.080	--	1.20	--	0.720	--
05...	1700	0.97	0.360	--	1.30	--	1.80	--
05...	1715	0.32	0.070	--	1.40	--	0.280	--
05...	1815	0.22	0.120	--	1.50	--	0.690	--
05...	2200	0.26	0.110	--	1.10	--	0.510	--
05...	2205	0.35	0.110	--	1.40	--	0.420	--
17...	0718	0.24	--	--	2.20	--	--	--
17...	0728	0.56	--	--	1.70	--	--	--
17...	0738	0.56	--	--	1.50	--	--	--
17...	0818	0.22	--	--	1.50	--	--	--
20...	0358	0.24	--	--	1.50	--	--	--
20...	0408	0.26	--	--	1.40	--	--	--
20...	0438	0.19	--	--	1.50	--	--	--
20...	0706	0.26	--	--	2.00	--	--	--
20...	0716	0.32	--	--	1.90	--	--	--
20...	0746	0.15	--	--	1.70	--	--	--
20...	0849	0.28	--	--	2.00	--	--	--
20...	0909	0.87	--	--	1.20	--	--	--
20...	1004	0.87	--	--	1.00	--	--	--
20...	1134	0.35	--	--	1.30	--	--	--
20...	1334	0.62	--	--	0.840	--	--	--
JAN								
15...	0133	0.24	--	--	2.50	--	--	--
15...	0138	0.26	--	--	2.40	--	--	--
15...	0208	0.17	--	--	3.10	--	--	--
FEB								
21...	1223	0.24	--	--	8.80	--	--	--
21...	1233	0.46	--	--	6.20	--	--	--
21...	1243	0.81	--	--	5.20	--	--	--
21...	1253	0.90	--	--	4.60	--	--	--
21...	1303	0.84	--	--	4.80	--	--	--
21...	1333	0.46	--	--	5.50	--	--	--
22...	0932	0.04	--	--	19.0	--	--	--
22...	0933	0.04	--	--	19.0	--	--	--
MAY								
05...	2355	0.30	0.340	--	15.0	--	2.40	--
06...	0015	0.26	0.280	--	12.0	--	2.10	--
06...	0035	0.19	0.290	--	13.0	--	2.00	--
06...	0105	2.6	0.090	--	1.90	--	1.20	--
06...	0110	2.5	0.080	0.070	1.40	1.40	1.10	0.930
06...	0115	2.3	0.080	--	1.30	--	0.980	--
06...	0155	0.94	0.120	--	2.80	--	1.70	--
06...	0255	0.78	0.190	0.190	5.00	4.20	2.30	1.90
06...	0425	0.20	0.280	0.200	7.10	5.90	2.20	1.80
06...	1930	0.17	--	--	3.80	--	--	--
06...	1935	0.17	--	--	4.00	--	--	--
06...	1945	0.06	--	--	4.40	--	--	--
06...	1955	0.24	--	--	4.00	--	--	--
23...	2239	0.32	0.070	--	0.660	--	0.080	--
23...	2254	0.84	0.070	--	0.700	--	0.120	--
23...	2319	1.0	0.050	--	0.660	--	0.050	--
24...	0019	0.70	0.050	--	0.790	--	0.040	--
24...	0119	0.17	0.060	--	0.880	--	0.080	--

CONESTOGA RIVER BASIN

01576083 AGRICULTURAL FIELD RUNOFF SITE NO. 1 NEAR CHURCHTOWN, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT							
21...	7.5	--	9.4	2.30	--	341	0.26
21...	12	--	14	3.40	--	--	--
21...	11	--	12	4.10	--	360	0.68
21...	9.2	--	10	3.50	--	295	0.69
22...	5.4	--	7.0	2.30	--	166	0.16
NOV							
05...	16	--	18	2.00	--	--	--
05...	12	--	13	1.50	--	2370	10
05...	14	--	15	1.90	--	1480	8.1
05...	27	--	28	4.40	--	--	--
05...	7.5	--	8.9	1.90	--	847	0.73
05...	7.9	--	9.4	3.10	--	--	--
05...	15	--	16	3.00	--	10200	7.1
05...	13	--	14	2.40	--	3990	3.8
17...	5.4	--	7.6	2.20	--	--	--
17...	5.9	--	7.6	2.50	--	653	0.99
17...	4.8	--	6.3	2.30	--	--	--
17...	3.4	--	4.9	1.80	--	169	0.10
20...	4.0	--	5.5	1.40	--	--	--
20...	3.6	--	5.0	1.40	--	--	--
20...	2.7	--	4.2	1.30	--	--	--
20...	3.0	--	5.0	1.30	--	--	--
20...	3.0	--	4.9	1.20	--	--	--
20...	2.4	--	4.1	1.10	--	--	--
20...	3.0	--	5.0	1.10	--	--	--
20...	3.2	--	4.4	1.40	--	--	--
20...	3.0	--	4.0	1.60	--	--	--
20...	2.4	--	3.7	1.40	--	306	0.29
20...	2.8	--	3.6	2.20	--	249	0.42
JAN							
15...	7.8	--	10	2.60	--	428	0.28
15...	6.3	--	8.7	3.00	--	--	--
15...	6.3	--	9.4	2.40	--	--	--
FEB							
21...	18	--	27	10.0	--	4080	2.6
21...	12	--	18	6.20	--	4290	5.3
21...	12	--	17	6.00	--	--	--
21...	15	--	20	7.30	--	--	--
21...	9.0	--	14	4.40	--	--	--
21...	10	--	15	5.40	--	1480	1.8
22...	4.7	--	24	1.80	--	--	--
22...	5.1	--	24	1.30	--	--	--
MAY							
05...	12	--	27	5.80	--	--	--
06...	6.4	--	18	2.70	--	--	--
06...	7.1	--	20	2.50	--	--	--
06...	6.1	--	8.0	1.80	--	7790	55
06...	8.9	3.0	10	4.40	0.680	--	--
06...	4.7	--	6.0	3.70	--	3690	23
06...	7.2	--	10	4.20	--	--	--
06...	12	3.3	17	9.80	0.900	--	--
06...	13	3.5	20	9.00	0.910	--	--
06...	17	--	21	11.0	--	4190	1.9
06...	13	--	17	8.60	--	--	--
06...	18	--	22	10.0	--	4620	0.75
06...	11	--	15	7.70	--	2510	1.6
23...	15	--	16	9.10	--	9040	7.8
23...	11	--	12	8.80	--	5380	12
23...	11	--	12	5.80	--	2410	6.7
24...	6.6	--	7.4	6.70	--	--	--
24...	5.9	--	6.8	4.80	--	--	--

CONESTOGA RIVER BASIN

01576083 AGRICULTURAL FIELD RUNOFF SITE NO. 1 NEAR CHURCHTOWN, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
JUN											
07...	0900	0.25	0.080	2.40	0.530	3.9	6.3	1.00	1700	1.1	--
07...	0905	0.75	0.070	1.50	0.360	9.5	11	5.40	2600	5.3	--
07...	0910	0.68	0.070	1.60	0.390	11	13	6.90	2090	3.8	--
07...	0925	0.43	0.060	1.50	0.370	9.8	11	4.10	1780	2.1	--
09...	1840	0.39	--	0.570	--	12	13	5.20	2570	2.7	--
09...	1845	3.6	--	0.680	--	12	13	2.50	2240	22	98
09...	1850	2.5	--	0.920	--	9.1	10	6.20	2050	14	--
09...	1920	0.87	--	0.970	--	4.8	5.8	3.40	756	1.8	--
09...	2020	0.15	--	1.00	--	2.5	3.5	1.70	--	--	--
15...	1913	0.54	--	1.80	--	12	14	4.50	2200	3.2	--
15...	1918	6.2	--	2.20	--	10	12	3.40	2920	49	98
15...	1923	2.3	--	2.40	--	10	12	5.80	2830	17	--
15...	1933	1.1	--	1.90	--	12	14	3.60	2880	8.8	--
15...	1938	2.6	--	1.90	--	11	13	5.50	3300	23	99
15...	1948	1.2	--	2.50	--	11	13	2.70	3300	11	--
15...	2123	0.81	--	1.40	--	11	12	3.10	910	2.0	--
15...	2253	0.06	--	0.770	--	2.4	3.2	2.00	--	--	--
25...	1548	0.28	--	2.90	--	9.2	12	3.60	--	--	--
25...	1558	1.4	--	1.00	--	8.7	9.7	2.80	--	--	--
25...	1628	0.24	--	1.60	--	9.7	11	2.80	--	--	--
25...	1658	0.24	--	1.80	--	7.6	9.4	6.00	1710	1.1	--
JUL											
13...	0615	0.97	--	0.680	--	3.8	4.5	3.00	--	--	--
13...	0715	0.32	--	0.990	--	2.8	3.8	1.40	194	0.17	--
13...	0750	0.41	--	0.730	--	3.2	3.9	1.90	261	0.29	--
13...	0805	1.1	--	0.590	--	3.3	3.9	2.80	221	0.63	--
13...	0820	1.3	--	0.460	--	2.8	3.3	1.70	--	--	--
13...	0928	1.1	--	0.370	--	2.6	3.0	1.70	150	0.45	--
13...	1058	0.32	--	0.510	--	1.7	2.2	0.920	93	0.08	--

INSTANTANEOUS SUSPENDED-SEDIMENT DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT				
02...	1712	0.26	3640	2.6
21...	2110	0.28	341	0.26
21...	2130	0.51	530	0.73
21...	2150	0.70	360	0.68
21...	2220	0.87	295	0.69
21...	2320	0.62	191	0.32
22...	0020	0.35	166	0.16
NOV				
05...	1635	0.41	2130	2.4
05...	1640	1.6	2370	10
05...	1645	2.0	1480	8.1
05...	1705	0.94	1360	3.5
05...	1715	0.32	847	0.73
05...	1845	0.20	756	0.41
05...	2200	0.26	10200	7.1
05...	2205	0.35	3990	3.8
17...	0723	0.41	684	0.76
17...	0728	0.56	653	0.99
17...	0743	0.54	342	0.50
17...	0818	0.22	169	0.10
20...	0403	0.26	326	0.23
20...	0433	0.20	151	0.08
20...	0711	0.32	235	0.20
20...	0739	0.18	144	0.07
20...	0854	0.44	378	0.45
20...	0914	0.87	321	0.75
20...	1034	0.87	289	0.68
20...	1134	0.35	306	0.29
20...	1334	0.62	249	0.42
27...	2235	0.24	7770	5.0
27...	2240	0.28	4480	3.4
27...	2255	0.32	1920	1.7
27...	2305	0.35	1360	1.3
27...	2315	0.44	1260	1.5
27...	2345	0.32	1130	0.97

CONESTOGA RIVER BASIN

01576083 AGRICULTURAL FIELD RUNOFF SITE NO. 1 NEAR CHURCHTOWN, PA--Continued

INSTANTANEOUS SUSPENDED-SEDIMENT DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
JAN					
15...	0133	0.24	428	0.28	--
15...	0158	0.21	134	0.08	--
FEB					
21...	1223	0.24	4080	2.6	--
21...	1228	0.35	4510	4.3	--
21...	1233	0.46	4290	5.3	--
21...	1238	0.73	3720	7.3	--
21...	1248	0.90	2630	6.4	--
21...	1258	0.87	2010	4.7	--
21...	1333	0.46	1480	1.8	--
MAY					
05...	2400	0.30	3300	2.7	--
06...	0030	0.19	1030	0.53	--
06...	0105	2.6	7790	55	--
06...	0115	2.3	3690	23	--
06...	0125	1.4	3970	15	--
06...	0225	0.90	3130	7.6	--
06...	0325	0.76	2200	4.5	--
06...	0455	0.19	1500	0.77	--
06...	1930	0.17	4190	1.9	--
06...	1945	0.06	4620	0.75	--
06...	1950	0.17	4300	2.0	--
06...	1955	0.24	2510	1.6	--
16...	1152	0.22	2260	1.3	--
16...	1222	0.67	910	1.6	--
16...	1252	0.44	728	0.86	--
23...	2239	0.32	9040	7.8	--
23...	2249	0.81	5730	13	--
23...	2254	0.84	5380	12	--
23...	2259	0.81	4300	9.4	--
23...	2314	0.84	5690	13	--
23...	2319	1.0	2410	6.7	--
23...	2349	0.78	1920	4.1	--
24...	0049	0.19	1360	0.70	--
JUN					
07...	0900	0.25	1700	1.1	--
07...	0905	0.75	2600	5.3	--
07...	0910	0.68	2090	3.8	--
07...	0925	0.43	1780	2.1	--
09...	1840	0.39	2570	2.7	--
09...	1845	3.6	2240	22	98
09...	1850	2.5	2050	14	--
09...	1900	1.2	2030	6.4	--
09...	1920	0.87	756	1.8	--
09...	1950	0.41	371	0.41	--
15...	1913	0.54	2200	3.2	--
15...	1918	6.2	2920	49	98
15...	1923	2.3	2830	17	--
15...	1928	1.0	2890	8.0	--
15...	1933	1.1	2880	8.8	--
15...	1938	2.6	3300	23	99
15...	1948	1.2	3300	11	--
15...	2023	0.84	2270	5.1	--
15...	2123	0.81	910	2.0	--
15...	2153	0.24	400	0.26	--
16...	1815	0.67	3800	6.9	--
16...	1820	3.0	2830	23	--
16...	1825	1.5	2340	9.5	--
16...	1835	0.97	4120	11	--
16...	1855	0.84	2880	6.5	--
16...	1930	0.44	1520	1.8	--
25...	1553	0.84	2180	5.0	--
25...	1603	1.0	2390	6.4	--
25...	1623	0.59	2410	3.8	--
25...	1658	0.24	1710	1.1	--
JUL					
13...	0545	1.5	452	1.8	--
13...	0645	0.62	248	0.42	--
13...	0715	0.32	194	0.17	--
13...	0750	0.41	261	0.29	--
13...	0805	1.1	221	0.63	--
13...	0815	1.2	293	0.95	99
13...	0825	1.3	225	0.81	--
13...	0928	1.1	150	0.45	--
13...	1028	0.59	137	0.22	--
13...	1058	0.32	93	0.08	--

CONESTOGA RIVER BASIN

015760831 LITTLE CONESTOGA CREEK, SITE 1, NEAR MORGANTOWN, PA

LOCATION.--Lat 40°09'42", long 75°55'14", Lancaster County, Hydrologic Unit 02050306, on upstream side of Valley View Road bridge, 0.2 mi west of intersection of Valley View Road and Maxwell School Road, and 1.6 mi west of Morgantown.

DRAINAGE AREA.--0.34 mi².

PERIOD OF RECORD.--Water years 1984 to current year.

COOPERATION.--Water-quality samples collected by Pa. Department of Environmental Resources and U.S. Geological Survey. Chemical samples analyzed by Pa. Department of Environmental Resources, Bureau of Laboratories except for the October pesticide sample which was analyzed by the U.S. Geological Survey.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (μS/CM)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)
OCT									
27...	1120	0.09	87	7.5	<0.010	<0.010	2.80	2.80	<0.020
NOV									
30...	1150	0.19	83	7.5	<0.010	<0.010	2.00	2.00	<0.020
JAN									
03...	1310	0.17	75	6.0	<0.010	<0.010	4.40	4.30	<0.020
FEB									
01...	1138	0.17	72	10.0	<0.010	<0.010	2.80	2.80	<0.020
MAR									
01...	1200	0.22	88	8.0	<0.010	<0.010	2.90	2.90	<0.020
APR									
11...	1315	0.73	67	11.0	<0.010	<0.010	2.60	2.60	<0.010
MAY									
23...	1135	1.3	76	12.0	<0.010	<0.010	2.20	2.20	0.020
JUN									
28...	1110	0.88	60	14.0	<0.010	<0.010	2.50	2.50	<0.020
JUL									
12...	1415	0.46	60	16.0	<0.010	<0.010	2.50	2.50	<0.020
AUG									
03...	1135	0.43	70	15.0	<0.010	<0.010	2.60	2.60	<0.020
31...	1400	0.22	67	19.0	<0.010	<0.010	2.60	2.60	<0.020
SEP									
29...	1205	0.16	73	14.0	<0.010	<0.010	3.00	2.90	<0.020

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT								
27...	<0.020	1.0	0.95	3.8	0.040	0.040	6	0.00
NOV								
30...	<0.020	0.34	0.22	2.3	0.040	0.030	10	0.01
JAN								
03...	<0.020	0.48	0.38	4.9	0.040	0.040	12	0.01
FEB								
01...	<0.020	0.51	0.49	3.3	0.040	0.030	6	0.00
MAR								
01...	<0.020	0.30	0.28	3.2	0.050	0.050	8	0.00
APR								
11...	<0.010	0.46	0.38	3.1	0.030	0.030	9	0.02
MAY								
23...	<0.020	0.58	0.46	2.8	0.040	0.030	18	0.06
JUN								
28...	<0.020	0.37	0.35	2.9	0.070	0.040	33	0.08
JUL								
12...	<0.020	0.53	0.43	3.0	0.050	0.040	22	0.03
AUG								
03...	<0.020	0.35	0.27	2.9	0.060	0.040	16	0.02
31...	<0.020	0.42	0.20	3.0	0.040	0.040	16	0.01
SEP								
29...	<0.020	0.36	0.21	3.4	0.040	0.030	8	0.00

< Actual value is known to be less than the value shown.

CONESTOGA RIVER BASIN

015760831 LITTLE CONESTOGA CREEK, SITE 1, NEAR MORGANTOWN, PA--Continued

PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	ALA- CHLOR TOTAL RECOVER ($\mu\text{G/L}$)	ATRA- ZINE, TOTAL ($\mu\text{G/L}$)	CYAN- AZINE TOTAL ($\mu\text{G/L}$)	METOLA- CHLOR IN WHOLE WATER ($\mu\text{G/L}$)	PRO- PAZINE TOTAL ($\mu\text{G/L}$)	SIMA- ZINE TOTAL ($\mu\text{G/L}$)	TOX- APHENE, TOTAL ($\mu\text{G/L}$)
OCT 27...	1120	0.09	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	--
MAY 23...	1135	1.3	<0.05	<0.30	<0.30	<0.10	<0.30	<0.30	<1
JUN 28...	1110	0.88	<0.05	<0.30	<0.30	0.20	<0.30	<0.30	<1
JUL 12...	1415	0.46	<0.10	<0.30	<0.30	<0.10	<0.30	<0.30	<1
AUG 03...	1135	0.43	<0.10	<0.30	<0.30	<0.10	<0.30	<0.30	<1
31...	1400	0.22	<0.10	<0.30	<0.30	<0.10	<0.30	<0.30	<1
SEP 29...	1205	0.16	<0.10	<0.30	<0.30	<0.10	<0.30	<0.30	<1

(<) Actual value is known to be less than the value shown.

CONESTOGA RIVER BASIN

0157608325 LITTLE CONESTOGA CREEK, SITE 2A, NEAR MORGANTOWN, PA

LOCATION.--Lat 40°08'58", long 75°55'06", Lancaster County, Hydrologic Unit 02050306, on upstream side of bridge on farm lane, 0.2 mi north of intersection of farm lane with State Highway 23, and 1.5 mi west of Morgantown.

DRAINAGE AREA.--0.99 mi².

PERIOD OF RECORD.--Water years 1984 to current year.

COOPERATION.--Water-quality samples collected by Pa. Department of Environmental Resources and U.S. Geological Survey. Chemical samples analyzed by Pa. Department of Environmental Resources, Bureau of Laboratories.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (μS/CM)	TEMPER-ATURE WATER (DEG C)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)
OCT 27...	1145	0.12	190	8.0	0.110	0.110	3.50	3.40	0.370
NOV 30...	1230	0.42	254	8.0	0.050	0.050	4.00	4.00	0.380
JAN 03...	1215	0.15	183	4.0	0.030	0.030	4.20	4.20	0.060
FEB 01...	1215	0.32	167	12.0	0.040	0.040	4.00	4.00	0.100
MAR 01...	1230	0.47	184	8.0	0.040	0.040	4.10	4.10	0.300
APR 11...	1200	0.94	135	12.0	0.020	0.020	3.50	3.40	<0.010
MAY 23...	1205	2.1	135	13.5	0.020	0.010	3.70	3.70	0.060
JUN 28...	1200	1.2	156	14.0	0.040	0.040	3.60	3.40	0.260
JUL 12...	1325	0.90	138	20.0	0.040	0.040	3.60	2.90	0.090
AUG 03...	1210	0.54	170	21.0	0.060	0.030	3.00	2.80	0.300
31...	1330	0.28	146	23.5	0.900	0.880	3.00	3.00	0.050
SEP 29...	1111	0.23	177	16.0	0.170	0.170	3.80	3.70	0.080

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHOROUS TOTAL (MG/L AS P)	PHOS-PHOROUS DIS-SOLVED (MG/L AS P)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
OCT 27...	0.370	2.2	1.9	5.7	0.390	0.350	6	0.00
NOV 30...	0.380	1.2	1.0	5.2	0.830	0.780	3	0.00
JAN 03...	0.040	0.67	0.48	4.9	0.230	0.200	29	0.01
FEB 01...	0.100	0.74	0.59	4.7	0.180	0.150	35	0.03
MAR 01...	0.290	1.3	1.0	5.4	0.140	0.110	53	0.07
APR 11...	<0.010	0.82	0.49	4.3	0.160	0.070	43	0.11
MAY 23...	0.030	1.1	0.87	4.8	0.100	0.060	36	0.20
JUN 28...	0.260	1.0	0.93	4.6	0.320	0.250	21	0.07
JUL 12...	0.090	1.2	1.6	4.8	0.280	0.170	41	0.10
AUG 03...	0.300	11	3.0	14	2.20	0.130	1980	2.9
31...	0.050	0.46	0.41	3.5	0.160	0.140	26	0.02
SEP 29...	0.080	1.9	1.0	5.7	0.240	0.120	151	0.09

< Actual value is known to be less than the value shown.

CONESTOGA RIVER BASIN

0157608335 LITTLE CONESTOGA CREEK, SITE 3A, NEAR MORGANTOWN, PA

LOCATION.--Lat 40°08'47", long 75°55'37", Lancaster County, Hydrologic Unit 02050306, on right bank 10 ft upstream from culvert under farm lane, 0.1 mi north of State Highway 23, 1.0 mi upstream from small right-bank tributary, and 2.2 mi west of Morgantown.

DRAINAGE AREA.--1.42 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder and wooden control. Elevation of gage is 640 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--5 years, 1.18 ft³/s, 11.28 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 620 ft³/s, Sept. 8, 1987, gage height, 6.59 ft, from rating curve extended above 66 ft³/s on basis of slope-area measurements at gage heights 4.51 ft and 5.42 ft; minimum, 0.02 ft³/s, Sept. 18, 1985, gage height, 0.82 ft, but may have been less during period of ice effect Jan. 19-23, 1985.

EXTREMES 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)
May 6	0245	156	4.75	June 15	Unknown	Unknown	Unknown
May 16	1000	98	4.29	June 22	Unknown	Unknown	Unknown
June 9	2000	*167	a*4.82				

(a) Maximum recorded, but may have been higher June 22 (see downstream station 0157608335, Little Conestoga Creek near Churchtown).
Minimum discharge, 0.07 ft³/s, Nov. 5, gage height, 0.83 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.23	.13	.84	.43	.81	1.0	1.4	1.1	e1.6	1.8	e1.4	e.47
2	.36	.13	.77	.43	.77	.99	1.3	1.7	e1.5	e1.7	e1.2	e.43
3	.29	.09	.77	.40	.79	.96	1.4	1.1	e1.4	e1.6	e1.1	e.41
4	.25	.09	.77	.38	.77	.93	1.5	.98	e1.5	1.7	e1.0	e.39
5	.23	.52	.73	.49	.77	.96	1.6	3.2	e1.3	3.7	e.96	e.37
6	.22	.32	.70	e.37	.77	1.6	2.3	22	e2.0	1.9	e.92	e.43
7	.21	.17	.60	e.34	.76	1.1	1.7	3.8	3.9	1.8	e1.0	e.36
8	.19	.14	.55	.81	.71	1.0	1.7	2.8	e1.7	1.5	e.92	e.33
9	.18	.12	.53	.59	e.66	1.0	1.7	2.5	e7.0	1.4	e.84	e.30
10	.18	.11	.53	.48	.71	1.1	1.6	6.5	e2.7	e1.3	e.78	e.34
11	.18	.11	.49	.46	.72	1.3	1.6	4.1	e2.2	e1.3	e.92	e.29
12	.16	.10	.47	1.2	.70	1.5	e1.1	3.1	e2.0	e1.2	e1.1	e.26
13	.16	.33	.45	.82	.68	1.2	e1.1	2.8	2.1	12	e.90	e.25
14	.16	.19	.45	.72	.79	1.1	1.4	2.6	e1.9	2.6	e.82	e.23
15	.15	.15	.45	3.3	.94	1.2	1.7	2.8	e12	1.9	e.94	e.22
16	.15	.13	.43	1.0	.87	1.1	e1.5	e18	4.9	2.2	e.78	e.30
17	.14	1.5	.43	.92	.77	1.0	e1.4	e7.0	3.0	1.9	e.74	e.54
18	.14	.33	.39	.92	e.72	1.3	e1.3	e4.9	2.3	1.8	e.70	e.42
19	.13	.26	.38	.87	e.68	1.1	e1.3	e3.6	2.1	1.7	e1.0	e.58
20	.13	12	.39	.84	.77	1.1	e1.2	e3.1	e2.0	2.1	e.82	e1.6
21	1.8	1.6	.48	e.82	4.5	1.8	e1.1	e2.8	e1.9	1.6	e.70	e.74
22	3.0	.93	.39	.79	2.8	1.2	e1.1	e2.6	e23	1.5	e.64	e.96
23	.22	.84	.46	.78	1.4	1.2	e1.1	e4.4	3.5	1.7	e.70	e.70
24	.26	.82	.65	.81	1.2	3.6	e1.0	6.4	2.2	1.5	e.64	e.60
25	.19	.77	.50	.82	1.1	2.0	e1.0	e3.0	5.1	2.6	e.60	e.54
26	.17	.75	.43	.85	1.1	1.7	e.98	e2.2	2.6	1.8	e.56	e.92
27	.16	.82	.42	.84	e1.0	1.5	e.96	e2.4	2.3	2.3	e.54	e.62
28	.15	2.4	.50	.79	1.0	1.5	e.94	e2.1	2.5	e1.6	e.52	e.56
29	.15	.89	.44	.77	---	1.4	e.95	e1.9	2.1	e1.4	e.50	e.54
30	.14	.84	.43	.88	---	1.6	e.98	e1.8	1.9	e1.2	e.62	e.52
31	.12	---	.43	.84	---	1.5	---	e1.7	---	e2.0	e.52	---
TOTAL	10.20	27.58	16.25	24.76	29.26	41.54	39.91	128.98	106.2	66.3	25.38	15.22
MEAN	.33	.92	.52	.80	1.04	1.34	1.33	4.16	3.54	2.14	.82	.51
MAX	3.0	12	.84	3.3	4.5	3.6	2.3	22	23	12	1.4	1.6
MIN	.12	.09	.38	.34	.66	.93	.94	.98	1.3	1.2	.50	.22
CFSM	.23	.65	.37	.56	.74	.94	.94	2.93	2.49	1.51	.58	.36
IN.	.27	.72	.43	.65	.77	1.09	1.05	3.38	2.78	1.74	.66	.40
CAL YR 1988	TOTAL 507.06	MEAN 1.39	MAX 30	MIN .09	CFSM .98	IN. 13.28						
WTR YR 1989	TOTAL 531.58	MEAN 1.46	MAX 23	MIN .09	CFSM 1.03	IN. 13.93						

e Estimated.

CONESTOGA RIVER BASIN

0157608335 LITTLE CONESTOGA CREEK, SITE 3A, NEAR MORGANTOWN, PA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1984 to current year.

INSTRUMENTATION.--Automatic sediment pumping sampler since April 1984.

COOPERATION.--Water-quality samples collected by Pa. Department of Environmental Resources and U.S. Geological Survey. Chemical samples analyzed by Pa. Department of Environmental Resources, Bureau of Laboratories except for the September pesticide sample which was analyzed by the U.S. Geological Survey.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (μ S/CM)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO ₂ +NO ₃ TOTAL (MG/L AS N)	NITRO- GEN, NO ₂ +NO ₃ DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)
OCT									
21...	2230	12	--	--	0.990	--	4.40	--	1.53
21...	2315	25	--	--	0.290	--	2.40	--	0.750
21...	2345	26	--	--	0.170	--	1.90	--	0.390
22...	0115	17	--	--	0.130	--	3.40	--	0.360
22...	0330	6.7	--	--	0.120	--	3.60	--	0.210
22...	0918	0.77	--	--	0.160	--	5.60	--	0.200
27...	1030	0.17	413	6.0	0.150	0.140	8.80	8.60	0.160
NOV									
20...	0930	6.7	--	--	0.060	--	2.80	--	0.240
20...	1115	30	--	--	0.040	--	1.70	--	0.180
20...	1215	28	--	--	0.050	--	1.50	--	0.080
20...	1330	32	--	--	0.040	--	1.70	--	0.140
20...	1345	35	--	--	0.040	--	1.70	--	0.190
20...	1515	28	--	--	0.050	--	2.20	--	0.240
20...	1915	9.2	--	--	0.070	--	3.50	--	0.240
20...	2015	8.4	--	--	0.080	--	3.60	--	0.240
20...	2315	6.0	--	--	0.070	--	3.80	--	0.180
30...	1115	0.84	470	7.5	0.060	0.050	7.60	7.60	0.180
JAN									
03...	1145	0.39	439	4.0	0.050	0.050	7.70	7.70	0.010
FEB									
01...	1120	0.84	400	8.0	0.060	0.060	8.00	8.00	0.120
21...	1315	13	--	--	0.150	--	3.10	--	0.840
21...	1345	24	--	--	0.110	--	2.00	--	0.630
21...	1400	29	--	--	0.090	--	1.80	--	0.570
21...	1430	26	--	--	0.100	--	2.20	--	0.600
21...	1530	15	--	--	0.070	--	2.80	--	0.540
21...	1700	6.7	--	--	0.060	--	4.70	--	0.510
22...	1103	4.3	--	--	0.070	--	5.00	--	0.960
MAR									
01...	1130	1.0	354	6.0	0.050	0.040	7.50	7.50	0.050
APR									
11...	1400	1.1	305	15.0	0.040	0.030	6.80	6.40	<0.010
MAY									
05...	2130	14	--	--	0.110	--	2.90	--	5.30
06...	0015	19	--	--	0.110	--	2.90	--	2.00
06...	0130	28	--	--	0.080	--	2.60	--	1.70
06...	0200	55	--	--	0.090	--	1.90	--	1.50
06...	0230	79	--	--	0.110	--	2.10	--	1.30
06...	0245	156	--	--	0.090	--	2.50	--	1.30
06...	0330	119	--	--	0.080	--	2.90	--	1.30
06...	0515	43	--	--	0.080	--	3.60	--	1.10
06...	0700	19	--	--	0.090	--	3.80	--	0.860
06...	1315	6.0	--	--	0.060	--	4.80	--	0.510
06...	2015	13	--	--	0.090	--	4.50	--	0.300
06...	2100	16	--	--	0.100	--	3.40	--	0.550
06...	2130	15	--	--	0.080	--	3.00	--	0.680
06...	2345	7.0	--	--	0.070	--	3.60	--	0.560
07...	0200	5.1	--	--	0.050	--	4.40	--	0.270
16...	0730	E15	--	--	0.090	--	3.30	--	0.350
16...	0830	E52	--	--	0.060	--	1.20	--	0.290
16...	1000	E98	--	--	0.050	--	2.00	--	0.280
16...	1200	E49	--	--	0.050	--	2.60	--	0.200
16...	1430	E97	--	--	0.050	--	2.40	--	0.150
16...	1730	E26	--	--	0.050	--	3.60	--	0.120
16...	2245	E14	--	--	0.040	--	4.50	--	0.090
17...	0700	E21	--	--	0.030	--	3.70	--	0.190
17...	1200	E11	--	--	0.030	--	4.90	--	0.090
23...	1115	E3.6	260	14.0	0.030	0.030	6.20	6.10	0.050
23...	1515	E9.2	--	--	0.090	--	4.40	--	0.330
24...	0030	E25	--	--	0.070	--	3.00	--	0.260
24...	0130	E18	--	--	0.060	--	2.60	--	0.330
24...	0300	E9.2	--	--	0.060	--	3.20	--	0.250
24...	0815	E6.0	--	--	0.040	--	4.60	--	0.110
JUN									
09...	1130	E8.8	--	--	0.300	--	5.70	--	0.320
09...	1215	E15	--	--	0.200	--	4.00	--	0.570

< Actual value is known to be less than the value shown.
 E Estimated.

CONESTOGA RIVER BASIN

0157608335 LITTLE CONESTOGA CREEK, SITE 3A, NEAR MORGANTOWN, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT								
21...	--	14	--	18	3.50	--	614	20
21...	--	13	--	15	5.30	--	--	--
21...	--	10	--	12	4.80	--	1840	129
22...	--	4.5	--	7.9	2.20	--	369	17
22...	--	3.5	--	7.1	1.60	--	139	2.5
22...	--	2.5	--	8.1	0.840	--	52	0.11
27...	0.170	1.7	1.7	10	0.330	0.270	19	0.01
NOV								
20...	--	5.6	--	8.4	2.40	--	440	8.0
20...	--	6.2	--	7.9	2.20	--	--	--
20...	--	9.7	--	11	3.30	--	--	--
20...	--	5.2	--	6.9	2.10	--	832	72
20...	--	7.1	--	8.8	2.20	--	--	--
20...	--	3.9	--	6.1	1.60	--	--	--
20...	--	3.3	--	6.8	1.30	--	--	--
20...	--	4.0	--	7.6	1.90	--	387	8.8
20...	--	2.9	--	6.7	1.20	--	136	2.2
30...	0.150	0.86	0.83	8.5	0.240	0.160	16	0.04
JAN								
03...	0.010	0.50	0.45	8.2	0.130	0.110	3	0.00
FEB								
01...	0.120	1.1	0.76	9.1	0.160	0.120	8	0.02
21...	--	19	--	22	7.60	--	4280	150
21...	--	29	--	31	9.90	--	6990	453
21...	--	20	--	22	7.30	--	7190	563
21...	--	12	--	14	3.70	--	4160	292
21...	--	7.7	--	10	3.70	--	1910	77
21...	--	4.2	--	8.9	0.900	--	740	13
22...	--	3.1	--	8.1	0.550	--	163	1.9
MAR								
01...	0.030	1.8	0.69	9.3	0.150	0.090	95	0.26
APR								
11...	<0.010	0.74	0.49	7.5	0.140	0.060	360	1.1
MAY								
05...	--	18	--	21	5.60	--	1090	41
06...	--	8.4	--	11	2.80	--	647	33
06...	--	10	--	13	3.50	--	1430	108
06...	--	33	--	35	7.30	--	--	--
06...	--	15	--	17	7.70	--	--	--
06...	--	12	--	14	2.40	--	4080	1720
06...	--	9.6	--	12	1.40	--	1810	582
06...	--	4.0	--	7.6	1.90	--	632	73
06...	--	4.0	--	7.8	0.130	--	277	14
06...	--	1.9	--	6.7	0.410	--	161	2.6
06...	--	3.8	--	8.3	1.10	--	263	9.2
06...	--	6.5	--	9.9	2.20	--	713	31
06...	--	3.9	--	6.9	1.70	--	--	--
06...	--	3.2	--	6.8	0.860	--	149	2.8
07...	--	1.6	--	6.0	0.400	--	70	0.96
16...	--	6.8	--	10	2.50	--	590	E24
16...	--	6.4	--	7.6	4.10	--	2090	E293
16...	--	5.1	--	7.1	2.60	--	983	E260
16...	--	2.5	--	5.1	1.40	--	428	E57
16...	--	3.2	--	5.6	1.60	--	588	E154
16...	--	1.6	--	5.2	0.690	--	162	E11
16...	--	1.3	--	5.8	0.410	--	78	E2.9
17...	--	1.9	--	5.6	0.750	--	126	E7.1
17...	--	1.2	--	--	0.340	--	51	E1.5
23...	0.040	0.70	0.55	6.9	0.170	0.070	48	E0.47
23...	--	4.7	--	9.1	1.40	--	365	E9.1
24...	--	7.1	--	10	3.00	--	1570	E106
24...	--	4.8	--	7.4	1.90	--	701	E34
24...	--	3.6	--	6.8	1.30	--	336	E8.3
24...	--	1.9	--	6.5	0.490	--	122	E2.0
JUN								
09...	--	4.0	--	9.7	1.00	--	249	E5.9
09	--	4.0	--	8.0	1.40	--	--	--

< Actual value is known to be less than the value shown.
E Estimated.

CONESTOGA RIVER BASIN

0157608335 LITTLE CONESTOGA CREEK, SITE 3A, NEAR MORGANTOWN, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)
JUN--Con't									
09...	1430	E9.6	--	--	0.190	--	4.00	--	0.550
09...	1815	E8.0	--	--	0.200	--	4.60	--	0.600
09...	1915	E42	--	--	0.290	--	1.90	--	0.580
09...	2015	E150	--	--	0.100	--	2.90	--	0.970
09...	2100	E48	--	--	0.120	--	4.00	--	0.730
09...	2200	E24	--	--	0.160	--	4.80	--	0.690
09...	2400	E9.6	--	--	0.190	--	4.80	--	0.600
15...	2000	E33	--	--	0.160	--	2.80	--	0.340
15...	2030	E54	--	--	0.110	--	3.00	--	0.510
15...	2100	E67	--	--	0.100	--	2.90	--	0.410
15...	2130	E46	--	--	0.100	--	3.00	--	0.390
15...	2230	E20	--	--	0.100	--	3.40	--	0.360
16...	0030	E7.3	--	--	0.110	--	4.40	--	0.280
22...	1700	E15	--	--	0.230	--	4.00	--	0.530
22...	1800	E59	--	--	0.100	--	2.80	--	0.360
22...	1830	E75	--	--	0.080	--	2.90	--	0.290
22...	1900	E46	--	--	0.080	--	3.00	--	0.250
22...	2047	E12	--	--	0.100	--	4.20	--	0.280
22...	2145	E6.7	--	--	0.110	--	2.40	--	0.280
28...	1010	E2.4	326	18.0	0.070	0.060	7.10	7.10	0.040
JUL									
12...	1230	E1.3	346	19.5	0.090	0.080	9.40	8.20	0.050
13...	0600	E12	--	--	0.440	--	5.30	--	--
13...	0730	E21	--	--	0.240	--	2.90	--	1.30
13...	0830	E18	--	--	0.240	--	3.40	--	1.20
13...	1100	E49	--	--	0.110	--	2.70	--	0.720
13...	1245	E25	--	--	0.110	--	4.40	--	0.780
13...	1400	E16	--	--	0.110	--	5.60	--	0.760
13...	1745	E5.4	--	--	0.100	--	6.30	--	0.400
AUG									
03...	1115	E1.1	375	20.5	0.130	0.130	8.60	8.60	<0.020
31...	1140	E0.52	384	22.0	0.140	0.130	8.70	8.70	0.020
SEP									
29...	1230	E0.54	414	16.0	0.200	0.200	9.20	9.10	0.020

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
JUN--Con't								
09...	--	4.1	--	8.1	1.10	--	126	E33
09...	--	3.7	--	8.3	1.10	--	155	E3.3
09...	--	15	--	17	4.40	--	4990	E566
09...	--	11	--	14	4.40	--	2780	E1130
09...	--	7.3	--	11	2.10	--	1270	E165
09...	--	4.8	--	9.6	2.00	--	--	--
09...	--	3.5	--	8.3	1.10	--	190	E4.9
15...	--	17	--	20	7.00	--	4290	E382
15...	--	19	--	22	9.80	--	--	--
15...	--	12	--	15	6.90	--	4150	E751
15...	--	8.5	--	11	4.50	--	2590	E322
15...	--	4.2	--	7.6	2.50	--	1200	E65
16...	--	2.6	--	7.0	1.30	--	--	--
22...	--	9.2	--	13	4.10	--	1290	E52
22...	--	15	--	18	7.80	--	4750	E757
22...	--	8.5	--	11	5.30	--	2800	E567
22...	--	6.1	--	9.1	3.80	--	2110	E262
22...	--	4.1	--	8.3	1.90	--	--	--
22...	--	3.3	--	5.7	1.30	--	336	E6.1
28...	0.030	0.52	0.47	7.6	0.170	0.090	35	E0.23
JUL								
12...	<0.020	1.7	0.34	11	0.110	0.080	11	E0.04
13...	0.850	6.4	--	12	2.10	--	691	E22
13...	--	9.6	--	12	3.10	--	1460	E83
13...	--	6.8	--	10	2.20	--	988	E48
13...	--	5.0	--	7.7	1.90	--	994	E132
13...	--	4.0	--	8.4	1.30	--	2740	E185
13...	--	3.7	--	9.3	1.10	--	693	E30
13...	--	2.0	--	8.3	0.420	--	56	E0.82
AUG								
03...	<0.020	0.75	0.75	9.3	0.120	0.090	8	E0.02
31...	0.020	0.51	0.35	9.2	0.130	0.100	23	E0.03
SEP								
29...	0.020	1.1	0.72	10	0.140	0.110	43	E0.06

E Estimated.

CONESTOGA RIVER BASIN

0157608335 LITTLE CONESTOGA CREEK, SITE 3A, NEAR MORGANTOWN, PA--Continued

INSTANTANEOUS SUSPENDED-SEDIMENT DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, DIS- CHARGE, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT				
21...	2230	12	614	20
21...	2345	26	1840	129
22...	0115	17	369	17
22...	0330	6.7	139	2.5
22...	0918	0.77	52	0.11
27...	1030	0.17	19	0.01
NOV				
20...	0930	6.7	440	8.0
20...	1100	28	1690	128
20...	1330	32	832	72
20...	1445	33	587	52
20...	1500	31	444	37
20...	2015	8.4	387	8.8
20...	2315	6.0	136	2.2
30...	1115	0.84	16	0.04
JAN				
03...	1145	0.39	3	0.00
15...	0200	10	907	24
15...	0300	12	692	22
15...	0430	7.7	282	5.9
15...	0530	5.4	180	2.6
FEB				
01...	1120	0.84	8	0.02
21...	1315	13	4280	150
21...	1345	24	6990	453
21...	1400	29	7190	563
21...	1430	26	4160	292
21...	1530	15	1910	77
21...	1700	6.7	740	13
22...	1103	4.3	163	1.9
MAR				
01...	1130	1.0	95	0.26
24...	1530	9.2	1230	31
24...	1600	11	1590	47
24...	1700	11	1140	34
24...	1800	8.8	616	15
24...	2000	5.1	267	3.7
APR				
11...	1400	1.1	360	1.1
MAY				
05...	2130	14	1090	41
06...	0015	19	647	33
06...	0130	28	1430	108
06...	0245	156	4080	1720
06...	0330	119	1810	582
06...	0515	43	632	73
06...	0700	19	277	14
06...	1315	6.0	161	2.6
06...	2015	13	263	9.2
06...	2100	16	713	31
06...	2345	7.0	149	2.8
07...	0200	5.1	70	0.96
10...	0815	6.7	147	2.7
10...	0945	16	495	21
10...	1015	16	493	21
10...	1245	10	188	5.1
10...	1800	5.7	63	0.97
11...	1425	3.9	28	0.29
16...	0730	E15	590	E24
16...	0830	E52	2090	E293
16...	1000	E98	983	E260
16...	1200	E49	428	E57
16...	1430	E97	588	E154
16...	1730	E26	162	E11
16...	2245	E14	78	E2.9
17...	0700	E21	126	E7.1
17...	1200	E11	51	E1.5
23...	1115	E3.6	48	E0.47
23...	1515	E9.2	365	E9.1
24...	0030	E25	1570	E106
24...	0130	E18	701	E34
24...	0300	E9.2	336	E8.3
24...	0815	E6.0	122	E2.0

E Estimated.

CONESTOGA RIVER BASIN

0157608335 LITTLE CONESTOGA CREEK, SITE 3A, NEAR MORGANTOWN, PA--Continued
 INSTANTANEOUS SUSPENDED-SEDIMENT DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
JUN				
09...	1130	E8.8	249	E5.9
09...	1430	E9.6	126	E33
09...	1815	E8.0	155	E3.3
09...	1915	E42	4990	E566
09...	2015	E150	2780	E1130
09...	2100	E48	1270	E165
09...	2400	E9.6	190	E4.9
15...	2000	E33	4290	E382
15...	2100	E67	4150	E751
15...	2130	E46	2590	E322
15...	2230	E20	1200	E65
15...	2400	E9.6	426	E11
16...	1915	E16	927	E40
16...	1930	E25	3650	E246
16...	1945	E25	4150	E280
16...	2015	E18	4860	E236
16...	2130	E8.4	1500	E34
21...	2045	E14	1940	E73
21...	2100	E26	6330	E444
21...	2215	E7.3	3150	E62
22...	1700	E15	1290	E52
22...	1800	E59	4750	E757
22...	1830	E75	2800	E567
22...	1900	E46	2110	E262
22...	2045	E12	605	E20
22...	2145	E6.7	336	E6.1
28...	1010	E2.4	35	E0.23
JUL				
12...	1230	E1.3	11	E0.04
13...	0600	E12	691	E22
13...	0730	E21	1460	E83
13...	0830	E18	988	E48
13...	1100	E49	994	E132
13...	1245	E25	2740	E185
13...	1400	E16	693	E30
13...	1745	E5.4	56	E0.82
AUG				
03...	1115	E1.1	8	E0.02
31...	1140	E0.52	23	E0.03
SEP				
29...	1230	E0.54	43	E0.06

PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	ALA- CHLOR TOTAL RECOVER (μG/L)	ATRA- ZINE, TOTAL (μG/L)	CYAN- AZINE TOTAL (μG/L)	METOLA- CHLOR IN WHOLE WATER (μG/L)	PRO- PAZINE TOTAL (μG/L)	SIMA- ZINE TOTAL (μG/L)	TOX- APHENE, TOTAL (μG/L)
OCT									
27...	1030	0.17	<0.10	0.40	0.10	--	<0.10	<0.10	--
MAY									
23...	1115	E3.6	<0.05	<0.30	<0.30	0.17	<0.30	<0.30	<1
JUN									
28...	1010	E2.4	0.05	2.7	0.48	0.41	<0.30	<0.30	<1
JUL									
12...	1230	E1.3	<0.10	0.64	<0.30	0.22	<0.30	<0.30	<1
AUG									
03...	1115	E1.1	<0.10	<0.30	0.32	0.13	<0.30	<0.30	<1
31...	1140	E0.52	<0.10	1.6	0.63	0.17	<0.30	<0.30	<1
SEP									
29...	1230	E0.54	<0.10	1.9	0.88	0.26	<0.30	<0.30	<1

E Estimated.

< Actual value is known to be less than the value shown.

CONESTOGA RIVER BASIN

015760839 UNNAMED TRIBUTARY TO LITTLE CONESTOGA CREEK, SITE 9, AT CHURCHTOWN, PA

LOCATION.--Lat 40°08'20", long 75°58'14", Lancaster County, Hydrologic Unit 02050306, on upstream side of bridge on farm lane, 0.1 mi upstream from mouth, and 0.5 mi northwest of Churchtown.

DRAINAGE AREA.--1.43 mi².

PERIOD OF RECORD.--Water years 1983 to current year.

COOPERATION.--Water-quality samples collected by Pa. Department of Environmental Resources and U.S. Geological Survey. Chemical samples analyzed by Pa. Department of Environmental Resources, Bureau of Laboratories.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON- DUCT- ANCE (μS/CM)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)
OCT 27...	0930	0.50	295	3.5	0.030	0.030	4.20	4.20	0.020
NOV 30...	1025	1.9	420	6.0	0.020	0.020	6.60	6.60	0.580
JAN 03...	1030	0.67	346	2.0	0.030	0.030	6.10	6.00	0.030
FEB 01...	1020	0.81	321	7.0	0.030	0.030	6.10	6.10	0.040
MAR 01...	1040	1.5	277	5.0	0.020	0.020	6.50	6.50	0.020
APR 11...	1025	2.3	300	8.5	0.020	0.020	5.90	5.30	<0.010
MAY 23...	1020	2.9	265	15.0	0.020	0.020	6.70	6.20	<0.020
JUN 28...	1345	3.5	270	21.0	0.030	0.030	6.10	6.10	0.030
JUL 12...	1015	2.0	289	20.0	0.060	0.050	5.30	5.30	0.090
AUG 03...	1015	2.0	308	20.0	0.030	0.030	5.70	5.70	0.020
AUG 31...	1015	0.84	258	20.0	0.840	0.800	3.80	3.80	0.050
SEP 29...	1030	0.92	273	14.0	0.060	0.060	4.10	4.10	0.060

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT 27...	0.040	1.6	0.51	5.8	0.220	0.190	4	0.01
NOV 30...	0.580	1.6	1.2	8.2	0.320	0.220	34	0.17
JAN 03...	0.020	1.7	1.2	7.8	0.180	0.100	41	0.07
FEB 01...	0.040	1.3	0.86	7.4	0.210	0.160	12	0.03
MAR 01...	0.020	0.82	0.64	7.3	0.130	0.110	10	0.04
APR 11...	<0.010	0.51	0.36	6.4	0.130	0.080	20	0.12
MAY 23...	<0.020	0.87	<0.20	7.6	0.140	0.120	11	0.09
JUN 28...	<0.020	0.93	0.65	7.0	0.150	0.100	22	0.21
JUL 12...	0.080	1.1	0.76	6.4	0.220	0.160	19	0.10
AUG 03...	0.020	0.86	0.67	6.6	0.170	0.140	19	0.10
AUG 31...	0.080	1.0	0.67	4.8	0.210	0.160	34	0.08
SEP 29...	0.060	0.93	0.62	5.0	0.250	0.220	10	0.02

< Actual value is known to be less than the value shown.

CONESTOGA RIVER BASIN

01576085 LITTLE CONESTOGA CREEK NEAR CHURCHTOWN, PA

LOCATION.--Lat 40°08'41", long 75°59'20", Lancaster County, Hydrologic Unit 02050306, on left bank 40 ft upstream from bridge on Smoketown Road (Township Route 773), 0.2 mi upstream from small right-bank tributary, and 1.6 mi northwest of Churchtown.

DRAINAGE AREA.--5.82 mi², excluding unnamed spring tributary 25 ft downstream.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WDR PA-83-2: 1982(P).

GAGE.--Water-stage recorder and wooden control. Elevation of gage is 410 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

AVERAGE DISCHARGE.--7 years, 7.48 ft³/s, 17.45 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,520 ft³/s, Sept. 8, 1987, gage height, 8.83 ft, from rating curve extended above 230 ft³/s on basis of slope-conveyance study and contracted-opening measurement at gage height 8.25 ft; minimum, 0.19 ft³/s, Mar. 7, 1986, gage height, 0.68 ft, result of freezeup; minimum gage height, 0.60 ft, Sept. 3, 1983.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 16, 1982, reached a stage of 8.25 ft, from floodmarks, discharge, 1,210 ft³/s, from rating curve extended as explained above. Flood of June 1972 reached a stage of about 9.8 ft, discharge not determined, from information by local residents.

EXTREMES 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)
May 6	0230	752	7.18	June 16	1930	260	4.90
May 16	1400	347	5.52	June 22	1800	*1,030	*7.88
June 9	2015	372	5.66	July 13	1000	352	5.55
June 15	2015	817	7.36				

Minimum discharge, 0.35 ft³/s, Oct. 15, gage height 0.72 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	1.6	6.2	2.6	4.2	6.1	7.7	4.7	7.8	8.7	6.6	2.6
2	2.6	1.6	5.5	2.6	4.1	5.7	7.1	11	7.3	8.0	6.0	2.6
3	2.6	1.5	5.1	2.5	4.1	5.5	7.6	5.3	6.8	7.5	5.5	2.5
4	1.7	1.4	4.5	2.3	3.7	5.3	11	4.7	7.0	7.8	5.2	2.4
5	1.6	9.8	4.2	2.2	3.7	5.6	11	15	6.3	22	4.9	2.3
6	1.4	5.2	4.1	2.0	3.8	9.5	19	140	6.9	11	4.8	2.4
7	1.4	2.5	4.0	2.5	3.6	7.2	12	31	15	8.8	4.9	2.3
8	1.4	2.2	3.7	6.6	3.4	6.1	11	20	7.7	7.6	4.6	2.3
9	1.4	2.1	3.6	4.9	3.0	6.0	9.9	16	46	6.9	4.3	2.3
10	1.3	2.1	3.2	3.6	3.2	6.4	8.6	34	19	6.6	4.1	2.3
11	1.3	1.9	3.1	3.5	3.3	8.5	8.0	24	11	6.1	4.4	2.1
12	1.2	1.7	2.8	11	3.2	9.9	7.5	18	9.4	5.8	5.5	2.1
13	1.2	3.9	2.8	7.4	3.0	8.2	7.1	15	9.6	74	4.5	2.0
14	1.2	2.6	2.7	5.3	4.1	7.6	6.8	14	8.3	15	4.4	2.0
15	.98	2.2	2.8	26	5.7	7.3	8.2	14	78	11	4.4	2.0
16	1.1	2.1	2.7	11	6.3	6.4	7.5	101	44	12	4.0	2.1
17	1.0	14	2.6	8.1	4.4	6.0	6.6	45	21	10	3.7	2.8
18	1.2	4.5	2.5	7.0	4.1	9.6	6.2	26	14	8.7	3.5	2.1
19	1.2	3.7	2.4	6.3	3.9	7.5	6.2	21	11	7.9	5.0	4.9
20	1.2	69	2.5	5.7	3.9	7.0	5.7	17	10	10	4.2	9.9
21	4.4	20	3.2	5.0	27	14	5.6	15	9.9	7.8	3.6	3.7
22	22	10	2.6	4.7	23	8.6	5.4	13	132	7.2	3.4	4.9
23	2.7	8.1	3.1	4.6	13	7.8	5.2	17	25	8.5	3.3	3.7
24	3.0	6.8	5.1	4.6	9.4	21	5.0	31	16	6.5	3.0	3.0
25	2.3	5.8	4.3	4.5	8.1	16	4.9	15	28	15	2.9	2.6
26	2.0	5.3	3.0	4.7	7.8	11	4.7	13	17	8.5	2.8	5.3
27	1.8	5.5	2.8	4.7	7.2	10	4.5	13	12	11	2.8	2.9
28	1.7	23	3.3	4.3	6.6	9.2	4.3	10	16	6.9	2.8	2.6
29	1.6	8.2	3.0	4.3	---	8.6	4.4	9.4	12	6.2	2.8	2.4
30	1.6	7.0	2.7	5.4	---	9.7	4.5	9.0	9.5	5.8	3.1	2.4
31	1.5	---	2.6	4.5	---	9.2	---	8.5	---	10	2.6	---
TOTAL	73.08	235.3	106.7	174.4	180.8	266.5	223.2	730.6	623.5	348.8	127.6	89.5
MEAN	2.36	7.84	3.44	5.63	6.46	8.60	7.44	23.6	20.8	11.3	4.12	2.98
MAX	22	69	6.2	26	27	21	19	140	132	74	6.6	9.9
MIN	.98	1.4	2.4	2.0	3.0	5.3	4.3	4.7	6.3	5.8	2.6	2.0
CFSM	.41	1.35	.59	.97	1.11	1.48	1.28	4.05	3.57	1.93	.71	.51
IN.	.47	1.50	.68	1.11	1.16	1.70	1.43	4.67	3.99	2.23	.82	.57

CAL YR 1988 TOTAL 2822.48 MEAN 7.71 MAX 167 MIN .98 CFSM 1.33 IN. 18.04
WTR YR 1989 TOTAL 3179.98 MEAN 8.71 MAX 140 MIN .98 CFSM 1.50 IN. 20.33

CONESTOGA RIVER BASIN

01576085 LITTLE CONESTOGA CREEK NEAR CHURCHTOWN, PA--Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: August 1982 to September 1983 (discontinued).

INSTRUMENTATION.--Automatic sediment pumping sampler since August 1982.

COOPERATION.--Water-quality samples collected by Pa. Department of Environmental Resources and U.S. Geological Survey. Chemical samples analyzed by Pa. Department of Environmental Resources, Bureau of Laboratories except for the October pesticide sample which was analyzed by the U.S. Geological Survey.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (μ S/CM)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)
OCT									
21...	2215	12	--	--	0.380	--	4.80	--	0.690
21...	2345	80	--	--	0.200	--	3.70	--	0.320
22...	0015	114	--	--	0.180	--	3.10	--	0.570
22...	0115	109	--	--	0.220	--	2.40	--	0.490
22...	0615	22	--	--	0.130	--	3.40	--	0.460
22...	0845	12	--	--	0.110	--	4.10	--	0.340
22...	1215	6.9	--	--	0.100	--	4.80	--	0.320
27...	0840	1.9	508	6.0	0.060	0.060	8.20	8.20	0.020
NOV									
17...	0645	14	--	--	0.080	--	6.60	--	0.040
17...	0915	38	--	--	0.100	--	4.90	--	0.120
17...	1015	48	--	--	0.090	--	3.10	--	0.140
17...	1115	36	--	--	0.090	--	3.10	--	0.180
17...	1415	18	--	--	0.090	--	5.50	--	0.180
17...	2015	7.2	--	--	0.090	--	4.80	--	0.180
20...	0530	12	--	--	0.060	--	9.40	--	0.040
20...	0830	29	--	--	0.060	--	5.50	--	0.250
20...	1045	87	--	--	0.060	--	4.40	--	0.280
20...	1215	159	--	--	0.040	--	2.80	--	0.200
20...	1330	156	--	--	0.040	--	2.90	--	0.180
20...	1400	171	--	--	0.040	--	2.80	--	0.180
20...	1445	200	--	--	0.040	--	2.80	--	0.140
20...	1500	194	--	--	0.040	--	2.80	--	0.140
20...	1745	90	--	--	0.040	--	3.80	--	0.120
20...	2100	57	--	--	0.050	--	5.00	--	0.130
21...	0730	22	--	--	0.050	--	8.80	--	0.060
30...	0945	7.2	584	5.5	0.030	0.030	10.0	10.0	0.050
JAN									
03...	0940	2.4	541	2.0	0.040	0.040	9.60	9.60	<0.020
15...	0115	16	--	--	0.060	--	9.40	--	0.260
15...	0245	59	--	--	0.050	--	6.00	--	0.400
15...	0415	61	--	--	0.050	--	3.70	--	0.460
15...	0645	35	--	--	0.040	--	4.00	--	0.570
FEB									
01...	0945	4.3	517	6.0	0.060	0.060	9.40	9.40	0.040
21...	1330	63	--	--	0.120	--	5.60	--	1.80
21...	1345	86	--	--	0.110	--	5.20	--	1.60
21...	1415	131	--	--	0.100	--	4.70	--	1.20
21...	1445	128	--	--	0.090	--	3.10	--	1.20
21...	1545	96	--	--	0.070	--	3.40	--	1.10
21...	1700	58	--	--	0.070	--	3.70	--	0.750
21...	1930	30	--	--	0.060	--	4.90	--	0.660
22...	0130	17	--	--	0.060	--	7.90	--	0.440
22...	0630	21	--	--	0.060	--	8.80	--	0.360
22...	1000	34	--	--	0.070	--	7.30	--	0.690
22...	1230	32	--	--	0.060	--	7.00	--	0.780
22...	1600	26	--	--	0.070	--	7.90	--	0.720
22...	1930	20	--	--	0.060	--	9.00	--	0.570
23...	0530	14	--	--	0.040	--	10.0	--	0.140
MAR									
01...	1000	6.0	473	3.0	0.030	0.030	10.0	10.0	0.020
APR									
05...	2330	19	--	--	0.070	--	6.60	--	0.140
06...	0030	24	--	--	0.070	--	6.50	--	0.250
06...	0130	30	--	--	0.080	--	5.80	--	0.320
06...	0230	32	--	--	0.090	--	5.20	--	0.340
06...	0500	26	--	--	0.090	--	5.00	--	0.410
06...	0800	20	--	--	0.070	--	5.90	--	1.40
11...	0930	18	436	6.0	0.020	0.020	9.00	8.60	<0.010
MAY									
02...	0730	21	--	--	0.150	--	5.40	--	0.200
02...	0830	26	--	--	0.170	--	4.80	--	0.380
02...	0900	27	--	--	0.160	--	4.40	--	0.430
02...	1030	21	--	--	0.110	--	4.00	--	0.370
02...	1200	16	--	--	0.090	--	3.60	--	0.350

< Actual value is known to be less than the value shown.

CONESTOGA RIVER BASIN

01576085 LITTLE CONESTOGA CREEK NEAR CHURCHTOWN, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT								
21...	--	10	--	15	2.20	--	1110	36
21...	--	7.7	--	11	2.50	--	1430	309
22...	--	8.5	--	12	2.90	--	1340	412
22...	--	9.6	--	12	3.70	--	1170	344
22...	--	5.3	--	8.7	1.90	--	293	17
22...	--	3.7	--	7.8	1.50	--	151	4.9
22...	--	2.7	--	7.5	1.40	--	146	2.7
27...	0.020	1.2	1.2	9.4	0.210	0.190	10	0.05
NOV								
17...	--	1.5	--	8.1	0.470	--	146	5.5
17...	--	4.8	--	9.7	1.30	--	302	31
17...	--	5.6	--	8.7	2.00	--	438	57
17...	--	5.4	--	8.5	2.00	--	419	41
17...	--	3.6	--	9.1	1.60	--	238	12
17...	--	2.9	--	7.7	1.10	--	80	1.6
20...	--	0.99	--	10	0.310	--	82	2.7
20...	--	3.0	--	8.5	1.40	--	225	18
20...	--	4.4	--	8.8	0.040	--	546	128
20...	--	6.4	--	9.2	<0.020	--	1150	494
20...	--	5.8	--	8.7	0.080	--	1100	463
20...	--	5.7	--	8.5	2.70	--	1030	476
20...	--	6.7	--	9.5	0.190	--	--	--
20...	--	5.8	--	8.6	2.50	--	1410	739
20...	--	3.6	--	7.4	1.60	--	435	106
20...	--	2.4	--	7.4	1.10	--	172	26
21...	--	1.9	--	11	0.620	--	62	3.7
30...	0.040	0.54	0.42	11	0.150	0.120	9	0.17
JAN								
03...	<0.020	0.45	0.43	10	0.120	0.090	13	0.08
15...	--	1.7	--	11	0.490	--	172	7.4
15...	--	5.0	--	11	0.920	--	938	149
15...	--	5.2	--	8.9	1.30	--	780	128
15...	--	3.5	--	7.5	1.40	--	446	42
FEB								
01...	0.040	0.94	0.81	10	0.180	0.210	9	0.10
21...	--	11	--	17	0.700	--	--	--
21...	--	12	--	17	0.710	--	--	--
21...	--	20	--	25	0.850	--	--	--
21...	--	18	--	21	1.10	--	--	--
21...	--	14	--	17	1.20	--	--	--
21...	--	12	--	16	1.20	--	--	--
21...	--	5.5	--	10	0.780	--	--	--
22...	--	2.7	--	11	0.340	--	--	--
22...	--	2.3	--	11	0.250	--	--	--
22...	--	3.5	--	11	0.400	--	--	--
22...	--	3.8	--	11	0.940	--	--	--
22...	--	2.7	--	11	0.860	--	--	--
22...	--	2.2	--	11	0.630	--	--	--
23...	--	1.3	--	11	0.270	--	--	--
MAR								
01...	0.020	0.51	0.51	11	0.110	0.100	8	0.13
APR								
05...	--	2.0	--	8.6	0.400	--	99	5.1
06...	--	2.9	--	9.4	0.670	--	135	8.7
06...	--	3.2	--	9.0	0.850	--	--	--
06...	--	3.4	--	8.6	0.960	--	239	21
06...	--	3.1	--	8.1	0.910	--	178	12
06...	--	3.6	--	9.5	0.980	--	113	6.1
11...	<0.010	0.51	0.51	9.5	0.070	0.050	8	0.39
MAY								
02...	--	2.7	--	8.1	0.670	--	218	12
02...	--	4.8	--	9.6	1.00	--	252	18
02...	--	5.0	--	9.4	1.30	--	240	17
02...	--	3.6	--	7.6	0.880	--	209	12
02...	--	2.4	--	6.0	0.760	--	118	5.1

< Actual value is known to be less than the value shown.

CONESTOGA RIVER BASIN

01576085 LITTLE CONESTOGA CREEK NEAR CHURCHTOWN, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (μ S/CM)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)
MAY--Con't									
05...	2115	21	--	--	0.100	--	4.10	--	0.240
05...	2400	104	--	--	0.120	--	3.80	--	0.720
06...	0215	672	--	--	0.160	--	4.20	--	1.10
06...	0230	752	--	--	0.160	--	4.00	--	1.30
06...	0300	710	--	--	0.140	--	4.00	--	0.920
06...	0515	242	--	--	0.130	--	5.00	--	0.700
06...	0730	105	--	--	0.120	--	5.90	--	0.510
06...	1445	41	--	--	0.100	--	8.30	--	0.230
06...	1845	32	--	--	0.090	--	6.60	--	0.150
06...	2015	64	--	--	0.080	--	7.70	--	0.200
06...	2045	86	--	--	0.080	--	7.30	--	0.260
06...	2115	97	--	--	0.090	--	6.90	--	0.350
06...	2130	98	--	--	0.100	--	6.50	--	0.400
06...	2230	81	--	--	0.120	--	4.80	--	0.420
07...	0230	42	--	--	0.080	--	6.60	--	0.230
07...	1300	27	--	--	0.040	--	8.80	--	0.070
08...	1230	20	--	--	0.030	--	9.10	--	0.040
09...	1500	16	--	--	0.030	--	9.40	--	0.120
10...	0830	31	--	--	0.050	--	7.30	--	0.150
10...	1000	62	--	--	0.060	--	6.50	--	0.280
10...	1030	67	--	--	0.060	--	6.10	--	0.350
10...	1600	40	--	--	0.060	--	6.70	--	0.320
11...	1030	25	--	--	0.040	--	8.80	--	0.110
16...	0815	49	--	--	0.040	--	7.40	--	0.080
16...	0900	128	--	--	0.050	--	6.10	--	0.340
16...	0930	202	--	--	0.070	--	4.50	--	0.370
16...	1015	217	--	--	0.070	--	3.70	--	0.380
16...	1115	205	--	--	0.060	--	3.00	--	0.310
16...	1215	174	--	--	0.060	--	3.60	--	0.260
16...	1315	245	--	--	0.060	--	3.80	--	0.240
16...	1400	347	--	--	0.060	--	4.00	--	0.240
16...	1615	154	--	--	0.060	--	4.00	--	0.200
16...	2315	54	--	--	0.050	--	7.10	--	0.180
17...	0615	53	--	--	0.040	--	7.30	--	0.130
17...	0745	67	--	--	0.040	--	7.70	--	0.160
17...	1045	52	--	--	0.040	--	7.00	--	0.140
23...	0950	12	393	14.0	0.030	0.030	9.00	8.50	<0.020
23...	1615	22	--	--	0.050	--	8.00	--	0.020
23...	2215	19	--	--	0.080	--	6.50	--	0.160
23...	2345	63	--	--	0.070	--	5.40	--	0.130
24...	0045	91	--	--	0.070	--	4.20	--	0.390
24...	0200	74	--	--	0.070	--	4.00	--	0.430
24...	0415	38	--	--	0.070	--	4.50	--	0.480
24...	0945	25	--	--	0.070	--	6.60	--	0.280
JUN									
09...	1230	19	--	--	0.120	--	8.60	--	0.020
09...	1430	33	--	--	0.130	--	6.60	--	0.270
09...	1600	28	--	--	0.130	--	6.10	--	0.450
09...	1830	22	--	--	0.150	--	7.00	--	0.300
09...	1930	86	--	--	0.130	--	5.40	--	0.390
09...	1945	206	--	--	0.110	--	5.30	--	0.390
09...	2000	345	--	--	0.110	--	4.20	--	0.490
09...	2015	372	--	--	0.100	--	4.20	--	0.430
09...	2030	328	--	--	0.070	--	4.20	--	0.400
09...	2045	277	--	--	0.070	--	3.70	--	0.420
09...	2145	172	--	--	0.090	--	4.40	--	0.390
09...	2300	77	--	--	0.100	--	4.80	--	0.560
10...	0030	42	--	--	0.110	--	8.40	--	0.210
10...	0900	18	--	--	0.110	--	9.80	--	0.150
10...	1400	15	--	--	0.090	--	11.0	--	0.070
15...	1930	146	--	--	0.070	--	4.40	--	0.290
15...	1945	192	--	--	0.070	--	5.20	--	0.260
15...	2000	566	--	--	0.070	--	6.20	--	0.160
15...	2015	817	--	--	0.080	--	5.20	--	0.350
15...	2100	690	--	--	0.080	--	4.10	--	0.580
15...	2215	239	--	--	0.090	--	3.20	--	0.380
15...	2345	95	--	--	0.080	--	3.40	--	0.300
16...	0200	42	--	--	0.080	--	4.40	--	0.170
16...	0430	28	--	--	0.070	--	5.20	--	0.110
16...	1005	20	--	--	0.060	--	7.40	--	0.060
22...	1600	81	--	--	0.100	--	7.90	--	0.150
22...	1630	713	--	--	0.110	--	5.30	--	0.680
22...	1730	936	--	--	0.080	--	2.10	--	0.380
22...	1800	1030	--	--	0.070	--	1.70	--	0.320
22...	1815	992	--	--	0.080	--	1.70	--	0.310
22...	1900	606	--	--	0.080	--	1.90	--	0.260
22...	2045	123	--	--	0.080	--	3.00	--	0.220
22...	2345	45	--	--	0.070	--	5.50	--	0.150

< Actual value is known to be less than the value shown.

CONESTOGA RIVER BASIN

01576085 LITTLE CONESTOGA CREEK NEAR CHURCHTOWN, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
MAY--Con't								
05...	--	2.8	--	6.9	0.900	--	239	14
05...	--	9.1	--	13	2.30	--	3440	966
06...	--	14	--	18	3.30	--	8800	16000
06...	--	27	--	31	8.60	--	10200	20700
06...	--	20	--	24	6.80	--	5730	11000
06...	--	7.2	--	12	2.60	--	1890	1230
06...	--	4.5	--	10	1.40	--	658	187
06...	--	1.9	--	10	0.490	--	134	15
06...	--	1.6	--	8.2	0.370	--	104	9.0
06...	--	1.9	--	9.6	0.570	--	267	46
06...	--	2.5	--	9.8	1.30	--	518	120
06...	--	3.8	--	11	1.50	--	690	181
06...	--	4.2	--	11	1.40	--	698	185
06...	--	4.0	--	8.8	0.120	--	582	127
07...	--	2.5	--	9.1	0.620	--	155	18
07...	--	1.2	--	10	0.250	--	49	3.6
08...	--	0.84	--	9.9	0.170	--	34	1.8
09...	--	0.87	--	10	0.190	--	40	1.7
10...	--	1.6	--	8.9	0.440	--	129	11
10...	--	2.6	--	9.1	0.810	--	310	52
10...	--	3.4	--	9.5	1.10	--	412	75
10...	--	2.4	--	9.1	0.750	--	152	16
11...	--	1.2	--	10	0.290	--	31	2.1
16...	--	1.8	--	9.2	0.270	--	315	42
16...	--	4.4	--	10	0.780	--	825	285
16...	--	8.0	--	12	0.780	--	2880	1570
16...	--	9.8	--	13	1.30	--	1940	1140
16...	--	7.1	--	10	1.30	--	1560	863
16...	--	4.6	--	8.2	1.20	--	1030	484
16...	--	4.1	--	7.9	1.00	--	920	609
16...	--	6.9	--	11	1.00	--	2150	2010
16...	--	3.4	--	7.4	0.780	--	603	251
16...	--	1.9	--	9.0	0.510	--	122	18
17...	--	1.7	--	9.0	0.380	--	67	9.6
17...	--	1.6	--	9.3	0.390	--	--	--
17...	--	1.6	--	8.6	0.460	--	77	11
23...	<0.020	0.65	0.58	9.6	0.090	0.060	42	1.4
23...	--	4.6	--	13	0.240	--	93	5.5
23...	--	3.8	--	10	0.490	--	85	4.4
23...	--	2.7	--	8.1	0.910	--	338	57
24...	--	5.9	--	10	2.30	--	936	230
24...	--	4.8	--	8.8	1.60	--	771	154
24...	--	4.1	--	8.6	1.40	--	391	40
24...	--	2.4	--	9.0	0.610	--	109	7.4
JUN								
09...	--	1.6	--	10	0.330	--	120	6.2
09...	--	3.6	--	10	0.790	--	163	15
09...	--	4.0	--	10	1.40	--	--	--
09...	--	3.6	--	11	1.10	--	93	5.5
09...	--	5.9	--	11	1.90	--	1150	267
09...	--	15	--	20	2.80	--	--	--
09...	--	24	--	28	5.10	--	6440	6000
09...	--	23	--	27	2.70	--	6400	6430
09...	--	18	--	22	3.90	--	4530	4010
09...	--	13	--	17	2.30	--	3580	2680
09...	--	11	--	15	3.50	--	--	--
09...	--	7.6	--	12	2.30	--	1540	320
10...	--	2.3	--	11	0.960	--	--	--
10...	--	2.1	--	12	0.550	--	--	--
10...	--	1.6	--	13	0.350	--	60	2.4
15...	--	19	--	23	9.10	--	7860	3100
15...	--	13	--	18	5.90	--	4130	2140
15...	--	6.7	--	13	3.40	--	2240	3420
15...	--	23	--	28	11.0	--	10400	23000
15...	--	19	--	23	8.40	--	8900	16600
15...	--	10	--	13	4.70	--	3240	2090
15...	--	6.0	--	9.4	3.50	--	2260	580
16...	--	3.2	--	7.6	1.60	--	704	80
16...	--	4.1	--	9.3	0.900	--	279	21
16...	--	1.6	--	9.0	0.360	--	84	4.5
22...	--	7.7	--	16	1.50	--	4010	877
22...	--	35	--	40	6.60	--	10700	20500
22...	--	32	--	34	6.60	--	10700	27100
22...	--	16	--	18	3.40	--	9230	25700
22...	--	15	--	17	5.50	--	6940	18600
22...	--	11	--	13	2.80	--	4190	6860
22...	--	7.8	--	11	3.30	--	1830	608
22...	--	3.4	--	8.9	1.50	--	544	66

< Actual value is known to be less than the value shown.

CONESTOGA RIVER BASIN

01576085 LITTLE CONESTOGA CREEK NEAR CHURCHTOWN, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (μ S/CM)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)
JUN--Con't									
23...	0145	35	--	--	0.080	--	5.40	--	0.170
23...	0815	25	--	--	0.080	--	7.30	--	0.110
23...	0915	24	--	--	0.080	--	7.50	--	0.100
25...	1715	59	--	--	0.070	--	7.40	--	0.080
25...	1745	97	--	--	0.070	--	6.60	--	0.110
25...	2100	30	--	--	0.080	--	5.40	--	0.160
25...	2200	52	--	--	0.090	--	3.30	--	0.200
26...	0330	20	--	--	0.080	--	7.10	--	0.160
28...	1445	12	420	18.0	0.070	0.070	8.20	8.20	0.020
JUL									
12...	0940	6.0	458	22.0	0.190	0.190	8.20	7.00	0.190
13...	0515	26	--	--	0.160	--	8.70	--	0.210
13...	0700	136	--	--	0.240	--	3.60	--	0.840
13...	0800	103	--	--	0.170	--	2.70	--	0.830
13...	0900	237	--	--	0.150	--	2.90	--	0.610
13...	0930	341	--	--	0.120	--	1.90	--	0.680
13...	1000	352	--	--	0.100	--	1.80	--	0.600
13...	1030	307	--	--	0.100	--	2.00	--	0.550
13...	1100	238	--	--	0.110	--	2.90	--	0.560
13...	1300	97	--	--	0.090	--	3.60	--	0.530
13...	1515	50	--	--	0.090	--	4.60	--	0.500
13...	1815	29	--	--	0.090	--	6.30	--	0.460
13...	2315	20	--	--	0.080	--	8.20	--	0.230
25...	1930	76	--	--	0.180	--	7.90	--	0.080
25...	1945	99	--	--	0.180	--	6.60	--	0.330
25...	2000	110	--	--	0.160	--	4.80	--	0.740
25...	2030	83	--	--	0.140	--	5.30	--	0.800
25...	2300	22	--	--	0.260	--	3.60	--	1.00
AUG									
03...	0945	5.8	500	20.0	0.100	0.100	8.80	8.70	0.070
31...	0930	2.6	445	21.5	0.270	0.270	6.07	6.07	--
SEP									
29...	0950	2.4	487	15.0	0.140	0.140	7.52	7.52	--

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
JUN--Con't								
23...	--	2.2	--	7.6	0.940	--	310	29
23...	--	1.4	--	8.7	0.470	--	90	6.1
23...	--	1.3	--	8.8	0.450	--	103	6.7
25...	--	4.3	--	12	1.50	--	714	114
25...	--	4.1	--	11	2.20	--	1440	377
25...	--	3.6	--	9.0	1.40	--	688	56
25...	--	3.3	--	6.6	1.10	--	653	92
26...	--	2.4	--	9.5	0.960	--	238	13
28...	<0.020	0.95	0.78	9.2	0.180	0.140	26	0.84
JUL								
12...	0.180	1.0	0.76	9.2	0.260	0.140	67	1.1
13...	--	2.7	--	11	0.500	--	422	30
13...	--	8.1	--	12	3.10	--	2200	808
13...	--	6.2	--	8.9	2.20	--	1410	392
13...	--	8.2	--	11	2.80	--	2000	1280
13...	--	8.5	--	10	3.70	--	3060	2820
13...	--	7.7	--	9.5	3.00	--	2330	2210
13...	--	7.3	--	9.3	2.90	--	2140	1770
13...	--	4.3	--	7.2	2.60	--	1510	970
13...	--	3.8	--	7.4	1.60	--	597	156
13...	--	3.0	--	7.6	1.10	--	249	34
13...	--	2.3	--	8.6	0.690	--	103	8.1
13...	--	1.7	--	9.9	0.390	--	55	3.0
25...	--	2.6	--	10	0.780	--	570	117
25...	--	4.4	--	11	1.30	--	--	--
25...	--	6.4	--	11	2.60	--	1410	419
25...	--	5.2	--	10	2.70	--	1660	372
25...	--	5.0	--	8.6	2.20	--	492	29
AUG								
03...	0.050	1.3	0.78	10	0.280	0.150	71	1.1
31...	--	1.6	1.0	7.7	0.440	0.290	118	0.83
SEP								
29...	--	1.2	1.2	8.7	0.320	0.280	33	0.21

< Actual value is known to be less than the value shown.

CONESTOGA RIVER BASIN

01576085 LITTLE CONESTOGA CREEK NEAR CHURCHTOWN, PA--Continued

INSTANTANEOUS SUSPENDED-SEDIMENT DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT				
21...	2215	12	1110	36
21...	2345	80	1430	309
22...	0015	114	1340	412
22...	0115	109	1170	344
22...	0245	68	619	114
22...	0615	22	293	17
22...	0845	12	151	4.9
22...	1215	6.9	146	2.7
27...	0840	1.9	10	0.05
NOV				
17...	0645	14	146	5.5
17...	0915	38	302	31
17...	1015	48	438	57
17...	1115	36	419	41
17...	1415	18	238	12
17...	2015	7.2	80	1.6
20...	0530	12	82	2.7
20...	0830	29	225	18
20...	1045	87	546	128
20...	1215	159	1150	494
20...	1330	156	1100	463
20...	1400	171	1030	476
20...	1430	198	1070	572
20...	1500	194	1410	739
20...	1745	90	435	106
20...	2100	57	172	26
21...	0730	22	62	3.7
27...	2330	9.1	198	4.9
27...	2400	16	319	14
28...	0030	44	866	103
28...	0130	74	1030	206
28...	0230	53	811	116
28...	0530	24	282	18
28...	1430	17	72	3.3
30...	0945	7.2	9	0.17
JAN				
03...	0940	2.4	13	0.08
15...	0115	16	172	7.4
15...	0245	59	938	149
15...	0415	61	780	128
15...	0645	35	446	42
16...	0145	13	39	1.4
FEB				
01...	0945	4.3	9	0.10
21...	1400	116	3250	1020
21...	1500	123	3870	1290
21...	1600	86	3030	704
21...	1830	38	1340	137
21...	2200	22	419	25
22...	0300	16	126	5.4
22...	0930	33	202	18
22...	1300	32	160	14
22...	1630	24	110	7.1
22...	2000	19	72	3.7
23...	0500	14	32	1.2
MAR				
01...	1000	6.0	8	0.13
18...	1745	25	44	3.0
18...	1815	24	455	29
18...	1845	22	398	24
18...	2115	14	345	13
APR				
05...	2330	19	99	5.1
06...	0030	24	135	8.7
06...	0230	32	239	21
06...	0500	26	178	12
06...	0800	20	113	6.1
11...	0930	18	8	0.39
MAY				
02...	0730	21	218	12
02...	0830	26	252	18
02...	0900	27	240	17
02...	1030	21	209	12
02...	1200	16	118	5.1
05...	2115	21	239	14
05...	2400	104	3440	966

CONESTOGA RIVER BASIN

01576085 LITTLE CONESTOGA CREEK NEAR CHURCHTOWN, PA--Continued

INSTANTANEOUS SUSPENDED-SEDIMENT DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
MAY--Con't				
06...	0215	672	8800	16000
06...	0230	752	10200	20700
06...	0300	710	5730	11000
06...	0515	242	1890	1230
06...	0730	105	658	187
06...	1445	41	134	15
06...	1845	32	104	9.0
06...	2015	64	267	46
06...	2045	86	518	120
06...	2115	97	690	181
06...	2130	98	698	185
06...	2230	81	582	127
07...	0230	42	155	18
07...	1300	27	49	3.6
08...	1230	20	34	1.8
09...	1500	16	40	1.7
10...	0830	31	129	11
10...	1000	62	310	52
10...	1030	67	412	75
10...	1600	40	152	16
11...	1030	25	31	2.1
16...	0815	49	315	42
16...	0900	128	825	285
16...	0930	202	2880	1570
16...	1015	217	1940	1140
16...	1115	205	1560	863
16...	1215	174	1030	484
16...	1315	245	920	609
16...	1400	347	2150	2010
16...	1615	154	603	251
16...	2315	54	122	18
17...	0615	53	67	9.6
17...	1045	52	77	11
17...	1915	32	56	4.8
18...	0415	29	45	3.5
23...	0950	12	42	1.4
23...	1615	22	93	5.5
23...	2215	19	85	4.4
23...	2345	63	338	57
24...	0045	91	936	230
24...	0200	74	771	154
24...	0415	38	391	40
24...	0945	25	109	7.4
JUN				
07...	0945	25	710	48
07...	1115	47	387	49
07...	1145	46	451	56
07...	1315	30	210	17
07...	1515	19	158	8.1
09...	1230	19	120	6.2
09...	1430	33	163	15
09...	1830	22	93	5.5
09...	1930	86	1150	267
09...	2000	345	6440	6000
09...	2015	372	6400	6430
09...	2030	328	4530	4010
09...	2045	277	3580	2680
09...	2300	77	1540	320
10...	1400	15	60	2.4
15...	1930	146	7860	3100
15...	1945	192	4130	2140
15...	2000	566	2240	3420
15...	2015	817	10400	23000
15...	2100	690	8900	16600
15...	2215	239	3240	2090
15...	2345	95	2260	580
16...	0200	42	704	80
16...	0430	28	279	21
16...	1005	20	84	4.5
16...	1845	74	1150	230
16...	1900	148	2180	871
16...	1930	260	8170	5740
16...	2000	180	4240	2060
16...	2245	48	1180	153
17...	0545	22	197	12
17...	0745	29	180	14
17...	1445	19	62	3.2

CONESTOGA RIVER BASIN

01576085 LITTLE CONESTOGA CREEK NEAR CHURCHTOWN, PA--Continued

INSTANTANEOUS SUSPENDED-SEDIMENT DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
JUN--Con't				
22...	1600	81	4010	877
22...	1630	713	10700	20500
22...	1730	936	10700	27100
22...	1800	1030	9230	25700
22...	1815	992	6940	18600
22...	1900	606	4190	6860
22...	2045	123	1830	608
22...	2345	45	544	66
23...	0145	35	310	29
23...	0815	25	90	6.1
23...	0915	24	103	6.7
25...	1715	59	714	114
25...	1745	97	1440	377
25...	2100	30	688	56
25...	2200	52	653	92
26...	0330	20	238	13
28...	1445	12	26	0.84
JUL				
12...	0940	6.0	67	1.1
13...	0515	26	422	30
13...	0700	136	2200	808
13...	0800	103	1410	392
13...	0900	237	2000	1280
13...	0930	341	3060	2820
13...	1000	352	2330	2210
13...	1030	307	2140	1770
13...	1100	238	1510	970
13...	1300	97	597	156
13...	1515	50	249	34
13...	1815	29	103	8.1
13...	2315	20	55	3.0
25...	1930	76	570	117
25...	2000	110	1410	419
25...	2030	83	1660	372
25...	2300	22	492	29
AUG				
03...	0945	5.8	71	1.1
31...	0930	2.6	118	0.83
SEP				
29...	0950	2.4	33	0.21

PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	ALA- CHLOR TOTAL RECOVER (μG/L)	ATRA- ZINE, TOTAL (μG/L)	CYAN- AZINE TOTAL (μG/L)	METOLA- CHLOR IN WHOLE WATER (μG/L)	PRO- PAZINE TOTAL (μG/L)	SIMA- ZINE TOTAL (μG/L)	TOX- APHENE, TOTAL (μG/L)
OCT									
27...	0840	1.9	<0.10	0.40	<0.10	--	<0.10	0.10	--
MAY									
23...	0950	12	<0.05	0.95	<0.30	0.18	<0.30	1.3	<1
JUN									
28...	1445	12	<0.05	<0.30	0.57	0.52	<0.30	<0.30	<1
JUL									
12...	0940	6.0	<0.10	1.2	<0.30	0.15	<0.30	<0.30	<1
AUG									
03...	0945	5.8	<0.10	<0.30	0.37	0.11	<0.30	<0.30	<1
31...	0930	2.6	<0.10	1.6	<0.30	<0.10	<0.30	<0.30	<1
SEP									
29...	0950	2.4	<0.10	1.2	<0.30	<0.10	<0.30	<0.30	<1

< Actual value is known to be less than the value shown.

CONESTOGA RIVER BASIN

01576500 CONESTOGA RIVER AT LANCASTER, PA

LOCATION.--Lat 40°03'00", long 76°16'39", Lancaster County, Hydrologic Unit 02050306, on left bank at Penn Central Railroad bridge, 50 ft downstream from small right-bank tributary, 500 ft downstream from diversion dam at city water plant and 0.7 mi east of Lancaster.

DRAINAGE AREA.--324 mi².

PERIOD OF RECORD.--September 1928 to March 1932; August, September 1932; April 1933 to current year. Monthly discharge only for some periods, published in WSP 1302. Prior to October 1973, published as Conestoga Creek at Lancaster.

REVISED RECORDS.--WSP 1202: Drainage area. WSP 1502: 1943(P). WDR PA-87-2: 1985-86(P) (Monthly and yearly summaries).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 245.63 ft above National Geodetic Vertical Datum of 1929. Prior to May 1, 1933, at site 600 ft upstream at different datum, excluding small tributary.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Regulation at low flow by water plant and mill above station. Diversion upstream for municipal supply of city of Lancaster. Several measurements of water temperature were made during the year. National Weather Service satellite telemeter at station.

COOPERATION.--Records of diversion provided by city of Lancaster.

AVERAGE DISCHARGE.--59 years, (1928-31, 1934-89), 405 ft³/s, 16.98 in/yr, adjusted for diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 88,300 ft³/s, June 23, 1972, gage height, 27.80 ft, from floodmark, from rating curve extended above 13,000 ft³/s on basis of slope-area measurement at gage height 17.50 ft and contracted-opening measurement at peak flow; minimum daily, 7.0 ft³/s, Aug. 11, 1930.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,800 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 20	^a 2200	^a 4,100	^a 8.0	June 10	0345	2,830	6.86
May 6	^a 1400	^a 16,300	^b 15.3	June 16	0600	^a 4,600	8.47
May 17	^a 0200	^a 6,700	^a 10.1	June 23	^a 0230	^a 8,800	^a 7.8
May 24	0845	2,980	7.01	July 13	^a 1800	^a 5,000	^a 8.8

(a) Determined from partial reconstruction of hydrographs based on comparison with records from downstream station and precipitation records.

(b) From floodmark.

Minimum daily, 103 ft³/s, Oct. 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	126	121	333	190	299	391	818	294	609	518	589	205
2	135	123	304	179	279	364	650	893	564	484	502	209
3	206	118	286	188	270	348	633	617	528	462	464	206
4	160	111	276	176	278	337	642	396	577	567	432	200
5	138	116	258	146	246	343	708	455	520	1280	407	192
6	137	447	245	162	238	473	925	^e 9400	508	949	383	^e 190
7	131	225	238	177	238	460	719	3060	877	725	382	^e 185
8	124	175	230	244	227	364	620	1670	925	561	372	^e 180
9	114	143	226	526	191	354	592	1350	980	487	343	^e 177
10	126	142	213	310	195	357	544	1640	1810	455	323	^e 173
11	117	132	206	260	198	390	496	1640	839	426	324	^e 170
12	108	131	183	319	196	497	472	1260	674	398	355	^e 165
13	107	147	182	682	195	537	455	1090	868	^e 2100	367	^e 160
14	108	292	189	393	235	439	435	998	715	1260	341	152
15	107	186	190	952	282	438	456	1080	780	748	347	150
16	109	157	184	765	415	420	597	^e 2400	2720	717	320	154
17	106	318	177	533	313	371	465	^e 3900	1360	976	302	272
18	105	356	167	458	248	390	420	1720	953	655	277	196
19	104	215	170	423	232	563	419	1380	813	581	345	232
20	103	^e 1400	169	393	228	407	389	1200	731	637	372	526
21	115	1690	182	351	608	611	362	1080	679	783	302	387
22	759	642	209	316	1290	552	352	964	1070	611	278	291
23	344	457	197	320	854	423	341	955	^e 1800	651	255	381
24	215	391	257	308	584	631	325	2110	1090	531	242	322
25	221	348	378	300	463	1230	316	1170	874	512	229	233
26	169	316	263	297	467	740	321	945	1340	764	227	322
27	149	304	214	360	456	632	304	886	721	1320	220	349
28	136	783	203	309	427	588	291	806	736	657	219	233
29	137	525	266	287	---	558	284	717	669	542	217	202
30	133	371	217	306	---	578	290	669	569	489	230	189
31	129	---	197	368	---	1220	---	648	---	724	221	---
TOTAL	4978	10882	7009	10998	10152	16006	14641	47393	27899	22570	10187	7003
MEAN	161	363	226	355	363	516	488	1529	930	728	329	233
MAX	759	1690	378	952	1290	1230	925	9400	2720	2100	589	526
MIN	103	111	167	146	191	337	284	294	508	398	217	150
(†)	10.1	8.7	11.2	9.8	11.0	9.5	8.9	7.7	6.5	8.0	12.7	10.8
MEAN†	171	372	237	365	374	526	497	1537	936	736	342	244
CFSM†	.53	1.15	.73	1.13	1.15	1.62	1.53	4.74	2.89	2.27	1.06	.75
IN.†	.61	1.28	.84	1.30	1.20	1.87	1.71	5.46	3.22	2.62	1.22	.84
CAL YR 1988	TOTAL 159058	MEAN 435	MAX 5400	MIN 101	MEAN† 447	CFSM† 1.38	IN.† 18.73					
WTR YR 1989	TOTAL 189718	MEAN 520	MAX 9400	MIN 103	MEAN† 529	CFSM† 1.63	IN.† 22.18					

^e Estimated.

† Diversion for municipal supply of city of Lancaster, equivalent in cubic feet per second.

‡ Adjusted for diversion.

CONESTOGA RIVER BASIN

01576697 SWARR RUN NEAR LANDISVILLE, PA

LOCATION.--Lat 40°04'19", long 76°21'26", Lancaster County, Hydrologic Unit 02050306, on left bank on old Rohrerstown Road, 0.6 mi upstream from mouth, and 3.7 mi east of Landisville.

DRAINAGE AREA.--8.67 mi 2 .

PERIOD OF RECORD.--June 1985 to September 1989 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 315 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,150 ft³/s, July 27, 1986, gage height, 12.29 ft, from rating curve extended above 600 ft³/s on basis of step-backwater analysis; minimum daily, 0.70 ft³/s, Aug. 20, 1987.

EXTREMES FOR CURRENT PERIOD.--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)
May 6	0245	*487	*7.81	July 27	0145	470	7.72

Minimum daily discharge, 2.2 ft³/s, Oct 17-19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.9	2.6	4.5	3.0	5.2	6.8	17	11	13	6.0	12	4.3
2	3.0	2.5	4.4	3.0	4.9	6.4	14	26	12	5.8	10	4.1
3	3.2	2.4	4.1	2.9	5.0	6.2	14	7.5	11	5.7	9.4	3.8
4	3.0	2.4	4.0	2.5	4.7	6.0	12	6.3	11	38	8.8	3.8
5	2.8	2.7	3.8	2.7	4.6	6.2	12	31	10	17	8.1	3.9
6	2.7	3.1	4.0	2.5	4.3	14	14	189	10	18	7.4	3.7
7	2.7	2.7	3.7	2.3	4.5	8.4	11	46	16	11	7.3	3.7
8	2.6	2.7	3.5	10	4.0	7.1	10	27	11	8.5	6.9	3.5
9	2.6	2.5	3.6	7.1	3.7	6.8	9.3	23	30	7.7	6.5	3.5
10	2.5	2.6	3.3	6.4	3.7	7.1	8.5	32	17	7.2	6.2	3.3
11	2.3	2.7	3.0	6.1	3.7	8.6	8.2	27	11	6.7	6.6	3.2
12	2.3	2.4	2.9	17	3.6	11	7.9	22	10	6.4	6.8	3.2
13	2.3	5.9	2.8	14	3.6	9.0	7.6	19	11	80	6.2	3.2
14	2.4	3.1	2.8	9.8	4.5	8.2	7.3	18	9.7	17	9.8	3.1
15	2.4	2.5	2.7	37	6.0	7.8	9.4	25	30	13	8.5	3.0
16	2.3	2.4	2.6	17	6.5	7.1	8.3	60	20	17	6.8	8.2
17	2.2	4.6	2.6	14	4.8	7.6	7.2	44	14	14	6.1	5.5
18	2.2	3.2	2.6	9.2	4.5	11	7.0	27	11	11	5.6	3.4
19	2.2	3.0	2.6	8.1	4.2	7.8	6.9	23	9.5	10	13	19
20	2.3	53	2.5	8.5	4.0	7.1	6.4	20	9.1	11	7.2	16
21	6.8	15	3.1	6.2	23	11	6.2	19	8.5	38	6.1	7.7
22	22	7.5	2.9	6.1	24	7.6	5.8	17	8.4	14	5.6	7.3
23	4.1	6.2	3.8	5.6	15	7.0	5.6	30	8.2	12	5.4	5.7
24	4.1	5.3	5.4	5.3	10	36	5.4	49	7.6	10	5.2	4.7
25	3.5	4.8	4.9	5.0	8.6	24	5.2	23	7.2	9.6	4.9	4.3
26	3.2	4.4	3.6	5.1	8.6	16	5.1	20	6.9	9.2	4.8	11
27	3.0	4.5	3.6	5.0	8.0	13	4.9	18	6.6	80	4.6	5.3
28	2.9	12	4.3	4.6	7.2	12	4.8	16	9.0	14	4.6	4.5
29	2.7	5.4	3.7	4.5	---	11	5.0	15	6.6	12	4.5	4.3
30	2.6	4.9	3.2	6.4	---	21	4.5	15	6.2	11	4.4	3.9
31	2.5	---	3.1	5.7	---	25	---	14	---	19	4.2	---
TOTAL	108.3	179.0	107.6	242.6	194.4	343.8	250.5	919.8	351.5	539.8	213.5	164.1
MEAN	3.49	5.97	3.47	7.83	6.94	11.1	8.35	29.7	11.7	17.4	6.89	5.47
MAX	22	53	5.4	37	24	36	17	189	30	80	13	19
MIN	2.2	2.4	2.5	2.3	3.6	6.0	4.5	6.3	6.2	5.7	4.2	3.0
CFSM	.40	.69	.40	.90	.80	1.28	.96	3.42	1.35	2.01	.79	.63
IN.	.46	.77	.46	1.04	.83	1.48	1.07	3.95	1.51	2.32	.92	.70
CAL YR 1988	TOTAL 3181.7		MEAN 8.69	MAX 204	MIN 1.7	CFSM 1.00	IN. 13.65					
WTR YR 1989	TOTAL 3614.9		MEAN 9.90	MAX 189	MIN 2.2	CFSM 1.14	IN. 15.51					

CONESTOGA RIVER BASIN

01576754 CONESTOGA RIVER AT CONESTOGA, PA

LOCATION.--Lat 39°56'47", long 76°22'05", Lancaster County, Hydrologic Unit 02050306, on left bank on SR 3030, 1,500 ft downstream from Little Conestoga Creek, 1.0 mi west of Conestoga, and 2.6 mi upstream from mouth.

DRAINAGE AREA.--470 mi².

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WDR PA-86-2: 1985(M).

GAGE.--Water-stage recorder. Datum of gage is 180.45 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair.

AVERAGE DISCHARGE.--5 years, 619 ft³/s, 17.88 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,000 ft³/s, Sept. 9, 1987, gage height, 14.37 ft; minimum, 82 ft³/s, Aug. 22, 1987, gage height, 1.13 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	0215	4,990	6.06	June 16	1030	5,510	6.41
May 6	1830	*16,900	*13.15	June 23	0715	4,530	5.76
May 17	0645	7,380	7.59	July 13	2230	5,570	6.45

Minimum discharge, 161 ft³/s, Oct. 14, 17, gage height, 1.40 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	214	218	478	300	443	565	1160	446	888	716	926	330
2	233	212	438	289	414	523	908	1060	827	669	748	323
3	345	204	412	288	407	506	862	1070	781	636	686	309
4	282	199	396	284	402	485	903	599	780	953	641	301
5	230	196	386	252	378	484	950	660	792	1780	597	297
6	223	520	366	240	361	690	1200	12000	739	1710	565	293
7	220	388	357	290	357	718	1050	5600	1030	1110	559	291
8	199	281	349	379	351	574	871	2460	1600	859	552	287
9	199	242	341	655	324	522	800	1940	1150	729	518	283
10	185	226	328	488	299	522	776	2050	2740	672	486	278
11	190	217	317	393	312	556	701	2410	1280	631	484	271
12	188	213	e270	454	309	662	660	1800	1000	591	505	268
13	181	261	e260	857	307	748	635	1520	e1100	2280	529	266
14	174	366	e250	605	342	630	614	1380	e900	2450	498	264
15	176	312	e260	1180	419	612	663	1490	e950	1130	524	257
16	172	258	e270	1160	537	614	803	2190	3530	986	514	260
17	173	338	280	781	496	554	678	5640	1860	1380	472	424
18	176	586	e270	648	386	611	599	2630	1360	981	436	344
19	176	345	e260	602	357	799	591	1860	1120	840	598	418
20	179	1190	271	565	349	627	564	1690	1010	902	625	890
21	196	2960	296	518	530	736	526	1500	940	1400	490	636
22	1050	971	319	467	1800	859	502	1350	1090	965	435	481
23	617	650	322	459	1330	617	488	1380	2650	910	413	554
24	350	548	367	447	847	917	471	3020	1520	816	387	510
25	324	490	482	440	669	1760	460	1930	1110	717	369	394
26	284	450	416	431	648	1090	460	1400	1820	1150	354	451
27	251	426	336	479	639	916	447	1290	1030	1820	352	565
28	229	924	316	462	598	844	428	1180	993	1070	342	395
29	227	812	363	417	---	793	428	1040	934	808	341	338
30	218	537	350	450	---	820	427	971	790	720	366	317
31	217	---	305	505	---	1510	---	936	---	968	341	---
TOTAL	8078	15540	10697	15783	14611	22864	20625	66592	38314	33349	15653	11295
MEAN	261	518	345	509	522	738	687	2148	1277	1076	505	376
MAX	1050	2960	482	1180	1800	1760	1200	12000	3530	2450	926	890
MIN	172	196	271	240	299	484	427	446	739	591	341	257
CFSM	.55	1.10	.73	1.08	1.11	1.57	1.46	4.57	2.72	2.29	1.07	.80
IN.	.64	1.23	.85	1.25	1.16	1.81	1.63	5.27	3.03	2.64	1.24	.89

CAL YR 1988 TOTAL 237706 MEAN 649 MAX 7840 MIN 172 CFSM 1.38 IN. 18.81
WTR YR 1989 TOTAL 273135 MEAN 748 MAX 12000 MIN 172 CFSM 1.59 IN. 21.62

e Estimated.

CONESTOGA RIVER BASIN

01576754 CONESTOGA RIVER AT CONESTOGA, PA--Continued

WATER-QUALITY RECORDS

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

INSTRUMENTATION.--Automatic pumping sampler since October 1986.

REMARKS.--Some samples collected from bridge on River Road 1.6 miles downstream from gage.

COOPERATION.--Water-quality samples collected by Susquehanna River Basin Commission and analyzed by the Pa. Department of Environmental Resources.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE FIELD (μ S/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)
OCT										
05...	1100	232	575	8.20	17.0	7.14	0.080	0.060	0.44	0.38
NOV										
17...	1020	332	505	7.20	11.0	6.36	0.100	0.100	0.28	0.18
20...	1430	1270	--	--	--	4.80	0.260	0.230	0.79	0.50
20...	1630	1410	--	--	--	4.80	0.260	0.240	0.62	0.52
20...	1830	1470	--	--	--	4.56	0.240	0.240	0.47	0.39
20...	2030	2120	--	--	--	4.80	0.220	0.200	0.49	0.46
20...	2230	3830	--	--	--	4.32	0.220	0.180	1.3	0.45
21...	0030	4760	--	--	--	4.80	0.220	0.180	2.0	0.90
21...	0200	4990	--	--	--	5.16	0.210	0.160	3.9	0.65
21...	0330	4820	--	--	--	4.56	0.260	0.220	3.8	0.59
21...	0530	4180	--	--	--	3.24	0.280	0.230	2.9	0.53
21...	0730	3520	--	--	--	2.76	0.270	0.220	3.0	0.59
21...	0818	3290	--	--	--	2.76	0.250	0.220	2.0	0.54
21...	0845	3240	--	--	--	2.64	0.250	0.230	2.5	0.60
21...	0923	3110	--	--	--	2.64	0.260	0.220	2.4	0.49
21...	1200	2690	--	--	--	2.76	0.190	0.190	2.4	0.86
21...	1700	1930	--	--	--	2.88	0.190	0.190	1.7	0.62
21...	2200	1480	--	--	--	3.00	0.190	0.180	1.3	0.51
22...	0645	1070	--	--	--	3.00	0.170	0.170	1.1	0.44
DEC										
06...	1000	361	580	8.40	5.0	8.16	0.070	0.070	0.16	0.16
JAN										
05...	1015	232	625	8.30	1.0	7.32	0.050	0.050	0.30	0.20
15...	1310	924	455	7.90	--	5.16	0.390	0.390	0.71	0.27
15...	1600	1380	460	7.90	--	5.52	0.280	0.280	0.72	0.12
15...	1800	1880	465	7.90	--	5.64	0.360	0.360	1.2	0.34
16...	0700	1250	430	7.90	--	5.88	0.220	0.220	0.61	0.18
FEB										
01...	1020	435	525	8.20	8.0	8.64	0.070	0.070	0.27	0.27
21...	1420	483	565	7.80	--	7.56	--	--	--	--
21...	2000	867	570	--	--	7.56	0.050	0.040	1.2	0.77
22...	0030	756	550	7.90	--	7.20	0.060	0.040	1.2	0.75
22...	0230	1360	510	--	--	6.60	0.110	0.100	1.7	0.44
22...	0330	2410	530	--	--	7.20	0.060	0.050	2.2	0.51
22...	0430	2590	480	--	--	6.84	0.090	0.080	3.8	0.76
22...	0600	2520	485	7.80	--	7.56	0.050	0.050	3.1	0.81
22...	0720	2310	500	7.70	--	7.44	0.050	0.040	2.1	0.42
22...	1100	1910	450	--	--	6.60	0.100	0.100	1.8	0.86
22...	1400	1690	380	--	--	5.16	0.360	0.270	2.1	0.93
22...	1600	1590	350	7.70	--	4.92	0.460	0.360	1.8	0.84
22...	1800	1520	340	--	--	4.44	0.440	0.330	2.6	1.2
22...	2000	1510	340	7.60	--	3.72	0.450	0.320	2.6	1.3
22...	2200	1590	350	7.60	--	3.72	0.470	0.320	2.5	0.98
23...	0215	1660	355	--	--	4.80	0.400	0.290	2.7	1.1
23...	1030	1310	355	7.60	--	4.92	0.360	0.300	2.2	1.1
23...	2030	1010	375	--	--	5.28	0.240	0.220	1.8	0.78
24...	0830	834	415	7.70	--	6.00	0.210	0.190	1.4	1.2
25...	1120	682	500	8.00	--	7.68	0.120	0.100	0.98	0.89
MAR										
16...	0940	607	523	8.25	10.0	8.52	0.040	0.040	0.48	0.33
APR										
27...	1100	440	530	8.30	20.0	8.32	0.020	0.020	0.55	0.50

CONESTOGA RIVER BASIN

01576754 CONESTOGA RIVER AT CONESTOGA, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT									
05...	0.52	0.44	7.7	0.370	0.340	0.290	3.9	13	8.2
NOV									
17...	0.38	0.28	6.7	0.290	0.250	0.220	3.9	13	12
20...	1.0	0.73	5.8	0.700	0.390	0.360	7.6	136	467
20...	0.88	0.76	5.7	0.650	0.420	0.390	7.7	98	372
20...	0.71	0.63	5.3	0.570	0.410	0.380	6.9	64	253
20...	0.71	0.66	5.5	0.560	0.350	0.340	7.1	85	486
20...	1.6	0.63	5.9	1.20	0.340	0.340	7.3	334	3460
21...	2.2	1.1	7.0	1.92	0.250	0.240	7.0	772	9920
21...	4.1	0.81	9.3	2.09	0.230	0.220	7.0	1060	14300
21...	4.1	0.81	8.7	1.92	0.230	0.230	7.4	1020	13300
21...	3.2	0.76	6.4	1.62	0.300	0.270	14	832	9390
21...	3.3	0.81	6.1	1.32	0.300	0.290	15	672	6390
21...	2.3	0.76	5.0	1.26	0.300	0.270	14	579	5150
21...	2.7	0.83	5.3	1.26	0.330	0.320	14	518	4530
21...	2.7	0.71	5.3	1.20	0.340	0.300	14	482	4050
21...	2.6	1.0	5.3	0.960	0.360	0.330	10	355	2580
21...	1.9	0.81	4.8	0.720	0.400	0.340	9.4	216	1130
21...	1.5	0.69	4.5	0.600	0.360	0.300	8.7	151	602
22...	1.2	0.61	4.2	0.530	0.320	0.260	8.1	101	291
DEC									
06...	0.23	0.23	8.4	0.220	0.210	0.200	2.6	5	4.9
JAN									
05...	0.35	0.25	7.7	0.220	0.180	0.130	3.0	4	2.5
15...	1.1	0.66	6.3	0.280	0.160	0.110	5.4	46	115
15...	1.0	0.40	6.5	0.310	0.170	0.110	5.7	52	194
15...	1.6	0.70	7.2	0.480	0.170	0.120	5.8	103	523
16...	0.83	0.40	6.7	0.410	0.270	0.220	4.2	56	189
FEB									
01...	0.34	0.34	9.0	0.110	0.110	0.070	2.7	10	12
21...	1.1	0.41	8.7	0.290	0.140	0.110	4.3	42	55
21...	1.3	0.81	8.9	0.380	0.260	0.220	4.2	33	77
22...	1.3	0.79	8.5	0.430	0.340	0.300	4.1	54	110
22...	1.8	0.54	8.4	0.560	0.340	0.290	4.0	76	279
22...	2.3	0.56	9.5	0.590	0.260	0.200	3.4	163	1060
22...	3.9	0.84	11	0.610	0.220	0.180	4.4	239	1670
22...	3.2	0.86	11	1.10	0.220	0.180	4.0	232	1580
22...	2.2	0.46	9.6	0.470	0.180	0.140	3.7	181	1130
22...	1.9	0.96	8.5	0.370	0.140	0.065	3.6	114	588
22...	2.5	1.2	7.7	0.420	0.200	0.130	6.1	201	917
22...	2.3	1.2	7.2	0.480	0.250	0.190	7.8	281	1210
22...	3.0	1.5	7.4	0.650	0.310	0.250	7.2	347	1420
22...	3.1	1.6	6.8	0.590	0.320	0.260	8.3	374	1520
22...	3.0	1.3	6.7	0.720	0.310	0.270	8.5	367	1580
23...	3.1	1.4	7.9	0.420	0.250	0.200	8.3	342	1530
23...	2.6	1.4	7.5	0.400	0.260	0.170	7.7	195	690
23...	2.0	1.0	7.3	0.380	0.250	0.170	6.1	76	207
24...	1.6	1.4	7.6	0.390	0.250	0.170	5.7	46	104
25...	1.1	0.99	8.8	0.240	0.170	0.110	4.1	13	24
MAR									
16...	0.52	0.37	9.0	0.210	0.140	0.090	3.4	57	93
APR									
27...	0.57	0.52	8.9	0.150	0.110	0.098	3.0	21	25

CONESTOGA RIVER BASIN

01576754 CONESTOGA RIVER AT CONESTOGA, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE FIELD (μ S/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)
MAY										
02...	0600	802	556	7.80	--	8.84	0.080	0.020	1.0	0.61
02...	1800	1200	491	7.80	--	6.78	0.070	0.070	1.3	0.63
03...	2200	690	385	7.90	--	4.49	0.190	0.190	1.1	0.77
05...	2400	3310	341	7.30	--	5.02	1.00	0.930	24	0.17
06...	0200	6080	321	7.40	--	4.22	0.460	0.360	5.2	0.49
06...	0340	7090	321	7.50	--	3.96	0.340	0.310	6.8	0.32
06...	0530	9120	313	7.30	--	3.43	0.440	0.440	15	0.56
06...	0730	10200	272	7.40	--	3.17	0.380	0.360	15	0.57
06...	1000	10800	302	7.40	--	3.96	0.410	0.410	8.7	0.40
06...	1200	12000	271	7.40	--	3.30	0.580	0.540	9.4	0.37
06...	1450	14900	220	7.40	--	2.90	0.600	0.600	8.8	0.44
06...	1505	15200	220	7.40	--	2.77	0.690	0.630	8.0	0.43
06...	1600	16000	209	7.40	--	2.64	0.560	0.520	7.4	0.42
07...	1640	3920	318	7.40	--	5.02	0.230	0.200	1.5	0.37
10...	1040	1900	418	--	--	8.95	0.110	0.110	0.61	0.28
17...	1330	5050	--	--	--	7.52	0.050	0.050	1.7	0.42
17...	1530	6160	--	--	--	7.39	0.090	0.080	1.3	0.39
17...	1730	6600	--	--	--	5.68	0.140	0.140	2.0	0.38
17...	1930	7160	--	--	--	4.09	0.160	0.160	2.0	0.36
17...	2130	7450	--	--	--	3.30	0.150	0.150	1.7	0.64
17...	2330	7350	--	--	--	3.17	0.140	0.140	1.4	0.31
18...	0130	5570	--	--	--	3.17	0.130	0.130	1.1	0.32
18...	0330	4590	--	--	--	3.56	0.130	0.130	1.1	0.39
23...	1040	1230	455	8.00	20.0	9.68	0.040	0.040	0.33	0.28
JUN										
16...	0215	1250	453	7.80	--	8.58	<0.020	<0.020	--	--
16...	0415	2460	458	7.70	--	8.84	<0.020	<0.020	--	--
16...	0615	4230	443	7.80	--	8.84	0.020	0.020	2.4	0.70
16...	0815	5030	378	7.70	--	8.05	0.020	0.020	4.7	1.4
16...	1015	5450	309	7.90	--	6.47	0.050	0.050	6.8	1.2
16...	1215	5210	264	8.00	--	5.28	0.070	0.040	9.5	1.3
16...	1415	4350	234	7.90	--	4.36	0.070	0.050	9.6	1.5
16...	1615	3520	222	7.80	--	4.09	0.080	0.070	6.2	1.5
16...	1815	3100	225	7.80	--	4.09	0.070	0.060	6.3	1.4
16...	2015	2790	234	7.70	--	4.22	0.110	0.070	4.0	1.1
16...	2215	2500	236	7.80	--	4.09	0.080	0.080	3.1	1.6
17...	0115	2180	253	7.70	--	4.22	0.080	0.060	2.2	0.89
17...	0415	1990	282	7.70	--	4.62	0.050	0.040	2.4	1.1
17...	0715	2310	294	7.70	--	5.02	0.040	0.040	2.6	1.1
17...	1015	2250	317	7.70	--	5.54	0.040	0.040	2.2	1.1
17...	1315	1940	324	7.70	--	5.94	0.030	0.020	1.5	0.85
17...	1615	1770	334	7.80	--	6.20	0.030	0.030	1.9	0.79
17...	1832	1680	337	7.90	--	6.07	0.020	0.020	1.8	0.90
17...	2245	1660	353	7.70	--	6.07	0.020	0.020	2.2	0.90
18...	0345	1540	353	7.60	--	6.34	0.040	0.040	1.9	1.1
18...	1145	1350	366	7.80	--	7.13	<0.020	<0.020	--	--
18...	1945	1240	379	8.00	--	7.39	<0.020	<0.020	--	--
19...	0345	1190	412	7.90	--	7.66	0.020	0.020	0.96	0.59
19...	1410	1120	436	7.90	--	8.58	0.020	0.020	0.93	0.69
20...	1603	998	469	7.90	--	9.11	0.020	0.020	1.1	0.46
30...	1005	794	469	7.90	--	9.11	<0.020	<0.020	--	--
JUL										
05...	1250	1790	440	8.20	--	8.98	0.060	0.060	1.1	0.31
16...	1520	981	500	8.20	--	9.20	0.050	0.040	0.65	0.25
20...	1520	957	530	8.20	23.0	9.50	0.020	0.020	0.45	0.24
AUG										
16...	1140	511	570	8.20	24.0	9.77	0.020	0.020	0.32	--
SEP										
12...	1010	270	590	7.40	23.0	10.0	0.070	0.070	0.41	0.26

< Actual value is known to be less than the value shown.

CONESTOGA RIVER BASIN

01576754 CONESTOGA RIVER AT CONESTOGA, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
MAY									
02...	1.1	0.63	9.9	0.200	0.150	0.089	3.4	54	117
02...	1.4	0.70	8.2	0.230	0.130	0.100	4.7	42	136
03...	1.3	0.96	5.8	0.260	0.170	0.120	5.6	41	76
05...	25	1.1	30	4.20	0.280	0.240	60	8710	77800
06...	5.7	0.85	9.9	1.70	0.360	0.330	18	2180	35800
06...	7.1	0.63	11	2.00	0.180	0.160	16	2340	44800
06...	15	1.0	18	3.00	0.140	0.100	23	1120	27600
06...	15	0.93	18	3.10	0.140	0.110	24	1030	28400
06...	9.1	0.81	13	3.00	0.170	0.130	30	1970	57400
06...	10	0.91	13	2.20	0.170	0.130	24	2290	74200
06...	9.4	1.0	12	1.56	0.200	0.140	22	2580	104000
06...	8.7	1.1	11	1.62	0.200	0.140	20	2540	104000
06...	8.0	0.94	11	1.62	0.220	0.150	14	2710	117000
07...	1.7	0.57	6.7	0.460	0.180	0.140	7.4	315	3330
10...	0.72	0.39	9.7	0.220	0.100	0.087	3.1	105	539
17...	1.7	0.47	9.2	0.160	0.120	0.008	4.8	539	7350
17...	1.4	0.47	8.8	0.180	0.140	0.012	5.5	562	9350
17...	2.1	0.52	7.8	0.270	0.180	0.008	6.9	561	10000
17...	2.2	0.52	6.3	0.300	0.220	0.022	13	597	11500
17...	1.9	0.79	5.2	0.320	0.250	0.046	14	518	10400
17...	1.5	0.45	4.7	0.460	0.240	0.023	12	432	8570
18...	1.2	0.45	4.4	0.440	0.240	0.160	11	316	4750
18...	1.2	0.52	4.8	0.300	0.240	0.084	8.1	253	3140
23...	0.37	0.32	10	0.150	0.140	0.049	2.7	33	110
JUN									
16...	1.3	0.77	9.9	0.160	0.120	0.100	3.3	53	179
16...	1.3	0.56	10	0.170	0.140	0.110	1.0	130	863
16...	2.4	0.72	11	0.350	0.140	0.110	4.5	387	4420
16...	4.7	1.4	13	0.410	0.140	0.140	8.8	963	13100
16...	6.9	1.2	13	0.500	0.260	0.080	12	2090	30800
16...	9.6	1.3	15	0.560	0.270	0.200	13	2740	38500
16...	9.7	1.6	14	1.40	0.260	0.031	15	2340	27500
16...	6.3	1.6	10	0.820	0.290	0.051	15	1800	17100
16...	6.4	1.5	10	0.680	0.290	0.048	15	1450	12100
16...	4.1	1.2	8.3	1.30	0.250	0.240	16	1140	8590
16...	3.2	1.7	7.3	0.720	0.260	0.220	14	822	5550
17...	2.3	0.95	6.5	1.20	0.240	0.210	8.9	609	3580
17...	2.5	1.1	7.1	0.930	0.220	0.200	8.7	437	2350
17...	2.6	1.1	7.6	0.900	0.210	0.200	6.9	428	2670
17...	2.2	1.1	7.7	0.790	0.210	0.190	5.5	341	2070
17...	1.5	0.87	7.4	0.620	0.170	0.150	5.2	250	1310
17...	1.9	0.82	8.1	0.670	0.190	0.170	5.3	287	1370
17...	1.8	0.92	7.9	0.590	0.180	0.180	5.8	321	1460
17...	2.2	0.92	8.3	0.770	0.190	0.180	6.8	366	1640
18...	1.9	1.1	8.2	0.840	0.210	0.200	7.8	417	1730
18...	1.7	0.77	8.8	0.500	0.180	0.180	5.5	283	1030
18...	1.1	1.0	8.5	0.420	0.180	0.150	3.1	154	516
19...	0.98	0.61	8.6	0.380	0.140	0.140	4.0	130	418
19...	0.95	0.71	9.5	0.330	0.130	0.120	2.4	99	299
20...	1.1	0.48	10	0.290	0.120	0.120	<1.0	59	159
30...	1.0	0.60	10	0.200	0.140	0.110	2.9	83	178
JUL									
05...	1.2	0.37	10	0.490	0.180	0.150	4.6	225	1090
16...	0.70	0.29	9.9	0.300	0.150	0.110	4.5	103	273
20...	0.47	0.26	10	0.210	0.200	0.100	3.7	50	129
AUG									
16...	0.34	<0.20	10	0.280	0.240	0.200	3.1	27	37
SEP									
12...	0.48	0.33	11	0.310	0.270	0.260	2.9	28	20

< Actual value is known to be less than the value shown.

MUDDY CREEK BASIN

01577400 BALD EAGLE CREEK NEAR FAWN GROVE, PA

LOCATION.--Lat 39°44'54", long 76°27'50", York County, Hydrologic Unit 02050306, on right bank 6 feet upstream from culvert on Kunkle Road (Township Route 804), 1,100 ft upstream from small right-bank tributary, and 1.6 mi north of Fawn Grove.

DRAINAGE AREA.--0.43 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder and wooden control. Elevation of gage is 600 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 212 ft³/s, May 17, 1988, gage height, 6.06 ft from floodmark, from rating curve extended above 2.2 ft³/s on basis of computation of peak flow through culvert; no flow Jan. 29 to Feb. 1, 1986, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 12 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 20	1245	13	1.64	May 5	Unknown	*107	*3.56
Jan. 15	0145	13	1.64	July 25	1600	15	1.84

Minimum discharge, 0.09 ft³/s, Jan. 4, 5, 6, gage height, 1.30 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.11	.13	.13	e.10	.16	.16	.16	.57	.48	.19	.57	.36
2	.25	.10	.11	.10	.16	.16	.10	.79	.48	.19	.57	.38
3	.14	.10	.10	.10	.23	.15	.23	.48	.48	.19	.56	.38
4	.11	.10	.10	.10	.13	.15	.23	.79	.48	6.6	.55	.39
5	.10	.18	.10	.10	.13	.17	.28	e5.1	.48	3.3	.54	.42
6	.10	.15	.10	e.10	.13	.59	.48	e3.1	.57	.74	.56	.38
7	.10	.11	.20	.10	.10	.24	.40	.48	1.6	.54	.58	.40
8	.10	.10	.17	.54	e.10	.19	.34	1.1	.57	.45	.52	.39
9	.10	.10	.13	.24	e.10	.24	.34	e.86	.81	.46	.51	.39
10	.10	.10	.11	.15	e.10	.34	.28	1.1	.48	.45	.49	.39
11	.11	.10	.10	.14	.10	.34	.28	e.88	.48	.46	.57	.37
12	.10	.10	.12	.76	.10	.34	.28	e.62	.48	.46	.59	.38
13	.10	.21	.17	.39	.11	.34	.34	e.49	.48	.97	.53	.38
14	.10	.11	.10	.23	.18	.28	.34	e.41	.48	.56	.60	.40
15	.10	.10	.10	1.9	.43	.23	.92	1.6	.48	.48	.58	.38
16	.10	.10	.10	.37	.27	.19	.67	1.4	.57	.81	.49	.45
17	.11	.42	.10	.23	.16	.16	.48	e.80	.67	.72	.48	.41
18	.12	.14	.10	.21	.14	.40	e.37	e.35	.67	.53	.48	.37
19	.10	.20	.10	.19	.14	.23	e.30	e.21	.57	.48	.89	.93
20	.10	2.8	.10	.17	.13	.23	e.36	e.17	.57	.83	.63	.66
21	.77	.40	.16	.13	.94	.34	e.27	e.29	.57	.57	.59	.45
22	.39	.18	.10	.15	1.0	.23	e.20	e.54	.57	.53	.55	.50
23	.14	.16	.14	.14	.40	.19	e.26	e1.3	.57	.51	.48	.52
24	.14	.13	.32	.16	.23	.67	e.21	2.3	.48	.48	.48	.44
25	.11	.11	.15	.15	.20	.79	e.19	1.1	.48	.96	.46	.45
26	.10	.12	.10	.16	.25	.57	e.15	.79	.40	.56	.47	.66
27	.10	.49	.10	.14	.22	.48	e.13	.79	.28	.48	.48	.48
28	.10	.55	.11	.13	.19	.34	e.11	.79	.34	.48	.50	.48
29	.10	.18	.10	.13	---	.28	e.14	.67	.28	.48	.47	.48
30	.10	.16	e.10	.18	---	.23	e.21	.57	.23	.59	.44	.48
31	.10	---	e.10	.13	---	.28	---	.57	---	.61	.43	---
TOTAL	4.40	7.93	3.82	7.82	6.53	9.53	9.05	31.01	16.08	25.66	16.64	13.55
MEAN	.14	.26	.12	.25	.23	.31	.30	1.00	.54	.83	.54	.45
MAX	.77	2.8	.32	1.9	1.0	.79	.92	5.1	1.6	6.6	.89	.93
MIN	.10	.10	.10	.10	.10	.15	.10	.17	.23	.19	.43	.36
CFSM	.33	.61	.29	.59	.54	.71	.70	2.33	1.25	1.92	1.25	1.05
IN.	.38	.69	.33	.68	.56	.82	.78	2.68	1.39	2.22	1.44	1.17

CAL YR 1988 TOTAL 265.67 MEAN .73 MAX 60 MIN .08 CFSM 1.69 IN. 22.98
WTR YR 1989 TOTAL 152.02 MEAN .42 MAX 6.6 MIN .10 CFSM .97 IN. 13.15

e Estimated.

MUDDY CREEK BASIN

01577400 BALD EAGLE CREEK NEAR FAWN GROVE, PA--Continued

WATER-QUALITY RECORDS

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

INSTRUMENTATION.--Automatic sediment pumping sampler since October 1985.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (μ S/CM)	NITRO- GEN, NO ₂ +NO ₃ TOTAL (MG/L AS N)	NITRO- GEN, NO ₂ +NO ₃ DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
OCT								
17...	0910	0.13	106	5.30	4.90	0.240	0.200	0.50
21...	2010	2.8	--	5.50	--	3.90	--	10
21...	2130	5.4	--	4.70	--	2.50	--	7.3
21...	2310	1.6	--	4.40	--	1.30	--	4.6
22...	0010	1.9	--	4.40	--	1.00	--	4.1
22...	0110	1.3	--	4.60	--	1.30	--	4.9
NOV								
14...	1000	0.13	--	5.10	5.10	0.020	0.020	0.50
20...	0450	2.5	--	3.70	3.20	0.760	0.760	6.8
20...	0610	1.4	--	3.50	3.50	0.970	0.970	7.0
20...	0850	1.5	--	3.80	3.30	0.440	0.440	2.4
20...	1030	7.6	--	3.30	3.10	1.90	0.930	4.7
20...	1110	9.2	--	2.90	2.90	0.880	0.880	11
20...	1230	12	--	2.70	2.40	0.540	0.540	6.0
20...	1310	9.7	--	2.90	2.60	0.570	0.570	7.9
20...	1530	2.1	--	3.50	3.40	0.450	0.450	3.0
20...	1850	1.2	--	4.40	4.10	0.300	0.300	2.3
20...	2150	1.2	--	4.40	4.10	0.880	0.520	3.0
DEC								
14...	1130	0.10	--	5.70	5.70	0.050	0.050	0.60
JAN								
27...	1000	0.16	111	5.60	5.60	0.030	0.010	0.50
FEB								
21...	1420	2.3	187	4.90	--	1.30	--	10
21...	1440	1.8	218	2.10	--	2.40	--	17
21...	1500	1.6	288	1.40	--	3.70	--	26
21...	1520	1.4	264	2.20	--	3.30	--	22
21...	1540	1.3	255	2.60	--	3.40	--	20
21...	1600	1.2	223	2.90	--	2.60	--	12
21...	1620	1.1	199	3.40	--	2.00	--	9.0
21...	1640	1.1	187	3.60	--	1.40	--	6.3
28...	1010	0.19	110	4.90	4.40	0.070	0.070	0.70
MAR								
17...	1300	0.16	108	5.50	5.50	0.030	0.010	0.50
APR								
14...	0940	0.34	--	5.10	5.10	0.030	0.020	0.50
MAY								
02...	0900	0.78	--	3.60	--	0.340	--	1.9
22...	1205	0.54	101	5.00	4.90	0.090	0.090	0.60
23...	1755	38	--	2.00	--	0.450	--	2.4
23...	1935	19	--	3.10	--	0.270	--	3.2
23...	2235	2.2	--	3.50	--	0.100	--	1.0
23...	2335	18	--	3.50	--	0.150	--	2.1
24...	0435	3.1	--	3.50	--	0.120	--	2.8
24...	0455	12	--	3.00	--	0.130	--	1.7
24...	0535	36	--	1.90	--	0.240	--	1.4
24...	0615	27	--	2.00	--	0.190	--	2.7
24...	0715	18	--	2.60	--	0.150	--	1.2
24...	1415	4.2	--	3.80	--	0.030	--	1.1
JUN								
20...	1220	0.57	--	5.40	5.40	0.200	0.200	0.80
JUL								
04...	1210	1.1	--	<0.100	--	0.040	--	1.9
04...	1410	2.2	--	3.00	--	1.00	--	3.7
04...	1450	87	--	2.60	--	0.750	--	1.7
04...	1510	70	--	3.20	--	0.680	--	1.9
04...	1610	32	--	4.40	--	0.570	--	1.9
04...	1630	58	--	2.90	--	0.310	--	1.3
04...	1730	33	--	4.70	--	0.420	--	1.8
04...	1750	29	--	4.20	--	0.270	--	1.5
04...	2130	1.1	--	2.70	--	0.190	--	1.1
05...	1042	54	--	1.50	--	0.740	--	3.2
05...	1047	61	--	1.70	--	0.620	--	2.8
05...	1100	27	--	1.30	--	0.170	--	1.1
05...	1110	14	--	1.40	--	0.150	--	0.90
24...	1300	0.48	114	5.40	4.80	0.050	0.050	0.70
AUG								
15...	1250	0.57	--	5.70	5.70	0.130	0.130	0.40
SEP								
06...	0850	0.40	121	5.50	5.00	--	0.080	0.50
29...	0920	0.48	122	5.30	4.10	0.030	0.030	0.50

MUDDY CREEK BASIN

01577400 BALD EAGLE CREEK NEAR FAWN GROVE, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT							
17...	0.30	5.8	0.030	0.030	0.030	2	0.00
21...	--	15	1.50	--	--	--	--
21...	--	12	2.40	--	--	--	--
21...	--	9.0	2.00	--	--	--	--
22...	--	8.5	0.860	--	--	--	--
22...	--	9.5	1.30	--	--	--	--
NOV							
14...	0.50	5.6	0.040	0.040	0.030	--	--
20...	3.5	10	1.20	0.620	0.510	--	--
20...	4.4	10	2.10	1.20	1.20	--	--
20...	2.4	6.2	0.690	0.540	0.450	--	--
20...	3.1	8.0	2.70	1.00	1.00	--	--
20...	4.1	14	2.10	1.50	1.30	--	--
20...	2.2	8.7	1.40	0.970	0.900	--	--
20...	2.3	11	1.70	1.20	1.10	--	--
20...	2.5	6.5	0.930	0.720	0.640	--	--
20...	1.9	6.7	0.480	0.430	0.380	--	--
20...	2.7	7.4	0.860	0.640	0.550	--	--
DEC							
14...	0.40	6.3	0.050	0.040	0.030	--	--
JAN							
27...	0.30	6.1	0.050	0.040	0.040	2	0.00
FEB							
21...	--	15	2.30	--	--	1130	7.0
21...	--	19	3.90	--	--	1890	9.2
21...	--	27	9.30	--	--	2590	11
21...	--	24	6.20	--	--	1690	6.4
21...	--	23	5.70	--	--	1300	4.6
21...	--	15	4.40	--	--	876	2.8
21...	--	12	2.50	--	--	498	1.5
21...	--	9.9	1.60	--	--	302	0.90
28...	0.50	5.6	0.060	0.050	0.050	2	0.00
MAR							
17...	0.50	6.0	0.090	0.070	0.070	4	0.00
APR							
14...	0.50	5.6	0.030	0.030	0.020	--	--
MAY							
02...	--	5.5	0.480	--	--	24	0.05
22...	0.50	5.6	0.040	0.040	0.030	4	0.01
23...	--	4.4	0.850	--	--	--	--
23...	--	6.3	0.570	--	--	703	36
23...	--	4.5	0.220	--	--	249	1.5
23...	--	5.6	0.390	--	--	227	11
24...	--	6.3	0.240	--	--	542	4.5
24...	--	4.7	0.740	--	--	--	--
24...	--	3.3	1.00	--	--	--	--
24...	--	4.7	0.560	--	--	1490	109
24...	--	3.8	0.480	--	--	358	17
24...	--	4.9	0.110	--	--	43	.49
JUN							
20...	0.70	6.2	0.060	0.060	0.060	5	0.01
JUL							
04...	--	--	0.320	--	--	829	2.5
04...	--	6.7	2.40	--	--	1080	6.4
04...	--	4.3	0.810	--	--	15100	3540
04...	--	5.1	0.480	--	--	9270	1750
04...	--	6.3	0.700	--	--	--	--
04...	--	4.2	0.460	--	--	6400	1000
04...	--	6.5	0.600	--	--	--	--
04...	--	5.7	0.500	--	--	2630	206
04...	--	3.8	0.320	--	--	2110	6.3
05...	--	4.7	2.70	--	--	12400	1810
05...	--	4.5	5.40	--	--	13300	2190
05...	--	2.4	0.450	--	--	6770	494
05...	--	2.3	0.450	--	--	4660	176
24...	0.70	6.1	0.180	0.170	0.160	5	0.01
AUG							
15...	0.40	6.1	0.060	0.040	0.040	2	0.00
SEP							
06...	0.50	6.0	0.040	0.040	0.040	7	0.01
29...	0.50	5.8	0.050	0.050	0.030	1	0.00

MUDDY CREEK BASIN

01577400 BALD EAGLE CREEK NEAR FAWN GROVE, PA--Continued

INSTANTANEOUS SUSPENDED-SEDIMENT DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (μ S/CM)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT						
17...	0910	0.13	106	2	0.00	--
21...	2030	3.1	--	202	1.7	--
21...	2150	5.3	--	488	7.0	--
22...	0030	1.6	--	59	0.25	--
22...	2330	0.19	--	115	0.06	--
NOV						
20...	0510	1.9	--	125	0.64	--
20...	0630	1.4	--	109	0.41	--
20...	0910	1.8	--	47	0.23	--
20...	1050	9.4	--	500	13	--
20...	1130	7.6	--	530	11	--
20...	1250	13	--	777	27	--
20...	1550	2.0	--	90	0.49	--
20...	1910	1.2	--	24	0.08	--
20...	2130	1.2	--	21	0.07	--
JAN						
27...	1000	0.16	111	2	0.00	--
FEB						
21...	1420	2.3	187	1130	7.0	--
21...	1440	1.8	218	1890	9.2	--
21...	1500	1.6	288	2590	11	--
21...	1520	1.4	264	1690	6.4	--
21...	1540	1.3	255	1300	4.6	--
21...	1600	1.2	223	876	2.8	--
21...	1620	1.1	199	498	1.5	--
21...	1640	1.1	187	302	0.90	--
28...	1010	0.19	110	2	0.00	--
MAR						
17...	1300	0.16	108	4	0.00	--
18...	1520	1.6	108	325	1.4	--
18...	1540	3.1	158	469	3.9	--
18...	1700	0.67	179	97	0.18	--
24...	0740	0.79	254	567	1.2	--
24...	1000	1.6	163	232	1.0	--
24...	1300	3.6	151	300	2.9	--
24...	1800	1.6	133	42	0.18	--
25...	0300	0.78	122	17	0.04	--
MAY						
02...	0900	0.78	--	24	0.05	--
05...	1240	E0.44	169	78	--	--
05...	1340	E0.42	162	86	--	--
05...	1950	E0.48	151	27	--	--
05...	2110	E0.60	139	23	--	--
05...	2230	E12	126	34	--	--
05...	2310	E59	102	392	--	--
05...	2330	E147	207	1260	--	--
05...	2350	E117	195	1280	--	--
06...	0010	90	171	749	182	--
06...	0030	64	140	522	90	--
06...	0050	35	131	511	48	--
06...	0110	15	--	1320	53	--
22...	1205	0.54	101	4	0.01	--
23...	1815	29	--	4000	313	95
23...	1935	19	--	703	36	--
23...	2235	2.2	--	249	1.5	--
23...	2335	18	--	227	11	--
24...	0435	3.1	--	542	4.5	--
24...	0535	5.4	--	3290	48	81
24...	0615	27	--	1490	109	--
24...	0715	18	--	358	17	--
24...	1415	4.2	--	43	.49	--
JUN						
04...	0300	0.48	--	114	0.15	--
07...	0930	6.8	--	560	10	--
07...	1000	28	--	8850	669	--
07...	1100	24	--	8110	526	--
07...	1130	9.4	--	3060	78	--
09...	1100	1.9	--	575	2.9	--
09...	1150	19	--	3080	158	--
09...	1210	23	--	4200	261	--
09...	1310	7.6	--	1340	27	--
09...	1510	0.92	--	166	0.41	--
20...	1220	0.57	--	5	0.01	--

MUDDY CREEK BASIN

01577400 BALD EAGLE CREEK NEAR FAWN GROVE, PA--Continued

INSTANTANEOUS SUSPENDED-SEDIMENT DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (μ S/CM)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
JUL					
04...	1210	1.1	--	829	2.5
04...	1310	0.78	--	588	1.2
04...	1410	2.2	--	1080	6.4
04...	1430	55	--	12600	1870
04...	1450	87	--	15100	3540
04...	1510	70	--	9270	1750
04...	1530	37	--	5080	507
04...	1630	58	--	6400	1000
04...	1710	22	--	2440	145
04...	1750	29	--	2630	206
04...	1810	20	--	1460	79
04...	2130	1.1	--	2110	6.3
05...	1042	54	--	12400	1810
05...	1047	61	--	13300	2190
05...	1100	27	--	6770	494
05...	1110	14	--	4660	176
24...	1300	0.48	114	5	0.01
25...	1600	21	--	2070	117
25...	1700	2.2	--	519	3.1
25...	1820	0.92	--	176	0.44
AUG					
15...	1250	0.57	--	2	0.00
SEP					
06...	0850	0.40	121	7	0.01
19...	1755	1.8	263	150	0.73
19...	2035	1.6	234	106	0.46
19...	2115	2.1	231	739	4.2
19...	2255	1.3	213	119	0.42
29...	0920	0.48	122	1	0.00

POTOMAC RIVER BASIN

TONOLOWAY CREEK BASIN

01613050 TONOLOWAY CREEK NEAR NEEDMORE, PA

LOCATION.--Lat 39°53'54", long 78°07'57", Fulton County, Hydrologic Unit 02070004, on left bank 10 ft downstream from bridge on SR 3008, 0.2 mi upstream from Foster Creek, and 3.5 mi north of Needmore.

DRAINAGE AREA.--10.7 mi².

PERIOD OF RECORD.--Occasional discharge measurements and annual maximums, water years 1963-65. October 1965 to current year.

REVISED RECORDS.--WSP 2103: 1966-68(M).

GAGE.--Water-stage recorder, crest-stage gage, and concrete control. Datum of gage is 688.94 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 2, 1965, crest-stage gage at same site at datum 2.0 ft higher.

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

AVERAGE DISCHARGE.--24 years, 12.6 ft³/s, 15.99 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,300 ft³/s, June 22, 1972, gage height, 9.17 ft, from rating curve extended above 540 ft³/s on basis of contracted-opening measurement of peak flow; no flow many days.

EXTREMES 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)
May 16	2215	264	5.08	July 22	2330	262	5.07
June 21	0030	*536	*6.38	July 24	1845	202	4.81
July 16	1300	306	5.30	July 31	0445	251	5.02
July 20	0115	191	4.76				

Minimum daily discharge, 0.52 ft³/s, Sept. 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	.68	3.4	e4.2	3.4	10	51	8.3	13	4.8	96	1.1
2	1.4	.68	2.9	e3.8	3.1	8.8	45	20	11	4.1	56	1.2
3	1.4	.66	2.7	e3.7	3.8	7.9	38	16	9.4	3.6	35	1.0
4	1.2	.67	2.5	e3.5	3.3	e7.4	32	15	15	7.0	24	.94
5	.98	5.4	2.4	e3.5	2.9	e7.0	29	37	9.0	18	16	.52
6	.95	4.1	2.2	e3.6	3.0	e6.6	25	99	9.1	12	12	.94
7	.92	1.3	2.2	e4.5	e2.5	e6.4	22	67	7.6	9.0	9.3	.98
8	.93	.89	2.1	e7.5	e2.4	e6.2	21	45	6.4	27	7.1	.86
9	.89	.76	1.9	14	e2.3	e6.0	20	38	6.0	18	5.7	.98
10	.82	.67	e1.7	12	e2.1	e13	17	56	6.5	13	4.5	.65
11	.83	.65	e1.6	11	e2.2	28	15	72	4.7	8.9	3.8	1.2
12	.79	.56	e1.5	30	e2.8	39	14	56	4.0	6.5	3.7	.97
13	.75	2.4	e1.4	43	e4.0	49	13	43	4.2	13	3.2	1.0
14	.76	1.7	e1.4	34	e6.0	47	12	38	4.4	25	2.8	1.0
15	.73	1.2	e2.0	40	14	60	14	40	7.3	14	2.5	1.2
16	.74	1.1	e1.9	38	24	65	13	154	15	116	2.5	1.9
17	.70	1.4	e1.7	32	22	46	11	197	37	109	2.2	1.8
18	.72	1.1	e1.6	26	19	38	11	95	24	54	2.0	1.5
19	.74	1.2	e1.5	22	16	31	13	52	18	34	1.9	1.1
20	.67	43	e1.4	e16	13	27	10	39	44	90	1.8	1.1
21	1.1	54	e1.4	e13	20	28	9.9	31	277	52	2.0	1.1
22	1.7	31	e1.5	e11	19	23	9.4	25	111	47	1.8	1.2
23	.97	19	e2.0	e9.0	18	20	9.0	27	67	89	1.6	1.6
24	.95	13	13	7.5	16	39	8.8	38	47	68	1.5	1.4
25	.95	9.5	15	5.9	20	52	8.5	28	33	65	1.4	1.3
26	.80	7.3	11	5.3	17	44	8.4	33	22	50	1.0	2.7
27	.73	6.2	9.1	4.9	15	37	7.9	28	15	43	1.2	1.6
28	.72	6.4	8.4	4.0	12	32	7.4	24	12	32	1.2	1.4
29	.74	4.5	6.4	3.7	---	28	8.5	21	8.2	21	1.2	1.3
30	.71	3.7	e5.6	4.1	---	36	7.3	19	6.0	28	1.7	1.3
31	.66	---	e5.0	3.7	---	46	---	16	---	150	1.3	---
TOTAL	28.25	224.72	118.4	424.4	288.8	894.3	511.1	1477.3	853.8	1231.9	307.9	36.84
MEAN	.91	7.49	3.82	13.7	10.3	28.8	17.0	47.7	28.5	39.7	9.93	1.23
MAX	1.7	54	15	43	24	65	51	197	277	150	96	2.7
MIN	.66	.56	1.4	3.5	2.1	6.0	7.3	8.3	4.0	3.6	1.0	.52
CFSM	.09	.70	.36	1.28	.96	2.70	1.59	4.45	2.66	3.71	.93	.11
IN.	.10	.78	.41	1.48	1.00	3.11	1.78	5.14	2.97	4.28	1.07	.13
CAL YR 1988	TOTAL 3889.94	MEAN 10.6	MAX 302	MIN .18	CFSM .99	IN. 13.52						
WTR YR 1989	TOTAL 6397.71	MEAN 17.5	MAX 277	MIN .52	CFSM 1.64	IN. 22.24						

e Estimated.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at crest-stage partial-record stations are presented in the following table. Discharge measurements made at low-flow partial-record sites and at miscellaneous sites and for special studies are given in separate tables.

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 near-by continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained but is not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Annual maximum discharge at crest-stage partial-record stations during water year 1989

Annual maximum discharge at crest-stage partial-record stations during water year 1989							
Station No.	Station name	Location	Drainage area (mi ²)	Period of record	Annual maximum		
					Date	Gage height (ft)	Dis-charge (ft ³ /s)
SUSQUEHANNA RIVER BASIN							
CHEMUNG RIVER BASIN							
01518420	Crooked Creek below Catlin Hollow at Middlebury Center, Pa.	Lat 41°50'33", long 77°16'25", Tioga County, Hydrologic Unit 02050104, at single-span bridge on Township Route 586 at Middlebury Center.	74.3	1986-89	6-21-89	44.95	2,670
01519200	Cowanesque River at Elkland, Pa.	Lat 41°59'15", long 77°18'09", Tioga County, Hydrologic Unit 02050104, at single-span steel-truss bridge on State Highway 49 at Elkland.	235	1980-89	6-21-89	25.27	12,300
TOWANDA CREEK BASIN							
01532200	South Branch Towanda Creek at New Albany, Pa.	Lat 41°35'23", long 76°25'58", Bradford County, Hydrologic Unit 02050106, at bridge on Township Route 381, 0.1 mi below French Creek, 0.7 mi above Beaver Run, and 0.8 mi south of New Albany.	13.3	1963-89	5-6-89	4.71	472
TUSCARORA CREEK BASIN							
01533250	Tuscarora Creek near Silvara, Pa.	Lat 41°42'25", long 76°07'10", Bradford County, Hydrologic Unit 02050106, at single-span bridge on Township Route 510, 1.0 mi northeast of Silvara, 1.1 mi above Mill Creek, and 4.6 mi upstream from mouth.	11.8	1963-89	3-15-78 12-13-83 6-24-89	6.15 a7.18 a6.38	b543 b697 942
WEST BRANCH SUSQUEHANNA RIVER BASIN							
01542720	Wilson Run at Penfield, Pa.	Lat 41°12'58", long 78°35'00", Clearfield County, Hydrologic Unit 02050201, at wooden bridge 200 ft north of State Highway 153, 0.7 mi upstream from mouth, and 0.8 mi northwest of Penfield.	8.3	1962-89	6-20-89	3.21	318
01543700	First Fork Sinnemahoning Creek at Wharton, Pa.	Lat 41°31'08", long 78°01'40", Potter County, Hydrologic Unit 02050202, 50 ft upstream from bridge on State Highway 872, and 0.8 mi southwest of Wharton.	182	1968-80* 1982* 1984-89	6-21-89	10.87	7,190
01545800	West Branch Susquehanna River at Lock Haven, Pa.	Lat 41°08'17", long 77°26'32", Clinton County, Hydrologic Unit 02050203, on right bank 50 ft downstream from Jay Street bridge, and 2.3 mi upstream from Bald Eagle Creek.	3,345	1975-89	6-21-89	15.43	47,200

* Also a low-flow partial-record station.

a Using auxiliary gage.

b Revised.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station name	Location	Drainage area (mi ²)	Period of record	Annual maximum		
					Date	Gage height (ft)	Dis-charge (ft ³ /s)
<u>SUSQUEHANNA RIVER BASIN--Continued</u>							
WEST BRANCH SUSQUEHANNA RIVER BASIN--Continued							
01549590	Little Pine Creek near Waterville, Pa.	Lat 41°21'06", long 77°21'18", Lycoming County, Hydrologic Unit 02050205, at single-span bridge 0.2 mi downstream from Little Pine Dam, and 3.4 mi upstream from Waterville.	172	1988-89	3-30-89	6.34	2,100
01550500	Lycoming Creek near Williamsport, Pa.	Lat 41°16'01", long 77°02'49", Lycoming County, Hydrologic Unit 02050206, 150 ft downstream from concrete bridge on U.S. Highway 15, 1.2 mi downstream from Beautys Run, and 3.4 mi upstream from mouth.	268	1908-13c 1982-87* 1988-89	6-17-89	7.60	5,410
01553005	Muncy Creek near Muncy, Pa.	Lat 41°12'27", long 76°45'09", Lycoming County, Hydrologic Unit 02050206, 1,900 ft downstream from Little Muncy Creek, 2,300 ft upstream from bridge on State Highway 405, and 2.2 mi east of Muncy.	209	1989	5-7-89	12.98	11,000
01553050	White Deer Hole Creek near Elmsport, Pa.	Lat 41°07'08", long 77°04'02", Lycoming County, Hydrologic Unit 02050206, at bridge on SR 2002, 2.5 mi west of Elmsport, and 12.5 mi upstream from mouth. Datum of gage is 650.84 ft, above NGVD of 1929.	18.2	1961-89	7-20-89	3.78	1,120
JUNIATA RIVER BASIN							
01559790	Raystown Branch Juniata River at Wolfsburg, Pa.	Lat 40°02'45", long 78°31'45", Bedford County, Hydrologic Unit 02050303, 150 ft upstream from single-span steel-girder bridge on U.S. Highway 30 at Wolfsburg, and 4.7 mi upstream from Dunning Creek.	132	1989	7-20-89	10.30	6,250
01565000	Kishacoquillas Creek at Reedsville, Pa.	Lat 40°39'17", long 77°35'00", Mifflin County, Hydrologic Unit 02050304, on left bank 150 ft downstream from bridge on old U.S. Highway 322, and 1.0 mi southeast of Reedsville. Datum of gage is 551.23 ft above NGVD of 1929.	164	1940-70‡ 1984-85‡ 1982-87* 1989	7-21-89	8.01	2,570
01566000	Tuscarora Creek near Port Royal, Pa.	Lat 40°30'55", long 77°25'10", Juniata County, Hydrologic Unit 02050304, at single-span bridge on SR 3008, 2.0 mi southwest of Port Royal, and 3.5 mi upstream from mouth. Datum of gage is 420.47 ft above NGVD of 1929.	214	1911-58‡ 1982-87* 1988-89	5-19-88 7-20-89	10.64 13.22	4,380 7,210
CONODOGUINET CREEK BASIN							
01569340	Newburg Run at Newburg, Pa.	Lat 40°07'40", long 77°32'50", Cumberland County, Hydrologic Unit 02050305, at concrete bridge on State Highway 696, 0.4 mi upstream from mouth, and 0.8 mi south of Newburg.	5.29	1964-89	5-16-89	4.46	394

* Also a low-flow partial-record station.

‡ Operated as a continuous-record station.

^a Using auxiliary gage.^b Revised.^c Operated as a continuous-record station by Pa. Dept. of Forests and Waters. Published as "at Bridge No. 2, near Williamsport."

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station name	Location	Drainage area (mi ²)	Period of record	Annual maximum		
					Date	Gage height (ft)	Dis-charge (ft ³ /s)
<u>SUSQUEHANNA RIVER BASIN--Continued</u>							
CONESTOGA RIVER BASIN							
01576320	Stony Run at Reamstown, Pa.	Lat 40°12'44", long 76°07'30", Lancaster County, Hydrologic Unit 02050306, at single-span bridge on SR 1051, 0.1 mi southeast of U.S. Highway 222, 0.1 mi northwest of Reamstown, and 0.7 mi upstream from mouth.	3.55	1964-89	5-6-89	7.62	1,170
CONOWINGO CREEK BASIN							
01578200	Conowingo Creek near Buck, Pa.	Lat 39°50'35", long 76°11'45", Lancaster County, Hydrologic Unit 02050306, at concrete bridge on SR 3008, 2.0 mi upstream from Jackson Run, and 2.5 mi southeast of Buck.	8.71	1963-89	5-6-89	6.22	503

Low-flow partial-record stations

Measurements of streamflow in the area covered by this report made at low-flow partial-record stations are given in the following table. These measurements were made during periods of base flow when streamflow is primarily from ground-water storage. These measurements when correlated with the simultaneous discharge of a nearby stream when continuous records are available, will give a picture of the low-flow potentiality of the 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 1989

Station No.	Station name	Location	Drainage area (mi ²)	Period of record	Measurements	
					Date	Dis-charge (ft ³ /s)
SUSQUEHANNA RIVER BASIN						
STARRUCCA RIVER BASIN						
01502750	Starrucca Creek near Melrose, Pa.	Lat 41°55'50", long 75°30'15", Susquehanna County, Hydrologic Unit 02050101, at bridge on Township Route 765 at Melrose, and 0.2 mi upstream from Wildcat Run.	47.0	1946-57, 1983-85, 1987,1989	9-7-89	6.5
SNAKE CREEK BASIN						
01502780	Snake Creek near Montrose, Pa.	Lat 41°55'00", long 75°50'45", Susquehanna County, Hydrologic Unit 02050104, at bridge on Township Route 683 at Franklin Forks, 20 ft upstream from Silver Creek, and 6.0 mi northeast of Montrose.	18.5	1959-69, 1983-85, 1987,1989	9-11-89	3.2
CHIMUNG RIVER BASIN						
01516300	Tioga River at Covington, Pa.	Lat 41°44'42", long 77°04'49", Tioga County, Hydrologic Unit 02050104, at bridge on SR 2022, and 0.1 mi west of Covington.	105	1970-79, 1982-83, 1985,1987, 1989	8-29-89	14
01519500	Cowanesque River at Nelson, Pa.	Lat 41°58'25", long 77°14'35", Tioga County, Hydrologic Unit 02050104, at bridge on State Highway 49, and 7.0 mi west of Lawrenceville.	266	1938-41, 1982-83, 1985,1987, 1989	8-29-89	10
01530850	Bentley Creek at Ridgebury, Pa.	Lat 41°58'25", long 76°43'12", Bradford County, Hydrologic Unit 02050105, at bridge on SR 4024 at Ridgebury, and 300 ft downstream from Three Falls Glen.	47.2	1970-80, 1982-83, 1985,1987, 1989	8-21-89	2.5
SUGAR CREEK BASIN						
01531300	Sugar Creek near West Burlington, Pa.	Lat 41°45'45", long 76°41'55", Bradford County, Hydrologic Unit 02050106, at bridge on Township Route 328, and 1.3 mi west of West Burlington.	88.3	1944-57, 1982-83, 1985,1987, 1989	8-21-89	7.3
TOWANDA CREEK BASIN						
01531900	Towanda Creek at Canton, Pa.	Lat 41°39'20", long 76°49'50", Bradford County, Hydrologic Unit 02050106, just upstream from the mouth of Mill Creek, and 1.0 mi east of Canton on State Highway 414.	22.6	1982-83, 1985,1987, 1989	8-21-89	4.8
WYSOX CREEK BASIN						
01532600	Wysox Creek near Wysox, Pa.	Lat 41°47'10", long 76°23'00", Bradford County, Hydrologic Unit 02050106, at bridge on SR 1027 near Wysox, and 0.8 mi upstream from mouth.	98.8	1982-83, 1985,1987, 1989	8-21-89	2.8
WYALUSING CREEK BASIN						
01532800	East Branch Wyalusing Creek at Lawton, Pa.	Lat 41°47'15", long 76°04'15", Susquehanna County, Hydrologic Unit 02050106, at bridge on State Highway 706 at Lawton.	68.9	1958-66, 1983-85, 1987,1989	9-11-89	4.3
01532850	Middle Branch Wyalusing Creek tributary near Birchardsville, Pa.	Lat 41°51'45", long 76°00'26", Susquehanna County, Hydrologic Unit 02050106, on left bank 60 ft upstream from bridge on State Highway 267, 1,000 ft upstream from mouth, and 1.2 mi north of Birchardsville.	5.67	1965-79‡, 1983-85, 1987,1989	9-11-89	.34

‡ Operated as a continuous-record gaging station.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at low-flow partial-record stations during water year 1989--Continued

Station No.	Station name	Location	Drainage area (mi ²)	Period of record	Measurements	
					Date	Dis-charge (ft ³ /s)
<u>SUSQUEHANNA RIVER BASIN--Continued</u>						
SUGAR RUN CREEK BASIN						
01533100	Sugar Run Creek at Sugar Run, Pa.	Lat 41°38'31", long 76°13'55", Bradford County, Hydrologic Unit 02050106, at bridge on SR 2002, 0.3 mi east of Sugar Run, and 0.4 mi upstream from mouth.	56.6	1970-79, 1982-83, 1985, 1987, 1989	8-21-89	7.3
MESHOPPEN CREEK BASIN						
01533300	Meshoppen Creek near Springville, Pa.	Lat 41°41'50", long 75°53'10", Susquehanna County, Hydrologic Unit 02050106, at bridge on SR 3004, and 1.8 mi east of Springville.	26.7	1946-69, 1983-85, 1987, 1989	9-11-89	1.8
MEHOOPANY CREEK BASIN						
01533500	North Branch Mehoopany Creek near Lovelton, Pa.	Lat 41°31'50", long 76°09'20", Wyoming County, Hydrologic Unit 02050106, 0.5 mi upstream from bridge on State Highway 87, 1.7 mi downstream from Lovelton, and 2.1 mi upstream from mouth.	35.2	1941-58‡, 1982-83, 1985, 1987, 1989	8-21-89	4.3
TUNKHANNOCK CREEK BASIN						
01533800	Butler Creek at Gibson, Pa.	Lat 41°48'10", long 75°38'40", Susquehanna County, Hydrologic Unit 02050106, at bridge on state Highway 547 at Gibson.	7.38	1963-73‡, 1974-79‡, 1983-85, 1987, 1989	9-7-89	.13
01533840	Tunkhannock Creek at Glenwood, Pa.	Lat 41°39'03", long 75°43'15", Susquehanna County, Hydrologic Unit 02050106, at bridge on State Highway 374 at Glenwood, and 0.4 mi upstream from East Branch Tunkhannock Creek.	107	1970-79, 1983-85, 1987, 1989	9-7-89	12
01533950	South Branch Tunkhannock Creek near Montdale, Pa.	Lat 41°34'29", long 75°38'32", Lackawanna County, Hydrologic Unit 02050106, on right bank 70 ft upstream from bridge on State Highway 438, 3.6 mi northwest of Montdale, and 16 mi upstream from mouth.	12.6	1961-78‡, 1983-85, 1987, 1989	9-7-89	1.2
BOWMAN CREEK BASIN						
01534050	Bowman Creek near Noxen, Pa.	Lat 41°24'55", long 76°05'30", Wyoming County, Hydrologic Unit 02050106, at bridge at Stull, and 2.1 mi upstream from Noxen.	35.9	1946-57, 1983-85, 1987, 1989	9-6-89	5.3
LACKAWANNA RIVER BASIN						
01534170	East Branch Lackawanna River at Union Dale, Pa.	Lat 41°43'08", long 75°28'49", Susquehanna County, Hydrologic Unit 02050107, at bridge on SR 2040 (Church St.), 0.3 mi east of the intersection of State Highway 171 and SR 2040, and 0.7 mi east of Union Dale.	17.3	1951, 1970-79, 1983-85, 1987, 1989	9-7-89	2.0
01535540	Spring Brook near Spring Brook, Pa.	Lat 41°17'07", long 75°35'33", Lackawanna County, Hydrologic Unit 02050107, at bridge on private road, 1.5 mi southeast of Spring Brook, and 1.8 mi upstream from Watres Reservoir dam.	8.98	1970-79, 1983-85, 1987, 1989	9-6-89	2.3
WAPWALLOPEN CREEK BASIN						
01537900	Little Wapwallopen Creek near Wapwallopen, Pa.	Lat 41°05'43", long 76°07'18", Luzerne County, Hydrologic Unit 02050107, at bridge on State Highway 239, 1.0 mi downstream from Pond Creek, and 1.9 mi north of Wapwallopen.	39.4	1970-74, 1976-79, 1982-85, 1987, 1989	9-7-89	1.7
NESCOPECK CREEK BASIN						
01538500	Nescopeck Creek near St. Johns, Pa.	Lat 41°01'15", long 76°00'40", Luzerne County, Hydrologic Unit 02050107, at bridge on Township Route 356, and 0.5 mi southwest of St. Johns.	49.0	1920-26‡, 1983-85, 1987, 1989	9-7-89	7.7

‡ Operated as a continuous-record gaging station.

‡ Operated as a crest-stage gage.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at low-flow partial-record stations during water year 1989--Continued

Station No.	Station name	Location	Drainage area (mi ²)	Period of record	Measurements	
					Date	Dis-charge (ft ³ /s)
SUSQUEHANNA RIVER BASIN--Continued						
NESCOPECK CREEK BASIN--Continued						
01538600	Nescopeck Creek at Nescopeck, Pa.	Lat 41°02'46", long 76°13'28", Luzerne County, Hydrologic Unit 02050107, at bridge on State Highway 339 at Nescopeck, and just downstream from railroad bridge.	171	1949-50, 1983-85, 1987, 1989*	9-7-89	63
FISHING CREEK BASIN						
01538900	Huntington Creek near Harveyville, Pa.	Lat 41°14'25", long 76°14'10", Luzerne County, Hydrologic Unit 02050107, at bridge on SR 4024, and 2.2 mi north of Harveyville.	29.9	1946-47, 1982-85, 1987, 1989	9-6-89	2.8
01538970	Fishing Creek at Forks, Pa.	Lat 41°06'27", long 76°21'44", Columbia County, Hydrologic Unit 02050107, at bridge on SR 1020 at Forks, and 0.2 mi upstream from Huntington Creek.	114	1970-79, 1982-85, 1987, 1989	9-6-89	22
01539500	Little Fishing Creek at Evers Grove, Pa.	Lat 41°04'50", long 76°30'40", Columbia County, Hydrologic Unit 02050107, at bridge on State Highway 42, 0.9 mi southeast of Evers Grove, 3.0 mi southeast of Millville, and 5.1 mi upstream from mouth.	56.5	1941-58‡, 1983-85, 1987, 1989	9-11-89	1.4
01540000	Fishing Creek at Bloomsburg, Pa.	Lat 41°00'10", long 76°27'50", Columbia County, Hydrologic Unit 02050107, at Red Rock Bridge on Railroad Street in Bloomsburg, and 2.0 mi upstream from mouth.	355	1915-28‡, 1983, 1985, 1987, 1989	9-11-89	44
CATAWISSA CREEK BASIN						
01540200	Trexler Run near Ringtown, Pa.	Lat 40°51'10", long 76°16'48", Schuylkill County, Hydrologic Unit 02050107, at bridge on SR 4036, 0.7 mi east of Columbia-Schuylkill County line, and 2.5 mi west of Ringtown.	1.77	1959-63a, 1964-81‡, 1982-85, 1987, 1989	9-11-89	.39
01540300	Tomhicken Creek near Zion Grove, Pa.	Lat 40°54'45", long 76°11'47", Schuylkill County, Hydrologic Unit 02050107, at bridge on SR 4033, 1.0 mi northeast of Zions Grove, and 1.4 mi upstream from mouth.	20.4	1959-69, 1982-83, 1985, 1987, 1989	9-11-89	5.2
01540350	Catawissa Creek at Catawissa, Pa.	Lat 40°57'00", long 76°27'56", Columbia County, Hydrologic Unit 02050107, at bridge on Second Street in Catawissa, and 0.2 mi upstream from mouth.	149	1949-50, 1970-79, 1982-85, 1987, 1989	9-11-89	45
WEST BRANCH SUSQUEHANNA RIVER BASIN						
01540820	Chest Creek near Mahaffey, Pa.	Lat 40°52'06", long 78°43'15", Clearfield County, Hydrologic Unit 02050201, at bridge on SR 3001, and 0.2 mi southeast of Mahaffey.	130	1945, 1982-83, 1985, 1987, 1989	8-21-89	40
01541250*	Anderson Creek at Curwensville, Pa.	Lat 45°58'20", long 78°31'20", Clearfield County, Hydrologic Unit 02050201, at bridge on State Highway 453 at Curwensville, and 800 ft upstream from mouth.	77.8	1945-74, 1982-83, 1985, 1987, 1989	8-21-89	8.1
01541325	Clearfield Creek at Flinton, Pa.	Lat 40°43'05", long 78°31'38", Cambria County, Hydrologic Unit 02050201, at bridge on SR 1021, 0.2 mi upstream from Beaverdam Run, and 0.5 mi northwest of Flinton.	98.1	1970-79, 1983-85, 1987, 1989	8-25-89	28
01542310	Moshannon Creek near Moshannon, Pa.	Lat 41°02'12", long 78°03'28", Centre County, Hydrologic Unit 02050201, at bridge on State Highway 53, 3.0 mi west of Moshannon, and 5.0 mi upstream from mouth.	263	1945, 1949, 1975-83, 1985, 1987, 1989	8-21-89	117

‡ Operated as a continuous-record gaging station.

* Also a miscellaneous station.

a Operated as a crest-stage gage.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at low-flow partial-record stations during water year 1989--Continued

Station No.	Station name	Location	Drainage area (mi ²)	Period of record	Measurements	
					Date	Dis-charge (ft ³ /s)
<u>SUSQUEHANNA RIVER BASIN--Continued</u>						
WEST BRANCH SUSQUEHANNA RIVER BASIN--Continued						
01542330	Black Moshannon Creek near Philipsburg, Pa.	Lat 40°52'43", long 78°04'36", Centre County, Hydrologic Unit 02050201, at bridge on Shirk Road, 0.5 mi southeast of Black Moshannon State Airport, and 6.0 mi east of Philipsburg.	2.33	1970-83, 1985, 1987, 1989	8-21-89	.78
01542760	Trout Run at Benezette, Pa.	Lat 41°18'50", long 78°23'05", Elk County, Hydrologic Unit 02050202, at bridge on State Highway 555 at Benezette.	55.2	1944-57, 1982-83, 1985, 1987, 1989	8-21-89	7.1
01542880	Driftwood Branch Sinnemahoning Creek at Emporium, Pa.	Lat 41°30'29", long 78°14'15", Cameron County, Hydrologic Unit 02050202, at bridge on SR 3001 at Emporium.	86.3	1945, 1982-83, 1985, 1987, 1989	8-21-89	18
01542950	Sinnemahoning Portage Creek near Emporium, Pa.	Lat 41°32'36", long 78°12'43", Cameron County, Hydrologic Unit 02050202, at bridge on State Highway 155, 2.6 mi north of intersection with State Highway 120, and 2.8 mi upstream from mouth.	59.8	1945, 1976-80, 1982-83, 1985, 1987, 1989	8-21-89	6.2
01545610	Left Branch Young Womans Creek near Renovo, Pa.	Lat 41°22'19", long 77°42'01", Clinton County, Hydrologic Unit 02050203, at bridge on SR 4005, 400 ft upstream from mouth, and 4.0 mi northeast of Renovo.	35.9	1970-79, 1982-83, 1985, 1987, 1989	8-21-89	8.9
01545680	Tangascootack Creek near Lock Haven, Pa.	Lat 41°10'32", long 77°32'53", Clinton County, Hydrologic Unit 02050203, at bridge on State Highway 120, 600 ft upstream from mouth, and 7.0 mi northwest of Lock Haven.	36.5	1970-83, 1985, 1987, 1989	8-21-89	11
01547800	South Fork Beech Creek near Snow Shoe, Pa.	Lat 41°01'30", long 77°54'15", Centre County, Hydrologic Unit 02050204, at bridge on State Highway 144, 2.5 mi east of Snow Shoe, and 4.2 mi upstream from mouth.	12.2	1959-69 ^a , 1969-81 [‡] , 1982-83, 1985, 1987, 1989	8-21-89	4.2
01548080	Fishing Creek at Mill Hall, Pa.	Lat 41°06'35", long 77°29'10", Clinton County, Hydrologic Unit 02050204, on Peale Street Bridge at Mill Hall, and 0.9 mi upstream from mouth.	179	1962-69, 1982-83, 1985, 1987, 1989	8-22-89	112
01548300	Marsh Creek near Marsh Creek, Pa.	Lat 41°46'25", long 77°21'15", Tioga County, Hydrologic Unit 02050205, at bridge on Township Route 478, at mouth of Heise Run, and 2.0 mi east of Marsh Creek.	39.7	1944-57, 1982-83, 1985, 1987, 1989	8-22-89	4.3
01548400	Babb Creek at Morris, Pa.	Lat 41°35'50", long 77°17'23", Tioga County, Hydrologic Unit 02050205, just upstream from Long Run at Morris, and 1,000 ft upstream from bridge on State Highway 287.	42.0	1958-69, 1982-83, 1985, 1987, 1989	8-22-89	10
01549550	Little Pine Creek near English Center, Pa.	Lat 41°24'46", long 77°19'19", Lycoming County, Hydrologic Unit 02050205, at bridge on SR 4001, and 2.4 mi southwest of English Center.	135	1970-79, 1982-83, 1985, 1987, 1989	8-22-89	38
01549790	Larrys Creek at Larrys Creek, Pa.	Lat 41°13'10", long 77°13'12", Lycoming County, Hydrologic Unit 02050206, at bridge on U.S. Highway 220 at Larrys Creek, and 0.2 mi upstream from mouth.	89.0	1970-79, 1982-83, 1985, 1987, 1989	8-21-89	23
01551830	Loyalsock Creek near Forks-ville, Pa.	Lat 41°28'10", long 76°35'05", Sullivan County, Hydrologic Unit 02050206, at bridge on State Highway 154 at Worlds End, and 1.8 mi southeast of Forksville.	131	1970-80, 1982-83, 1985, 1987, 1989	8-22-89	31
01553010	Muncy Creek near Muncy, Pa.	Lat 41°13'15", long 76°47'10", Lycoming County, Hydrologic Unit 02050206, near Muncy, and 1.0 mi upstream from mouth.	216	1945, 1955, 1982-83, 1985, 1987, 1989	8-22-89	34

‡ Operated as a continuous-record gaging station.

a Operated as a crest-stage gage.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at low-flow partial-record stations during water year 1989--Continued

Station No.	Station name	Location	Drainage area (mi ²)	Period of record	Measurements	
					Date	Dis-charge (ft ³ /s)
<u>SUSQUEHANNA RIVER BASIN--Continued</u>						
WEST BRANCH SUSQUEHANNA RIVER BASIN--Continued						
01553110	White Deer Hole Creek at Allenwood, Pa.	Lat 41°06'14", long 76°53'54", Union County, Hydrologic Unit 02050206, at bridge on Township Route 421, 0.4 mi south of Allenwood, and 0.9 mi upstream from mouth.	66.4	1970-79, 1982-83, 1985, 1987, 1989	8-22-89	30
01553130	Sand Spring Run near White Deer, Pa.	Lat 41°03'31", long 77°04'37", Union County, Hydrologic Unit 02050206, at bridge on White Deer Creek Road, 500 ft upstream from mouth, and 11.3 mi west of White Deer.	4.93	1968-81‡, 1982-83, 1985, 1987, 1989	8-22-89	4.2
01553480	Buffalo Creek at Lewisburg, Pa.	Lat 40°58'19", long 76°53'30", Union County, Hydrologic Unit 02050206, at bridge on U.S. Highway 15 at Lewisburg, and 0.6 mi upstream from mouth.	134	1970-79, 1982-83, 1985, 1987, 1989	8-22-89	93
PENNS CREEK BASIN						
01554800	Pine Creek at Woodward, Pa.	Lat 40°54'00", long 77°21'25", Centre County, Hydrologic Unit 02050301, at bridge on State Highway 45 at Woodward.	19.8	1945-57, 1982-85, 1987, 1989	9-8-89	7.7
01555200	Middle Creek near Beaver-town, Pa.	Lat 40°46'40", long 77°07'05", Snyder County, Hydrologic Unit 02050301, at bridge on U.S. Highway 522, and 2.7 mi northeast of Beavertown.	110	1958-69, 1982-85, 1987, 1989	9-6-89	32
MAHANOEY CREEK BASIN						
01555250	Mahanoy Creek at Dornsife, Pa.	Lat 40°44'40", long 76°47'28", Northumberland County, Hydrologic Unit 02050301, at bridge on State Highway 225 at Dornsife.	117	1949-50, 1970-74, 1983, 1985, 1987, 1989	9-12-89	87
WICONISCO CREEK BASIN						
01555570	Wiconisco Creek near Elizabethville, Pa.	Lat 40°33'40", long 76°48'30", Dauphin County, Hydrologic Unit 02050301, at bridge on State Highway 225, and 1.0 mi north of Elizabethville.	79.2	1949-50, 1970-79, 1982-83, 1985, 1987, 1989	9-8-89	30
JUNIATA RIVER BASIN						
01555780	Frankstown Branch Juniata River at East Freedom, Pa.	Lat 40°21'23", long 78°25'41", Blair County, Hydrologic Unit 02050302, at bridge on SR 2010 (old Rt. 164), 400 ft upstream from South Dry Run, and 0.1 mi east of East Freedom.	47.4	1970-80, 1983-85, 1987, 1989	8-25-89	14
01558500	Shaver Creek near Petersburg, Pa.	Lat 40°36'40", long 78°00'25", Huntingdon County, Hydrologic Unit 02050302, at bridge on State Highway 305, 3.5 mi northeast of Petersburg, and 4.5 mi upstream from mouth.	46.4	1930-38‡, 1982-85, 1987, 1989	9-13-89	8.8
01559500	Standing Stone Creek near Huntingdon, Pa.	Lat 40°31'25", long 77°58'15", Huntingdon County, Hydrologic Unit 02050302, at bridge on State Highway 26, 3.2 mi northeast of Huntingdon, and 3.5 mi upstream from mouth.	128	1930-58‡, 1983-85, 1987, 1989	9-13-89	26
01559700	Buffalo Run tributary near Manns Choice, Pa.	Lat 39°58'40", long 78°37'05", Bedford County, Hydrologic Unit 02050303, at bridge on State Highway 96, 2,000 ft upstream from mouth, and 2.3 mi south of Manns Choice.	5.28	1962-78‡, 1983, 1985, 1987, 1989	9-7-89	.50
01559750	Raystown Branch Juniata River near Manns Choice, Pa.	Lat 40°01'02", long 78°37'07", Bedford County, Hydrologic Unit 02050303, at bridge on State Highway 31, 0.3 mi upstream from Shawnee Branch, and 2.0 mi northwest of Manns Choice.	50.8	1952-53, 1970-79, 1983, 1985, 1987, 1989	9-7-89	3.3

‡ Operated as a continuous-record gaging station.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at low-flow partial-record stations during water year 1989--Continued

Station No.	Station name	Location	Drainage area (mi ²)	Period of record	Measurements	
					Date	Dis-charge (ft ³ /s)
<u>SUSQUEHANNA RIVER BASIN--Continued</u>						
JUNIATA RIVER BASIN--Continued						
01559756	Shawnee Branch at Schellsburg, Pa.	Lat 40°02'17", long 78°39'16", Bedford County, Hydrologic Unit 02050303, at covered bridge on Township Route 443, 0.3 mi upstream from mouth, and 0.9 mi southwest of Schellsburg.	18.6	1968-79, 1983, 1985, 1987, 1989	9-6-89	4.1
01561000	Brush Creek at Gapsville, Pa.	Lat 39°57'20", long 78°15'15", Bedford County, Hydrologic Unit 02050303, at covered bridge 0.8 mi northwest of Gapsville, 1.5 mi downstream from Little Brush Creek, and 5.5 mi upstream from Shaffer Creek.	36.8	1930-58‡, 1983, 1985, 1987, 1989	9-11-89	7.8
01565700	Little Lost Creek at Oakland Mills, Pa.	Lat 40°36'19", long 77°18'42", Juniata County, Hydrologic Unit 02050304, at bridge on SR 2007, 0.8 mi south of Oakland Mills, and 1.0 mi upstream from mouth.	6.52	1960-63a, 1964-81‡, 1983-85, 1987, 1989	8-24-89	5.0
01566900	Buffalo Creek near Newport, Pa.	Lat 40°29'37", long 77°08'20", Perry County, Hydrologic Unit 02050304, at bridge on SR 1024, 0.4 mi upstream from mouth, and 1.2 mi north of Newport.	69.5	1948, 1970-79, 1983-85, 1987, 1989	8-24-89	30.
STONY CREEK BASIN						
01568750	Stony Creek at Water Tank Trail near Dauphin, Pa.	Lat 40°24'51", long 76°46'50", Dauphin County, Hydrologic Unit 02050301, at the intersection of Township Route 535 and Water Tank Trail, 3.8 mi downstream from Rattling Run, and 9.0 mi northeast of Dauphin.	21.9	1974-76‡, 1985-86‡, 1988*, 1989	9-8-89	9.9
CONODOGUINET CREEK BASIN						
01569300	Conodoguinet Creek at Orrstown, Pa.	Lat 40°03'40", long 77°37'00", Franklin County, Hydrologic Unit 02050305, at bridge on State Highway 433, and 0.3 mi northwest of Orrstown.	53.4	1943-57, 1983-85, 1987, 1989	9-7-89	8.4
YELLOW BREECHES CREEK BASIN						
01571185	Mountain Creek at Pine Grove Furnace, Pa.	Lat 40°01'51", long 77°18'18", Cumberland County, Hydrologic Unit 02050305, at bridge on Township Route 336, 0.2 mi south of Pine Grove Furnace, and 0.5 mi upstream from Toms Run.	13.9	1970-80, 1983-85, 1987, 1989	9-8-89	6.2
01571190	Mountain Creek near Mount Holly Springs, Pa.	Lat 40°05'36", long 77°11'14", Cumberland County, Hydrologic Unit 02050305, 0.6 mi upstream from reservoir dam, and 2.0 mi south of Mount Holly Springs.	37.4	1970-79, 1982-85, 1987, 1989	9-6-89	11
01571200	Yellow Breeches Creek at Craigheads, Pa.	Lat 40°08'45", long 77°10'15", Cumberland County, Hydrologic Unit 02050305, at single-lane steel highway bridge on Township Route 520 at Craigheads.	110	1959-62, 1982-85, 1987, 1989	9-6-89	61
01571300	Dogwood Run near Dillsburg, Pa.	Lat 40°08'50", long 77°01'50", York County, Hydrologic Unit 02050305, at Williams Grove, just downstream from millrace, 100 ft above mouth, and 2.5 mi north of Dillsburg.	8.78	1957-69, 1983-85, 1989	9-6-89	6.7
SWATARA CREEK BASIN						
01571824*	Swatara Creek at Ravine, Pa.	Lat 40°34'30", long 76°24'10", Schuylkill County, Hydrologic Unit 02050305, at bridge on Spittler Road, and 0.1 mi east of State Highway 125 at Ravine.	44.6	1975-80, 1982-85, 1987, 1989	9-7-89	30
01572000	Lower Little Swatara Creek at Pine Grove, Pa.	Lat 40°32'15", long 76°22'40", Schuylkill County, Hydrologic Unit 02050305, at bridge on State Highway 501, 0.5 mi upstream from mouth, and 0.8 mi south-east of Pine Grove.	34.3	1920-32‡, 1981-84‡, 1985, 1987, 1989	9-7-89	6.1

‡ Operated as a continuous-record gaging station.

* Also a miscellaneous station.

a Operated as a crest-stage gage.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at low-flow partial-record stations during water year 1989--Continued

					Measurements	
Station No.	Station name	Location	Drainage area (mi ²)	Period of record	Date	Dis-charge (ft ³ /s)
<u>SUSQUEHANNA RIVER BASIN--Continued</u>						
SWATARA CREEK BASIN--Continued						
01573086	Beck Creek near Cleona, Pa.	Lat 40°19'24", long 76°29'00", Lebanon County, Hydrologic Unit 02050305, at bridge on Township Route 421 (Bricker Lane), 0.4 mi upstream from mouth, and 1.0 mi south of Cleona.	7.87	1963-81 [‡] , 1983-85, 1987,1989	9-7-89	5.7
CODORUS CREEK BASIN						
01574800	East Branch Codorus Creek tributary near Winterstown, Pa.	Lat 39°48'57", long 76°37'59", York County, Hydrologic Unit 02050306, on right bank 20 ft downstream from Township Route 850, 1.5 mi upstream from mouth, and 1.7 mi southwest of Winterstown.	5.17	1960-68, 1969-75 [‡] , 1983-85, 1987,1989	9-5-89	2.4
CONESTOGA RIVER BASIN						
01576200	Little Muddy Creek near Reamstown, Pa.	Lat 40°11'05", long 76°04'40", Lancaster County, Hydrologic Unit 02050306, at bridge on Fivepointville Road, 0.2 mi east of Red Run, 0.8 mi upstream from mouth, and 3.0 mi southeast of Reams-town.	15.7	1959-69, 1983,1985, 1987,1989	9-7-89	4.2
01576340	Cocalico Creek near Akron, Pa.	Lat 40°09'53", long 76°13'56", Lancaster County, Hydrologic Unit 02050306, 200 ft upstream from Middle Creek, and 2.0 mi west of Akron.	--	1964,1983, 1985,1987, 1989	9-7-89	31
01576750	Little Conestoga Creek near Rockhill, Pa.	Lat 39°57'20", long 76°22'16", Lancaster County, Hydrologic Unit 02050306, 0.2 mi downstream from bridge on Township Route 561, 0.4 mi upstream of mouth, 0.5 mi southwest of Rockhill, and 3.0 mi south of Millersville.	65.5	1948, 1983-84, 1985,1987, 1989	9-7-89	40
PEQUEA CREEK BASIN						
01576766	Pequea Creek at Paradise, Pa.	Lat 40°00'39", long 76°08'07, Lancaster County, Hydrologic Unit 02050306, at west end of Paradise, and 500 ft up-stream from U.S. Highway 30.	66.8	1964-65, 1983,1985, 1987,1989	9-6-89	61
MUDDY CREEK BASIN						
01577500	Muddy Creek at Castle Fin, Pa.	Lat 39°46'21", long 76°18'58", York County, Hydrologic Unit 02050306, at bridge on SR 2024 (Paper Mill Road), 0.8 mi northeast of Castle Fin, 1.0 mi east of the intersection of SR 2024 and State Highway 74, and 3.4 mi upstream from mouth.	133	1929-38 [‡] , 1968-71 [‡] , 1983-85, 1987, 1989*	9-5-89	100
OCTORARO CREEK BASIN						
01578360	East Branch Octoraro Creek near Mount Vernon, Pa.	Lat 39°49'50", long 76°01'05", Lancaster County, Hydrologic Unit 02050306, at county bridge on Township Route 341, 0.2 mi downstream from Muddy Run, 1.0 mi upstream from Octoraro Lake, and 1.5 mi north of Mt. Vernon.	76.6	1970-78, 1983-85, 1987,1989	9-6-89	58
01578400	Bowery Run near Quarryville, Pa.	Lat 39°53'41", long 76°06'50", Lancaster County, Hydrologic Unit 02050306, at bridge on Township Route 389, 1.1 mi upstream from mouth, and 2.5 mi east of Quarryville.	5.98	1963-81 [‡] , 1983-85, 1987,1989	9-6-89	4.9
01578440	West Branch Octoraro Creek at White Rock, Pa.	Lat 39°49'29", long 76°05'25", Lancaster County, Hydrologic Unit 02050306, at county bridge on Township Route 337 at White Rock, 1.0 mi upstream from Octoraro Lake, and 1.2 mi downstream from Kings Run.	39.6	1970-78, 1983-85, 1987,1989	9-6-89	36

‡ Operated as a continuous-record gaging station.

* Also a miscellaneous station.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at low-flow partial-record stations during water year 1989--Continued

Station No.	Station name	Location	Drainage area (mi ²)	Period of record	Measurements	
					Date	Dis-charge (ft ³ /s)
POTOMAC CREEK BASIN						
WILLS CREEK BASIN						
01600700	Little Wills Creek at Bard, Pa.	Lat 39°55'35", long 78°39'40", Bedford County, Hydrologic Unit 02070002, at bridge on State Highway 96 at Bard.	10.2	1961-81a, 1970-87b, 1989*	9-7-89	.27
01601000	Wills Creek below Hyndman, Pa.	Lat 39°48'43", long 78°43'00", Bedford County, Hydrologic Unit 02070002, on left bank 150 ft upstream from county highway bridge piers (bridge dismantled), 150 ft downstream from Pennsylvania Railroad bridge (currently used as a highway bridge), and 5.0 mi south of Hyndman.	146	1952-67‡, 1983, 1985, 1987, 1989	9-6-89	14
SIDELING HILL CREEK BASIN						
01610130	West Branch Sideling Hill Creek at Purcell, Pa.	Lat 39°47'11", long 78°21'53", Bedford County, Hydrologic Unit 02070003, at bridge on SR 2011, 0.2 mi south of Purcell, and 0.4 mi upstream from mouth.	21.3	1970-79, 1983, 1985, 1987, 1989	9-8-89	no flow
TONOLOWAY CREEK BASIN						
01613080	Little Tonoloway Creek at Warfordsburg, Pa.	Lat 39°45'30", long 78°11'19", Fulton County, Hydrologic Unit 02070004, at bridge on U.S. Highway 522, 0.2 mi upstream from Cove Run, and 0.5 mi north of Warfordsburg.	44.8	1970-79, 1983, 1985, 1987, 1989	9-11-89	20
LICKING CREEK BASIN						
01613500	Licking Creek near Sylvan, Pa.	Lat 39°43'23", long 78°03'38", Franklin County, Hydrologic Unit 02070004, at bridge on State Highway 456, 200 ft upstream from PA-MD state line, and 3.0 mi southwest of Sylvan.	158	1930-41‡, 1983, 1985, 1987, 1989*	9-8-89	28
CONOCOCHEAQUE CREEK BASIN						
01614090	Conococheaque Creek near Fayetteville, Pa.	Lat 39°55'48", long 77°26'23", Adams County, Hydrologic Unit 02070004, on right bank 20 ft downstream from bridge on State Highway 233, 1.3 mi upstream from dam on Chambersburg Reservoir, and 4.0 mi northeast of Fayetteville.	5.05	1961-81‡, 1983-85, 1987, 1989	9-7-89	2.0
01614100 ^c	Birch Run near Fayetteville, Pa.	Lat 39°55'46", long 77°26'28", Adams County, Hydrologic Unit 02070004, at bridge on State Highway 233, 0.3 mi upstream from mouth, 2.7 mi northeast of intersection with U.S. Highway 30, and 6.0 mi east of Fayetteville.	8.13	1959-69, 1983-85, 1987		
01614140	Back Creek near Chambersburg, Pa.	Lat 39°53'36", long 77°44'30", Franklin County, Hydrologic Unit 02070004, at bridge on SR 3012, 1.2 mi west of Turkeyfoot, and 5.0 mi southwest of Chambersburg.	63.0	1968-76, 1977-78‡, 1983, 1985, 1987, 1989	9-8-89	9.8
MONOCACY RIVER BASIN						
01638800	Marsh Creek near Gettysburg, Pa.	Lat 39°49'05", long 77°17'05", Adams County, Hydrologic Unit 02070009, at bridge on State Highway 116, and 2.2 mi west of Gettysburg.	49.6	1943-57, 1983-85, 1987, 1989	9-8-89	7.6

‡ Operated as a continuous-record gaging station.

* Also a miscellaneous station.

a Operated as a crest-stage gage.

b Most years during period.

c Discontinued - streamflow at this station regulated by Long Pine Run Reservoir since 1983.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Special study and miscellaneous sites

Discharge measurements made at special study and miscellaneous sites during water year 1989

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
SUSQUEHANNA RIVER BASIN						
WEST BRANCH SUSQUEHANNA RIVER BASIN						
01531490 Sugar Creek	West Branch Susquehanna River	Lat 41°47'27", long 76°27'45", Bradford County, Hydrologic Unit 02050106, at steel-truss bridge in North Towanda, and 0.8 mi upstream from mouth.	188	---	11-17-88 2-22-89 5-9-89 5-10-89 5-11-89	33 243 550 896 2,620
01532950 Wyalusing Creek	West Branch Susquehanna River	Lat 41°41'49", long 76°13'52", Bradford County, Hydrologic Unit 02050106, at concrete bridge on State Highway 706, 2.8 mi north of Wyalusing, and 3.0 mi upstream from mouth.	215	---	11-17-88 2-22-89 5-9-89 5-10-89	76 380 1,040 1,200
SUSQUEHANNA RIVER BASIN						
01538600* Nescopeck Creek	Susquehanna River	Lat 41°02'46", long 76°13'28", Luzerne County, Hydrologic Unit 02050107, at bridge on State Highway 339, just downstream from railroad bridge at Nescopeck.	171	1949-50 1982-87 ^a	2-3-89 6-2-89 7-27-89 8-24-89 9-28-89	405 371 141 118 107
WEST BRANCH SUSQUEHANNA RIVER BASIN						
01541250* Anderson Creek	West Branch Susquehanna River	Lat 40°58'20", long 78°31'20", Clear- field County, Hydrologic Unit 02050201, at bridge on State Highway 453 at Cur- wensville, and 800 ft upstream from mouth.	77.8	1945-74 1982-88	5-31-89 6-1-89	301 224
01542790 Bennett Branch Creek	Driftwood Branch Sinnemahoning Creek	Lat 41°20'02", long 78°08'10", Cameron County, Hydrologic Unit 02050202, at bridge on Township Route 343 at Drift- wood and 1000 ft upstream from mouth.	367	1975-88	2-21-89 9-1-89	1,340 24
01548075 Fishing Creek	Bald Eagle Creek	Lat 41°04'31", long 77°28'40", Clinton County, Hydrologic Unit 02050204, at bridge on SR 2004, 1,700 ft south of Cedar Springs (Hill St.), and 4.5 mi upstream from mouth.	137	---	2-16-89 9-22-89	124 32
01548085 Bald Eagle Creek	West Branch Susquehanna River	Lat 41°07'35", long 77°26'00", Clinton County, Hydrologic Unit 02050204, at steel-truss bridge on SR 2012 at Castanea, and 1.8 mi upstream from mouth.	768	1988	4-6-89 5-11-89	2,450 4,470
01548248 Pine Creek	West Branch Susquehanna River	Lat 41°44'37", long 77°26'03", Tioga County, Hydrologic Unit 02050205, at concrete bridge on forest road at Ansonia, 1,500 ft upstream from mouth, and 7.0 mi west of Wellsboro.	274	---	3-20-89 5-10-89 8-31-89	369 2,360 38
01548351 Marsh Creek	Pine Creek	Lat 41°44'48", long 77°25'40", Tioga County, Hydrologic Unit 02050205, at bridge on State Highway 6 at Ansonia, 1,300 ft upstream from mouth, and 7.0 mi west of Wellsboro.	81.6	---	3-20-89 5-10-89 8-31-89	58 640 8.2
01553150 White Deer Creek	West Branch Susquehanna River	Lat 41°04'29", long 76°52'22", Union County, Hydrologic Unit 02050206, at concrete bridge on SR 1011 at White Deer, and 0.5 mi upstream from mouth.	46.9	1945	11-4-88 4-18-89 5-10-89 8-9-89 8-30-89 9-25-89	19 61 331 27 19 28
SUSQUEHANNA RIVER BASIN						
PENNS CREEK BASIN						
01555207 Middle Creek	Penns Creek	Lat 40°47'27", long 76°55'24", Snyder County, Hydrologic Unit 02050301, at double-span concrete bridge on Creek Road (T-460), 1.8 mi north of Kantz, and 2.2 mi northeast of Freeburg.	155	---	2-24-89 6-2-89 8-1-89 8-24-89 9-28-89	229 123 178 109 52

* Also a low-flow partial-record station.

^a Most years during period.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Special study and miscellaneous sites

Discharge measurements made at special study and miscellaneous sites during water year 1989

Discharge measurements made at special study and miscellaneous sites during water year 1989						
Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
<u>SUSQUEHANNA RIVER BASIN--Continued</u>						
JUNIATA RIVER BASIN						
01555858 Beaverdam Branch Juniata River	Frankstown Branch Juniata River	Lat 40°25'27", long 78°23'37", Blair County, Hydrologic Unit 02050302, at bridge on Plank Road in Hollidaysburg, 1.5 mi downstream from Blair Gap Run, and 2.2 mi upstream from mouth.	83.0	1982	9-21-89	30
CONODOGUINET CREEK BASIN						
01570280 Conodo- guinet Creek	Susquehanna River	Lat 40°16'38", long 76°57'00", Cumber- land County, Hydrologic Unit 02050305, at bridge on Oyster Mill Road at Enola, 0.2 mi downstream from Holtz Run, and 4.7 mi upstream from mouth.	501	---	9-22-89	215
CHICKIES CREEK BASIN						
01575900 Chickies Creek	Susquehanna River	Lat 40°03'46", long 76°30'57", Lancaster County, Hydrologic Unit 02050306, at double-span concrete bridge on State Highway 23, 400 feet downstream from Little Chickies Creek, and 1.2 mi east of Marietta.	108	---	4-7-89 6-5-89	195 142
PEQUEA CREEK BASIN						
01576787 Pequea Creek	Susquehanna River	Lat 39°54'21", long 76°19'43", Lancaster County, Hydrologic Unit 02050306, at concrete bridge on State Highway 324 at Martic Forge, and 3.4 mi upstream from mouth. Datum of gage is 209.25 feet above NGVD of 1929.	148	1977-81 [‡]	2-27-89 6-5-89	147 204
MUDDY CREEK BASIN						
01577500* Muddy Creek	Susquehanna River	Lat 39°46'21", long 76°18'58", York County, Hydrologic Unit 02050306, at bridge on Paper Mill Road (SR 2024), 0.8 mi northeast of Castle Fin, 1.1 mi east of the intersection of SR 2024 and State Highway 74, and 3.4 mi up- stream from mouth.	133	1929-38 [‡] 1968-71 [‡] 1983-88 ^{*a}	12-30-88 2-8-89 6-1-89 8-11-89 9-5-89	83 86 281 144 100
OCTORARO CREEK BASIN						
01578475 Octoraro Creek	Susquehanna River	Lat 39°42'24", long 76°06'56", Cecil County, Hydrologic Unit 02050306, at single-span steel-truss bridge on New Bridge Road, 1.0 mi south of PA-MD state line, 1.3 mi northeast of Rich- ardsmere, and 2.5 mi east of Rock Springs, Md.	177	---	1-27-89 2-27-89 6-1-89 8-11-89	139 177 216 176
<u>POTOMAC RIVER BASIN</u>						
WILLS CREEK BASIN						
01600700* Little Wills Creek	Wills Creek	Lat 39°55'35", long 78°39'40", Bedford County, Hydrologic Unit 02070002, at double-span concrete bridge on State Highway 96 at Bard, 2.5 mi upstream from Wolf Camp Run, 9.5 mi upstream from mouth, and 11 mi southwest of Bedford.	10.2	1961-81 ^b 1970-88 ^{*a}	1-24-89 3-15-89 5-8-89	7.1 110 52
LICKING CREEK BASIN						
01613500* Licking Creek	Potomac River	Lat 39°43'23", long 78°03'38", Franklin County, Hydrologic Unit 02070004, at bridge on State Highway 456, 200 feet north of PA-MD state line, 3.0 mi southwest of Sylvan, and 10 mi up- stream from mouth.	158	1930-41 [‡] 1983-88 ^{*a}	9-8-89 9-28-89	26 36

[‡] Operated as a continuous-record gaging station.^{*} Also a low-flow partial-record station.^a Most years during period.^b Operated as a crest-stage partial-record station.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Special study and miscellaneous sites

Discharge measurements made at special study and miscellaneous sites during water year 1989

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)

POTOMAC RIVER BASIN--Continued

MONOCACY CREEK BASIN

01638890 Rock Creek	Monocacy River	Lat 39°48'17", long 77°12'42", Adams County, Hydrologic Unit 02070009, at double-span concrete bridge on Town- ship Route 411, 1.2 mi west of the intersection of State Highway 134 and U.S. Highway 15, and near Gettysburg.	23.5	---	9-22-89	4.8
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ANALYSIS OF SURFACE-WATER SAMPLES COLLECTED AT PARTIAL-RECORD STATIONS

Water-quality partial-record stations are particular sites where chemical-quality, biological, and/or sediment data are collected systematically over a period of years for use in hydrologic analyses. The data are collected usually less than quarterly.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (µS/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD AS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)
OCTORARO CREEK BASIN										
01578340	EAST BRANCH OCTORARO CREEK AT CHRISTIANA, PA. (LAT 39 56 57N LONG 075 59 38W)									
NOV 1988 07...	0845	7.1	295	7.40	9.5	6.0	10.8	120	53	28
01578343	VALLEY CREEK NEAR ATGLEN, PA. (LAT 39 56 23N LONG 075 59 06W)									
NOV 1988 07...	1230	5.7	292	7.50	10.0	2.5	11.0	120	51	32
DATE		MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
01578340	EAST BRANCH OCTORARO CREEK AT CHRISTIANA, PA. (LAT 39 56 57N LONG 075 59 38W)									
NOV 1988 07...	11	8.7	13	0.4	6.9	62	37	17	16	193
01578343	VALLEY CREEK NEAR ATGLEN, PA. (LAT 39 56 23N LONG 075 59 06W)									
NOV 1988 07...	9.8	9.9	15	0.4	5.0	70	28	17	12	182
DATE		SOLIDS, DIS-SOLVED (TONS PER AC-FT)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	PHOS-PHOROUS TOTAL (MG/L AS P)
01578340	EAST BRANCH OCTORARO CREEK AT CHRISTIANA, PA. (LAT 39 56 57N LONG 075 59 38W)									
NOV 1988 07...	0.26	6.96	0.040	7.00	0.050	1.7	2.1	1.7	0.160	0.100
01578343	VALLEY CREEK NEAR ATGLEN, PA. (LAT 39 56 23N LONG 075 59 06W)									
NOV 1988 07...	0.25	5.65	0.050	5.70	0.160	0.54	0.80	0.70	0.160	0.140
DATE		PHOS-PHOROUS ORTHO, DIS-SOLVED (MG/L AS P)	ALUM-INUM, DIS-SOLVED (µG/L AS AL)	ARSENIC DIS-SOLVED (µG/L AS AS)	BARIUM, DIS-SOLVED (µG/L AS BA)	BERYL-LIUM, DIS-SOLVED (µG/L AS BE)	CADMIUM DIS-SOLVED (µG/L AS CD)	CHRO-MIUM, DIS-SOLVED (µG/L AS CR)	COBALT, DIS-SOLVED (µG/L AS CO)	COPPER, DIS-SOLVED (µG/L AS CU)
01578340	EAST BRANCH OCTORARO CREEK AT CHRISTIANA, PA. (LAT 39 56 57N LONG 075 59 38W)									
NOV 1988 07...	0.080	10	<1	64	<0.5	<1	<5	<3	<10	70
01578343	VALLEY CREEK NEAR ATGLEN, PA. (LAT 39 56 23N LONG 075 59 06W)									
NOV 1988 07...	0.110	10	<1	54	<0.5	<1	<5	<3	<10	48

(<) Actual value is known to be less than the value shown.

ANALYSIS OF SURFACE-WATER SAMPLES COLLECTED AT PARTIAL-RECORD STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	LEAD, DIS- SOLVED (μ G/L AS PB)	LITHIUM DIS- SOLVED (μ G/L AS LI)	MANGA- NESE, DIS- SOLVED (μ G/L AS MN)	MOLYB- DENUM, DIS- SOLVED (μ G/L AS MO)	MERCURY DIS- SOLVED (μ G/L AS HG)	NICKEL, DIS- SOLVED (μ G/L AS NI)	SILVER, DIS- SOLVED (μ G/L AS AG)	STRON- TIUM, DIS- SOLVED (μ G/L AS SR)	VANA- DIUM, DIS- SOLVED (μ G/L AS V)	ZINC, DIS- SOLVED (μ G/L AS ZN)
OCTORARO CREEK BASIN--Continued										
01578340	EAST BRANCH OCTORARO CREEK AT CHRISTIANA, PA. (LAT 39 56 57N LONG 075 59 38W)									
NOV 1988 07...	<10	<4	41	<10	<0.1	<10	<1.0	110	<6	9
01578343	VALLEY CREEK NEAR ATGLEN, PA. (LAT 39 56 23N LONG 075 59 06W)									
NOV 1988 07...	<10	<4	29	<10	0.2	<10	<1.0	140	<6	6

(<) Actual value is known to be less than the value shown.

GROUND-WATER-LEVEL AND GROUND-WATER-QUALITY STATION RECORDS

ADAMS COUNTY

395846077040601. Local number, AD 146.

LOCATION.--Lat 39°58'46", long 77°04'06", Hydrologic Unit 02050306, at State Game Land Number 249.

Owner: U.S. Geological Survey.

AQUIFER.--Shale and sandstone of Gettysburg shale of Late Triassic age.

WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 100 ft, cased to 17 ft, open hole.

INSTRUMENTATION.--Digital recorder with 60-minute recording interval. Pa. Department of Environmental Resources satellite telemeter at station.

DATUM.--Elevation of land surface is 540 ft above National Geodetic Vertical Datum of 1929, from topographic map.

Measuring point: Top of casing, 2.0 ft above land-surface datum.

REMARKS.--Water-quality records for 1973-75 are available in files of district office.

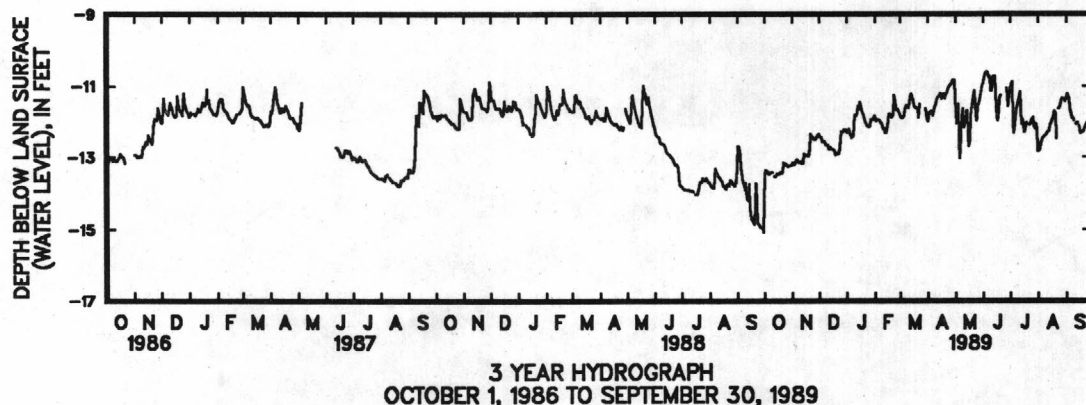
PERIOD OF RECORD.--January 1968 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 9.87 ft below land-surface datum, June 21, 1972; lowest, 14.02 ft below land-surface datum, July 16, 1988.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.47	13.15	12.42	12.31	11.93	11.87	11.99	11.75	10.90	11.09	12.83	11.32
2	13.37	13.17	12.44	12.27	12.00	11.88	11.74	12.07	10.77	10.97	12.80	11.23
3	13.36	13.21	12.44	12.21	11.94	11.91	11.75	11.81	10.65	10.89	12.73	11.29
4	13.38	13.18	12.56	12.38	11.93	11.88	11.70	11.51	10.65	12.06	12.61	11.36
5	13.46	13.09	12.56	12.39	11.95	11.81	11.74	12.57	10.59	12.31	12.52	11.63
6	13.48	13.06	12.54	12.45	11.99	11.65	11.83	13.03	10.63	12.06	12.45	11.80
7	13.46	13.14	12.61	12.42	12.02	11.55	11.70	12.48	10.76	11.86	12.42	11.90
8	13.44	13.15	12.67	12.40	12.04	11.58	11.58	11.86	10.75	11.67	12.40	11.90
9	13.43	13.14	12.65	11.81	12.14	11.62	11.52	11.64	11.13	11.51	12.38	11.98
10	13.43	13.12	12.65	11.82	12.20	11.62	11.40	12.13	11.13	11.42	12.35	---
11	---	13.18	12.76	11.85	12.21	11.44	11.34	12.17	10.93	11.28	12.30	12.07
12	13.53	13.18	12.77	11.76	12.31	11.24	11.29	11.99	10.75	11.18	12.28	12.08
13	13.54	13.13	12.73	11.57	12.32	11.22	11.27	11.71	10.73	12.08	12.24	12.03
14	13.52	12.91	12.76	11.66	12.21	11.32	11.20	11.68	10.73	12.09	12.11	---
15	13.46	12.94	12.78	11.46	12.13	11.41	11.30	12.42	11.62	11.93	12.02	12.12
16	13.48	12.94	12.78	11.51	11.79	11.57	11.36	12.68	11.87	12.30	11.98	12.33
17	13.48	12.94	12.80	11.69	11.77	11.61	11.27	12.51	11.98	12.27	11.89	12.32
18	13.42	12.98	12.87	11.74	11.79	11.59	11.23	11.82	11.71	12.11	11.77	12.31
19	13.42	12.97	12.93	11.82	11.88	11.64	11.34	11.56	11.34	12.02	11.71	12.30
20	13.45	12.78	12.88	11.92	11.87	11.64	11.26	11.43	11.27	---	11.80	12.28
21	13.41	12.35	12.92	12.04	11.80	11.88	11.21	11.31	---	---	12.48	---
22	13.15	12.40	12.90	12.09	11.25	11.50	11.14	11.14	---	12.10	---	---
23	13.19	12.43	12.88	12.11	11.43	---	11.06	11.57	---	12.08	11.63	12.09
24	13.18	12.48	12.71	12.14	11.59	---	11.01	11.97	---	11.97	11.63	12.02
25	13.20	12.51	12.28	12.15	11.69	---	10.97	11.86	---	11.92	11.54	11.97
26	13.25	12.51	12.29	12.13	11.66	---	10.94	11.57	---	11.88	11.43	11.95
27	13.26	12.50	12.30	11.94	11.73	---	10.90	11.48	11.07	12.12	11.35	11.95
28	13.23	12.42	12.22	11.96	11.80	---	10.85	11.39	11.56	12.20	11.35	11.87
29	13.25	12.38	12.24	11.96	---	11.64	10.83	11.21	11.45	12.07	---	11.81
30	13.22	12.35	12.22	11.90	---	11.91	10.87	11.08	11.21	12.19	11.43	12.47
31	13.22	---	12.30	11.84	---	11.97	---	10.97	---	12.83	11.38	---
MEAN	13.37	12.86	12.61	11.99	11.91	11.64	11.32	11.82	11.09	11.88	12.06	11.94
MAX	13.54	13.21	12.93	12.45	12.32	11.97	11.99	13.03	11.98	12.83	12.83	12.47
MIN	13.15	12.35	12.22	11.46	11.25	11.22	10.83	10.97	10.59	10.89	11.35	11.23

WTR YR 1989: HIGHEST 10.59, JUNE 5; LOWEST 13.54, OCTOBER 13.



ADAMS COUNTY

394916077142901. Local number, AD 177.

LOCATION.--Lat 39°49'16", long 77°14'29", Hydrologic Unit 02070009, at Gettysburg National Military Park.

Owner: National Park Service.

AQUIFER.--Gettysburg Formation of Triassic age.

WELL CHARACTERISTICS.--Drilled well, diameter 8 in., depth 499 ft, cased to 32 ft, open hole.

INSTRUMENTATION.--Continuous strip-chart recorder.

DATUM.--Elevation of land surface is 550 ft above National Geodetic Vertical Datum of 1929, from topographic map.

Measuring point: Top of casing, 6.0 ft above land-surface datum.

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

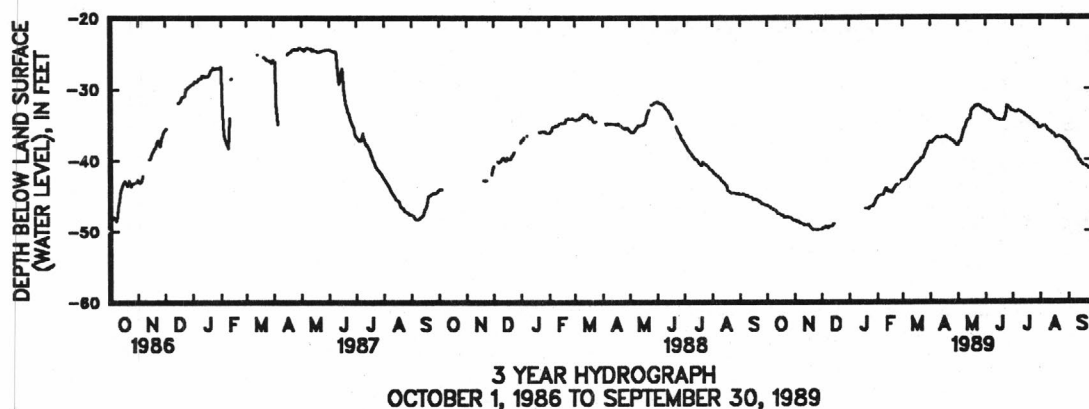
REMARKS.--Ground-water levels effected by the intermittent pumping of a nearby public supply well.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 23.37 ft below land-surface datum, Mar. 14, 1986; lowest, 49.79 ft below land-surface datum, Nov. 21, 1988.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46.29	48.35	49.66	---	45.11	42.83	37.60	37.93	33.01	33.08	35.49	37.58
2	46.38	48.44	49.47	---	45.09	42.75	37.57	37.61	33.10	33.10	35.42	37.95
3	46.42	48.58	49.50	---	45.00	42.71	37.42	37.41	33.30	33.18	35.28	38.17
4	46.50	48.58	49.50	---	44.94	42.66	37.16	37.35	33.16	33.27	35.18	38.36
5	46.65	48.57	49.27	---	44.86	42.50	37.11	37.10	33.06	33.29	35.18	38.47
6	46.76	48.71	49.32	---	44.86	42.28	37.00	36.62	33.13	33.25	35.21	38.62
7	46.78	48.76	49.55	---	44.90	41.96	36.84	35.98	33.44	33.14	35.38	38.71
8	46.84	48.83	49.52	---	44.77	41.91	36.70	35.59	33.65	33.11	35.59	38.86
9	46.94	48.89	49.29	---	44.13	41.85	36.75	35.45	33.69	33.13	35.79	39.04
10	46.92	48.88	49.26	---	43.94	41.54	36.87	35.16	33.98	33.15	35.89	39.29
11	47.09	49.09	49.25	---	43.89	41.39	36.84	34.71	34.18	33.32	35.96	39.56
12	47.32	49.09	49.24	---	44.26	41.16	36.83	34.45	34.24	33.43	36.04	39.81
13	47.45	49.06	49.05	---	44.41	41.08	36.81	34.32	34.23	33.45	36.14	40.03
14	47.46	49.04	48.88	---	44.28	40.83	36.79	34.25	34.33	33.55	36.25	40.09
15	47.49	49.02	---	---	44.29	40.55	36.76	34.04	34.35	33.78	36.30	40.38
16	47.51	48.95	---	---	44.52	40.48	36.77	33.20	34.38	33.81	36.38	40.48
17	47.69	49.15	---	---	44.52	40.40	36.76	32.86	34.40	33.87	36.69	40.66
18	47.68	49.34	---	---	44.20	40.21	36.57	32.77	34.41	34.02	36.85	40.73
19	47.83	49.52	---	46.75	44.01	40.24	36.74	32.64	34.42	34.06	36.87	40.77
20	47.97	49.59	---	46.76	43.90	40.18	36.93	32.44	34.44	34.07	36.79	40.78
21	48.00	49.79	---	46.78	---	39.69	36.93	32.33	34.45	34.30	36.70	40.97
22	47.97	49.67	---	46.81	43.43	39.69	36.97	32.43	34.23	34.45	36.67	40.97
23	47.96	49.66	---	46.62	43.42	39.65	37.09	32.31	33.77	34.51	36.69	41.13
24	47.95	49.68	---	46.47	43.35	39.52	37.18	32.31	32.98	34.62	36.78	41.23
25	48.04	49.76	---	46.49	43.24	39.05	37.22	32.34	32.32	34.76	36.87	41.23
26	48.03	49.74	---	46.51	42.96	38.64	37.32	32.39	32.49	34.84	36.93	41.39
27	48.04	49.77	---	46.27	42.79	38.51	37.37	32.59	32.61	34.88	37.06	41.55
28	48.18	49.67	---	46.31	42.78	38.21	37.61	32.73	32.73	34.94	37.15	41.57
29	48.30	49.71	---	45.86	---	37.75	37.76	32.82	32.95	35.27	37.23	41.48
30	48.41	49.73	---	45.46	---	37.55	37.93	32.82	33.07	35.46	37.40	41.49
31	48.44	---	---	45.31	---	37.37	---	32.90	---	35.49	37.59	---
MEAN	47.46	49.19	49.34	46.34	44.13	40.49	37.07	34.19	33.62	33.95	36.31	40.05
MAX	48.44	49.79	49.66	46.81	45.11	42.83	37.93	37.93	34.45	35.49	37.59	41.57
MIN	46.29	48.35	48.88	45.31	42.78	37.37	36.57	32.31	32.32	33.08	35.18	37.58

WTR YR 1989: HIGHEST 32.31, MAY 23, 24; LOWEST 49.79, NOVEMBER 21.



ADAMS COUNTY

394755077160501. Local number, AD 255.

LOCATION.--Lat 39°47'55", long 77°16'05", Hydrologic Unit 02070009, at Eisenhower National Historic Site at Gettysburg.

Owner: National Park Service.

AQUIFER.--Gettysburg Formation of Triassic age.

WELL CHARACTERISTICS.--Drilled well, diameter 10 in., depth 475 ft, cased to 14 ft, open hole.

INSTRUMENTATION.--Continuous strip-chart recorder.

DATUM.--Elevation of land surface is 470 ft above National Geodetic Vertical Datum of 1929, from topographic map.

Measuring point: Top of casing, 1.2 ft above land-surface datum.

REMARKS.--Ground-water levels effected by the intermittent pumping of a nearby public supply well.

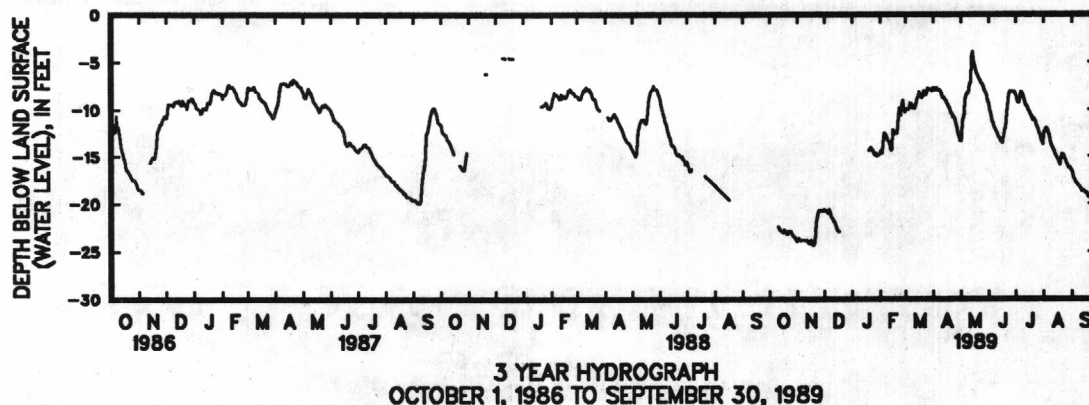
PERIOD OF RECORD.--October 1985 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 3.21 ft below land-surface datum, Dec. 2, 1985; lowest, 24.37 ft below land-surface datum, Nov. 19, 1988.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	23.70	20.58	---	14.48	10.05	7.70	13.38	9.36	8.40	12.42	16.49
2	---	23.59	20.71	---	14.36	9.89	7.94	12.66	10.00	8.80	12.28	16.86
3	---	23.89	20.76	---	14.61	9.98	7.78	11.29	10.40	9.21	12.06	17.21
4	---	23.89	20.97	---	13.64	10.00	7.69	10.79	10.90	9.31	11.98	17.48
5	---	23.92	21.00	---	12.46	9.76	7.91	10.34	11.19	9.27	12.13	17.69
6	---	23.84	20.58	---	12.52	9.24	7.88	8.89	11.56	8.43	12.40	17.83
7	---	23.83	21.02	---	12.72	9.79	7.90	8.48	11.85	8.10	12.84	17.99
8	---	23.83	21.33	---	12.91	9.41	7.98	8.27	12.11	8.24	13.27	18.11
9	---	23.86	21.47	---	13.27	9.75	8.11	8.29	12.28	8.39	13.61	18.21
10	---	23.92	21.62	---	13.39	9.90	8.45	7.85	12.55	8.72	13.99	18.33
11	22.46	23.81	21.85	---	13.42	9.88	8.71	7.27	12.75	9.19	14.18	18.48
12	22.68	23.91	21.93	---	14.03	9.47	8.68	7.19	12.97	9.53	14.38	18.69
13	22.80	24.16	22.18	---	14.39	9.08	8.86	4.53	13.02	9.63	14.60	18.61
14	22.85	24.16	22.39	---	14.16	8.75	8.99	3.89	13.36	9.83	14.85	18.67
15	22.98	24.19	22.80	---	12.15	8.61	9.16	4.94	13.44	10.05	15.03	18.73
16	23.04	23.83	22.88	---	12.30	8.16	9.35	5.06	13.57	10.18	15.23	18.94
17	22.73	24.11	22.98	---	12.61	8.57	9.61	5.65	13.26	10.49	15.52	18.89
18	22.86	24.36	---	---	12.57	8.63	9.68	6.03	12.36	10.70	15.64	18.86
19	23.00	24.37	---	14.31	12.48	8.72	9.99	6.27	12.01	10.81	15.90	19.29
20	23.13	24.05	---	14.36	12.55	8.50	10.32	6.50	12.01	11.15	15.18	19.36
21	23.21	22.98	---	14.01	---	8.02	10.43	6.68	10.36	10.98	14.77	19.42
22	22.87	22.02	---	14.21	9.79	8.35	10.80	6.85	9.66	11.17	14.79	19.37
23	22.97	21.27	---	14.26	10.50	8.50	10.77	7.11	8.41	11.43	14.82	19.25
24	22.92	20.89	---	14.50	10.62	8.42	10.87	7.20	8.18	11.72	15.16	19.67
25	23.02	20.70	---	14.78	9.50	7.71	11.31	7.41	8.09	12.02	15.45	19.79
26	23.18	20.64	---	14.87	9.00	7.78	11.78	7.46	8.04	12.27	15.71	19.60
27	23.44	20.63	---	14.67	9.83	7.88	12.12	7.93	8.16	12.46	15.94	19.78
28	23.47	20.72	---	14.94	10.28	7.82	12.54	8.16	8.14	12.82	16.18	19.86
29	23.62	20.82	---	14.89	---	7.90	12.90	8.43	8.05	13.31	16.27	19.76
30	23.77	20.58	---	14.83	---	8.07	13.27	8.67	8.18	13.52	16.18	19.99
31	23.94	---	---	14.77	---	7.77	---	9.11	---	13.68	16.42	---
MEAN	23.09	23.02	21.59	14.57	12.39	8.85	9.65	7.83	10.87	10.45	14.49	18.71
MAX	23.94	24.37	22.98	14.94	14.61	10.05	13.27	13.38	13.57	13.68	16.42	19.99
MIN	22.46	20.58	20.58	14.01	9.00	7.71	7.69	3.89	8.04	8.10	11.98	16.49

WTR YR 1989: HIGHEST 3.89, MAY 14; LOWEST 24.37, NOVEMBER 19.



ADAMS COUNTY

394807077150101. Local number, AD 600.

LOCATION.--Lat 39°48'07", long 77°15'01", Hydrologic Unit 02070009, at Gettysburg National Military Park.

Owner: National Park Service.

AQUIFER.--Gettysburg Formation of Triassic age.

WELL CHARACTERISTICS.--Drilled well, depth 48 ft.

INSTRUMENTATION.--Continuous strip-chart recorder.

DATUM.--Elevation of land surface is 560 ft above National Geodetic Vertical Datum of 1929, from topographic map.

Measuring point: Top of casing, 0.5 ft above land-surface datum.

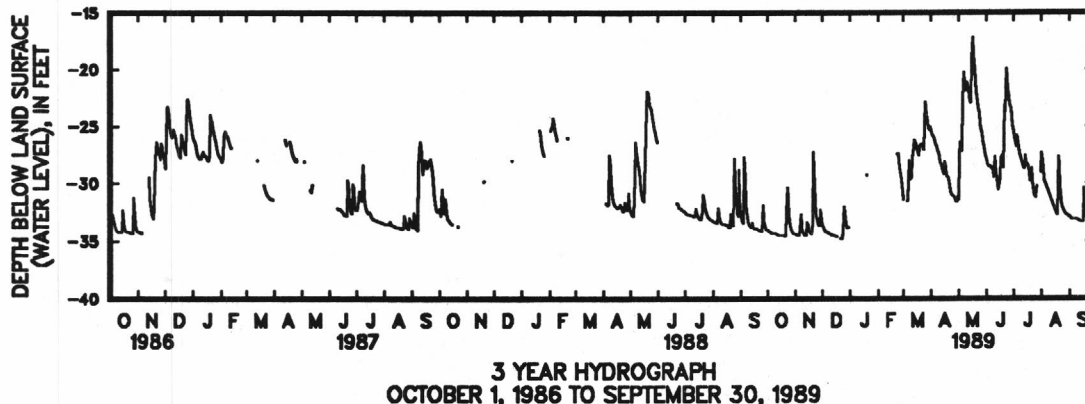
PERIOD OF RECORD.--March 1986 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 17.17 ft below land-surface datum, May 17, 1989; lowest, 34.80 ft below land-surface datum, Dec. 22, 1988.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34.10	34.39	33.66	---	---	31.44	25.47	31.43	27.94	25.45	27.33	32.89
2	34.15	34.43	33.92	---	---	---	25.83	27.65	28.27	25.95	28.09	33.00
3	34.19	34.50	34.06	---	---	---	25.88	26.41	28.51	26.47	28.79	33.07
4	34.24	34.54	34.16	---	---	---	26.11	27.01	28.53	26.81	29.70	33.11
5	34.29	34.53	34.23	---	---	31.55	26.38	27.20	28.50	25.86	---	33.11
6	34.33	33.97	34.24	---	---	31.48	26.63	22.59	28.70	26.46	---	33.13
7	34.34	32.75	34.29	---	---	28.02	26.87	20.29	28.62	26.98	---	33.13
8	34.34	33.86	34.37	---	---	28.76	27.15	21.23	28.94	27.41	---	33.11
9	34.36	34.24	34.39	---	---	29.65	27.40	21.89	29.47	27.76	---	33.14
10	34.35	34.37	34.41	---	---	29.43	27.78	21.64	27.70	28.05	---	33.15
11	34.41	34.49	34.49	---	---	27.79	28.13	21.17	28.47	28.39	---	33.22
12	34.47	34.49	34.50	---	---	26.94	28.43	21.79	29.15	28.66	---	33.31
13	34.49	34.51	34.50	---	---	26.24	28.67	22.47	30.09	28.71	---	33.33
14	34.48	33.39	34.52	---	---	26.35	29.10	22.95	30.54	27.56	---	33.34
15	34.51	33.66	34.58	---	---	26.63	29.21	22.91	29.89	28.22	---	33.33
16	34.51	34.10	34.58	---	---	27.03	28.17	18.96	29.54	28.43	---	33.35
17	34.52	34.25	34.60	---	---	27.41	28.64	17.17	27.79	28.37	---	30.41
18	34.51	34.27	---	---	---	27.61	29.37	18.75	27.58	28.96	32.70	31.79
19	34.54	34.40	---	29.27	---	26.82	29.47	19.99	28.25	29.74	32.70	32.97
20	34.57	33.54	---	---	---	26.61	29.61	21.07	28.66	29.80	27.72	32.94
21	34.58	27.29	34.76	---	---	26.61	30.25	22.02	23.18	28.70	28.62	31.90
22	32.49	28.90	34.80	---	27.45	26.58	30.70	22.89	23.65	29.81	30.23	32.27
23	30.39	31.52	34.80	---	27.41	27.06	30.92	23.41	19.92	30.76	31.59	31.48
24	31.43	32.79	34.14	---	28.01	27.07	31.03	23.92	20.81	31.05	32.00	32.49
25	32.81	33.25	32.06	---	28.66	22.88	31.12	24.74	21.75	31.19	32.29	32.90
26	33.70	33.52	32.66	---	29.30	23.48	31.22	25.22	22.52	30.51	32.44	32.87
27	34.03	33.69	33.51	---	29.71	24.10	31.34	25.62	23.13	30.28	32.62	29.10
28	34.26	33.69	33.89	---	30.72	24.64	31.53	26.24	23.44	---	32.71	31.44
29	34.32	32.31	33.90	---	---	25.22	31.61	26.78	24.18	---	32.73	32.53
30	34.37	33.28	33.85	---	---	25.35	31.21	27.22	24.89	---	32.77	32.97
31	34.39	---	---	---	---	25.07	---	27.60	---	29.01	32.87	---
MEAN	34.02	33.43	34.14	29.27	28.75	27.07	28.84	23.56	26.75	28.41	30.99	32.63
MAX	34.58	34.54	34.80	29.27	30.72	31.55	31.61	31.43	30.54	31.19	32.87	33.35
MIN	30.39	27.29	32.06	29.27	27.41	22.88	25.47	17.17	19.92	25.45	27.33	29.10

WTR YR 1989: HIGHEST 17.17, MAY 17; LOWEST 34.80, DECEMBER 22, 23.



BEDFORD COUNTY

400217078281901. Local number, BD 150.

LOCATION.--Lat 40°02'17", long 78°28'19", Hydrologic Unit 02050303, at Bedford.

Owner: U.S. Geological Survey.

AQUIFER.--Shaley limestone of Onondaga limestone of Middle Devonian age.

WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 6 in., depth 150 ft, cased to 47 ft, open hole.

INSTRUMENTATION.--Continuous strip-chart recorder.

DATUM.--Elevation of land surface is 1,160 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 3.0 ft above land-surface datum.

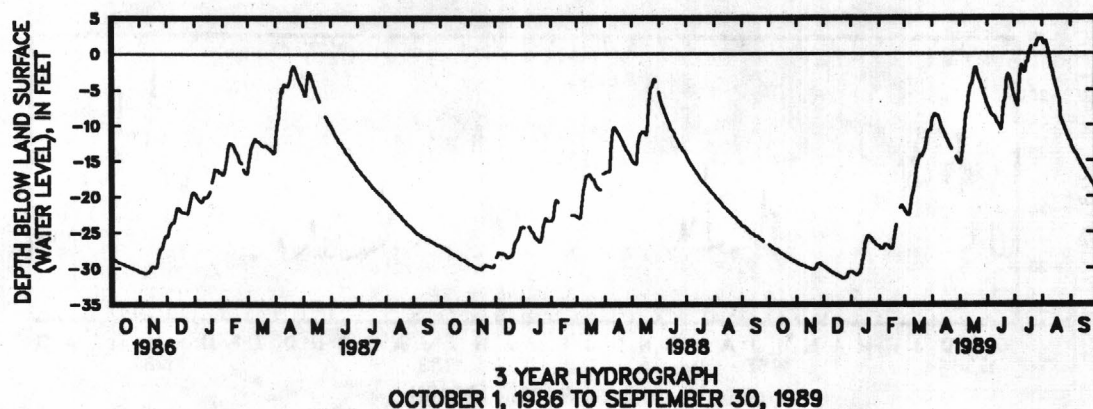
PERIOD OF RECORD.--July 1965 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 2.02 ft above land-surface datum, July 28, 1989; lowest, 41.42 ft below land-surface datum, Feb. 12, 13, 1966.

WATER LEVEL, IN FEET ABOVE OR BELOW (-) LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	-26.68	-29.14	-29.71	-30.50	-27.00	-22.01	-8.94	-15.32	-7.06	-6.03	2.01	-12.29
2	-26.73	-29.28	-29.81	-30.55	-27.16	-22.12	-8.76	-15.28	-7.40	-6.45	1.37	-12.75
3	-26.83	-29.34	-29.89	-30.57	-27.33	-22.34	-8.48	-14.90	-7.74	-6.86	1.34	-13.09
4	-26.93	-29.39	-30.01	-30.76	-27.33	-22.55	-8.40	-13.42	-8.03	-7.23	1.57	-13.41
5	-27.09	-29.39	-30.08	-30.78	-27.16	-22.58	-8.59	-12.50	-8.30	-7.27	1.62	-13.66
6	-27.18	-29.48	-30.12	-30.86	-26.80	-22.58	-8.59	-11.68	-8.54	-5.07	1.17	-13.87
7	-27.24	-29.59	-30.26	-30.91	-26.66	-21.50	-8.65	-9.73	-8.59	-3.37	.57	-14.01
8	-27.30	-29.64	-30.39	-30.89	-26.64	-20.65	-8.89	-8.37	-8.72	-2.54	.01	-14.21
9	-27.35	-29.64	-30.46	-30.71	-26.77	-19.94	-9.45	-7.95	-8.78	-1.68	-0.50	-14.42
10	-27.39	-29.64	-30.52	-30.69	-26.76	-19.40	-9.91	-7.48	-9.18	-1.82	-1.52	-14.66
11	-27.52	-29.81	-30.67	-30.32	-26.75	-18.88	-10.25	-6.02	-9.49	-2.34	-2.01	-14.96
12	-27.68	-29.84	-30.70	-29.99	-27.10	-17.85	-10.47	-5.04	-9.62	-2.66	-2.43	-15.26
13	-27.76	-29.85	-30.72	-28.90	-27.17	-17.16	-10.86	-4.47	-9.76	-2.53	-3.01	-15.47
14	-27.80	-29.90	-30.77	-28.56	-27.32	-16.25	-11.11	-4.22	-10.06	-1.36	-3.51	-15.63
15	-27.91	-29.95	-30.93	-27.76	-27.30	-15.28	-11.35	-4.03	-10.29	-1.24	-4.02	-15.94
16	-27.99	-29.95	-30.93	-26.63	-26.90	-14.85	-11.74	-3.49	-10.56	-1.19	-4.51	-16.04
17	-28.04	-30.06	-31.01	-26.10	-26.20	-14.47	-11.97	-2.55	-10.22	.08	-5.02	-16.31
18	-28.14	-30.13	-31.07	-25.74	-25.09	-14.20	-12.24	-2.10	-8.15	.45	-5.51	-16.62
19	-28.25	-30.16	-31.15	-25.56	-24.32	-14.31	-12.62	-2.01	-6.71	.47	-6.02	-16.77
20	-28.34	-30.14	-31.20	-25.51	-23.99	-14.31	-12.86	-2.23	-6.77	.98	-6.41	-17.01
21	-28.38	-30.06	-31.33	-25.65	---	-13.99	-13.10	-2.73	-5.93	---	-8.75	-17.25
22	-28.44	-29.98	-31.36	-25.69	---	-13.64	-13.36	-3.21	-3.92	---	-9.20	-17.37
23	-28.51	-29.63	-31.40	-25.82	---	-13.39	---	-3.59	-3.07	---	-9.51	-17.66
24	-28.61	-29.36	-31.40	-26.02	-21.58	-13.13	---	-3.99	-2.87	1.00	-9.90	-17.98
25	-28.71	-29.32	-31.28	-26.29	-21.42	-12.05	---	-4.26	-3.03	1.03	-10.27	-18.10
26	-28.84	-29.31	-31.29	-26.29	-21.19	-11.29	---	-4.57	-3.38	1.75	-10.60	-18.27
27	-28.76	-29.26	-31.11	-26.53	-21.46	-10.93	-14.42	-5.03	-3.84	1.79	-10.96	-18.58
28	-28.88	-29.46	-30.58	-26.64	-21.66	-10.67	-14.70	-5.57	-4.51	2.02	-11.27	-18.70
29	-28.98	-29.56	-30.58	-26.73	---	-10.67	-14.94	-5.91	-5.17	---	-11.52	-18.82
30	-29.07	-29.57	-30.48	-26.80	---	-10.65	-15.22	-6.26	-5.58	---	-11.81	-19.04
31	-29.12	---	-30.47	-26.84	---	-9.70	---	-6.65	---	---	-12.15	---
MEAN	-27.95	-29.66	-30.70	-28.12	-25.56	-16.24	-11.15	-6.60	-7.18	-2.00	-4.86	-15.94
MAX	-26.68	-29.14	-29.71	-25.51	-21.19	-9.70	-8.40	-2.01	-2.87	2.02	2.01	-12.29
MIN	-29.12	-30.16	-31.40	-30.91	-27.33	-22.58	-15.22	-15.32	-10.56	-7.27	-12.15	-19.04

WTR YR 1989: HIGHEST 2.02, JULY 28; LOWEST -31.40, DECEMBER 23, 24.



BLAIR COUNTY

402452078271301. Local number, BA 74.

LOCATION.--Lat 40°24'52", long 78°27'13", Hydrologic Unit 02050302, at National Park Land.

Owner: U.S. Geological Survey.

AQUIFER.--Shale of Brallier Formation of Late Devonian age.

WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 150 ft, cased to 14 ft, open hole.

INSTRUMENTATION.--Continuous strip-chart recorder.

DATUM.--Elevation of land surface is 1,130 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 1.8 ft above land-surface datum.

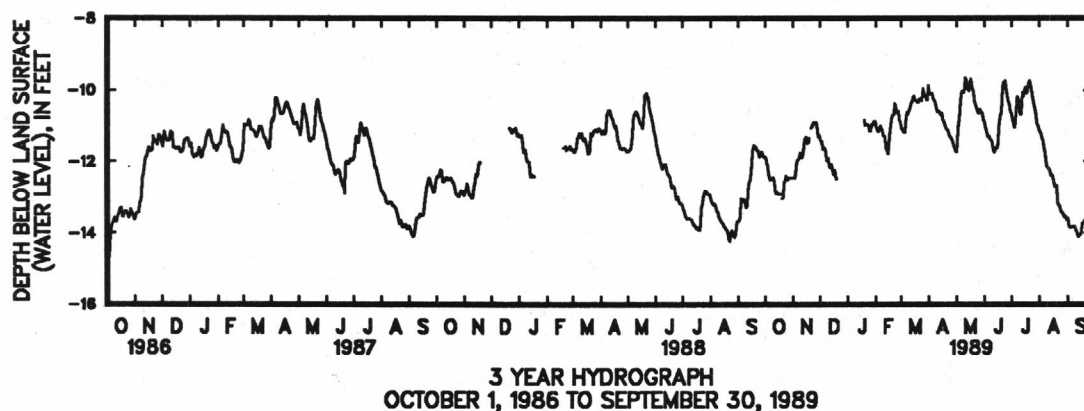
PERIOD OF RECORD.--August 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 9.65 ft below land-surface datum, May 11, 1989; lowest, 18.65 ft below land-surface datum, Oct. 29, 30, 1969.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11.86	---	11.37	---	10.97	11.05	10.05	11.72	10.91	10.68	11.15	13.59
2	11.89	---	11.45	---	11.10	11.10	10.12	11.46	11.02	10.81	11.20	13.72
3	12.03	12.45	11.44	---	11.16	11.14	10.11	11.06	11.17	10.96	11.26	13.82
4	12.13	12.34	11.65	---	11.16	11.19	10.08	10.81	11.22	11.05	11.34	13.85
5	12.36	11.99	11.62	---	11.08	11.19	10.21	10.56	11.32	11.05	11.44	13.84
6	12.50	11.96	11.62	---	11.00	10.92	10.26	10.29	11.30	10.65	11.59	13.84
7	12.51	11.92	11.74	---	11.09	10.61	10.32	10.03	11.36	10.28	11.77	13.81
8	12.47	11.88	11.97	---	11.12	10.68	10.38	10.03	11.41	10.19	11.93	13.81
9	12.48	11.76	11.95	---	11.28	10.61	10.54	10.06	11.42	10.33	12.12	13.82
10	12.44	11.88	11.90	---	11.28	10.56	10.61	9.94	11.61	10.59	12.16	13.90
11	12.55	11.88	12.14	---	11.29	10.48	10.60	9.65	11.70	10.69	12.19	13.99
12	12.78	11.75	12.18	---	11.61	10.34	10.60	9.74	11.74	10.66	12.25	14.06
13	12.88	11.53	12.09	---	11.66	10.34	10.67	9.96	11.63	10.07	12.34	14.11
14	12.86	11.41	12.08	---	11.76	10.22	10.69	9.98	11.62	10.13	12.40	14.06
15	12.88	11.32	12.32	---	11.77	10.16	10.66	10.03	11.62	10.18	12.38	14.05
16	12.91	11.33	12.37	---	11.29	10.28	10.80	9.85	11.46	9.92	12.46	13.97
17	12.91	11.49	12.24	---	11.11	10.29	10.89	9.68	11.03	10.01	12.63	13.73
18	12.90	11.48	12.36	---	10.85	10.29	10.93	9.86	10.75	10.10	12.70	13.74
19	---	11.36	12.49	10.84	10.70	10.34	11.05	9.99	10.69	---	12.70	13.68
20	13.02	---	---	11.00	10.70	10.34	11.10	10.07	10.64	9.84	12.67	13.65
21	13.00	11.06	---	10.98	10.68	10.24	11.12	10.28	9.94	9.75	13.14	13.66
22	12.58	11.05	---	10.96	10.38	10.27	11.16	10.43	9.80	9.83	13.20	13.60
23	12.53	10.94	---	10.96	10.51	10.31	11.25	10.48	9.77	9.95	13.23	13.67
24	12.41	10.90	---	11.02	10.62	10.27	11.32	10.58	9.75	10.15	13.31	13.75
25	12.48	10.91	---	11.15	10.63	9.95	11.34	10.65	9.94	10.33	13.42	13.68
26	12.50	10.90	---	11.15	10.59	10.10	11.40	10.65	10.14	10.46	13.43	13.63
27	12.45	10.91	---	10.96	10.81	10.16	11.45	10.55	10.32	10.51	13.48	13.72
28	---	11.12	---	10.99	10.91	10.18	11.54	10.61	10.36	10.71	13.55	13.74
29	---	11.31	---	10.92	---	10.27	11.63	10.63	10.50	10.92	13.52	13.65
30	---	11.27	---	10.86	---	10.27	11.71	10.68	10.59	11.01	13.57	13.78
31	---	---	---	10.87	---	9.86	---	10.81	---	11.08	13.64	---
MEAN	12.55	11.49	11.95	10.97	11.04	10.45	10.82	10.36	10.89	10.43	12.52	13.80
MAX	13.02	12.45	12.49	11.15	11.77	11.19	11.71	11.72	11.74	11.08	13.64	14.11
MIN	11.86	10.90	11.37	10.84	10.38	9.86	10.05	9.65	9.75	9.75	11.15	13.59

WTR YR 1989: HIGHEST 9.65, MAY 11; LOWEST 14.11, SEPTEMBER 13.



BRADFORD COUNTY

414330076280501. Local number, BR 92.

LOCATION.--Lat 41°43'30", long 76°28'05", Hydrologic Unit 02050106, at Monroeton.

Owner: U.S. Geological Survey.

AQUIFER.--Shale of Gardeau Formation of Late Devonian age.

WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 117 ft, cased to 55 ft, open hole.

INSTRUMENTATION.--Continuous strip-chart recorder.

DATUM.--Elevation of land surface is 750 ft above National Geodetic Vertical Datum of 1929, from topographic map.

Measuring point: Top of casing, 3.0 ft above land-surface datum.

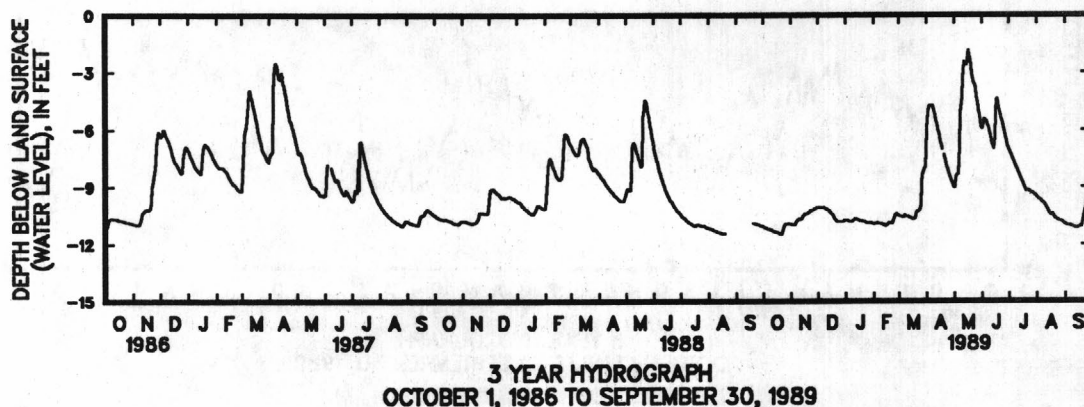
PERIOD OF RECORD.--May 1966 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 1.33 ft below land-surface datum, Apr. 6, 1984; lowest, 11.86 ft below land-surface datum, Oct. 23, 24, 1980.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11.06	10.95	10.08	10.72	10.93	10.50	5.94	9.02	5.94	---	9.53	10.94
2	11.09	10.98	10.05	10.72	10.92	10.52	5.09	8.94	5.81	---	9.60	10.96
3	11.12	10.98	10.05	10.72	10.92	10.52	4.80	8.47	5.45	---	9.62	10.99
4	11.15	10.97	10.06	10.78	10.92	10.53	4.75	8.36	5.48	---	9.64	11.01
5	11.18	10.97	10.06	10.79	10.88	10.55	4.73	8.33	5.51	---	9.70	11.00
6	11.19	10.88	10.06	10.82	10.90	10.57	4.72	8.33	5.55	---	9.75	11.01
7	11.20	10.77	10.08	10.82	10.90	10.48	4.74	6.92	5.70	---	9.79	11.03
8	11.22	10.73	10.09	10.80	10.89	10.50	4.86	5.10	5.89	---	9.83	11.03
9	11.25	10.70	10.11	10.73	10.93	10.52	5.09	4.55	6.09	---	9.88	11.06
10	11.25	10.67	10.15	10.70	10.92	10.54	5.29	4.31	6.32	---	9.95	11.07
11	11.30	10.69	10.17	10.67	10.94	10.53	5.52	3.32	6.56	---	10.03	11.09
12	11.32	10.68	10.21	10.67	10.99	10.59	5.72	2.44	6.74	---	10.14	11.13
13	11.33	10.65	10.24	10.70	10.98	10.59	5.98	2.49	6.89	---	10.20	11.14
14	11.35	10.52	10.30	10.70	11.03	10.61	6.17	2.56	6.98	---	10.31	11.14
15	11.36	10.47	10.36	10.72	11.01	10.62	6.39	2.64	6.37	---	10.39	11.14
16	11.38	10.39	10.40	10.75	10.98	10.68	6.63	2.35	5.13	---	10.44	11.11
17	11.39	10.42	10.48	10.76	10.92	10.67	6.82	1.86	4.43	---	10.45	11.08
18	11.42	10.42	10.54	10.76	10.88	10.65	7.01	2.17	4.41	---	10.39	11.05
19	11.44	10.40	10.62	10.78	10.86	10.64	---	2.40	4.66	---	10.44	11.06
20	11.48	10.35	10.71	10.80	10.88	10.31	7.33	2.73	4.92	9.19	10.60	10.92
21	11.47	10.32	10.78	10.81	10.89	10.26	7.61	3.09	5.12	9.15	10.62	10.55
22	11.41	10.28	10.80	10.81	10.83	10.26	7.78	3.42	5.34	9.17	10.64	10.37
23	11.20	10.24	10.80	10.83	10.65	10.23	7.96	3.58	5.55	9.21	10.69	10.27
24	11.02	10.22	10.80	10.86	10.51	10.21	8.09	3.66	5.67	9.24	10.70	9.96
25	10.96	10.19	10.80	10.87	10.46	9.97	8.26	3.92	5.87	9.26	10.73	9.50
26	10.94	10.16	10.80	10.86	10.40	8.80	8.44	4.26	6.10	9.29	10.77	9.45
27	10.94	10.13	10.80	10.86	10.45	8.34	8.57	4.61	6.35	9.31	10.78	9.52
28	10.93	10.13	10.81	10.88	10.46	8.16	8.69	4.93	6.61	9.37	10.81	9.58
29	10.92	10.09	10.79	10.87	---	8.03	8.81	5.24	6.82	9.39	10.81	9.68
30	10.94	10.08	10.72	10.90	---	7.94	8.97	5.55	---	9.43	10.86	9.78
31	10.94	---	10.72	10.89	---	7.09	---	5.83	---	9.49	10.89	---
MEAN	11.20	10.51	10.43	10.79	10.83	10.01	6.58	4.69	5.80	9.29	10.29	10.65
MAX	11.48	10.98	10.81	10.90	11.03	10.68	8.97	9.02	6.98	9.49	10.89	11.14
MIN	10.92	10.08	10.05	10.67	10.40	7.09	4.72	1.86	4.41	9.15	9.53	9.45

WTR YR 1989: HIGHEST 1.86, MAY 17; LOWEST 11.48, OCTOBER 20.



CAMERON COUNTY

412732078034201. Local number, CM 13.

LOCATION.--Lat 41°27'32", long 78°03'42", Hydrologic Unit 02050202, at Sinnemahoning State Park.

Owner: U.S. Geological Survey.

AQUIFER.--Sandstone of Catskill Formation of Late Devonian age.

WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 102 ft, cased to 57 ft, open hole.

INSTRUMENTATION.--Digital recorder with 60-minute recording interval. Pa. Department of Environmental Resources satellite telemeter at station.

DATUM.--Elevation of land surface is 1,010 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 3.1 ft above land-surface datum.

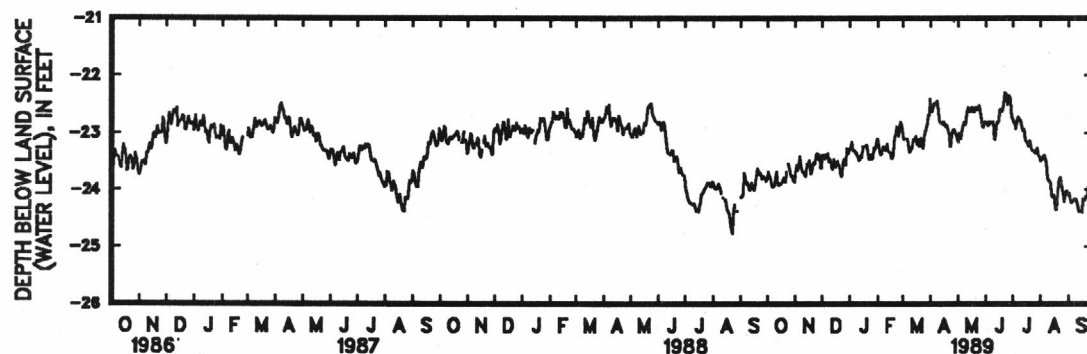
PERIOD OF RECORD.--October 1967 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 18.53 ft below land-surface datum, Feb. 16, 1984; lowest, 25.98 ft below land-surface datum, Sept. 10, 1972.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23.78	23.72	23.40	23.28	23.16	23.06	22.58	23.16	22.82	22.78	23.49	24.08
2	23.69	23.56	23.40	23.24	23.24	23.11	22.64	23.01	22.81	22.83	23.47	24.07
3	23.75	23.66	23.38	23.16	23.36	23.10	22.59	23.02	22.88	22.83	23.44	24.16
4	23.77	23.66	23.46	23.32	23.38	23.10	22.49	23.10	22.80	22.93	23.42	24.23
5	23.85	23.56	23.44	23.32	23.36	23.10	22.51	23.00	22.86	22.87	23.40	24.21
6	23.94	23.41	23.38	23.31	23.26	23.11	22.50	22.92	22.80	22.76	23.43	24.20
7	23.95	23.60	23.36	23.36	23.24	23.27	22.47	22.84	22.82	22.72	23.53	24.18
8	23.94	23.63	23.51	23.34	23.26	23.34	22.45	22.81	22.82	22.76	23.67	24.17
9	23.92	23.70	23.52	23.41	23.32	23.32	22.61	22.86	22.80	22.78	23.79	24.17
10	23.79	23.68	23.46	23.44	23.28	23.28	22.77	22.78	23.10	22.79	23.85	24.20
11	23.68	23.73	23.59	23.48	23.20	23.27	22.82	22.66	23.11	22.91	23.85	24.29
12	23.83	23.76	23.64	23.46	23.30	23.12	22.84	22.56	22.98	22.96	23.90	24.35
13	23.92	23.70	23.58	23.40	23.34	23.14	22.83	22.62	22.82	22.94	24.09	24.39
14	23.92	23.54	23.46	23.43	23.34	---	22.86	22.64	22.83	23.03	24.13	24.38
15	23.90	23.58	23.56	23.24	23.34	23.06	22.80	22.62	22.78	23.13	24.13	24.38
16	23.90	23.52	23.60	23.24	23.45	23.20	22.84	22.56	22.62	23.16	24.10	24.40
17	23.86	23.48	23.51	23.24	23.45	23.22	22.89	22.56	22.59	23.17	24.30	24.16
18	23.82	23.72	23.50	23.24	23.39	23.12	22.86	22.64	22.61	23.24	24.36	24.18
19	23.78	23.71	23.58	23.22	23.17	23.24	22.90	22.64	22.62	23.23	24.34	24.19
20	23.86	23.60	23.58	23.25	23.09	23.24	22.97	22.56	22.59	23.14	24.05	24.12
21	23.86	23.52	23.70	23.44	22.99	23.09	23.04	22.56	22.41	23.25	23.87	24.13
22	23.68	23.56	23.76	23.46	22.89	23.21	23.24	22.60	22.30	23.31	23.84	24.08
23	---	23.54	23.73	23.40	23.02	23.27	23.24	22.58	22.32	23.32	23.78	23.96
24	23.54	23.40	23.54	23.38	23.06	23.19	23.04	22.52	22.39	23.32	23.89	24.09
25	23.59	23.36	23.46	23.46	22.98	22.97	22.96	22.56	22.51	23.35	23.99	24.09
26	23.69	23.46	23.56	23.44	22.81	22.97	22.94	22.62	22.36	23.36	24.08	23.99
27	23.76	23.44	23.56	23.26	22.85	22.92	22.96	22.78	22.35	23.31	24.21	24.17
28	23.75	23.38	23.27	23.30	22.92	22.83	23.00	22.88	22.42	23.27	24.11	24.17
29	23.83	23.62	23.37	23.26	---	22.69	23.04	22.90	22.61	23.38	24.07	24.07
30	23.84	23.62	23.36	23.18	---	22.69	23.12	22.83	22.71	23.43	24.02	24.10
31	23.86	---	23.28	23.10	---	22.41	---	22.80	---	23.45	24.09	---
MEAN	23.81	23.58	23.50	23.32	23.19	23.09	22.83	22.75	22.68	23.09	23.89	24.18
MAX	23.95	23.76	23.76	23.48	23.45	23.34	23.24	23.16	23.11	23.45	24.36	24.40
MIN	23.54	23.36	23.27	23.10	22.81	22.41	22.45	22.52	22.30	22.72	23.40	23.96

WTR YR 1989: HIGHEST 22.30, JUNE 22; LOWEST 24.40, SEPTEMBER 16.

3 YEAR HYDROGRAPH
OCTOBER 1, 1986 TO SEPTEMBER 30, 1989

CENTRE COUNTY

404518077575501. Local number, CE 118.

LOCATION.--Lat 40°45'18", long 77°57'55", Hydrologic Unit 02050302, at State Game Land Number 176.

Owner: U.S. Geological Survey.

AQUIFER.--Sandstone and dolomite of Gatesburg Formation of Upper Cambrian age.

WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 130 ft, cased to 40 ft, open hole.

INSTRUMENTATION.--Continuous strip-chart recorder.

DATUM.--Elevation of land surface is 1,150 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 2.5 ft above land-surface datum.

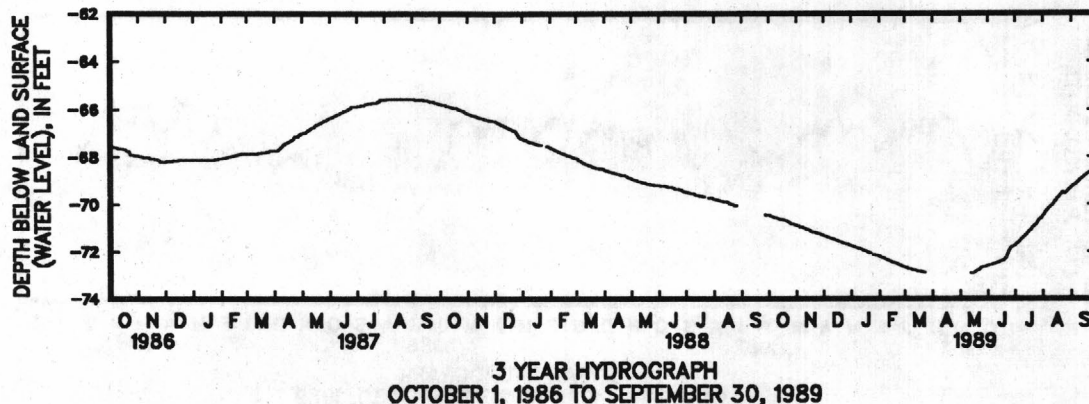
PERIOD OF RECORD.--January 1968 to June 1981, July 1984 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 51.91 ft below land-surface datum, Sept. 8, 12, 16, 1978; lowest, 80.14 ft below land-surface datum, March 26, 1970.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	70.45	70.88	---	71.76	72.21	72.66	---	---	72.61	71.73	70.47	69.28
2	70.46	70.90	---	71.78	72.23	72.68	---	---	72.59	71.69	70.42	69.24
3	70.48	70.92	---	71.79	72.24	72.69	---	---	72.58	71.66	70.35	69.22
4	70.50	70.94	---	71.80	72.26	72.70	---	---	72.56	71.63	70.30	69.19
5	70.52	70.95	---	71.82	72.28	72.72	---	---	72.56	71.60	70.26	69.16
6	70.54	70.96	---	71.83	72.29	72.73	---	---	72.54	71.56	70.21	69.13
7	70.55	70.97	---	71.84	72.31	72.74	---	---	72.54	71.53	70.17	69.10
8	70.56	71.00	---	71.85	72.33	72.75	---	---	72.52	71.48	70.14	69.06
9	70.57	71.01	---	71.87	72.35	72.77	---	---	72.51	71.44	70.11	69.03
10	70.59	71.02	---	71.88	72.36	72.78	---	---	72.50	71.40	70.06	68.99
11	70.60	71.05	---	71.89	72.38	72.79	---	---	72.48	71.35	70.04	68.96
12	70.61	71.06	---	71.91	72.39	72.80	---	---	72.47	71.32	69.96	68.93
13	70.62	71.07	---	71.93	72.41	72.81	---	72.93	72.45	71.28	69.91	68.89
14	70.63	71.08	---	71.94	72.43	72.82	---	72.93	72.43	71.24	69.88	68.86
15	70.64	71.11	---	71.96	72.44	72.83	---	72.92	72.42	71.20	69.87	68.83
16	70.65	71.13	---	71.97	72.46	72.84	---	72.91	72.41	71.16	69.77	68.80
17	70.65	71.15	---	71.99	72.47	72.84	---	72.89	72.40	71.13	69.74	68.77
18	70.67	---	---	72.01	72.49	72.85	---	72.88	72.38	71.09	69.70	68.74
19	70.68	71.17	---	72.03	72.50	72.87	---	72.85	72.35	71.04	69.66	68.71
20	70.70	71.18	---	72.04	72.52	72.87	---	72.82	72.31	70.99	69.61	68.68
21	70.70	71.19	---	72.06	72.53	72.88	---	72.80	72.27	70.95	69.56	68.66
22	70.71	71.20	71.63	72.07	72.55	72.89	---	72.78	72.19	70.92	69.52	68.63
23	70.74	71.21	71.64	---	72.56	72.90	---	72.75	72.06	70.89	69.49	68.61
24	70.79	71.22	71.66	---	72.58	---	---	72.69	71.99	70.85	69.55	68.59
25	70.81	71.24	71.67	72.13	72.60	---	---	72.68	---	70.81	69.54	68.57
26	70.82	---	71.68	72.14	72.62	---	---	72.67	71.84	70.71	69.51	68.54
27	70.83	---	71.69	72.15	72.63	---	---	72.65	71.83	70.68	69.47	68.54
28	70.84	---	71.70	72.16	72.65	---	---	72.65	71.80	70.63	69.43	68.54
29	70.86	---	71.72	72.17	---	---	---	72.64	71.79	70.60	69.39	68.51
30	70.87	---	71.73	72.18	---	---	---	72.63	71.77	70.59	69.34	68.49
31	70.88	---	71.75	72.19	---	---	---	72.62	---	70.51	69.32	---
MEAN	70.66	71.07	71.69	71.97	72.43	72.79	---	72.77	72.32	71.15	69.83	68.84
MAX	70.88	71.24	71.75	72.19	72.65	72.90	---	72.93	72.61	71.73	70.47	69.28
MIN	70.45	70.88	71.63	71.76	72.21	72.66	---	72.62	71.77	70.51	69.32	68.49

WTR YR 1989: HIGHEST 68.49, SEPTEMBER 30; LOWEST 72.93, MAY 13,14.



CLINTON COUNTY

411424077462201. Local number, CN 1.

LOCATION.--Lat 41°14'24", long 77°46'22", Hydrologic Unit 02050203, at Sproul State Forest.

Owner: Commonwealth of Pennsylvania.

AQUIFER.--Sandstone of Pocono Formation of Late Mississippian age.

WELL CHARACTERISTICS.--Drilled unused observation well, diameter 6 in., depth 78 ft, cased to 38 ft, open hole.

INSTRUMENTATION.--Continuous strip-chart recorder.

DATUM.--Elevation of land surface is 2,050 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of platform, 0.2 ft above land-surface datum.

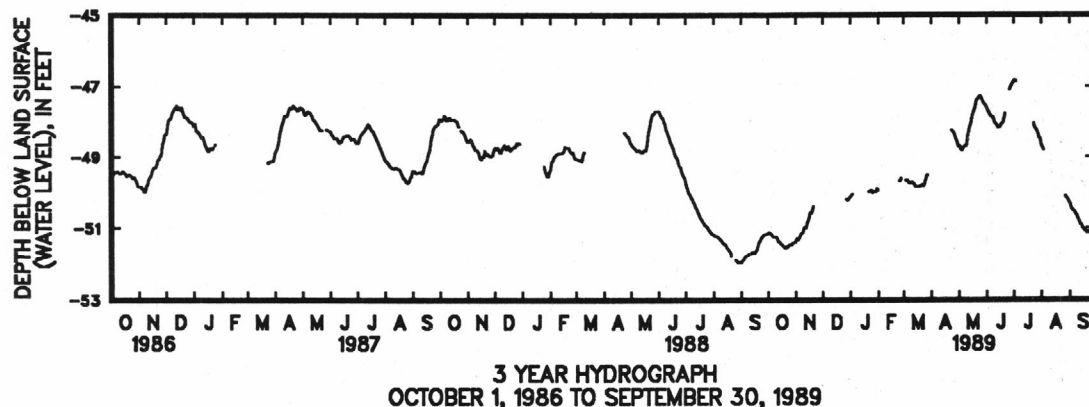
PERIOD OF RECORD.--August 1950 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 44.00 ft below land-surface datum, Jan. 13, 1951; lowest, 57.24 ft below land-surface datum, Dec. 21, 1964.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51.15	51.33	---	50.11	---	---	---	48.71	47.64	46.85	48.69	50.30
2	51.12	51.28	---	50.06	---	---	---	48.69	47.68	46.83	48.74	50.38
3	51.14	51.33	---	50.04	---	49.66	---	48.78	47.76	46.85	48.79	50.45
4	51.16	51.30	---	---	---	49.67	---	48.81	47.78	---	---	50.49
5	51.20	51.26	---	---	---	49.66	---	48.80	47.82	---	---	50.51
6	51.23	51.17	---	---	---	49.70	---	48.75	47.85	---	---	50.54
7	51.24	51.15	---	---	---	49.74	---	48.71	47.89	---	---	50.59
8	51.24	51.13	---	---	---	49.75	---	48.68	47.89	---	---	50.63
9	51.24	51.10	---	---	---	49.74	---	48.68	47.99	---	---	50.67
10	51.24	50.98	---	---	---	49.71	---	48.60	48.04	---	---	50.73
11	51.29	51.00	---	---	---	49.73	---	48.42	48.06	---	---	50.80
12	51.36	50.99	---	---	---	49.74	---	48.26	48.09	---	---	50.87
13	51.39	50.86	---	---	---	48.81	---	48.18	48.16	---	---	50.90
14	51.39	50.81	---	---	---	49.83	---	48.07	48.17	---	---	50.91
15	51.44	50.75	---	---	---	49.83	---	47.97	48.15	---	---	50.99
16	51.46	50.63	---	---	---	---	---	47.85	48.14	---	---	51.01
17	51.49	50.57	---	---	---	---	---	47.75	48.08	---	---	51.06
18	51.51	50.58	---	---	---	---	---	47.68	48.04	---	---	51.08
19	51.54	50.53	---	---	---	49.83	---	47.58	48.02	---	---	51.08
20	51.56	50.39	---	---	---	49.82	---	47.45	47.96	---	---	51.13
21	51.56	---	---	49.97	---	49.78	---	47.38	47.79	---	---	51.13
22	51.52	---	---	49.97	---	49.82	---	47.34	---	---	---	51.10
23	51.53	---	---	49.95	---	49.82	48.24	47.32	---	48.06	---	51.11
24	51.47	---	---	49.94	49.67	49.77	48.28	47.27	---	48.15	---	51.11
25	51.47	---	---	50.01	49.67	49.63	48.32	47.27	---	48.20	---	51.04
26	51.46	---	---	49.98	49.59	49.57	48.39	47.33	47.10	48.24	---	51.04
27	51.48	---	50.19	49.98	---	49.51	48.44	47.40	47.06	48.25	50.10	50.98
28	51.43	---	50.23	49.98	---	---	48.49	47.46	46.98	48.36	50.15	---
29	51.42	---	50.21	49.97	---	---	48.58	47.50	46.94	48.45	50.15	---
30	51.41	---	50.16	49.89	---	---	48.68	47.53	46.92	48.48	50.22	---
31	51.40	---	50.13	49.93	---	---	---	47.56	---	48.62	50.26	---
MEAN	51.37	50.96	50.18	49.98	49.64	49.73	48.43	47.99	47.77	47.95	49.64	50.84
MAX	51.56	51.33	50.23	50.11	49.67	49.83	48.68	48.81	48.17	48.62	50.26	51.13
MIN	51.12	50.39	50.13	49.89	49.59	49.51	48.24	47.27	46.92	46.83	48.69	50.30

WTR YR 1989: HIGHEST 46.83, JULY 2; LOWEST 51.56, OCTOBER 20, 21.



CUMBERLAND COUNTY

400209077183301. Local number, CU 2.

LOCATION.--Lat 40°02'09", long 77°18'33", Hydrologic Unit 02050305, at Michaux State Forest.

Owner: Commonwealth of Pennsylvania.

AQUIFER.--Metarhyolite of Precambrian age.

WELL CHARACTERISTICS.--Drilled unused observation well, diameter 6 in., depth 37 ft, cased to 19 ft.

INSTRUMENTATION.--Continuous strip-chart recorder.

DATUM.--Elevation of land surface is 955 ft above National Geodetic Vertical Datum of 1929, from topographic map.

Measuring point: Top of casing, 1.5 ft above land-surface datum.

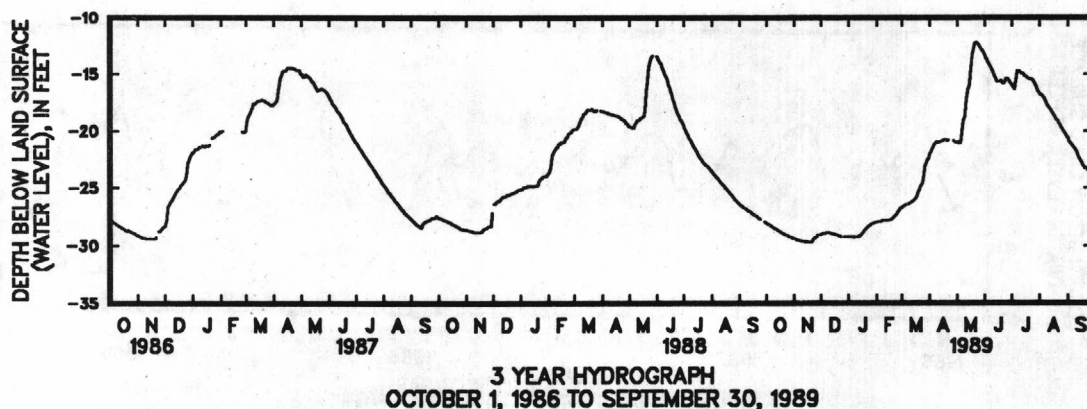
PERIOD OF RECORD.--June 1951 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 9.51 ft below land-surface datum, Apr. 18, 1961; lowest, 33.50 ft below land-surface datum, Feb. 3, 1955.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28.06	29.39	29.03	29.23	27.98	26.70	21.99	21.04	13.34	15.95	16.75	20.59
2	28.10	29.42	28.99	29.24	27.97	26.68	21.87	21.00	13.58	16.08	16.82	20.79
3	28.15	29.46	28.97	29.24	27.94	26.61	21.62	21.07	13.63	16.22	16.86	20.94
4	28.19	29.49	28.96	29.24	27.93	26.57	21.45	21.07	13.92	16.33	16.93	21.06
5	28.26	29.52	28.95	29.24	27.93	26.51	21.28	21.00	13.98	15.87	17.07	21.19
6	28.30	29.53	28.94	29.25	27.88	26.44	21.19	20.61	14.20	15.24	17.19	21.28
7	28.34	29.56	28.92	29.27	27.86	26.43	21.09	19.62	14.34	14.73	17.33	21.40
8	28.39	29.58	28.91	29.26	27.85	26.42	20.99	19.08	14.47	14.73	17.49	21.50
9	28.45	29.59	28.91	29.26	27.85	26.39	20.99	18.91	14.64	14.73	17.70	21.63
10	28.49	29.61	28.92	29.26	27.84	26.33	21.01	18.63	14.89	14.75	17.81	21.72
11	28.54	29.62	28.94	29.23	27.83	26.29	21.00	17.66	15.08	14.86	17.93	21.92
12	28.59	29.64	28.93	29.22	27.82	26.20	20.96	16.84	15.16	14.92	18.05	22.13
13	28.64	29.66	28.95	29.14	27.83	26.17	20.92	16.42	15.45	14.92	18.16	22.27
14	28.67	29.66	28.99	29.11	27.81	26.09	20.89	16.12	15.62	15.05	18.28	22.40
15	28.74	29.65	28.99	29.02	27.81	26.00	20.84	15.86	15.64	15.14	18.40	22.60
16	28.78	29.67	29.02	28.94	27.80	25.93	20.79	15.05	15.64	15.18	18.54	22.73
17	28.82	29.68	29.05	28.84	27.76	25.76	20.82	13.99	15.66	15.23	18.71	22.88
18	28.88	29.68	29.06	28.71	27.68	25.52	20.77	13.29	15.68	15.34	18.86	23.06
19	28.93	29.68	29.09	28.62	27.61	25.35	20.79	12.83	15.57	15.38	18.93	23.17
20	28.97	29.69	29.12	28.53	27.54	25.20	20.84	12.45	15.74	---	19.08	23.31
21	29.02	29.62	29.17	28.47	27.46	24.92	20.80	12.27	15.81	---	19.09	23.24
22	29.05	29.48	29.19	28.43	27.38	24.73	---	12.25	15.81	---	19.29	23.25
23	29.07	29.35	29.21	28.35	27.28	24.68	---	12.20	15.75	---	19.43	23.40
24	29.12	29.34	---	28.29	27.10	24.53	---	12.32	15.43	15.50	19.58	23.51
25	29.14	29.27	---	28.24	27.06	23.82	---	12.37	15.37	15.69	19.72	23.54
26	29.20	29.20	---	28.12	26.92	23.24	---	12.49	15.36	15.79	19.86	23.63
27	29.23	29.15	29.22	28.13	26.81	22.99	20.87	12.70	15.52	15.93	19.99	23.72
28	29.26	29.10	29.25	28.12	26.78	22.74	20.92	12.80	15.59	16.18	20.11	23.77
29	29.30	29.08	29.26	28.07	---	22.52	20.97	12.88	15.78	16.38	20.20	23.83
30	29.33	29.05	29.25	28.03	---	22.45	21.04	13.02	15.82	16.55	20.37	23.93
31	29.36	---	29.24	27.99	---	22.23	---	13.18	---	16.66	20.50	---
MEAN	28.75	29.48	29.05	28.78	27.62	25.24	21.07	15.84	15.08	15.53	18.55	22.48
MAX	29.36	29.69	29.26	29.27	27.98	26.70	21.99	21.07	15.82	16.66	20.50	23.93
MIN	28.06	29.05	28.91	27.99	26.78	22.23	20.77	12.20	13.34	14.73	16.75	20.59

WTR YR 1989: HIGHEST 12.20, MAY 23; LOWEST 29.69, NOVEMBER 20.



DAUPHIN COUNTY

402118076462201. Local number, DA 350.

LOCATION.--Lat 40°21'18", long 76°46'22", Hydrologic Unit 02050305, at R. D. 1, Linglestown.

Owner: William R. Miller.

AQUIFER.--Shale of Hamburg sequence of Middle Ordovician age.

WELL CHARACTERISTICS.--Drilled unused well, diameter 6 in., depth 225 ft, cased to 19 ft, open hole.

INSTRUMENTATION.--Digital recorder with 60-minute recording interval. Pa. Department of Environmental Resources satellite telemeter at station.

DATUM.--Elevation of land surface is 450 ft above National Geodetic Vertical Datum of 1929, from topographic map.

Measuring point: Top of casing, 1.3 ft above land-surface datum.

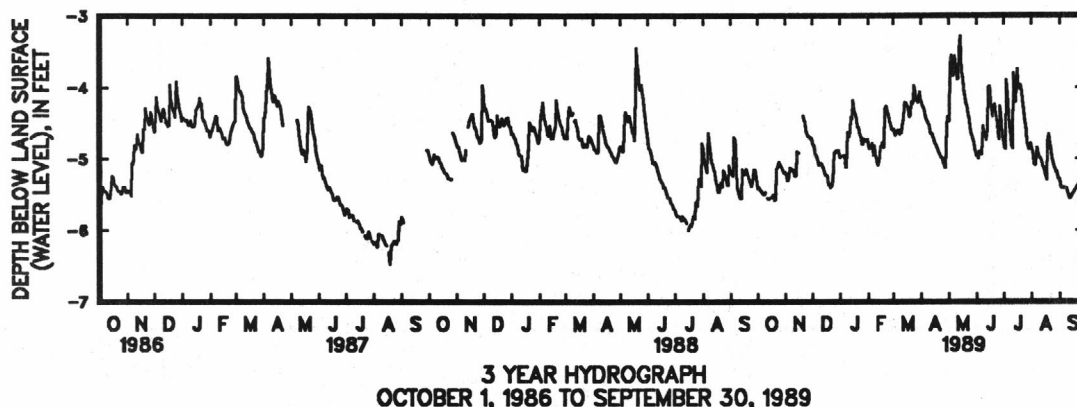
PERIOD OF RECORD.--September 1964 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 1.15 ft below land-surface datum, June 22, 1972; lowest, 6.95 ft below land-surface datum, Sept. 11, 1966.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.42	5.18	4.78	4.99	4.80	4.61	4.19	4.48	4.96	4.77	4.83	5.28
2	5.40	5.24	4.82	4.97	4.85	4.58	4.26	4.47	4.95	4.84	4.91	5.37
3	5.40	5.30	4.82	4.96	4.86	4.67	4.28	3.68	5.00	4.86	4.96	5.40
4	5.44	5.30	4.92	4.95	4.85	4.66	4.32	3.55	4.90	3.90	5.07	5.41
5	5.44	5.24	4.96	4.95	4.78	4.62	4.37	3.72	4.93	4.01	5.08	5.41
6	5.48	5.12	4.96	4.95	4.86	4.60	4.42	3.84	4.94	4.22	5.07	5.40
7	5.48	5.14	5.04	5.11	4.95	4.60	4.47	3.82	4.93	4.42	4.84	5.41
8	5.50	5.14	5.08	5.11	4.82	4.66	4.48	3.56	4.54	4.54	4.90	5.41
9	5.50	5.16	5.08	4.63	4.96	4.64	4.52	3.71	4.65	4.68	4.95	5.43
10	5.46	5.16	5.06	4.66	4.97	4.64	4.54	3.81	4.68	4.82	4.99	5.47
11	---	5.24	5.06	4.69	5.07	4.54	4.63	3.89	4.68	4.85	4.99	5.53
12	5.54	5.24	5.11	4.62	5.08	4.44	4.66	3.88	4.74	3.80	5.03	5.55
13	5.56	5.22	5.11	4.41	5.03	4.26	4.65	3.48	4.59	4.03	5.09	5.55
14	5.56	4.90	5.16	4.44	4.96	4.21	4.71	3.28	4.00	4.21	5.11	---
15	5.54	4.92	5.23	4.18	4.83	4.22	4.73	3.60	3.99	4.19	5.14	---
16	5.54	4.92	5.23	4.26	4.83	4.26	4.78	3.77	4.06	3.74	5.20	---
17	5.54	---	5.23	4.36	4.77	4.28	4.80	3.89	4.23	3.93	5.26	---
18	5.50	---	5.28	4.38	4.84	4.38	4.83	4.03	4.38	4.02	5.29	---
19	5.54	---	5.36	4.45	4.83	4.41	4.87	4.13	4.41	3.98	4.77	---
20	5.58	---	5.36	4.56	4.30	4.38	4.90	4.21	4.28	3.97	4.66	---
21	5.56	4.40	5.40	4.56	4.26	4.20	4.94	4.24	4.24	4.07	4.74	---
22	5.14	4.46	5.38	4.63	4.30	4.24	4.96	4.31	4.32	4.18	4.80	---
23	5.12	4.50	5.34	4.66	4.38	4.20	4.99	4.39	4.44	4.32	4.91	---
24	5.06	4.60	5.29	4.71	4.39	3.98	4.99	4.46	4.51	4.43	5.00	---
25	5.04	4.66	4.92	4.79	4.47	4.08	5.05	4.56	4.63	4.54	5.07	---
26	5.08	4.68	4.92	4.80	4.51	4.19	5.09	4.63	4.73	4.62	5.10	5.25
27	5.10	4.68	4.89	4.72	4.58	4.15	5.12	4.68	4.26	4.77	5.15	5.15
28	5.14	4.69	4.88	4.74	4.60	4.22	5.12	4.72	4.39	4.84	5.18	5.15
29	5.16	4.72	4.90	4.75	---	4.21	4.56	4.77	4.53	4.87	5.17	5.21
30	5.19	4.71	4.88	4.75	---	4.07	4.42	4.85	4.68	4.81	5.25	5.27
31	5.20	---	4.97	4.73	---	4.17	---	4.90	---	4.78	5.28	---
MEAN	5.37	4.94	5.08	4.69	4.74	4.37	4.69	4.11	4.55	4.39	5.03	5.37
MAX	5.58	5.30	5.40	5.11	5.08	4.67	5.12	4.90	5.00	4.87	5.29	5.55
MIN	5.04	4.40	4.78	4.18	4.26	3.98	4.19	3.28	3.99	3.74	4.66	5.15

WTR YR 1989: HIGHEST 3.28, MAY 14; LOWEST 5.58, OCTOBER 20.



FRANKLIN COUNTY

394731077411701. Local number, FR 332.

LOCATION.--Lat 39°47'31", long 77°41'17", Hydrologic Unit 02070004, near Greencastle.

Owner: Borough of Greencastle.

AQUIFER.--Stonehenge Formation of Early Ordovician age.

WELL CHARACTERISTICS.--Drilled unused well, diameter 8 in., depth 296 ft, cased to 92 ft, open hole.

INSTRUMENTATION.--Digital recorder with 60-minute recording interval. Pa. Department of Environmental Resources satellite telemeter at station.

DATUM.--Elevation of land surface is 730 ft above National Geodetic Vertical Datum of 1929, from topographic map.

Measuring point: Top of casing, 1.0 ft above land-surface datum.

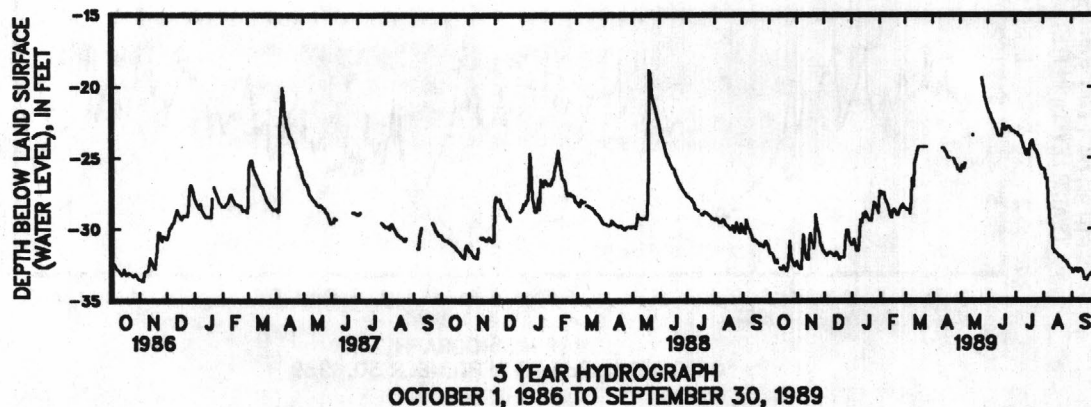
PERIOD OF RECORD.--March 1975 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 12.30 ft below land-surface datum, Sept. 27, 1975; lowest, 36.68 ft below land-surface datum, Sept. 6, 1976.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31.64	32.51	31.65	31.08	27.33	28.51	---	25.95	21.63	23.23	25.78	32.81
2	31.69	32.67	31.71	30.94	27.41	28.60	---	25.60	21.80	23.27	25.87	33.02
3	31.63	32.72	31.81	30.72	27.57	28.62	---	25.51	21.84	23.26	26.42	33.03
4	31.73	32.76	31.81	31.04	27.55	28.62	---	25.63	22.10	23.40	26.51	32.88
5	31.83	32.75	31.69	31.37	27.43	28.62	---	25.75	22.24	23.44	26.46	32.81
6	32.13	31.64	31.65	31.52	27.89	28.91	---	25.37	22.38	23.45	27.92	32.78
7	32.31	30.37	31.57	31.52	27.98	27.96	---	---	22.52	23.54	28.88	32.99
8	32.31	30.65	31.65	31.47	28.16	26.47	---	---	22.70	23.74	29.72	33.02
9	32.15	31.51	31.67	30.29	28.22	26.99	---	---	22.86	23.98	29.80	32.90
10	32.36	31.89	31.72	29.36	28.44	26.98	---	---	23.06	24.26	29.90	32.76
11	---	32.05	31.85	29.49	28.77	25.41	24.29	---	23.32	24.44	31.38	32.81
12	32.65	32.07	31.87	29.51	28.99	25.02	24.31	---	23.42	24.69	31.44	32.88
13	32.77	32.09	31.78	28.93	29.20	24.89	24.41	---	23.44	24.81	31.63	32.94
14	32.81	30.77	31.59	29.18	29.17	24.57	24.51	---	23.46	24.43	31.60	33.27
15	32.81	30.31	31.67	29.17	28.71	24.21	24.57	23.41	23.44	24.62	31.67	33.52
16	32.54	30.52	31.83	28.77	28.59	---	24.75	---	23.24	24.79	31.73	33.40
17	32.65	30.92	32.09	28.99	28.63	---	24.93	---	22.66	24.04	31.81	33.52
18	32.80	30.95	32.07	29.19	28.82	---	24.99	---	22.66	23.86	31.95	33.56
19	32.89	31.32	31.93	29.30	29.01	---	25.00	---	22.96	23.82	31.86	33.31
20	32.87	30.85	31.95	29.39	29.01	---	---	---	23.05	23.79	31.94	33.23
21	32.60	28.99	31.95	29.40	28.99	---	---	---	23.00	24.22	32.00	33.18
22	32.05	29.45	31.94	29.40	28.73	---	---	---	22.84	24.40	32.01	33.08
23	30.85	29.77	31.89	29.15	28.53	---	25.03	---	22.80	24.43	32.20	33.16
24	31.49	30.06	31.03	28.48	28.41	24.21	25.21	---	22.79	24.60	32.24	33.20
25	31.89	30.31	30.12	28.13	28.37	---	25.39	19.41	22.88	24.76	32.24	33.19
26	32.21	30.81	30.07	28.20	28.26	---	25.47	19.77	22.96	24.90	32.36	33.19
27	32.38	31.13	30.09	28.35	28.51	---	25.51	20.15	23.12	25.19	32.36	33.24
28	32.55	31.17	30.40	28.55	28.51	---	25.83	20.70	23.12	25.54	32.56	33.28
29	32.57	31.45	30.84	28.63	---	---	25.85	20.96	---	25.69	32.64	33.38
30	32.41	31.52	30.99	28.85	---	---	25.91	21.17	23.16	25.84	32.76	33.49
31	32.24	---	31.08	27.33	---	---	---	21.38	---	25.74	32.78	---
MEAN	32.26	31.20	31.48	29.54	28.40	26.79	25.06	22.91	22.81	24.33	30.66	33.13
MAX	32.89	32.76	32.09	31.52	29.20	28.91	25.91	25.95	23.46	25.84	32.78	33.56
MIN	30.85	28.99	30.07	27.33	27.33	24.21	24.29	19.41	21.63	23.23	25.78	32.76

WTR YR 1989: HIGHEST 19.41, MAY 25; LOWEST 33.56, SEPTEMBER 18.



FULTON COUNTY

400302078090401. Local number, FU 93.

LOCATION.--Lat 40°03'02", long 78°09'04", Hydrologic Unit 02050304, at Buchanan State Forest.

Owner: Commonwealth of Pennsylvania.

AQUIFER.--Sandstone of Pocono Formation of Early Mississippian age.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 6 in., depth 191 ft, cased to 45 ft, open hole.

INSTRUMENTATION.--Continuous strip-chart recorder.

DATUM.--Elevation of land surface is 1,180 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 2.0 ft above land-surface datum.

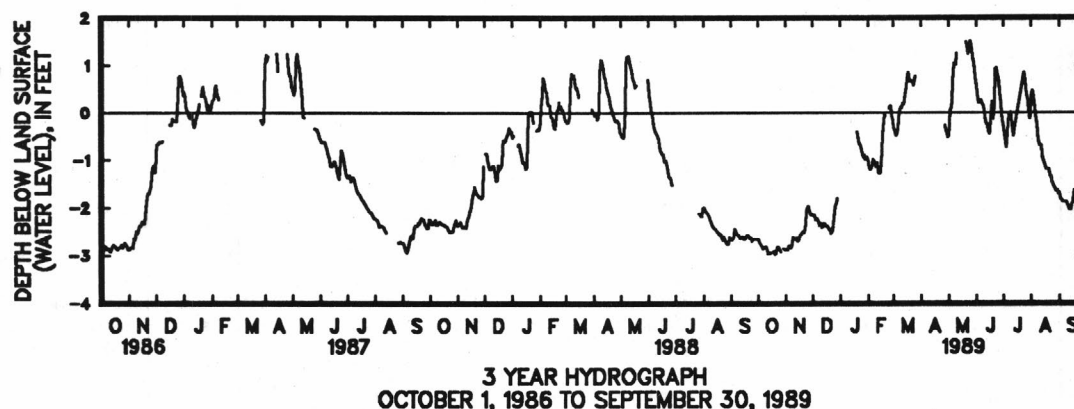
PERIOD OF RECORD.--July 1965 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 2.00 ft above land-surface datum, Feb. 22, 1971; lowest, -4.46 ft below land-surface datum, Sept. 12, 1966.

WATER LEVEL, IN FEET ABOVE OR BELOW (-) LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	-2.66	-2.89	-2.15	---	-1.07	-0.32	---	-0.49	.56	-0.33	.34	-1.67
2	-2.68	-2.87	-2.17	---	-1.16	-0.35	---	-0.25	.40	-0.46	.47	-1.77
3	-2.73	-2.88	-2.15	---	-1.20	-0.44	---	.07	.21	-0.60	.41	-1.81
4	-2.76	-2.81	-2.25	---	-1.19	-0.48	---	.12	.22	-0.73	.31	-1.84
5	-2.80	-2.79	-2.24	---	-1.10	-0.42	---	.25	.21	-0.61	.11	-1.87
6	-2.86	-2.84	-2.22	---	-0.98	-0.32	---	.65	.26	-0.22	-0.06	-1.87
7	-2.86	-2.82	-2.29	---	-1.00	.03	---	1.05	.23	-0.06	-0.24	-1.86
8	-2.83	-2.74	-2.37	---	-1.06	.05	---	1.05	.16	-0.04	-0.43	-1.86
9	-2.83	-2.61	-2.32	---	-1.14	.12	---	1.01	.13	.01	-0.58	-1.86
10	-2.80	-2.65	-2.32	---	-1.07	.11	---	1.26	-0.08	-0.12	-0.69	-1.92
11	-2.89	-2.66	-2.41	---	-1.05	.20	---	---	-0.18	-0.35	-0.69	-1.97
12	-2.96	-2.63	-2.40	---	-1.25	.19	---	---	-0.24	-0.49	-0.69	-2.03
13	-2.96	-2.63	-2.32	---	-1.27	.26	---	---	-0.25	---	-0.89	-2.03
14	-2.96	-2.70	-2.32	---	-1.26	.39	---	---	-0.39	---	-0.98	-2.03
15	-2.94	-2.69	-2.38	---	-1.24	.55	---	---	-0.44	---	-1.03	-1.92
16	-2.94	-2.64	-2.39	---	-0.81	.71	---	---	-0.38	---	-1.08	-1.87
17	-2.94	-2.57	-2.37	---	-0.44	.85	---	---	-0.13	---	-1.19	-1.72
18	-2.91	-2.56	-2.41	---	-0.17	.78	---	---	.24	---	-1.19	-1.63
19	-2.93	-2.52	-2.46	-0.41	-0.02	.65	---	---	.01	---	-1.18	-1.69
20	-2.97	-2.50	-2.46	-0.49	-0.08	.68	---	---	-0.14	---	-1.18	-1.67
21	-2.95	-2.52	-2.53	-0.66	---	.67	---	1.50	.14	---	-1.21	-1.75
22	-2.83	-2.50	-2.48	-0.66	---	.63	---	1.34	.93	---	-1.32	-1.72
23	-2.82	-2.34	-2.47	-0.68	---	.57	---	1.25	.95	---	-1.33	-1.72
24	-2.85	-2.06	-2.33	-0.78	.09	.63	---	1.40	.81	.86	-1.43	-1.84
25	-2.87	-1.99	-2.08	-0.89	.13	.78	---	1.51	.79	.67	-1.50	-1.82
26	-2.92	-1.96	-1.95	-0.94	.14	---	---	1.48	.64	.51	-1.54	-1.74
27	---	-2.01	-1.90	-0.89	-0.05	---	-0.27	1.33	.43	.39	-1.59	-1.79
28	---	-2.14	-1.80	-0.98	-0.17	---	-0.38	1.18	.20	.25	-1.64	-1.76
29	-2.86	-2.15	---	-0.98	---	---	-0.43	1.06	-0.03	.02	-1.63	-1.79
30	-2.86	-2.14	---	-0.93	---	---	-0.51	.91	-0.16	-0.12	-1.62	-1.86
31	-2.88	---	---	-0.97	---	---	---	.75	---	-0.05	-1.70	---
MEAN	-2.86	-2.53	-2.28	-0.79	-0.74	.26	-0.40	.88	.17	-0.07	-0.87	-1.82
MAX	-2.66	-1.96	-1.80	-0.41	.14	.85	-0.27	1.51	.95	.86	.47	-1.63
MIN	-2.97	-2.89	-2.53	-0.98	-1.27	-0.48	-0.51	-0.49	-0.44	-0.73	-1.70	-2.03

WTR YR 1989: HIGHEST 1.51, MAY 25; LOWEST -2.97, OCTOBER 20.



HUNTINGDON COUNTY

401843078075401. Local number, HU 301.

LOCATION.--Lat 40°18'43", long 78°07'54", Hydrologic Unit 02050303, at Trough Creek State Park.

Owner: U.S. Geological Survey.

AQUIFER.--Sandstone of Pocono Formation of Early Mississippian age.

WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 105 ft, cased to 18 ft, open hole.

INSTRUMENTATION.--Digital recorder with 60-minute recording interval. Pa. Department of Environmental Resources satellite telemeter at station.

DATUM.--Elevation of land surface is 970 ft above National Geodetic Vertical Datum of 1929, from topographic map.

Measuring point: Top of casing, 3.3 ft above land-surface datum.

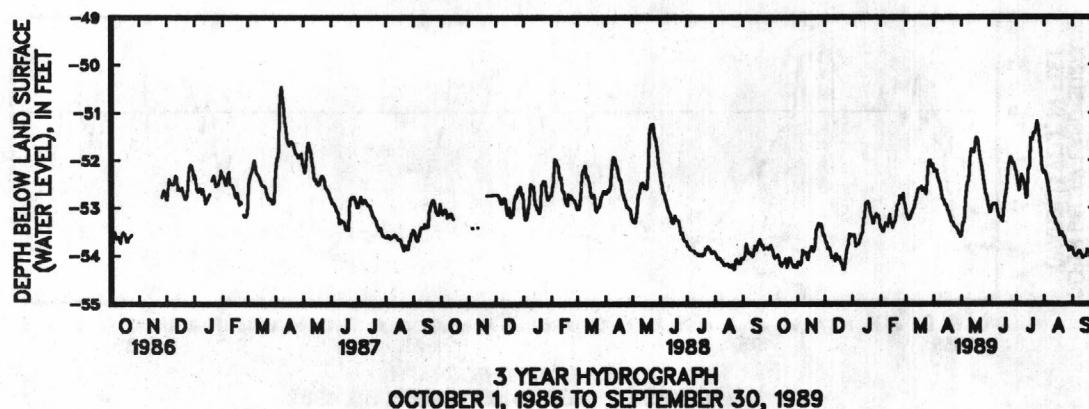
PERIOD OF RECORD.--August 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 48.82 ft below land-surface datum, June 23, 1972; lowest, 55.96 ft below land-surface datum, Aug. 28, 30, 1981.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53.84	54.12	53.66	53.57	53.38	53.10	52.23	53.58	53.01	52.25	52.22	53.84
2	53.77	54.12	53.74	53.57	53.44	53.13	52.22	53.41	53.10	52.37	52.25	53.94
3	53.85	54.20	53.72	53.56	53.49	53.21	52.20	53.31	53.07	52.51	52.32	53.98
4	53.90	54.19	53.86	53.80	53.49	53.24	52.21	53.29	52.97	52.63	52.37	54.01
5	53.97	54.13	53.85	53.79	53.40	53.23	52.35	53.11	52.94	52.61	52.50	54.00
6	54.06	53.89	53.83	53.76	53.31	53.18	52.38	52.85	52.90	52.40	52.62	53.98
7	54.05	53.94	53.94	53.76	53.34	53.08	52.46	52.57	52.92	52.29	52.78	53.92
8	54.03	53.96	54.05	53.73	53.36	53.10	52.51	52.47	52.92	52.35	52.93	53.90
9	54.01	53.96	54.05	53.65	53.39	53.02	52.66	52.41	52.91	52.41	53.06	53.90
10	53.98	53.92	54.02	53.62	53.26	52.97	52.79	52.25	53.07	52.48	53.15	53.93
11	54.04	54.05	54.06	53.55	53.14	52.86	52.82	51.97	53.15	52.66	53.18	54.00
12	54.17	54.08	54.11	53.51	53.30	52.80	52.84	51.75	53.20	52.78	53.21	54.04
13	54.20	53.97	53.96	53.23	53.34	52.73	52.94	51.78	53.18	52.73	53.27	54.05
14	54.22	53.91	53.96	53.19	53.41	52.62	52.93	51.80	53.24	52.20	53.34	54.02
15	54.15	53.89	54.06	52.94	53.38	52.58	52.93	51.84	53.25	52.18	53.36	54.01
16	54.15	53.81	54.08	52.89	53.30	52.58	53.04	51.78	53.28	52.10	53.39	54.02
17	54.15	53.83	54.03	52.88	53.29	52.57	53.07	51.54	53.09	51.52	53.49	53.87
18	54.06	53.91	54.10	52.87	53.15	52.54	53.14	51.51	52.81	51.52	53.58	53.90
19	54.15	53.88	54.17	52.93	52.97	52.64	53.21	51.56	52.73	51.56	53.53	53.93
20	54.25	53.79	54.16	53.05	52.94	52.64	53.29	51.60	52.67	51.43	53.51	53.89
21	54.18	53.47	54.28	53.19	52.90	52.58	53.30	51.75	52.44	51.40	53.52	53.91
22	54.05	53.46	54.28	53.19	52.74	52.67	53.32	51.94	52.18	51.43	53.60	53.84
23	54.05	53.37	54.25	53.31	52.79	52.70	53.37	52.02	52.04	51.26	53.60	53.80
24	54.09	53.32	54.13	53.32	52.82	52.63	53.40	52.15	51.97	51.18	53.69	53.94
25	54.14	53.34	53.90	53.21	52.79	52.21	53.40	52.25	51.92	51.30	53.77	53.89
26	54.21	53.37	53.83	53.17	52.69	52.04	53.45	52.37	51.96	51.43	53.79	53.82
27	54.23	53.34	53.75	53.12	52.86	52.00	53.45	52.55	52.08	51.57	53.85	53.91
28	54.20	53.45	53.55	53.17	52.96	51.99	53.53	52.67	52.05	51.79	53.90	53.89
29	54.24	53.57	53.60	53.16	---	52.13	53.55	52.74	52.10	52.06	53.86	53.81
30	54.24	53.56	53.58	53.17	---	52.10	53.60	52.79	52.18	52.24	53.82	53.86
31	54.25	---	53.56	53.40	---	52.08	---	52.92	---	52.26	53.89	---
MEAN	54.09	53.79	53.94	53.33	53.17	52.68	52.95	52.34	52.71	52.03	53.27	53.93
MAX	54.25	54.20	54.28	53.80	53.49	53.24	53.60	53.58	53.28	52.78	53.90	54.05
MIN	53.77	53.32	53.55	52.87	52.69	51.99	52.20	51.51	51.92	51.18	52.22	53.80

WTR YR 1989: HIGHEST 51.18, JULY 24; LOWEST 54.28, DECEMBER 21, 22.



JUNIATA COUNTY

402411077374801. Local number, JU 351.

LOCATION.--Lat 40°24'11", long 77°37'48", Hydrologic Unit 02050304, at State Game Land Number 215.

Owner: U.S. Geological Survey.

AQUIFER.--Shale of Mahantango Formation of Middle Devonian age.

WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 110 ft, cased to 18 ft, open hole.

INSTRUMENTATION.--Continuous strip-chart recorder.

DATUM.--Elevation of land surface is 635 ft above National Geodetic Vertical Datum of 1929, from topographic map.

Measuring point: Top of plywood cover, 3.6 ft above land-surface datum.

REMARKS.--This well shows significant response to Earth tide effects.

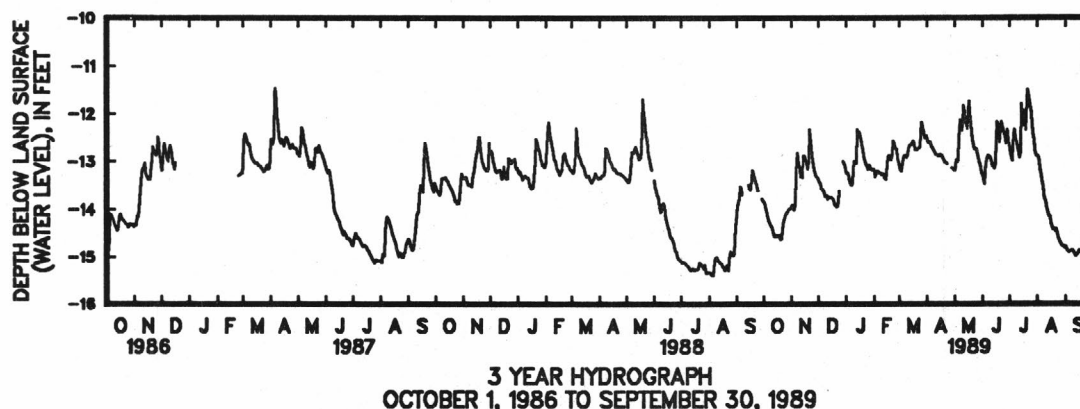
PERIOD OF RECORD.--June 1968 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 11.20 ft below land-surface datum, May 15, 1978; lowest, 15.44 ft below land-surface datum, Oct. 8, 10, 1983.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.84	13.92	13.40	13.24	13.24	13.10	12.57	13.18	13.27	12.71	12.87	14.78
2	13.85	13.91	13.44	13.25	13.31	13.17	12.60	13.08	13.35	12.83	12.92	14.80
3	13.93	14.00	13.45	13.24	13.25	13.20	12.58	12.97	13.46	12.91	13.01	14.86
4	14.02	14.01	13.56	13.41	13.20	13.10	12.59	13.01	13.20	12.98	13.14	14.89
5	14.10	13.92	13.58	13.43	13.20	12.94	12.68	12.94	13.03	12.62	13.27	14.90
6	14.21	13.20	13.58	13.47	13.23	12.88	12.68	12.53	12.90	12.32	13.39	14.89
7	14.26	12.82	13.65	13.49	13.25	12.87	12.74	12.12	12.88	12.38	13.51	14.87
8	14.28	12.94	13.73	13.41	13.24	12.90	12.76	12.22	12.90	12.52	13.67	14.86
9	14.35	13.06	13.71	13.00	13.27	12.91	12.81	12.35	12.89	12.61	13.77	14.86
10	14.35	13.14	13.71	13.02	13.26	12.85	12.86	12.20	12.96	12.71	13.82	14.90
11	14.45	13.31	13.79	13.04	13.25	12.72	12.86	11.82	13.03	12.82	13.94	14.95
12	14.53	13.32	13.73	13.03	13.33	12.65	12.86	11.96	13.10	12.91	14.02	14.97
13	14.56	13.33	13.74	12.33	13.35	12.66	12.89	12.17	13.06	12.79	14.10	14.98
14	14.57	12.87	13.74	12.44	13.37	12.65	12.89	12.23	13.14	11.79	14.13	14.94
15	14.54	12.87	13.75	12.37	13.22	12.60	12.85	12.31	13.05	12.06	14.13	14.94
16	14.56	12.93	13.76	12.43	12.91	12.57	12.86	12.19	12.55	12.25	14.28	14.86
17	14.57	12.97	13.78	12.53	12.88	12.64	12.88	11.74	12.16	11.93	14.36	14.88
18	14.54	13.10	13.85	12.63	12.88	12.75	12.92	11.99	12.23	12.16	14.42	14.90
19	14.59	13.15	13.90	12.75	12.94	12.74	12.97	12.21	12.44	12.34	14.40	14.89
20	14.63	13.01	13.90	12.87	12.97	12.75	13.02	12.39	12.59	12.01	14.43	14.85
21	14.61	12.32	13.95	12.99	12.85	12.72	13.02	12.54	12.32	11.49	14.46	14.85
22	14.41	12.50	13.93	13.03	12.56	---	13.03	12.67	12.16	---	14.40	14.65
23	14.21	12.71	13.81	13.07	12.64	12.71	13.05	12.74	12.30	---	14.50	14.77
24	14.21	12.89	13.62	13.13	12.70	12.67	---	12.72	12.32	---	14.57	14.87
25	14.12	13.08	---	13.17	12.73	12.17	---	12.73	12.42	11.99	14.64	14.87
26	14.06	13.19	---	13.08	12.74	12.19	---	12.81	12.52	12.21	14.68	14.78
27	14.08	13.21	---	13.12	12.94	12.31	---	12.90	12.62	12.40	14.73	14.85
28	14.01	13.30	12.99	13.15	13.05	12.39	13.13	12.99	12.32	12.54	14.76	14.83
29	13.99	13.32	13.04	13.18	---	12.51	13.14	13.06	12.40	12.75	14.76	14.84
30	13.98	13.34	13.07	13.16	---	12.49	13.17	13.14	12.58	12.88	14.76	14.88
31	13.98	---	13.17	13.16	---	12.46	---	13.23	---	12.87	14.81	---
MEAN	14.27	13.19	13.62	13.02	13.06	12.71	12.86	12.55	12.74	12.46	14.09	14.87
MAX	14.63	14.01	13.95	13.49	13.37	13.20	13.17	13.23	13.46	12.98	14.81	14.98
MIN	13.84	12.32	12.99	12.33	12.56	12.17	12.57	11.74	12.16	11.49	12.87	14.65

WTR YR 1989: HIGHEST 11.49, JULY 21; LOWEST 14.98, SEPTEMBER 13.



LANCASTER COUNTY

400506076235201. Local number, LN 514.

LOCATION.--Lat 40°05'06", long 76°23'52", Hydrologic Unit 02050306, near Landisville.

Owner: Benjamin Landis.

AQUIFER.--Shale and limestone of Kinzers Formation of Early Cambrian age.

WELL CHARACTERISTICS.--Drilled unused well, diameter 6 in., depth 260 ft, casing information not available.

INSTRUMENTATION.--Continuous strip-chart recorder.

DATUM.--Elevation of land surface is 415 ft above National Geodetic Vertical Datum of 1929, from topographic map.

Measuring point: Top of casing, 1.0 ft above land-surface datum.

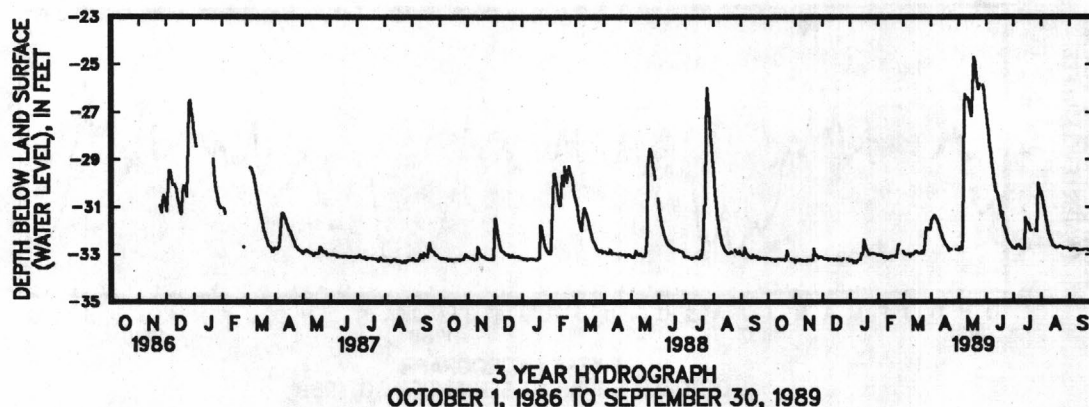
PERIOD OF RECORD.--January 1964 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 16.92 ft below land-surface datum, Mar. 28, 1978; lowest, 35.47 ft below land-surface datum, Nov. 15, 1967.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33.17	33.25	33.13	33.24	33.02	32.92	31.60	32.81	27.13	32.72	30.43	32.77
2	33.16	33.22	33.20	33.23	33.03	32.95	31.45	32.69	27.46	32.75	30.62	32.84
3	33.16	33.24	33.16	33.24	33.01	32.98	31.42	32.74	27.79	32.78	30.82	32.83
4	33.22	33.24	33.18	33.36	33.04	33.00	31.34	32.79	28.12	32.78	31.02	32.78
5	33.20	33.21	33.19	33.33	33.07	33.00	31.38	32.78	28.43	32.60	31.24	32.77
6	33.20	33.24	33.18	33.29	33.06	32.98	31.44	32.12	28.76	32.63	31.48	32.77
7	33.19	33.23	33.24	33.36	33.13	32.98	31.60	26.69	29.13	32.59	31.73	32.78
8	33.19	33.28	33.20	33.32	33.09	33.08	31.64	26.25	29.42	32.68	31.92	32.78
9	33.28	33.27	33.21	33.23	33.09	33.00	31.79	26.45	29.76	32.70	32.09	32.78
10	33.23	33.26	33.20	33.22	33.09	32.99	31.95	26.44	30.02	32.77	32.24	32.85
11	33.21	33.25	33.21	33.22	33.17	33.00	32.01	26.39	30.27	32.76	32.36	32.81
12	33.20	33.27	33.19	33.22	33.11	32.95	32.16	26.50	30.36	32.78	32.46	32.81
13	33.21	33.27	33.26	32.95	33.11	32.93	32.30	26.77	30.40	32.76	32.55	32.81
14	33.21	33.22	33.23	33.01	33.10	32.89	32.42	27.03	30.62	31.44	32.63	---
15	33.20	33.23	33.22	32.91	33.10	32.89	32.44	27.17	30.84	31.59	32.64	---
16	33.22	33.24	33.21	32.40	33.07	32.91	32.54	26.90	31.03	31.67	32.68	---
17	33.23	33.24	33.25	32.57	33.08	32.93	32.61	25.25	31.26	31.68	32.72	---
18	33.21	33.23	33.23	32.72	33.07	32.95	32.66	24.71	31.45	31.78	32.72	---
19	33.22	33.24	33.23	32.84	33.07	32.94	32.71	24.88	31.22	31.91	32.72	---
20	33.24	33.23	33.22	32.88	33.11	32.95	32.85	25.13	31.75	31.99	32.68	---
21	33.21	32.77	33.26	33.01	33.11	32.87	32.78	25.48	31.88	32.00	32.70	32.80
22	32.84	32.94	33.24	33.01	32.89	32.94	32.80	25.86	31.97	---	32.66	32.85
23	33.05	33.00	33.22	33.01	32.57	32.84	32.80	26.04	32.16	---	32.68	32.85
24	---	33.05	33.17	32.94	32.57	32.82	---	25.82	32.27	---	32.69	32.85
25	---	33.07	---	32.96	---	32.15	---	---	32.40	31.93	32.77	32.84
26	33.17	33.16	---	32.96	---	31.88	---	---	32.47	32.02	32.73	32.84
27	33.19	33.15	---	32.99	---	31.90	---	---	32.55	32.02	32.73	32.85
28	33.22	33.11	33.20	32.99	32.87	31.90	32.79	25.85	32.60	29.97	32.73	32.84
29	33.21	33.08	33.20	32.99	---	31.93	32.80	26.12	32.64	30.09	32.74	32.85
30	33.21	33.12	33.22	33.00	---	31.95	32.81	26.46	32.72	30.32	32.74	32.88
31	33.33	---	33.27	33.03	---	31.83	---	26.82	---	30.33	32.77	---
MEAN	33.19	33.18	33.21	33.05	33.03	32.72	32.20	27.53	30.63	32.00	32.25	32.82
MAX	33.33	33.28	33.27	33.36	33.17	33.08	32.85	32.81	32.72	32.78	32.77	32.88
MIN	32.84	32.77	33.13	32.40	32.57	31.83	31.34	24.71	27.13	29.97	30.43	32.77

WTR YR 1989: HIGHEST 24.71, MAY 18; LOWEST 33.36, JANUARY 4, 7.



LANCASTER COUNTY

400741075584301. Local number, LN 1643.

LOCATION.--Lat 40°07'41", long 75°58'43", Hydrologic Unit 02050306, 1.1 mi southeast of Churchtown.

Owner: U.S. Geological Survey.

AQUIFER.--Dolomite of Zooks Corner Formation of Cambrian age.

WATER-LEVEL RECORDS

WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 100 ft, cased to 69 ft, open hole.

INSTRUMENTATION.--Continuous strip-chart recorder.

DATUM.--Elevation of land surface is 465 ft above National Geodetic Vertical Datum of 1929. Measuring point:

Top of plywood cover, 3.1 ft above land-surface datum.

PERIOD OF RECORD.--October 1982 to August 1989 (discontinued).

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 33.66 ft below land-surface datum, Dec. 14, 1983; lowest, 37.75 ft below land-surface datum, Nov. 17, 1982.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37.41	---	37.01	37.29	37.23	36.96	36.80	37.13	36.30	36.03	36.58	
2	37.42	---	37.03	37.30	37.23	36.96	36.82	37.10	36.34	36.10	36.62	
3	37.42	---	37.06	37.30	37.24	36.97	36.82	37.09	36.39	36.17	36.66	
4	37.42	---	37.08	37.32	37.24	36.99	36.82	37.11	36.42	36.20	36.70	
5	37.42	---	37.10	37.33	37.25	36.98	36.80	37.11	36.45	36.20	36.74	
6	37.43	---	37.11	37.34	37.26	36.98	36.75	36.39	36.46	36.08	36.77	
7	37.43	---	37.13	37.34	37.27	36.91	36.70	36.10	36.43	36.14	36.78	
8	37.44	---	37.15	37.33	37.29	36.93	36.73	36.23	36.45	36.21	36.82	
9	37.44	---	37.17	37.19	37.28	36.93	36.76	36.25	36.26	36.27	36.85	
10	37.44	---	37.18	37.23	37.29	36.94	36.78	36.23	36.32	36.31	36.86	
11	37.44	---	37.21	37.26	37.30	36.92	36.80	36.05	36.34	36.38	36.87	
12	37.44	---	37.22	37.27	37.31	36.85	36.82	36.06	36.36	36.41	36.86	
13	37.45	---	37.23	37.11	37.29	36.85	36.84	36.11	36.40	36.41	36.88	
14	37.45	---	37.24	37.15	37.28	36.87	36.86	36.17	36.43	35.99	36.91	
15	37.46	---	37.24	37.13	37.19	36.88	36.86	36.20	36.16	36.03	36.92	
16	37.46	---	37.25	36.94	37.21	36.90	36.85	36.24	36.02	36.07	36.95	
17	37.46	---	37.26	36.94	37.23	36.90	36.87	36.25	36.03	36.12	36.98	
18	37.47	---	37.27	36.99	37.26	36.90	36.89	35.73	36.09	36.16	37.01	
19	37.46	---	37.28	37.02	37.27	36.83	36.91	35.68	36.16	36.20	37.00	
20	37.45	---	37.29	37.06	37.26	36.86	36.93	35.72	36.20	36.24	37.02	
21	37.24	---	37.29	37.09	36.90	36.84	36.94	35.77	36.24	36.28	37.04	
22	37.28	---	37.27	37.13	36.91	36.75	36.96	35.85	35.61	36.32	37.05	
23	37.29	---	37.28	37.13	36.98	36.78	36.98	35.91	35.72	36.34	37.07	
24	37.33	---	37.25	37.15	37.01	36.79	36.99	35.94	35.74	36.37	37.09	
25	37.36	---	37.22	37.16	37.02	36.56	37.00	35.75	35.71	36.38	37.11	
26	37.39	---	37.25	37.17	37.04	36.58	37.02	35.80	35.76	36.43	37.12	
27	---	---	37.24	37.18	36.92	36.62	37.11	35.87	35.80	36.45	37.14	
28	---	---	37.25	37.20	36.94	36.64	37.12	35.91	35.84	36.50	37.15	
29	---	36.93	37.25	37.20	---	36.65	37.12	35.98	35.91	36.54	37.15	
30	---	36.96	37.27	37.17	---	36.67	37.13	36.22	35.96	36.58	37.16	
31	---	---	37.28	37.20	---	36.76	---	36.24	---	36.56	37.18	
MEAN	37.41	36.95	37.21	37.18	37.18	36.84	36.90	36.20	36.14	36.27	36.94	
MAX	37.47	36.96	37.29	37.34	37.31	36.99	37.13	37.13	36.46	36.58	37.18	
MIN	37.24	36.93	37.01	36.94	36.90	36.56	36.70	35.68	35.61	35.99	36.58	

WTR YR 1989: HIGHEST 35.61, JUNE 22; LOWEST 37.47, OCTOBER 18.

LANCASTER COUNTY

400741075584301. Local number, LN 1643--Continued

WATER-QUALITY RECORDS

REMARKS.--Water-quality samples bailed adjacent to major water-bearing zone.

COOPERATION.--Chemical samples analyzed by Pa. Department of Environmental Resources, Bureau of Laboratories.

PERIOD OF RECORD.--Water years 1983 to September 1989 (discontinued).

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET)	SPE- CIFIC CON- DUCT- ANCE (μ S/CM)	NITRO- GEN, NO ₂ +NO ₃ DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)
OCT							
18...	0900	37.39	744	18.0	--	--	--
NOV							
15...	0950	37.41	771	15.0	--	--	--
22...	0850	36.73	830	16.0	--	--	--
DEC							
14...	1000	37.20	695	18.0	--	--	--
JAN							
23...	1210	37.14	720	17.0	--	--	--
FEB							
27...	1215	36.90	703	16.0	--	--	--
MAR							
13...	1635	36.90	800	17.0	--	--	--
20...	1330	36.92	828	21.0	--	--	--
APR							
27...	1045	37.11	863	26.0	--	--	--
28...	1200	37.12	760	25.0	--	--	--
MAY							
03...	1430	37.07	--	25.0	--	--	--
06...	1630	36.15	825	24.0	--	--	--
08...	1325	37.09	811	25.0	--	--	--
09...	1310	36.26	817	25.0	--	--	--
11...	1100	36.05	855	27.0	--	--	--
13...	1030	36.13	880	28.0	--	--	--
15...	1230	36.21	884	25.0	--	--	--
17...	0955	35.68	840	28.0	--	--	--
18...	1350	35.67	880	30.0	--	--	--
24...	0900	35.72	885	27.0	--	--	--
30...	1315	36.06	870	27.0	--	--	--
JUN							
09...	1105	36.42	--	30.0	--	--	--
12...	1025	36.34	--	30.0	--	--	--
16...	0845	36.15	900	31.0	--	--	--
22...	1025	36.23	--	32.0	--	--	--
26...	1430	35.80	--	31.0	--	--	--
28...	1515	35.85	--	29.0	--	--	--
30...	0900	35.92	787	32.0	--	--	--
JUL							
07...	1245	36.10	--	32.0	--	--	--
12...	1130	36.38	887	21.0	--	--	--
14...	1315	35.96	877	33.0	--	--	--
25...	1030	36.34	856	21.0	--	--	--
SEP							
11...	0930	37.12	905	24.0	0.62	<0.020	0.040

(<) Actual value is known to be less than value shown.

LANCASTER COUNTY

400746075584301. Local number, LN 1645.

LOCATION.--Lat 40°07'46", long 75°58'43", Hydrologic Unit 02050306, 1.1 mi southeast of Churchtown.

Owner: U.S. Geological Survey.

AQUIFER.--Dolomite of Zooks Corner Formation of Cambrian age.

WATER-LEVEL RECORDS

WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 80 ft, cased to 24 ft, open hole.

INSTRUMENTATION.--Continuous strip-chart recorder.

DATUM.--Elevation of land surface is 483 ft above National Geodetic Vertical Datum of 1929. Measuring point:

Top of plywood cover, 2.8 ft above land-surface datum.

PERIOD OF RECORD.--November 1982 to August 1989 (discontinued).

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 49.00 ft below land-surface datum, Dec. 15, 1983; lowest, 54.53 ft below land-surface datum, Nov. 2, 3, 4, 5, 1986.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52.24	52.28	51.92	52.14	52.02	51.95	51.83	51.99	50.97	50.71	51.40	
2	52.24	52.28	51.93	52.14	52.04	51.97	51.84	51.99	51.02	50.78	51.43	
3	52.24	52.29	51.95	52.15	52.03	51.97	51.84	51.97	51.08	50.85	51.47	
4	52.23	52.30	51.98	52.15	52.04	51.98	51.85	51.98	51.12	50.89	51.49	
5	52.24	52.30	51.99	52.16	52.04	51.99	51.86	51.99	51.17	50.92	51.54	
6	52.25	52.22	52.01	52.16	52.04	51.99	51.85	51.96	51.21	50.86	51.56	
7	52.25	52.24	52.02	52.16	52.04	51.97	51.80	51.38	51.23	50.89	51.59	
8	52.25	52.26	52.04	52.16	52.04	51.98	51.80	51.25	51.24	50.93	51.63	
9	52.27	52.28	52.04	52.12	52.05	51.98	51.81	51.24	51.26	50.98	51.66	
10	52.28	52.28	52.05	52.14	52.06	51.99	51.81	51.18	51.15	51.02	51.68	
11	52.29	52.28	52.07	52.15	52.07	51.99	51.82	51.15	51.14	51.08	51.68	
12	52.29	52.29	52.08	52.15	52.08	51.97	51.85	51.14	51.16	51.12	51.70	
13	52.29	52.29	52.08	52.08	52.07	51.95	51.84	51.12	51.18	51.11	51.72	
14	52.29	52.28	52.10	52.08	52.08	51.94	51.86	51.14	51.21	50.90	51.75	
15	52.31	52.28	52.11	51.97	52.05	51.94	51.86	51.16	51.24	50.84	51.77	
16	52.31	52.29	52.11	51.94	52.05	51.95	51.87	51.17	50.95	50.81	51.80	
17	52.32	52.28	52.12	51.94	52.05	51.95	51.88	50.91	50.85	50.81	51.82	
18	52.33	52.21	52.13	51.94	52.07	51.93	51.80	50.77	50.86	50.86	51.83	
19	52.33	52.21	52.14	51.96	52.07	51.93	51.91	50.69	50.90	50.89	51.85	
20	52.34	52.21	52.15	51.97	52.07	51.91	51.92	50.67	50.97	50.94	51.86	
21	52.34	51.80	52.15	51.98	51.91	51.89	51.93	50.73	50.99	50.99	51.88	
22	52.34	51.77	52.15	51.99	51.84	51.91	51.95	50.76	50.61	51.04	51.89	
23	52.23	51.80	52.15	52.00	51.85	51.89	51.96	50.67	50.60	51.09	51.92	
24	52.26	51.83	52.14	52.01	51.86	51.79	51.97	50.68	50.60	51.14	51.94	
25	52.27	51.87	52.14	52.01	51.86	51.78	51.98	50.71	50.54	51.17	51.95	
26	52.27	51.90	52.15	52.01	51.87	51.78	51.99	50.77	50.55	51.19	51.96	
27	52.26	51.93	52.12	52.01	51.92	51.77	52.01	50.81	50.58	51.21	51.97	
28	52.26	51.94	52.12	52.02	51.94	51.77	51.98	50.86	50.63	51.28	51.99	
29	52.27	51.87	52.12	52.03	---	51.78	51.98	50.91	50.64	51.32	52.00	
30	52.27	51.81	52.12	52.02	---	51.78	51.99	50.92	50.66	51.35	52.02	
31	52.27	---	52.13	52.02	---	51.81	---	---	---	51.36	52.03	
MEAN	52.28	52.13	52.08	52.06	52.00	51.91	51.89	51.16	50.94	51.01	51.77	
MAX	52.34	52.30	52.15	52.16	52.08	51.99	52.01	51.99	51.26	51.36	52.03	
MIN	52.23	51.77	51.92	51.94	51.84	51.77	51.80	50.67	50.54	50.71	51.40	

WTR YR 1989: HIGHEST 50.54, JUNE 25; LOWEST 52.34, OCTOBER 20, 21, 22.

LANCASTER COUNTY

400746075584301. Local number, LN 1645--Continued

WATER-QUALITY RECORDS

REMARKS.--Water-quality samples bailed adjacent to major water-bearing zone.
 COOPERATION.--Chemical samples analyzed by Pa. Department of Environmental Resources, Bureau of Laboratories
 except for the pesticide samples which were analyzed by the U.S. Geological Survey.
 PERIOD OF RECORD.--Water years 1983 to September 1989 (discontinued).

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET)	SPE- CIFIC CON- DUCT- ANCE (μ S/CM)	NITRO- GEN, NO ₂ +NO ₃ DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)
OCT							
18...	0920	52.30	586	12.0	--	--	--
NOV							
15...	0935	52.28	603	13.0	--	--	--
22...	0900	51.77	660	11.0	--	--	--
DEC							
14...	1105	52.08	620	12.0	--	--	--
JAN							
23...	1225	52.03	527	12.0	--	--	--
FEB							
27...	1150	51.93	554	12.0	--	--	--
MAR							
13...	1625	51.93	621	10.0	--	--	--
20...	1345	51.92	640	12.0	--	--	--
APR							
27...	1020	51.97	600	12.0	--	--	--
MAY							
08...	1340	51.22	593	13.0	--	--	--
09...	1325	51.24	596	13.0	--	--	--
11...	1115	51.19	636	16.0	--	--	--
13...	1020	51.15	699	16.0	--	--	--
15...	1240	51.18	624	14.0	--	--	--
17...	0945	50.92	745	16.0	--	--	--
24...	0905	50.78	690	12.0	--	--	--
30...	1310	50.88	660	13.0	--	--	--
JUN							
30...	0825	50.64	530	14.0	--	--	--
JUL							
25...	1015	51.13	594	14.0	--	--	--
SEP							
11...	1145	51.99	660	13.0	0.36	0.020	0.040

PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET)	ALA- CHLOR TOTAL RECOVER (μ G/L)	ATRA- ZINE, TOTAL (μ G/L)	CYAN- AZINE TOTAL (μ G/L)	METOLA- CHLOR IN WHOLE WATER (μ G/L)	PRO- PAZINE TOTAL (μ G/L)	SIMA- ZINE TOTAL (μ G/L)	TOX- APHENE, TOTAL (μ G/L)
OCT									
18...	0920	52.30	0.10	0.40	<0.10	<0.10	<0.10	<0.10	--
APR									
27...	1020	51.97	<0.05	0.60	<0.30	<0.10	<0.30	<0.30	<1
JUL									
07...	1300	50.86	<0.05	<0.30	<0.30	<0.10	<0.30	<0.30	<1
25...	1015	51.13	<0.10	<0.30	<0.30	<0.10	<0.30	<0.30	<1
SEP									
11...	1145	51.99	<0.10	1.4	<0.30	<0.10	<0.30	<0.30	<1

(<) Actual value is known to be less than the value shown.

LANCASTER COUNTY

400744075584701. Local number, LN 1646.

LOCATION.--Lat 40°07'44", long 75°58'47", Hydrologic Unit 02050306, 1.1 mi southeast of Churchtown.

Owner: U.S. Geological Survey.

QUIFER.--Dolomite of Zooks Corner Formation of Cambrian age.

WATER-LEVEL RECORDS

WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 125 ft, cased to 99 ft, open hole.

INSTRUMENTATION.--Continuous strip-chart recorder.

DATUM.--Elevation of land surface is 503 ft above National Geodetic Vertical Datum of 1929. Measuring point:

Top of plywood cover, 2.6 ft above land-surface datum.

PERIOD OF RECORD.--November 1982 to August 1989 (discontinued).

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 69.47 ft below land-surface datum, Dec. 15, 1983; lowest, 74.21 ft below land-surface datum, Oct. 18, 19, 20, 21, 1988.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	74.12	73.73	73.40	73.56	73.45	73.37	73.27	73.47	72.43	72.07	72.82	
2	74.13	73.73	73.41	73.56	73.45	73.38	73.30	73.43	72.48	72.13	72.84	
3	74.11	73.74	73.43	73.56	73.46	73.39	73.31	73.44	72.53	72.20	72.88	
4	74.13	73.75	73.46	73.56	73.45	73.40	73.31	73.46	72.58	72.27	72.93	
5	74.14	73.74	73.47	73.57	73.46	73.41	73.31	73.47	72.63	72.31	72.97	
6	74.14	73.69	73.48	73.58	73.46	73.41	73.31	73.41	72.64	72.26	72.99	
7	74.14	73.68	73.50	73.58	73.46	73.39	73.26	72.91	72.65	72.23	73.02	
8	74.15	73.71	73.51	73.59	73.47	73.40	73.26	72.73	72.66	72.28	73.05	
9	74.15	73.72	73.52	73.55	73.50	73.40	73.27	72.68	72.69	72.33	73.08	
10	74.16	73.73	73.54	73.56	73.50	73.41	73.27	72.64	72.58	72.38	73.11	
11	74.17	73.73	73.55	73.56	73.51	73.41	73.27	72.60	72.54	72.43	73.12	
12	74.17	73.74	73.56	73.56	73.50	73.39	73.29	72.58	72.56	72.47	73.14	
13	74.19	73.74	73.57	73.51	73.51	73.38	73.29	72.56	72.61	72.47	73.16	
14	74.20	73.73	73.61	73.50	73.51	73.38	73.30	72.55	72.64	72.44	73.18	
15	74.20	73.76	73.62	73.46	73.51	73.38	73.31	72.55	72.66	72.45	73.20	
16	74.20	73.78	73.62	73.38	73.51	73.37	73.31	72.60	72.45	72.45	73.22	
17	74.20	73.78	73.63	73.35	73.51	73.38	73.33	72.51	72.22	72.44	73.25	
18	74.21	73.71	73.64	73.36	73.51	73.39	73.34	72.24	72.27	72.44	73.27	
19	74.21	73.70	73.65	73.37	73.51	73.39	73.36	72.12	72.37	72.44	73.28	
20	74.21	73.70	73.66	73.39	73.50	73.37	73.37	72.06	72.47	72.44	73.31	
21	74.21	73.30	73.66	73.40	73.52	73.36	73.38	72.03	72.54	72.44	73.33	
22	74.08	73.28	73.66	73.41	73.44	73.33	73.39	72.07	72.63	72.44	73.34	
23	74.13	73.33	73.65	73.42	73.34	73.33	73.40	72.12	72.00	72.44	73.35	
24	74.14	73.37	73.65	73.41	73.32	73.33	73.42	72.07	71.99	72.48	73.37	
25	74.15	73.41	73.64	73.42	73.31	73.33	73.43	72.05	71.99	72.53	73.39	
26	74.16	73.44	73.65	73.42	73.31	73.25	73.44	72.07	71.96	72.62	73.39	
27	73.71	73.45	73.54	73.44	73.35	73.22	73.47	72.12	71.95	72.65	73.40	
28	73.71	73.42	73.53	73.45	73.35	73.21	73.45	72.16	71.95	72.69	73.42	
29	73.71	73.37	73.54	73.45	---	73.22	73.46	72.21	71.99	72.73	73.43	
30	73.72	73.38	73.54	73.44	---	73.22	73.46	72.37	72.01	72.77	73.43	
31	73.73	---	73.56	73.44	---	73.23	---	72.39	---	72.79	73.45	
MEAN	74.09	73.61	73.56	73.48	73.45	73.35	73.34	72.57	72.39	72.44	73.20	
MAX	74.21	73.78	73.66	73.59	73.52	73.41	73.47	73.47	72.69	72.79	73.45	
MIN	73.71	73.28	73.40	73.35	73.31	73.21	73.26	72.03	71.95	72.07	72.82	

WTR YR 1989: HIGHEST 71.95, JUNE 27, 28; LOWEST 74.21, OCTOBER 18, 19, 20, 21.

LANCASTER COUNTY

400744075584701. Local number, LN 1646--Continued

WATER-QUALITY RECORDS

REMARKS.--Water-quality samples bailed adjacent to major water-bearing zone.
 COOPERATION.--Chemical samples analyzed by Pa. Department of Environmental Resources, Bureau of Laboratories
 except for the pesticide samples which were analyzed by the U.S. Geological Survey.
 PERIOD OF RECORD.--Water years 1983 to September 1989 (discontinued).

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET)	SPE- CIFIC CON- DUCT- ANCE (μ S/CM)	NITRO- GEN, NO ₂ +NO ₃ DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)
OCT							
18...	0945	73.79	548	8.40	0.28	--	--
NOV							
15...	0915	73.76	583	9.70	<0.20	--	--
22...	0915	73.26	631	9.70	0.39	--	--
DEC							
14...	1120	73.57	615	6.40	<0.20	--	--
JAN							
23...	1240	73.44	577	10.0	0.45	--	--
FEB							
27...	1130	73.34	541	9.20	0.43	--	--
MAR							
13...	1615	73.34	627	8.80	0.40	--	--
20...	1400	73.36	673	9.70	0.34	--	--
APR							
27...	1000	73.25	592	8.80	0.57	--	--
MAY							
08...	1350	72.63	574	11.0	0.33	--	--
09...	1340	72.68	580	13.0	0.15	--	--
11...	1130	72.60	565	9.50	0.40	--	--
15...	1250	72.59	559	9.20	0.49	--	--
17...	0935	72.38	590	9.70	0.60	--	--
30...	1300	72.40	595	9.90	0.43	--	--
JUN							
30...	0810	71.98	512	11.0	0.24	--	--
JUL							
07...	1315	72.40	595	9.90	9.4	--	--
25...	0950	72.60	582	12.0	0.47	--	--
SEP							
11...	1205	73.50	575	8.30	0.41	0.050	0.020

PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET)	ALA- CHLOR TOTAL RECOVER (μ G/L)	ATRA- ZINE, TOTAL (μ G/L)	CYAN- AZINE TOTAL (μ G/L)	METOLA- CHLOR IN WHOLE WATER (μ G/L)	PRO- PAZINE TOTAL (μ G/L)	SIMA- ZINE TOTAL (μ G/L)	TOX- APHENE, TOTAL (μ G/L)
OCT									
18...	0945	73.79	0.10	0.40	1.0	<0.01	<0.10	<0.10	--
APR									
27...	1000	73.25	<0.05	0.65	0.44	<0.10	<0.30	<0.30	<1
JUL									
07...	1315	72.40	0.10	<0.30	<0.30	<0.10	<0.30	<0.30	<1
25...	0950	72.60	<0.10	<0.30	<0.30	<0.10	<0.30	<0.30	<1
SEP									
11...	1205	73.50	<0.10	0.60	1.0	<0.10	<0.30	<0.30	<1

(<) Actual value is known to be less than the value shown.

LANCASTER COUNTY

400741075585101. Local number, LN 1650.

LOCATION.--Lat 40°07'41", long 75°58'51", Hydrologic Unit 02050306, 1.1 mi southeast of Churchtown.

Owner: U.S. Geological Survey.

AQUIFER.--Dolomite of Zooks Corner Formation of Cambrian age.

WATER-LEVEL RECORDS

WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 125 ft, cased to 90 ft, open hole.

INSTRUMENTATION.--Continuous strip-chart recorder.

DATUM.--Elevation of land surface is 505 ft above National Geodetic Vertical Datum of 1929. Measuring point:

Top of plywood cover, 3.3 ft above land-surface datum.

PERIOD OF RECORD.--November 1982 to August 1989 (discontinued).

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 70.14 ft below land-surface datum, Apr. 19, 1983; lowest, 74.57 ft below land-surface datum, Nov. 5, 1986.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	74.11	74.20	73.85	74.05	73.88	73.85	73.59	73.76	72.36	72.03	72.79	
2	74.12	74.21	73.87	74.06	73.88	73.85	73.61	73.74	72.42	72.09	72.83	
3	74.11	74.22	73.89	74.06	73.89	73.86	73.63	73.74	72.47	72.17	72.86	
4	74.12	74.22	73.90	74.07	73.90	73.86	73.62	73.75	72.53	72.24	72.92	
5	74.13	74.22	73.92	74.07	73.89	73.87	73.63	73.76	72.59	72.26	72.98	
6	74.14	74.15	73.93	74.08	73.89	73.87	73.63	73.55	72.63	72.22	73.02	
7	74.15	74.16	73.94	74.10	73.90	73.85	73.62	73.13	72.65	72.25	73.06	
8	74.15	74.18	73.95	74.09	73.90	73.86	73.57	72.96	72.70	72.30	73.10	
9	74.16	74.20	73.96	74.05	73.91	73.86	73.58	72.90	72.72	72.36	73.14	
10	74.17	74.20	73.97	74.06	73.91	73.86	73.58	72.85	72.62	72.41	73.16	
11	74.18	74.21	73.98	74.07	73.91	73.86	73.59	72.77	72.64	72.48	73.20	
12	74.19	74.22	74.00	74.07	73.92	73.85	73.60	72.73	72.65	72.53	73.21	
13	74.20	74.22	74.00	74.03	73.92	73.84	73.60	72.70	72.69	72.54	73.25	
14	74.21	74.21	74.02	74.01	73.92	73.83	73.62	72.70	72.71	72.34	73.27	
15	74.22	74.21	74.04	74.01	73.92	73.82	73.62	72.70	72.62	72.26	73.30	
16	74.23	74.21	74.05	73.91	73.89	73.83	73.62	72.69	72.44	72.21	73.34	
17	74.23	74.22	74.05	73.87	73.90	73.83	73.63	72.49	72.32	72.16	73.37	
18	74.25	74.12	74.07	73.87	73.90	73.83	73.65	72.32	72.29	72.18	73.40	
19	74.26	74.13	74.08	73.87	73.91	73.83	73.66	72.19	72.34	72.22	73.42	
20	74.26	74.13	74.09	73.89	73.92	73.82	73.68	72.11	72.39	72.27	73.45	
21	74.26	74.12	74.10	73.90	73.81	73.84	73.69	72.07	72.43	72.31	73.48	
22	74.15	73.82	74.10	73.90	73.71	73.83	73.70	72.11	72.01	72.38	73.51	
23	74.18	73.73	74.10	73.92	73.70	73.83	73.71	72.14	71.98	72.43	73.51	
24	74.18	73.71	74.08	73.93	73.71	73.84	73.73	72.09	71.95	72.48	73.53	
25	74.20	73.75	74.09	73.94	73.71	73.83	73.74	72.04	71.90	72.53	73.55	
26	74.22	73.78	74.11	73.93	73.71	73.76	73.76	72.03	71.87	72.53	73.57	
27	74.16	73.80	74.02	73.89	73.84	73.69	73.78	72.06	71.88	72.57	73.58	
28	74.17	73.81	74.03	73.87	73.85	73.69	73.74	72.11	71.93	72.63	73.60	
29	74.18	73.83	74.04	73.87	---	73.65	73.74	72.16	71.95	72.68	73.63	
30	74.20	73.84	74.04	73.87	---	73.63	73.75	72.19	71.97	72.72	73.63	
31	74.19	---	74.05	73.86	---	73.64	---	72.30	---	72.74	---	
MEAN	74.18	74.07	74.01	73.97	73.86	73.81	73.66	72.67	72.36	72.37	73.29	
MAX	74.26	74.22	74.11	74.10	73.92	73.87	73.78	72.76	72.72	72.74	73.63	
MIN	74.11	73.71	73.85	73.86	73.70	73.63	73.57	72.03	71.87	72.03	72.79	

WTR YR 1989: HIGHEST 71.87, JUNE 26; LOWEST 74.26, OCTOBER 19, 20, 21.

LANCASTER COUNTY

400741075585101. Local number, LN 1650--Continued

WATER-QUALITY RECORDS

REMARKS.--Water-quality samples bailed adjacent to major water-bearing zone.
 COOPERATION.--Chemical samples analyzed by Pa. Department of Environmental Resources, Bureau of Laboratories.
 PERIOD OF RECORD.--Water years 1983 to September 1989 (discontinued).

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET)	SPE- CIFIC CON- DUCT- ANCE (μ S/CM)	NITRO- GEN, NO ₂ +NO ₃ DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)
OCT							
18...	1010	74.16	525	12.0	--	--	--
NOV							
15...	0900	74.14	570	11.0	--	--	--
22...	0930	73.64	605	11.0	--	--	--
DEC							
14...	1135	78.88	542	11.0	--	--	--
JAN							
23...	1255	73.94	569	13.0	--	--	--
FEB							
27...	1115	73.78	528	8.90	--	--	--
MAR							
13...	1600	73.80	567	11.0	--	--	--
20...	1415	73.80	580	9.70	--	--	--
APR							
27...	0950	73.59	547	10.0	--	--	--
MAY							
06...	1400	73.20	535	11.0	--	--	--
09...	1400	72.90	532	11.0	--	--	--
11...	1140	72.75	524	9.90	--	--	--
13...	1000	72.70	555	8.30	--	--	--
15...	1305	72.70	486	8.80	--	--	--
17...	0930	72.73	530	8.80	--	--	--
24...	0920	72.12	530	9.20	--	--	--
30...	1255	72.32	540	8.80	--	--	--
JUN							
30...	0755	71.94	480	10.0	--	--	--
JUL							
25...	0940	72.50	554	11.0	--	--	--
SEP							
11...	0940	73.76	455	4.50	0.57	0.060	0.020

LANCASTER COUNTY

400739075585101. Local number, LN 1651.

LOCATION.--Lat 40°07'39", long 75°58'51", Hydrologic Unit 02050306, 1.1 mi southeast of Churchtown.

Owner: U.S. Geological Survey.

AQUIFER.--Dolomite of Zooks Corner Formation of Cambrian age.

WATER-LEVEL RECORDS

WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 105 ft, cased to 72 ft, open hole.

INSTRUMENTATION.--Continuous strip-chart recorder.

DATUM.--Elevation of land surface is 505 ft above National Geodetic Vertical Datum of 1929. Measuring point:

Top of plywood cover, 3.3 ft above land-surface datum.

PERIOD OF RECORD.--November 1982 to August 1989 (discontinued).

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 62.65 ft below land-surface datum, Apr. 19, 1983; lowest, 72.28 ft below land-surface datum, Mar. 24, 1985.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	69.97	70.18	69.77	69.96	69.92	69.81	69.72	69.54	65.85	65.36	66.98	
2	69.97	70.19	69.77	69.96	69.94	69.81	69.72	69.54	65.94	65.42	67.05	
3	69.99	70.20	69.77	69.98	69.95	69.80	69.71	69.54	66.04	65.51	67.10	
4	70.00	70.20	69.77	69.99	69.96	69.81	69.68	69.54	66.14	65.59	67.18	
5	70.01	70.22	69.77	70.00	69.96	69.81	69.65	69.54	66.24	65.67	67.29	
6	70.02	70.22	69.77	70.02	69.96	69.80	69.60	69.54	66.34	65.70	67.39	
7	70.02	70.22	69.78	70.03	69.97	69.80	69.56	69.39	66.40	65.72	67.52	
8	70.03	70.22	69.78	70.03	69.98	69.80	69.55	68.63	66.50	65.78	67.59	
9	70.04	70.22	69.78	70.03	69.98	69.80	69.54	67.99	66.50	65.89	67.71	
10	70.05	70.22	69.78	70.03	69.98	69.80	69.54	67.73	66.51	65.96	67.80	
11	70.07	70.22	69.79	70.04	70.00	69.80	69.54	67.29	66.49	66.09	67.86	
12	70.09	70.23	69.79	70.04	70.01	69.80	69.55	67.27	66.49	66.17	67.99	
13	70.11	70.23	69.80	70.04	70.01	69.79	69.55	67.25	66.50	66.22	68.11	
14	70.12	70.24	69.82	70.04	70.02	69.78	69.55	67.24	66.54	66.15	68.22	
15	70.13	70.27	69.82	70.04	70.02	69.77	69.54	67.24	66.60	66.04	68.33	
16	70.14	70.27	69.83	70.04	70.03	69.76	69.56	67.24	66.53	65.94	68.42	
17	70.15	70.28	69.83	70.01	70.03	69.75	69.57	67.23	66.33	65.86	68.55	
18	70.16	70.28	69.84	69.99	70.03	69.75	69.58	67.20	66.27	65.84	68.71	
19	70.18	70.28	69.86	69.98	70.04	69.74	69.59	66.89	66.15	65.91	68.83	
20	70.19	70.27	69.86	69.96	70.05	69.72	69.59	66.70	66.09	65.97	68.89	
21	70.19	70.14	69.88	69.95	70.03	69.72	69.60	66.69	66.13	66.07	68.93	
22	70.05	69.96	69.90	69.95	69.97	69.71	69.60	66.68	66.17	66.16	68.98	
23	70.06	69.82	69.91	69.94	69.93	69.70	69.60	66.73	66.10	66.24	69.01	
24	70.10	69.77	69.92	69.94	69.89	69.68	69.60	66.80	65.90	66.32	69.04	
25	70.14	69.76	69.93	69.94	69.86	69.67	69.60	66.89	65.64	66.39	69.07	
26	70.16	69.76	69.94	69.94	69.82	69.65	69.61	66.99	65.51	66.50	69.09	
27	70.18	69.76	69.92	69.92	69.81	69.63	69.60	67.14	65.41	66.57	69.12	
28	70.17	69.75	69.93	69.92	69.81	69.63	69.53	67.31	65.37	66.63	69.15	
29	70.18	69.76	69.93	69.92	---	69.64	69.53	67.48	65.38	66.78	69.19	
30	70.18	69.77	69.93	69.92	---	69.67	69.54	67.65	65.34	66.90	69.22	
31	70.18	---	69.94	69.92	---	69.70	---	65.80	---	66.94	69.28	
MEAN	70.10	70.10	69.84	69.98	69.96	69.75	69.59	67.70	66.11	66.07	68.31	
MAX	70.19	70.28	69.94	70.04	70.05	69.81	69.72	69.54	66.60	66.94	69.28	
MIN	69.97	69.75	69.77	69.92	69.81	69.63	69.53	65.80	65.34	65.36	66.98	

WTR YR 1989: HIGHEST 65.34, JUNE 30; LOWEST 70.28, NOVEMBER 17, 18, 19.

LANCASTER COUNTY

400739075585101. Local number, LN 1651--Continued

WATER-QUALITY RECORDS

REMARKS.--Water-quality samples bailed adjacent to major water-bearing zone.

COOPERATION.--Chemical samples analyzed by Pa. Department of Environmental Resources, Bureau of Laboratories.

PERIOD OF RECORD.--Water years 1983 to September 1989 (discontinued).

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET)	SPE- CIFIC CON- DUCT- ANCE (μ S/CM)	NITRO- GEN, NO ₂ +NO ₃ DIS- SOLVED (MG/L AS N)
OCT				
18...	1025	69.99	631	13.0
NOV				
15...	0845	70.26	620	13.0
22...	0945	69.79	677	13.0
DEC				
14...	1150	69.75	667	13.0
JAN				
23...	1310	69.95	629	13.0
FEB				
27...	1100	69.79	647	13.0
MAR				
13...	1530	69.78	698	13.0
20...	1425	69.74	674	12.0
APR				
27...	0940	69.52	615	12.0
MAY				
08...	1425	69.07	658	14.0
09...	1415	67.71	699	14.0
11...	1155	67.28	465	9.90
13...	0945	67.29	649	13.0
15...	1315	65.45	556	14.0
17...	0915	65.42	690	13.0
24...	0925	64.94	650	14.0
30...	1240	65.82	655	14.0
JUN				
30...	0740	65.32	564	15.0
JUL				
25...	0915	66.43	613	15.0
SEP				
11...	1300	70.33	660	14.0

LANCASTER COUNTY

401149076105501. Local number, LN 1669.

LOCATION.--Lat 40°11'49", long 76°10'55", Hydrologic Unit 02050306, 1.6 mi north of Ephrata.

Owner: U.S. Geological Survey.

AQUIFER.--Dolomite of Snitz Creek Formation of Cambrian age.

WATER-LEVEL RECORDS

WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 100 ft, cased to 11 ft, open hole.

INSTRUMENTATION.--Continuous strip-chart recorder.

DATUM.--Elevation of land surface is 358 ft above National Geodetic Vertical Datum of 1929. Measuring point:

Top of shelter platform, 1.0 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 10.29 ft below land-surface datum, May 18, 1988; lowest, 19.61 ft below land-surface datum, Aug. 18, 1989.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18.64	18.87	17.23	18.07	17.63	16.64	15.27	18.38	15.36	16.83	---	18.13
2	18.65	18.91	17.33	18.08	17.70	16.82	15.42	17.86	15.35	16.99	---	18.17
3	18.67	18.81	17.39	18.11	17.70	17.00	15.56	17.89	15.37	17.10	---	18.20
4	18.71	18.66	17.47	18.23	17.77	17.12	15.66	17.93	15.40	17.14	---	18.22
5	18.74	18.71	17.54	18.35	17.79	17.18	15.87	17.95	15.39	16.75	---	18.24
6	18.75	18.80	17.59	18.32	17.82	17.21	16.09	17.64	15.42	16.50	---	18.25
7	18.79	18.80	17.70	18.37	17.92	17.29	16.40	---	15.48	16.72	---	18.26
8	18.80	18.87	17.77	18.35	17.93	17.35	16.55	---	15.49	16.85	---	18.26
9	18.83	18.90	17.81	17.92	18.11	17.40	16.71	---	15.59	16.99	---	18.28
10	18.88	18.94	17.91	17.75	18.07	17.46	16.88	---	15.66	17.17	---	18.37
11	18.96	18.97	17.99	17.76	18.09	17.41	17.08	---	15.71	17.30	---	18.42
12	18.98	19.04	18.04	17.76	18.11	17.27	17.20	---	15.75	17.30	---	18.46
13	19.00	19.13	18.13	17.43	18.13	17.17	17.33	---	---	16.56	17.03	18.46
14	19.07	19.22	18.21	17.25	18.03	17.05	17.45	---	---	---	17.98	18.47
15	19.14	19.30	18.29	16.97	17.85	16.98	17.57	---	---	---	18.37	18.51
16	19.25	19.55	18.33	16.36	17.86	17.01	17.72	---	---	---	18.95	18.57
17	19.33	18.90	18.41	15.91	17.87	17.10	17.81	---	---	---	19.47	18.57
18	19.35	18.60	18.44	16.08	17.93	17.04	17.88	---	---	---	19.61	18.40
19	19.34	18.44	18.47	16.29	17.95	17.11	17.97	---	---	---	19.55	18.17
20	18.77	18.33	18.49	16.53	17.13	17.15	18.07	---	---	---	18.52	18.11
21	18.68	18.20	18.47	16.65	16.14	17.17	18.16	---	---	---	18.81	17.81
22	18.64	18.09	18.40	16.72	15.98	17.08	18.23	---	---	---	---	17.40
23	18.72	17.96	18.31	16.84	16.10	17.15	18.34	---	---	---	---	17.42
24	18.83	17.76	18.25	16.90	16.23	17.18	18.43	---	---	---	---	17.24
25	18.87	17.39	18.22	16.99	16.28	---	18.51	---	---	---	---	17.17
26	---	17.14	18.19	17.06	16.43	---	18.60	---	---	---	---	17.27
27	18.53	17.03	17.89	17.35	16.18	---	18.68	---	---	---	---	17.17
28	18.60	17.00	17.94	17.44	16.41	---	18.58	---	---	---	---	17.05
29	18.73	17.09	17.97	17.49	---	---	18.60	---	---	---	---	17.16
30	18.78	17.16	17.98	17.49	---	---	18.62	---	16.85	---	---	17.25
31	18.80	---	18.03	17.54	---	---	---	---	---	---	18.05	---
MEAN	18.86	18.42	18.01	17.37	17.40	17.14	17.37	17.94	15.60	16.94	18.63	17.98
MAX	19.35	19.55	18.49	18.37	18.13	17.46	18.68	18.38	16.85	17.30	19.61	18.57
MIN	18.53	17.00	17.23	15.91	15.98	16.64	15.27	17.64	15.35	16.50	17.03	17.05

WTR YR 1989: HIGHEST 15.27, APRIL 1; LOWEST 19.61, AUGUST 18.

LANCASTER COUNTY

401149076105501. Local number, LN 1669--Continued

WATER-QUALITY RECORDS

REMARKS.--Water-quality samples bailed from recovering water after well pumped dry.
 COOPERATION.--Chemical samples analyzed by Pa. Department of Environmental Resources, Bureau of Laboratories.
 PERIOD OF RECORD.--Water years 1985 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET)	SPE- CIFIC CON- DUCT- ANCE (μ S/CM)	NITRO- GEN, NO ₂ +NO ₃ DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N)
OCT					
17...	1105	19.01	665	11.0	0.36
NOV					
15...	1045	18.50	640	7.60	<0.20
DEC					
14...	1415	17.56	620	9.10	--
JAN					
24...	1000	16.98	618	9.20	--
FEB					
27...	1210	16.09	646	9.70	--
MAR					
23...	1100	17.13	640	11.0	--
APR					
28...	1300	18.61	687	8.80	--
MAY					
30...	1130	16.18	710	10.0	--
JUN					
29...	1040	20.91	635	13.0	0.39
AUG					
28...	1400	16.18	663	10.0	--

(<) Actual value is known to be less than the value shown.

LANCASTER COUNTY

401156076105701. Local number, LN 1670.

LOCATION.--Lat 40°11'56", long 76°10'57", Hydrologic Unit 02050306, 1.5 mi north of Ephrata.

Owner: U.S. Geological Survey

AQUIFER.--Dolomite of Snitz Creek Formation of Cambrian age.

WATER-LEVEL RECORDS

WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 75 ft, cased to 10 ft, open hole.

INSTRUMENTATION.--Continuous strip-chart recorder.

DATUM.--Elevation of land surface is 367 ft above National Geodetic Vertical Datum of 1929. Measuring point:

Top of shelter platform, 3.5 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 8.57 ft below land-surface datum, May 7, 1989; lowest, 19.70 ft below land-surface datum, Dec. 12, 1984.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.48	15.59	10.56	13.24	11.12	10.49	10.46	12.39	10.27	---	10.32	12.25
2	14.60	15.63	10.59	13.28	11.21	10.52	10.49	12.38	10.31	---	10.38	12.32
3	14.73	15.70	10.60	13.34	11.33	10.59	10.61	12.41	10.34	---	10.39	12.39
4	14.81	15.70	10.68	13.52	11.38	10.64	10.70	12.47	10.42	---	10.42	12.43
5	14.95	15.66	10.68	13.59	11.44	10.72	10.69	12.51	10.47	---	10.28	12.48
6	15.01	15.71	10.69	13.70	11.55	10.81	10.73	12.28	10.56	---	10.27	12.52
7	15.08	15.79	10.81	13.73	11.67	10.94	10.73	8.57	10.61	---	10.23	12.56
8	15.13	15.80	10.85	13.72	11.79	11.02	10.81	9.20	10.63	---	10.44	12.61
9	15.20	15.83	10.91	13.72	11.86	11.06	10.85	9.69	10.65	---	10.57	12.65
10	15.23	15.78	10.97	13.73	11.94	11.12	10.86	9.88	9.16	---	10.68	12.69
11	15.35	15.90	11.08	13.53	12.02	11.13	10.91	9.93	9.69	---	10.81	12.78
12	15.43	15.93	11.13	13.33	12.21	11.19	10.95	9.88	9.84	---	10.89	12.84
13	15.51	15.85	11.24	12.99	12.25	11.05	11.01	9.93	9.94	---	10.99	12.90
14	15.54	15.79	11.33	12.27	12.35	10.70	11.04	10.04	10.05	---	11.05	12.94
15	15.61	15.85	---	11.63	12.44	10.49	11.15	10.09	10.08	---	11.14	13.03
16	15.66	15.82	---	10.10	12.53	10.51	11.22	10.11	9.11	---	11.22	13.06
17	15.70	15.78	---	10.15	12.55	10.51	11.32	10.12	9.65	---	11.32	13.09
18	15.78	15.83	---	10.24	12.57	10.62	11.43	8.74	9.83	---	11.43	13.08
19	15.85	15.80	---	10.35	12.64	10.66	11.54	9.75	9.95	---	11.49	13.09
20	15.92	15.69	---	10.45	12.67	10.68	11.60	9.91	10.01	---	11.56	12.81
21	15.93	11.00	---	10.51	12.65	10.77	11.67	10.01	10.09	---	11.64	12.44
22	15.80	10.07	---	10.50	12.45	10.86	11.77	10.08	10.13	---	11.75	12.06
23	15.84	10.30	---	10.56	10.19	10.90	11.86	10.11	10.16	---	11.83	11.39
24	15.84	10.39	---	10.60	10.06	---	11.93	10.13	10.19	---	11.91	11.02
25	15.85	10.44	---	10.68	10.13	---	12.03	9.96	10.23	9.99	12.01	10.79
26	15.91	10.46	---	10.64	10.25	---	12.13	10.02	10.29	9.99	12.07	10.59
27	15.59	10.47	12.84	10.70	10.41	---	12.22	10.13	10.34	9.47	12.36	10.39
28	15.60	10.48	12.99	10.78	10.45	---	12.16	10.16	10.42	9.62	12.11	10.20
29	15.62	10.67	13.03	10.82	---	---	12.24	10.22	10.49	10.06	12.07	10.10
30	15.64	10.54	13.05	10.93	---	---	12.36	10.24	---	10.22	12.17	10.01
31	15.66	---	13.17	11.00	---	---	---	10.30	---	10.31	12.21	---
MEAN	15.45	14.01	11.43	11.88	11.65	10.78	11.32	10.38	10.13	9.95	11.23	12.12
MAX	15.93	15.93	13.17	13.73	12.67	11.19	12.36	12.51	10.65	10.31	12.36	13.09
MIN	14.48	10.07	10.56	10.10	10.06	10.49	10.46	8.57	9.11	9.47	10.23	10.01

WTR YR 1989: HIGHEST 8.57, MAY 7; LOWEST 15.93, OCTOBER 21, NOVEMBER 12.

LANCASTER COUNTY

401156076105701. Local number, LN 1670--Continued

WATER-QUALITY RECORDS

REMARKS.--Water-quality samples bailed from recovering water after well pumped dry.
 COOPERATION.--Chemical samples analyzed by Pa. Department of Environmental Resources, Bureau of Laboratories.
 PERIOD OF RECORD.--Water years 1985 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET)	SPE- CIFIC CON- DUCT- ANCE (μ S/CM)	NITRO- GEN, NO ₂ +NO ₃ DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N)
DEC 14...	1340	11.30	1020	46.0	--
MAR 23...	1040	10.80	1140	53.0	--
JUN 29...	0910	15.77	1160	70.0	0.45

LANCASTER COUNTY

401148076110301. Local number, LN 1673.

LOCATION.--Lat 40°11'48", long 76°11'03", Hydrologic Unit 02050306, 1.5 mi north of Ephrata.

Owner: U.S. Geological Survey.

AQUIFER: Dolomite of Snitz Creek Formation of Cambrian age.

WATER-LEVEL RECORDS

WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 46 ft, cased to 14 ft, open hole.

INSTRUMENTATION.--Continuous strip-chart recorder.

DATUM.--Elevation of land surface is 382 ft above National Geodetic Vertical Datum of 1929. Measuring point:

Top of shelter platform, 2.2 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 3.21 ft below land-surface datum, May 6, 1989; lowest, 10.68 ft below land-surface datum, Sept. 5, 6, 7, 8, 1986.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.62	10.58	9.76	10.37	10.04	9.76	9.19	10.12	9.81	9.84	9.66	10.30
2	10.62	10.58	9.78	10.37	10.07	9.80	9.25	10.13	9.84	9.87	9.69	10.32
3	10.63	10.58	9.82	10.38	10.08	9.84	9.31	10.00	9.88	9.87	9.71	10.34
4	10.63	10.57	9.87	10.41	10.09	9.87	9.38	10.03	9.90	9.88	9.75	10.37
5	10.63	10.58	9.88	10.42	10.10	9.90	9.44	3.50	9.93	9.80	9.79	10.39
6	10.63	10.58	9.89	10.43	10.11	9.91	9.49	3.21	9.96	9.81	9.83	10.40
7	10.63	10.58	9.92	10.45	10.13	9.93	9.55	3.55	9.98	9.87	9.84	10.41
8	10.63	10.58	9.96	10.45	10.14	9.95	9.59	7.32	9.94	9.88	9.85	10.42
9	10.63	10.58	9.99	10.14	10.15	9.95	9.63	8.54	9.95	9.89	9.88	10.43
10	10.63	10.58	10.01	10.16	10.16	9.95	9.67	8.56	9.60	9.91	9.91	10.43
11	10.64	10.58	10.04	10.17	10.17	9.95	9.72	8.64	9.95	9.95	9.95	10.43
12	10.64	10.59	10.06	10.17	10.19	9.96	9.76	8.72	9.95	9.97	9.97	10.44
13	10.65	10.58	10.07	10.17	10.20	9.95	9.79	8.79	8.11	9.97	10.00	10.44
14	10.65	10.57	10.10	9.91	10.20	9.92	9.82	8.87	8.05	8.90	10.01	10.44
15	10.65	10.58	10.11	9.87	10.19	9.88	9.84	9.15	8.37	9.27	10.04	10.44
16	10.65	10.58	10.13	9.70	10.19	9.83	9.88	9.14	8.70	9.58	10.06	10.44
17	10.65	10.58	10.14	9.07	10.20	9.78	9.90	8.30	8.81	9.63	10.09	10.43
18	10.65	10.55	10.15	9.17	10.20	9.76	9.94	8.15	8.97	9.67	10.11	10.44
19	10.65	10.52	10.16	9.35	10.21	9.78	9.97	8.58	9.11	9.71	10.12	10.44
20	10.66	9.74	10.17	9.54	10.21	9.86	10.00	8.77	9.24	9.76	10.11	10.30
21	10.44	9.65	10.19	9.67	10.12	9.91	10.02	8.87	9.30	9.78	10.13	10.39
22	10.63	9.68	10.20	9.72	9.92	9.91	10.05	9.07	7.83	9.63	10.16	10.41
23	10.64	9.72	10.22	9.75	9.63	9.90	10.08	9.27	8.06	9.56	10.18	10.38
24	10.66	9.73	10.23	9.78	9.44	9.59	10.11	9.25	8.35	9.60	10.20	10.37
25	10.66	9.74	10.24	9.83	9.44	8.98	10.13	9.28	8.71	9.65	10.22	10.39
26	10.67	9.74	10.26	9.85	9.51	9.02	10.16	9.39	8.82	9.65	10.23	10.39
27	10.57	9.74	10.31	9.85	9.65	9.19	10.18	9.48	9.46	9.64	10.25	10.27
28	10.58	9.74	10.31	9.95	9.70	9.38	10.09	9.59	9.73	9.65	10.30	10.30
29	10.58	9.74	10.34	9.98	---	9.57	10.10	9.67	9.79	9.65	10.25	10.33
30	10.57	9.73	10.34	10.00	---	9.59	10.12	9.74	9.82	9.65	10.27	10.36
31	10.58	---	10.37	10.02	---	9.60	---	9.82	---	9.65	10.29	---
MEAN	10.62	10.26	10.10	9.97	10.02	9.75	9.81	8.56	9.26	9.71	10.03	10.39
MAX	10.67	10.59	10.37	10.45	10.21	9.96	10.18	10.13	9.98	9.97	10.30	10.44
MIN	10.44	9.65	9.76	9.07	9.44	8.98	9.19	3.21	7.83	8.90	9.66	10.27

WTR YR 1989: HIGHEST 3.21, MAY 6; LOWEST 10.67, OCTOBER 26.

LANCASTER COUNTY

401148076110301. Local number, LN 1673--Continued

WATER-QUALITY RECORDS

REMARKS.--Water-quality samples bailed from recovering water after well pumped dry.
 COOPERATION.--Chemical samples analyzed by Pa. Department of Environmental Resources, Bureau of Laboratories.
 PERIOD OF RECORD.--Water years 1985 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET)	SPE- CIFIC CON- DUCT- ANCE (μ S/CM)	NITRO- GEN, NO ₂ +NO ₃ DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N)
OCT					
17...	0855	10.64	855	30.0	0.34
NOV					
15...	0945	10.57	890	30.0	<0.20
DEC					
14...	1130	10.09	893	29.0	--
JAN					
24...	0850	9.82	906	29.0	--
FEB					
27...	1305	9.45	905	27.0	--
MAR					
23...	0915	9.88	805	31.0	--
APR					
28...	1100	10.03	736	32.0	--
MAY					
30...	1005	9.80	845	34.0	--
JUN					
29...	0815	9.75	885	32.0	0.35
JUL					
25...	0845	9.59	850	41.0	--
AUG					
28...	1330	10.48	891	37.0	--

(<) Actual value is known to be less than the value shown.

LANCASTER COUNTY

401152076110101. Local number, LN 1676.

LOCATION.--Lat 40°11'52", long 76°11'01", Hydrologic Unit 02050306, 1.5 mi north of Ephrata.

Owner: U.S. Geological Survey.

AQUIFER.--Dolomite of Snitz Creek Formation of Cambrian age.

WATER-LEVEL RECORDS

WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 40 ft, cased to 9 ft, open hole.

INSTRUMENTATION.--Continuous strip-chart recorder.

DATUM.--Elevation of land surface is 367 ft above National Geodetic Vertical Datum of 1929. Measuring point:

Top of shelter platform, 1.0 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 17.05 ft below land-surface datum, May 8, 1989; lowest, 24.82 ft below land-surface datum, Sept. 29, 1985.

DEPTH BELOW LAND SURFACE (WATER LEVEL)(FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24.34	24.45	23.72	24.17	23.79	23.45	22.67	23.61	22.18	22.40	22.43	23.74
2	24.37	24.46	23.74	24.18	23.82	23.50	22.64	23.59	22.30	22.46	22.51	23.75
3	24.37	24.46	23.77	24.19	23.84	23.55	22.64	23.47	22.38	22.53	22.59	23.77
4	24.38	24.47	23.82	24.22	23.86	23.60	22.73	23.51	22.43	22.54	22.64	23.79
5	24.39	24.47	23.85	24.24	23.88	23.62	22.80	23.53	22.51	22.49	22.68	23.80
6	24.40	24.47	23.87	24.24	23.90	23.64	22.83	22.89	22.56	22.43	22.74	23.82
7	24.41	24.47	23.89	24.26	23.93	23.68	22.89	20.31	22.59	22.51	22.80	23.83
8	24.42	24.47	23.92	24.27	23.94	23.70	22.94	17.05	22.51	22.57	22.89	23.85
9	24.44	24.47	23.95	24.17	23.96	23.72	23.01	18.39	22.54	22.61	22.98	23.88
10	24.44	24.48	23.97	24.17	23.97	23.73	23.04	19.31	21.75	22.66	23.03	23.90
11	24.45	24.49	24.00	24.17	23.98	23.73	23.09	19.89	20.97	22.71	23.09	23.91
12	24.46	24.50	24.02	24.16	24.01	23.70	23.13	20.33	21.00	22.75	23.13	23.92
13	24.47	24.51	24.04	23.93	24.03	23.65	23.18	20.60	21.36	22.75	23.17	23.94
14	24.48	24.51	24.04	23.90	24.03	23.61	23.23	20.86	21.73	21.92	23.22	23.95
15	24.49	24.51	24.05	23.58	24.03	23.57	23.26	21.10	21.99	22.03	23.26	23.97
16	24.49	24.51	24.07	23.15	24.03	23.57	23.28	21.14	21.51	22.07	23.30	23.98
17	24.50	24.51	24.09	23.16	24.04	23.57	23.32	20.09	20.11	22.16	23.33	23.91
18	24.50	24.51	24.11	23.25	24.04	23.57	23.36	19.42	20.41	22.30	23.38	23.90
19	24.50	24.51	24.12	23.36	24.05	23.59	23.39	19.81	20.90	22.39	23.42	23.92
20	24.52	24.52	24.14	23.44	24.06	23.61	23.42	20.33	21.24	22.45	23.42	23.78
21	24.52	24.51	24.16	23.49	24.06	23.60	23.45	20.81	21.57	22.41	23.43	23.76
22	24.38	23.31	24.17	23.54	23.60	23.62	23.49	21.22	21.78	22.32	23.45	23.76
23	24.39	22.82	24.18	23.64	23.20	23.64	23.52	---	21.80	22.34	23.50	23.76
24	24.41	22.91	24.17	23.68	23.00	23.62	23.55	---	21.98	22.38	23.54	23.76
25	24.43	23.15	24.17	23.68	22.98	23.17	23.57	---	21.71	22.41	23.57	23.78
26	24.46	23.36	24.18	23.65	23.05	22.94	23.60	---	21.84	22.42	23.60	23.78
27	24.40	23.53	24.12	23.66	23.28	22.85	23.63	---	21.97	22.39	23.61	23.75
28	24.42	23.62	24.12	23.70	23.37	22.87	23.55	---	22.16	22.09	23.67	23.77
29	24.42	23.69	24.14	23.73	---	22.98	23.57	---	22.26	22.18	23.68	23.79
30	24.43	23.70	24.15	23.74	---	23.02	23.60	---	22.34	22.31	23.70	23.81
31	24.45	---	24.16	23.76	---	22.71	---	---	---	22.39	23.72	---
MEAN	24.44	24.15	24.03	23.82	23.78	23.46	23.21	20.97	21.81	22.40	23.21	23.83
MAX	24.52	24.52	24.18	24.27	24.06	23.73	23.63	23.61	22.59	22.75	23.72	23.98
MIN	24.34	22.82	23.72	23.15	22.98	22.71	22.64	17.05	20.11	21.92	22.43	23.74

WTR YR 1989: HIGHEST 17.05, MAY 8; LOWEST 24.52, OCTOBER 20, 21, NOVEMBER 20.

LANCASTER COUNTY

401152076110101. Local number, LN 1676--Continued

WATER-QUALITY RECORDS

REMARKS.--Water-quality samples bailed from recovering water after well pumped dry.
 COOPERATION.--Chemical samples analyzed by Pa. Department of Environmental Resources, Bureau of Laboratories.
 PERIOD OF RECORD.--Water years 1985 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET)	SPE- CIFIC CON- DUCT- ANCE (μ S/CM)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)
OCT 17...	0910	24.49	1140	49.0	0.36
DEC 14...	1140	24.03	1130	43.0	--
MAR 23...	0920	23.60	1060	44.0	--
JUN 29...	0830	22.20	1030	60.0	0.68

LANCASTER COUNTY

401156076110501. Local number, LN 1677.

LOCATION.--Lat 40°11'56", long 76°11'05", Hydrologic Unit 02050306, 1.5 mi north of Ephrata.

Owner: U.S. Geological Survey.

AQUIFER.--Dolomite of Snitz Creek Formation of Cambrian age.

WATER-LEVEL RECORDS

WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 50 ft, casing 30 ft, open hole.

INSTRUMENTATION.--Continuous strip-chart recorder.

DATUM.--Elevation of land surface is 377 ft above National Geodetic Vertical Datum of 1929. Measuring point:

Top of shelter platform, 1.4 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 22.04 ft below land-surface datum, May 7, 1989; lowest, 32.37 ft below land-surface datum, Sept. 26, 1985.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31.64	32.06	30.80	31.61	30.88	30.16	29.09	30.45	27.86	28.48	28.87	30.61
2	31.66	32.07	30.84	31.63	30.91	30.24	28.98	30.41	28.03	28.58	28.98	30.64
3	31.68	32.09	30.87	31.65	30.94	30.31	28.96	30.28	28.16	28.69	29.06	30.68
4	31.70	32.10	30.92	31.68	30.97	30.37	29.01	30.31	28.29	28.74	29.13	30.71
5	31.73	32.11	30.97	31.70	30.98	30.42	29.14	30.33	28.40	28.73	29.20	30.74
6	31.74	32.11	31.00	31.72	31.02	30.46	29.20	25.88	28.50	28.72	29.27	30.77
7	31.77	32.11	31.04	31.74	31.04	30.50	29.23	22.04	28.55	28.82	29.40	30.80
8	31.79	32.12	31.08	31.74	31.06	30.55	29.27	22.19	28.54	28.90	29.50	30.83
9	31.81	32.13	31.12	31.60	31.08	30.57	29.34	23.29	28.56	28.98	29.57	30.86
10	31.83	32.14	31.15	31.60	31.11	30.59	29.41	24.10	27.60	29.07	29.65	30.89
11	31.85	32.16	31.18	31.60	31.13	30.59	29.47	24.75	26.54	29.16	29.70	30.92
12	31.87	32.17	31.22	31.36	31.17	30.57	29.53	25.23	26.57	29.22	29.76	30.96
13	31.90	32.17	31.25	31.20	31.18	30.52	29.61	25.68	26.88	29.24	29.82	30.98
14	31.91	32.12	31.28	30.98	31.20	30.42	29.67	26.06	27.21	28.32	29.89	31.02
15	31.94	32.14	31.32	30.49	31.19	30.36	29.71	26.38	27.40	28.24	29.94	31.04
16	31.96	32.15	31.34	30.21	31.20	30.32	29.78	26.41	26.41	28.32	30.00	31.05
17	31.97	32.15	31.37	30.22	31.21	30.32	29.82	24.70	25.02	28.42	30.05	30.94
18	31.99	32.10	31.40	30.34	31.24	30.32	29.88	23.74	25.46	28.53	30.11	30.99
19	32.01	32.10	31.43	30.42	31.25	30.37	29.94	24.22	25.97	28.66	30.11	30.97
20	32.02	32.10	31.46	30.48	31.27	30.39	29.99	25.41	26.39	28.76	30.14	30.78
21	32.03	30.60	31.49	30.53	31.26	30.39	30.04	25.70	26.77	28.74	30.19	30.83
22	31.83	29.94	31.52	30.61	30.70	30.42	30.09	25.90	26.94	28.61	30.25	30.81
23	31.87	30.00	31.52	30.66	30.21	30.45	30.13	26.14	27.07	28.64	30.29	30.82
24	31.89	30.20	31.51	30.67	29.86	30.43	30.19	26.33	27.27	28.71	30.29	30.87
25	31.92	30.40	31.52	30.69	29.79	30.44	30.24	26.49	27.49	28.75	30.32	30.89
26	31.96	30.57	31.53	30.70	29.87	29.56	30.29	26.71	27.69	28.78	30.36	30.83
27	31.96	30.72	31.53	30.74	29.97	29.40	30.32	26.93	27.89	28.53	30.40	30.86
28	31.99	30.84	31.54	30.77	30.07	29.36	30.34	27.11	28.06	28.47	30.46	30.89
29	32.01	30.77	31.56	30.80	---	29.45	30.38	27.38	28.20	28.59	30.49	30.93
30	32.03	30.77	31.57	30.82	---	29.49	30.43	27.61	28.34	28.70	30.53	30.95
31	32.05	---	31.60	30.85	---	29.22	---	27.77	---	28.79	30.57	---
MEAN	31.88	31.57	31.29	31.03	30.85	30.21	29.72	26.32	27.40	28.71	29.88	30.86
MAX	32.05	32.17	31.60	31.74	31.27	30.59	30.43	30.45	28.56	29.24	30.57	31.05
MIN	31.64	29.94	30.80	30.21	29.79	29.22	28.96	22.04	25.02	28.24	28.87	30.61

WTR YR 1989: HIGHEST 22.04, MAY 7; LOWEST 32.17, NOVEMBER 12, 13.

LANCASTER COUNTY

401156076110501. Local number, LN 1677--Continued

WATER-QUALITY RECORDS

REMARKS.--Water-quality samples bailed adjacent to major water-bearing zone.

COOPERATION.--Chemical samples analyzed by Pa. Department of Environmental Resources, Bureau of Laboratories.

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET)	SPE- CIFIC CON- DUCT- ANCE (μ S/CM)	NITRO- GEN, NO ₂ +NO ₃ DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N)
OCT					
17...	1028	31.97	745	21.0	0.34
NOV					
15...	1025	32.12	660	24.0	<0.20
21...	1245	30.01	691	21.0	--
22...	1055	29.98	775	18.0	--
25...	1415	30.55	746	21.0	--
DEC					
14...	1330	31.24	743	21.0	--
JAN					
24...	0945	30.70	775	21.0	--
FEB					
27...	1135	29.89	753	17.0	--
MAR					
13...	1745	30.55	775	23.0	--
23...	0930	30.51	795	21.0	--
APR					
28...	1150	30.30	800	28.0	--
MAY					
08...	1125	21.63	865	31.0	--
09...	1145	22.63	824	30.0	--
11...	0930	24.29	825	27.0	--
13...	1110	25.35	780	22.0	--
17...	0800	24.44	830	22.0	--
24...	0750	26.14	700	19.0	--
30...	1030	27.38	760	21.0	--
JUN					
29...	0850	28.10	760	22.0	0.32
JUL					
25...	1055	28.70	770	14.0	--
AUG					
25...	0925	30.43	770	26.0	--
28...	1315	30.43	813	29.0	--

(<) Actual value is known to be less than the value shown.

LANCASTER COUNTY

401152076105701. Local number, LN 1679.

LOCATION.--Lat 40°11'52", long 76°10'57", Hydrologic Unit 02050306, 1.5 mi north of Ephrata.

OWNER: U.S. Geological Survey.

AQUIFER.--Dolomite of Snitz Creek Formation of Cambrian Age.

WATER-LEVEL RECORDS

WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 60 ft, cased to 13 ft, open hole.

INSTRUMENTATION.--Continuous strip-chart recorder.

DATUM.--Elevation of land surface is 364 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of plywood cover, 2.6 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 15.39 ft below land-surface datum, May 7, 1989; lowest, 21.26 ft below land-surface datum, Oct. 19, Nov. 12, 13, 1988.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.94	21.16	20.40	20.73	20.45	20.15	19.33	20.31	19.05	19.20	19.30	20.35
2	20.94	21.18	20.43	20.75	20.47	20.19	19.32	20.20	19.14	19.25	19.37	20.37
3	20.96	21.18	20.45	20.76	20.51	20.24	19.33	20.15	19.20	19.28	19.41	20.40
4	20.97	21.19	20.48	20.79	20.52	20.27	19.40	20.20	19.23	19.31	19.44	20.41
5	20.98	21.19	20.52	20.81	20.54	20.30	19.48	20.22	19.29	19.20	19.49	20.43
6	20.99	21.17	20.54	20.83	20.57	20.30	19.48	18.51	19.32	19.21	19.54	20.44
7	21.00	21.19	20.56	20.87	20.59	20.33	19.54	15.39	19.34	19.28	19.62	20.46
8	21.00	21.21	20.60	20.87	20.60	20.37	19.58	15.50	19.29	19.33	19.69	20.48
9	21.01	21.22	20.62	20.66	20.63	20.39	19.63	16.29	19.30	19.37	19.73	20.50
10	21.02	21.23	20.64	20.68	20.63	20.39	19.68	16.75	18.55	19.40	19.78	20.52
11	21.03	21.24	20.67	20.70	20.64	20.37	19.71	17.14	17.79	19.43	19.82	20.54
12	21.05	21.26	20.69	20.71	20.67	20.32	19.74	17.42	17.83	19.46	19.85	20.55
13	21.06	21.26	20.71	20.70	20.68	20.28	19.78	17.62	18.08	19.46	19.88	20.57
14	21.07	21.20	20.73	20.47	20.68	20.26	19.82	17.81	18.36	18.80	19.94	20.58
15	21.08	21.21	---	20.43	20.68	20.22	19.84	17.94	18.54	18.87	19.97	20.60
16	21.10	21.23	---	20.42	20.65	20.23	19.86	17.95	17.71	18.94	20.02	20.61
17	21.11	21.22	---	19.92	20.67	20.24	19.90	16.94	17.14	19.01	20.06	20.48
18	21.12	21.19	---	19.78	20.69	20.24	19.93	16.62	17.39	19.13	20.09	20.51
19	21.26	21.20	---	19.83	20.70	20.27	19.96	16.85	17.66	19.20	20.10	20.53
20	21.25	21.14	---	19.90	20.71	20.28	19.99	17.17	17.91	19.24	20.08	20.34
21	21.01	19.77	---	20.00	20.71	20.25	20.02	17.48	18.17	19.14	20.12	20.37
22	21.03	19.77	---	20.06	20.14	20.28	20.05	17.73	18.32	19.15	20.16	20.33
23	21.07	19.96	---	20.10	19.73	20.26	20.08	17.86	18.33	19.17	20.20	20.35
24	21.10	20.13	---	20.13	19.73	19.74	20.11	17.96	18.50	19.20	20.22	20.37
25	21.11	20.25	---	20.21	19.75	19.61	20.14	18.12	18.66	19.23	20.25	20.40
26	21.13	20.32	---	20.28	19.82	19.54	20.16	18.28	18.80	19.23	20.28	20.33
27	21.10	20.38	20.65	20.31	20.01	19.54	20.18	18.42	18.93	19.14	---	20.36
28	21.12	20.32	20.67	20.37	20.07	19.60	20.26	18.59	19.00	19.06	20.30	20.39
29	21.14	20.37	20.68	20.39	---	19.67	20.28	18.73	19.08	19.15	20.32	20.39
30	21.15	20.38	20.69	20.39	---	19.70	20.29	18.85	19.15	19.22	20.34	20.36
31	21.16	---	20.71	20.42	---	19.71	---	18.98	---	19.25	20.34	---
MEAN	21.07	20.86	20.60	20.43	20.44	20.11	19.83	18.00	18.57	19.20	19.92	20.44
MAX	21.26	21.26	20.73	20.87	20.71	20.39	20.29	20.31	19.34	19.46	20.34	20.61
MIN	20.94	19.77	20.40	19.78	19.73	19.54	19.32	15.39	17.14	18.80	19.30	20.33

WTR YR 1989: HIGHEST 15.39, MAY 7; LOWEST 21.26, OCTOBER 19, NOVEMBER 12, 13.

LANCASTER COUNTY

401152076105701. Local number, LN 1679--Continued

WATER-QUALITY RECORDS

REMARKS.--Water-quality samples bailed from recovering water after well pumped.
 COOPERATION.--Chemical samples analyzed by Pa. Department of Environmental Resources, Bureau of Laboratories.
 PERIOD OF RECORD.--Water years 1986 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET)	SPE- CIFIC CON- DUCT- ANCE (μ S/CM)	NITRO- GEN, NO ₂ +NO ₃ DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N)
OCT					
17...	1045	21.18	799	24.0	0.36
NOV					
15...	1010	21.19	810	22.0	<0.20
21...	1230	20.18	865	21.0	--
22...	1045	19.65	870	17.0	--
25...	1430	20.18	783	21.0	--
DEC					
14...	1400	20.71	822	24.0	--
JAN					
24...	0955	20.13	805	19.0	--
FEB					
27...	1200	19.95	739	17.0	--
MAR					
13...	1800	20.28	780	19.0	--
23...	0950	20.31	745	20.0	--
APR					
28...	1210	20.26	785	17.0	--
MAY					
08...	1040	15.05	721	21.0	--
09...	1210	15.86	731	24.0	--
11...	0950	16.78	764	22.0	--
13...	1125	17.40	760	21.0	--
15...	1120	17.98	775	19.0	--
24...	0730	17.91	685	19.0	--
30...	1045	18.83	779	18.0	--
JUN					
29...	0935	19.04	725	13.0	0.27
JUL					
25...	1030	19.21	782	15.0	--
AUG					
25...	0950	20.21	756	21.0	--
28...	1255	20.28	760	21.0	--

(<) Actual value is known to be less than the value shown.

LANCASTER COUNTY

400744075583901. Local number, LN SP 58.

LOCATION.--Lat 40°07'44", long 75°58'39", Hydrologic Unit 02050306, 1.1 mi southeast of Churchtown.

Owner: Harry Krappenbach.

AQUIFER.--Dolomite of Zooks Corner Formation of Cambrian age.

DATUM.--Elevation of land surface is 427 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Hillside spring used for domestic purposes.

COOPERATION.--Chemical samples analyzed by Pa. Department of Environmental Resources, Bureau of Laboratories.

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (μ S/CM)	NITRO- GEN, NO ₂ +NO ₃ DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)
OCT						
18...	0845	608	13.0	--	--	--
NOV						
15...	0825	630	13.0	--	--	--
22...	0830	670	13.0	--	--	--
DEC						
14...	0800	810	13.0	--	--	--
JAN						
23...	1145	623	12.0	--	--	--
FEB						
27...	1045	520	13.0	--	--	--
MAR						
13...	1300	633	12.0	--	--	--
20...	1430	658	12.0	--	--	--
APR						
27...	1145	675	12.0	--	--	--
MAY						
08...	1305	628	12.0	--	--	--
09...	1440	627	9.70	--	--	--
11...	1250	585	14.0	--	--	--
13...	0930	685	13.0	--	--	--
15...	1345	659	13.0	--	--	--
17...	0900	723	13.0	--	--	--
24...	0825	610	12.0	--	--	--
30...	1230	720	12.0	--	--	--
JUN						
30...	0715	554	14.0	--	--	--
JUL						
25...	0845	609	13.0	--	--	--
SEP						
11...	1615	680	12.0	0.36	<0.020	0.030

(<) Actual value is known to be less than the value shown.

LANCASTER COUNTY

401152076105301. Local number, LN SP 61.

LOCATION.--Lat 40°11'52", long 76°10'53", Hydrologic Unit 02050306, 1.5 mi north of Ephrata.

Owner: Aaron Stauffer.

AQUIFER.--Dolomite of Snitz Creek Formation of Cambrian age.

DATUM.--Elevation of land surface is 340 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Abandoned spring once used for domestic supply.

COOPERATION.--Chemical samples analyzed by Pa. Department of Environmental Resources, Bureau of Laboratories.

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (μ S/CM)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)
OCT				
17...	1050	680	18.0	<0.20
NOV				
15...	1035	680	16.0	0.63
21...	1220	679	18.0	--
22...	1110	745	18.0	--
25...	1435	710	20.0	--
DEC				
14...	1320	660	18.0	--
FEB				
27...	1130	728	18.0	--
MAR				
13...	1730	790	17.0	--
23...	0950	700	17.0	--
APR				
28...	1155	765	18.0	--
MAY				
08...	1100	768	31.0	--
09...	1155	808	31.0	--
11...	0950	850	29.0	--
13...	1130	795	24.0	--
15...	1100	746	22.0	--
17...	0830	789	25.0	--
24...	0745	775	22.0	--
30...	1050	768	20.0	--
JUN				
29...	0945	635	21.0	0.37
JUL				
25...	1200	580	22.0	--
AUG				
25...	0915	756	18.0	--
28...	1230	714	18.0	--

(<) Actual value is known to be less than the value shown.

LUZERNE COUNTY

411800076162501. Local number, LU 243.

LOCATION.--Lat 41°18'00", long 76°16'25", Hydrologic Unit 02050107, at Ricketts Glen Park, Fairmount Township.

Owner: Commonwealth of Pennsylvania.

AQUIFER.--Sandstone of Catskill Formation of Late Devonian age.

WELL CHARACTERISTICS.--Drilled unused observation well, diameter 6 in., depth 160 ft, cased to 40 ft, open hole.

INSTRUMENTATION.--Continuous strip-chart recorder.

DATUM.--Elevation of land surface is 1,266 ft above National Geodetic Vertical Datum of 1929. Measuring point:

Top of casing, 1.3 ft above land-surface datum.

REMARKS.--Well levels effected by nearby intermittent pumpage.

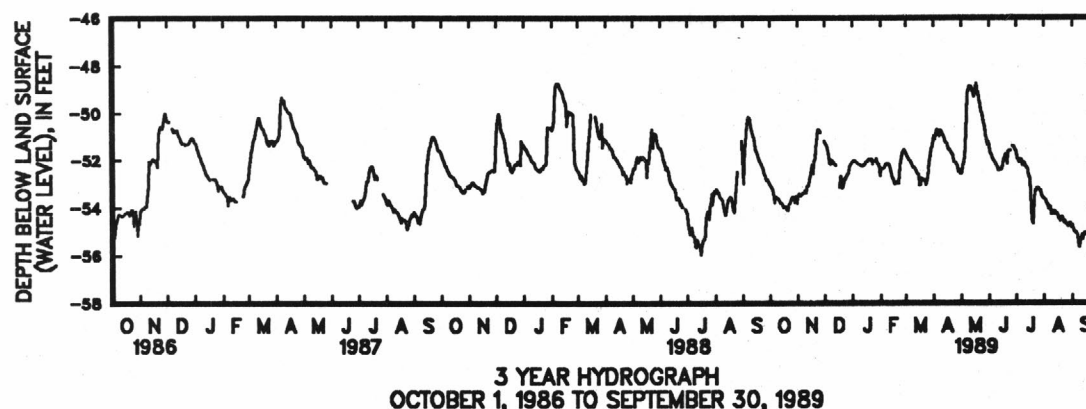
PERIOD OF RECORD.--November 1948 to July 1950, July 1955 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 36.08 ft below land-surface datum, Mar. 31, 1950; lowest, 58.70 ft below land-surface datum, Oct. 5, 1957.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53.05	53.51	51.28	52.06	52.33	51.70	50.98	52.58	51.36	51.68	53.62	54.71
2	53.09	53.42	51.35	52.01	52.39	51.81	51.14	52.46	51.67	51.94	53.67	54.87
3	53.14	53.49	51.42	52.01	52.35	51.89	50.90	52.24	51.74	51.95	53.72	54.96
4	53.23	53.51	51.54	52.07	52.36	51.96	50.71	52.04	51.86	52.09	53.84	55.04
5	53.35	53.45	51.80	52.09	52.32	52.02	50.95	51.84	51.93	51.95	53.86	55.02
6	53.78	53.42	52.11	52.12	52.19	52.07	50.75	51.40	52.02	51.96	54.04	55.12
7	53.55	53.39	52.17	52.18	52.15	52.19	50.99	50.14	52.08	52.01	53.95	55.18
8	53.54	53.38	51.99	52.19	52.14	52.22	50.73	49.16	52.18	52.23	53.97	55.63
9	53.60	53.27	52.01	52.21	52.18	52.30	50.78	48.98	52.22	52.22	54.26	55.65
10	53.61	53.39	52.08	52.22	52.14	52.32	50.86	48.86	52.31	52.10	54.25	55.41
11	53.70	53.12	52.18	52.25	52.23	52.37	50.95	48.87	52.45	52.24	54.17	55.23
12	53.75	53.10	52.18	52.25	52.42	52.48	51.01	48.88	52.44	52.30	54.13	55.13
13	53.80	53.03	52.22	52.21	52.62	52.55	51.19	49.03	52.36	52.34	54.27	55.33
14	53.82	52.83	---	52.20	52.78	52.58	51.27	49.21	52.41	52.50	54.20	55.09
15	53.88	52.61	---	52.10	52.78	52.61	51.27	49.30	52.35	52.69	54.23	55.04
16	53.99	52.42	---	52.07	52.97	53.05	51.36	49.26	52.17	52.75	54.29	55.05
17	53.96	52.20	53.15	52.07	53.00	53.03	51.57	48.90	52.00	53.46	54.49	55.06
18	53.94	52.57	52.71	51.99	52.98	52.77	51.53	48.74	51.84	54.51	54.44	55.14
19	53.99	52.07	52.68	51.95	52.93	52.84	51.62	49.22	51.75	54.62	54.56	55.13
20	54.08	51.92	53.17	51.96	52.95	52.83	51.70	49.11	51.85	54.68	54.41	55.00
21	54.11	51.50	53.14	52.02	52.98	52.81	51.76	49.43	52.15	53.73	54.39	54.95
22	53.87	51.23	52.90	51.97	52.55	52.88	51.84	49.64	51.65	53.28	54.47	54.95
23	53.82	50.73	52.76	52.17	52.01	53.02	52.06	49.91	51.58	53.28	54.63	54.89
24	53.72	50.69	52.81	---	51.90	52.93	---	50.04	51.61	53.16	54.54	54.92
25	53.60	50.76	52.67	52.03	51.69	52.73	52.10	50.25	51.59	53.17	54.69	55.57
26	53.53	50.84	52.60	52.05	51.63	52.39	52.23	50.40	---	53.22	54.69	---
27	53.56	---	52.54	51.94	51.57	52.08	52.26	50.59	51.41	53.26	54.81	55.23
28	53.78	---	52.32	52.12	51.67	51.78	52.51	50.92	51.43	53.28	54.71	55.07
29	53.54	---	52.22	52.20	---	51.51	52.43	51.15	51.49	53.50	54.66	54.97
30	53.52	51.18	52.16	52.18	---	51.39	52.58	51.33	51.55	53.59	54.64	55.01
31	53.81	---	52.09	52.66	---	51.17	---	51.22	---	53.60	54.82	---
MEAN	53.67	52.48	52.29	52.12	52.36	52.33	51.45	50.16	51.91	52.88	54.30	55.12
MAX	54.11	53.51	53.17	52.66	53.00	53.05	52.58	52.58	52.45	54.68	54.82	55.65
MIN	53.05	50.69	51.28	51.94	51.57	51.17	50.71	48.74	51.36	51.68	53.62	54.71

WTR YR 1989: HIGHEST 48.74, MAY 18; LOWEST 55.65, SEPTEMBER 9.



LYCOMING COUNTY

412427076594401. Local number, LY 112.

LOCATION.--Lat 41°24'27", long 76°59'44", Hydrologic Unit 02050206, at State Game Land Number 133, near Trout Run.

Owner: U.S. Geological Survey.

AQUIFER.--Shale of Catskill Formation of Late Devonian age.

WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 200 ft, cased to 23 ft, open hole.

INSTRUMENTATION.--Continuous strip-chart recorder.

DATUM.--Elevation of land surface is 1,400 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of plywood cover, 3.1 ft above land-surface datum.

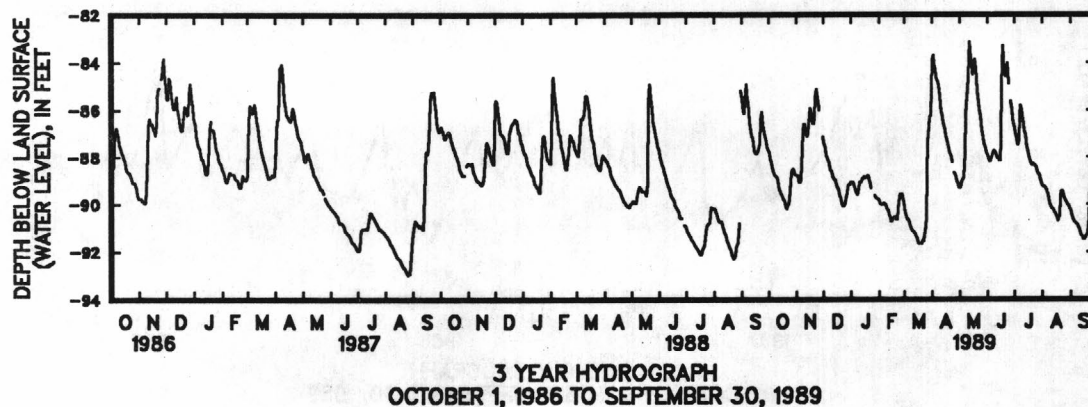
PERIOD OF RECORD.--October 1967 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 76.10 ft below land-surface datum, June 23, 1972; lowest, 95.32 ft below land-surface datum, Oct. 23, 24, 1980.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	87.76	88.78	87.36	89.05	89.85	90.17	83.89	89.31	87.92	86.79	89.23	90.23
2	87.85	88.75	87.54	89.05	89.98	90.35	83.71	89.29	88.03	86.99	89.25	90.36
3	88.07	88.98	87.64	89.05	90.02	90.52	84.09	89.12	88.17	87.20	89.25	90.52
4	88.22	89.06	87.91	89.24	90.03	90.65	84.30	88.95	88.17	87.42	89.27	90.66
5	88.41	89.06	88.03	89.37	90.03	90.65	84.62	88.92	88.10	87.48	89.34	90.71
6	88.60	88.92	88.11	89.45	89.95	90.71	84.71	88.82	87.95	87.25	89.46	90.77
7	88.72	87.70	88.25	89.58	89.98	90.90	84.79	87.86	87.81	86.23	89.60	90.81
8	88.78	86.90	88.52	89.59	90.01	91.00	84.98	86.18	87.71	85.81	89.78	90.86
9	88.83	86.60	88.55	89.32	90.16	91.07	85.41	85.42	87.74	86.03	89.94	90.92
10	88.83	86.60	88.60	89.05	90.21	91.14	85.78	85.14	87.85	86.26	90.07	91.00
11	88.99	86.95	88.80	89.06	90.23	91.15	86.08	84.57	87.97	86.59	90.15	91.11
12	89.21	87.11	88.92	89.07	90.43	91.22	86.29	83.13	88.04	86.89	90.19	91.24
13	89.38	87.11	88.94	88.90	90.56	91.29	86.53	83.54	88.01	87.05	90.22	91.31
14	89.50	86.98	88.96	88.90	90.71	91.36	86.72	84.02	88.16	87.33	90.32	91.37
15	89.56	86.19	89.16	88.81	90.72	91.46	86.86	84.45	88.15	87.60	90.37	91.46
16	89.68	85.92	89.29	88.87	90.64	91.63	87.10	84.51	87.24	87.79	90.45	91.46
17	89.78	86.04	89.32	88.86	90.57	91.66	87.28	84.01	84.91	87.95	90.58	91.45
18	89.80	86.40	89.45	88.86	90.54	91.66	87.45	83.87	83.29	88.14	90.69	91.37
19	89.93	86.57	89.66	88.77	90.54	91.66	87.66	84.29	83.85	88.26	90.58	91.30
20	90.11	86.57	89.76	88.79	90.63	91.66	87.82	84.72	84.39	88.32	90.50	91.24
21	90.19	86.28	89.93	89.05	90.63	91.52	87.92	85.21	84.58	88.34	89.71	90.59
22	90.06	85.50	90.09	89.18	90.19	91.54	88.03	85.69	84.36	88.29	89.45	89.75
23	89.99	85.12	90.05	89.31	89.70	91.22	88.19	85.98	84.03	88.33	89.44	89.27
24	89.76	85.37	90.07	---	89.58	91.18	---	86.26	84.41	88.35	89.55	89.04
25	89.43	85.67	89.94	---	89.59	90.62	88.67	86.57	84.88	88.47	89.75	88.02
26	88.66	85.99	89.74	---	89.56	88.65	88.77	86.85	---	88.60	89.80	---
27	88.56	---	89.54	89.62	89.69	87.36	88.86	87.15	85.64	88.69	89.89	87.65
28	88.50	---	89.26	89.71	89.92	86.69	89.00	87.41	86.00	88.71	89.98	87.77
29	88.58	---	89.18	89.76	---	86.30	89.13	87.56	86.37	88.88	90.02	87.91
30	88.70	87.13	89.18	89.76	---	86.22	89.27	87.66	86.58	89.03	90.04	88.16
31	88.77	---	89.07	89.78	---	85.12	---	87.80	---	89.16	90.20	---
MEAN	89.07	86.97	88.99	89.21	90.17	90.27	86.69	86.27	86.56	87.68	89.91	90.29
MAX	90.19	89.06	90.09	89.78	90.72	91.66	89.27	89.31	88.17	89.16	90.69	91.46
MIN	87.76	85.12	87.36	88.77	89.56	85.12	83.71	83.13	83.29	85.81	89.23	87.65

WTR YR 1989: HIGHEST 83.13, MAY 12; LOWEST 91.66, MARCH 17, 18, 19, 20.



MIFFLIN COUNTY

404140077354801. Local number, MF 344.

LOCATION.--Lat 40°41'40", long 77°35'48", Hydrologic Unit 02050304, at Roseann.

Owner: Ira Huron

AQUIFER.--Dolomite of Bellefonte Formation of Lower Ordovician age.

WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 200 ft, cased to 42 ft, open hole.

INSTRUMENTATION.--Continuous strip-chart recorder.

DATUM.--Elevation of land surface is 800 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of shelter platform, 1.0 ft above land-surface datum.

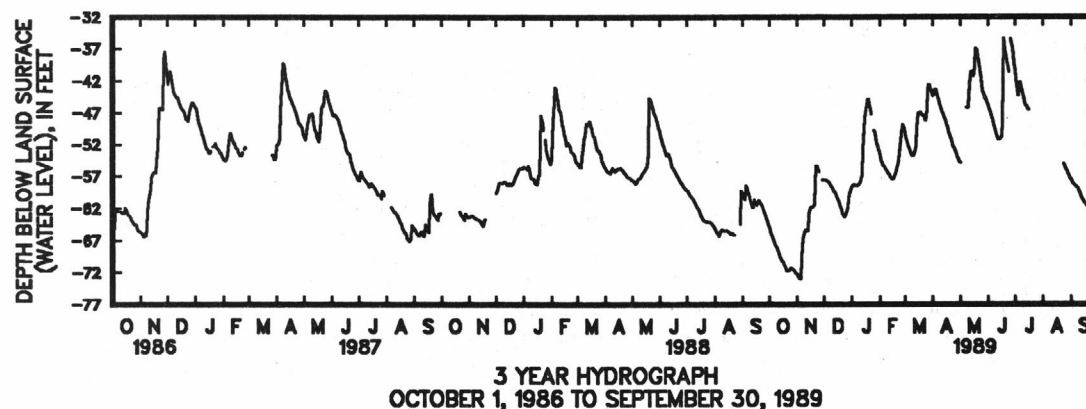
PERIOD OF RECORD.--September 1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 21.29 ft below land-surface datum, Feb. 15, 1984; lowest, 77.13 ft below land-surface datum, Oct. 11, 1983.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64.95	72.34	57.54	58.61	53.88	50.35	44.44	54.87	45.96	40.40	---	57.46
2	65.40	72.62	57.57	58.42	54.41	50.92	44.07	---	46.36	41.74	---	57.87
3	65.88	72.86	57.53	58.26	54.96	51.56	43.32	---	46.79	43.25	---	58.10
4	66.31	72.99	57.74	58.44	55.24	52.13	43.28	---	47.14	44.27	---	58.23
5	66.75	72.99	57.80	58.44	55.34	52.54	43.84	---	47.57	44.27	---	58.42
6	67.14	69.60	57.89	58.41	55.64	52.84	44.40	---	48.16	42.21	---	58.58
7	67.39	66.63	58.18	58.50	55.89	53.47	44.98	---	48.83	42.35	---	58.71
8	67.73	66.22	58.48	58.37	56.09	53.72	45.49	46.20	49.47	42.99	---	58.89
9	68.04	65.84	58.53	58.03	56.41	53.77	46.09	46.20	49.96	43.63	---	59.11
10	68.24	65.30	58.75	57.98	56.56	53.71	46.41	46.11	50.61	44.30	---	59.43
11	68.77	65.45	59.23	57.50	56.68	53.48	46.81	44.13	51.03	45.08	---	59.82
12	69.14	65.54	59.35	56.91	57.07	52.87	47.18	41.35	51.28	45.80	---	60.16
13	69.54	65.37	59.52	52.70	57.23	52.00	47.65	40.55	51.30	45.97	---	60.43
14	69.84	62.77	59.77	49.68	57.44	49.38	48.04	40.55	51.12	46.08	---	60.68
15	70.13	62.13	60.38	47.89	57.48	47.18	48.38	41.22	50.91	46.41	---	60.93
16	70.23	61.76	60.54	46.99	57.38	47.04	48.83	41.33	50.51	46.49	---	61.14
17	70.62	61.75	60.98	45.94	56.98	47.01	49.31	39.86	48.49	---	---	61.34
18	70.93	61.74	61.39	45.02	56.56	46.96	49.97	36.93	35.40	---	---	61.53
19	71.19	61.70	61.81	44.88	56.13	47.23	50.57	37.04	36.26	---	---	61.70
20	71.61	61.29	62.18	45.66	55.67	47.38	50.94	37.51	37.26	---	---	61.84
21	71.72	58.17	62.82	46.48	55.10	47.45	51.31	38.37	38.29	---	---	61.99
22	71.69	55.32	63.04	47.18	54.35	47.76	51.87	39.35	39.10	---	---	62.10
23	71.63	55.36	63.29	---	52.38	48.25	52.39	40.25	39.83	---	---	62.22
24	71.58	55.92	63.30	---	51.48	48.21	52.59	41.59	40.58	---	55.10	62.33
25	71.26	56.29	62.81	49.87	50.26	46.48	52.97	42.80	---	---	55.47	---
26	71.38	---	62.47	50.24	48.91	43.46	53.39	43.48	35.44	---	55.77	62.52
27	71.49	---	61.79	50.97	49.08	42.63	53.70	44.09	36.21	---	56.08	62.79
28	71.67	---	60.41	51.76	49.62	42.60	54.08	44.55	36.99	---	56.48	62.87
29	71.85	57.60	59.82	52.30	---	43.29	54.46	44.87	38.09	---	56.70	63.06
30	72.05	57.51	59.29	52.70	---	43.69	54.79	45.12	39.28	---	57.03	63.40
31	72.17	---	58.75	53.19	---	44.27	---	45.48	---	---	57.36	---
MEAN	69.62	63.82	60.10	52.80	54.79	48.83	48.85	42.55	44.42	44.08	56.25	60.61
MAX	72.17	72.99	63.30	58.61	57.48	53.77	54.79	54.87	51.30	46.49	57.36	63.40
MIN	64.95	55.32	57.53	44.88	48.91	42.60	43.28	36.93	35.40	40.40	55.10	57.46

WTR YR 1989: HIGHEST 35.40 JUNE 18; LOWEST 72.99, NOVEMBER 4, 5.



PERRY COUNTY

402339077074502. Local number, PE 518.

LOCATION.--Lat 40°23'39", long 77°07'45", Hydrologic Unit 02050305, at State Game Land Number 256.

Owner: U.S. Geological Survey.

AQUIFER.--Shale of Mahantango Formation of Middle Devonian age.

WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 138 ft, cased to 17 ft, open hole.

INSTRUMENTATION.--Continuous strip-chart recorder.

DATUM.--Elevation of land surface is 590 ft above National Geodetic Vertical Datum of 1929, from topographic map.

Measuring point: Top of plywood cover, 3.0 ft above land-surface datum.

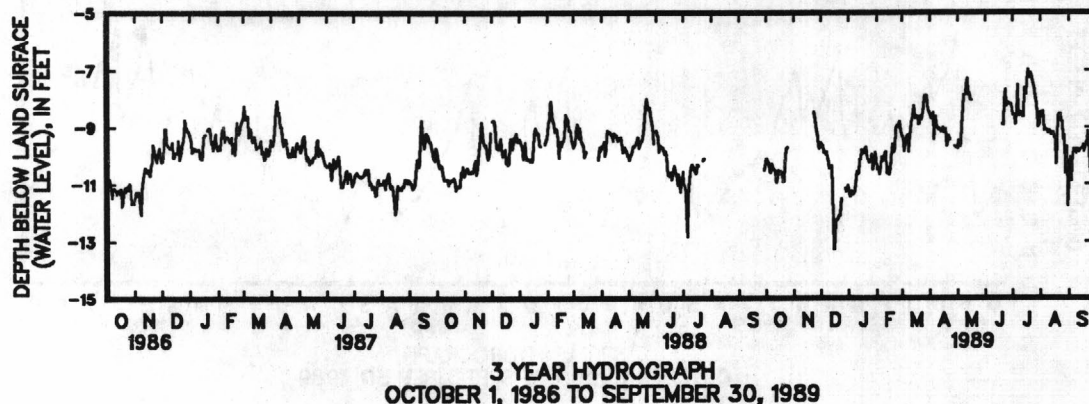
PERIOD OF RECORD.--July 1975 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 6.97 ft below land-surface datum, July 18, 1989; lowest, 19.51 ft below land-surface datum, Aug. 19, 1975.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.09	---	9.55	11.18	10.48	9.33	8.63	9.74	---	8.57	8.47	10.94
2	10.11	---	9.65	11.42	10.38	9.32	8.70	9.46	---	8.56	8.59	10.28
3	10.24	---	9.63	11.42	10.49	9.82	8.61	9.68	---	8.58	8.59	10.06
4	10.24	---	9.87	11.23	10.65	9.73	8.50	9.68	---	8.90	8.45	10.89
5	10.52	---	9.86	11.33	10.36	9.42	9.41	9.50	---	8.88	9.12	10.26
6	10.59	---	9.94	11.35	10.04	9.32	9.11	8.93	---	8.01	9.05	9.78
7	10.53	---	9.85	11.27	10.21	9.28	8.62	8.34	---	7.50	9.09	9.82
8	10.29	---	10.11	11.21	10.13	9.86	8.92	7.87	---	8.57	9.09	9.77
9	10.49	---	10.11	10.75	10.06	9.52	9.05	7.86	---	8.60	9.18	9.92
10	10.48	---	10.44	10.55	9.90	9.10	9.09	7.84	---	8.47	9.20	9.77
11	10.50	---	10.39	10.63	9.85	8.86	9.03	7.51	---	8.55	9.13	9.76
12	10.87	---	10.41	10.62	10.60	8.63	9.07	7.30	---	8.63	9.25	9.89
13	10.92	---	10.35	10.12	10.61	8.46	9.17	7.86	---	8.63	9.28	9.84
14	10.74	---	11.22	10.12	10.42	8.24	9.14	7.81	---	7.63	9.20	9.80
15	10.51	---	13.28	9.79	10.66	8.70	9.01	8.03	---	7.72	9.18	9.75
16	10.65	---	13.27	9.82	10.43	8.66	9.19	8.04	---	7.85	9.36	9.74
17	10.54	---	12.30	9.93	10.08	8.62	9.17	---	---	7.35	9.41	9.60
18	10.58	---	12.25	9.89	9.58	8.64	9.05	---	---	6.97	10.29	9.86
19	10.56	---	12.24	9.71	9.65	8.89	9.65	---	---	7.24	10.22	9.72
20	10.90	---	12.15	9.70	9.87	8.88	9.58	---	8.89	7.27	8.61	9.55
21	10.89	---	12.09	10.10	9.74	8.64	9.29	---	8.91	7.08	8.60	9.49
22	10.28	---	12.08	10.12	9.06	8.74	9.42	---	8.05	---	8.55	9.15
23	9.75	8.46	11.70	10.22	8.94	8.61	9.42	---	7.69	---	8.55	9.50
24	9.75	8.59	11.51	10.23	8.99	8.49	---	---	8.28	---	8.78	10.25
25	9.70	8.92	---	10.18	8.96	8.01	---	---	8.23	7.71	8.81	10.59
26	---	9.14	---	9.94	8.81	7.90	---	---	8.14	8.01	9.43	10.17
27	---	9.17	---	10.47	9.01	7.93	---	---	8.19	8.00	9.29	10.16
28	---	9.64	11.14	10.43	9.26	7.90	9.66	---	8.20	8.50	10.61	10.11
29	---	9.74	11.27	10.14	---	8.24	9.69	---	8.19	8.98	10.44	9.93
30	---	9.65	11.14	9.89	---	8.48	9.70	---	8.20	8.90	9.68	9.95
31	---	---	11.04	10.12	---	8.47	---	---	---	8.90	11.75	---
MEAN	10.43	9.16	11.03	10.45	9.90	8.80	9.15	8.47	8.27	8.16	9.27	9.94
MAX	10.92	9.74	13.28	11.42	10.66	9.86	9.70	9.74	8.91	8.98	11.75	10.94
MIN	9.70	8.46	9.55	9.70	8.81	7.90	8.50	7.30	7.69	6.97	8.45	9.15

WTR YR 1989: HIGHEST 6.97, JULY 18; LOWEST 13.28, DECEMBER 15.



POTTER COUNTY

414640077493801. Local number, PO 72.

LOCATION.--Lat 41°46'40", long 77°49'38", Hydrologic Unit 02050205, at Denton Hill State Park.

Owner: U.S. Geological Survey.

AQUIFER.--Shale of Catskill Formation of Late Devonian age.

WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 110 ft, cased to 21 ft, open hole.

INSTRUMENTATION.--Continuous strip-chart recorder.

DATUM.--Elevation of land surface is 1,810 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of plywood cover, 1.8 ft above land-surface datum.

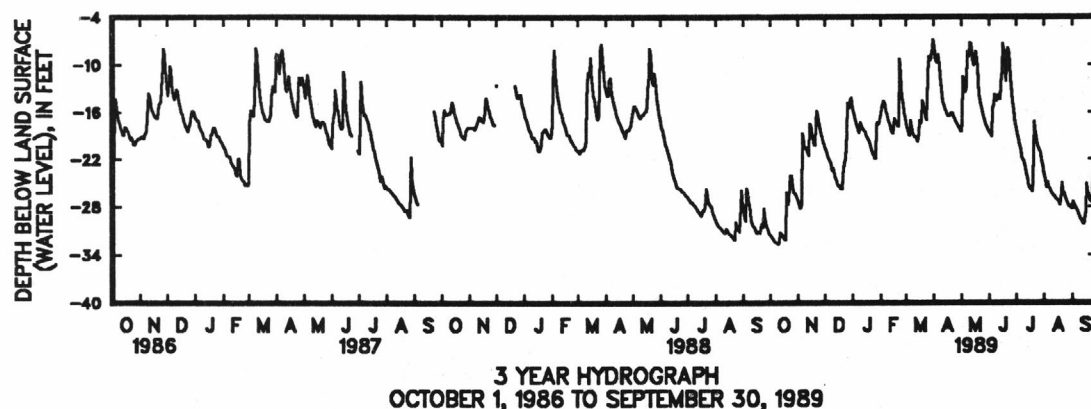
PERIOD OF RECORD.--October 1967 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 5.20 ft below land-surface datum, Mar. 23, 1968; lowest, 39.12 ft below land-surface datum, Dec. 11, 1987.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31.53	27.26	20.59	15.63	16.32	17.39	7.27	18.42	18.61	18.09	23.86	28.24
2	31.63	27.73	20.94	16.21	15.47	17.86	8.50	17.13	18.66	18.78	24.56	27.35
3	31.79	28.18	21.17	16.66	14.98	18.37	9.54	11.52	19.01	19.40	25.18	27.71
4	31.97	28.13	21.64	17.31	14.55	18.85	9.71	11.99	19.05	19.80	25.60	28.04
5	32.15	27.66	21.93	17.66	14.79	18.99	9.26	12.95	15.57	20.18	24.89	28.20
6	32.33	18.65	22.11	17.87	15.30	17.11	8.68	13.45	15.04	20.77	25.57	28.38
7	32.43	19.92	22.41	18.46	15.90	17.95	10.04	12.72	13.78	21.65	25.72	28.55
8	32.51	20.55	22.98	18.55	16.36	18.47	11.48	8.26	13.94	21.94	25.93	29.02
9	32.54	20.60	23.44	17.31	16.90	18.86	13.01	8.90	14.54	22.12	26.18	29.15
10	32.65	20.53	23.07	17.55	17.22	19.13	14.01	8.91	14.10	22.46	26.35	29.49
11	32.33	20.91	23.53	17.85	17.56	19.17	14.62	7.25	13.88	23.06	26.52	29.65
12	31.24	21.36	24.41	18.09	18.01	19.22	15.17	7.36	14.30	23.72	26.61	29.90
13	31.28	21.47	24.53	18.28	18.52	19.51	15.54	8.27	14.29	24.22	26.73	30.10
14	31.46	17.47	24.74	18.41	18.62	19.69	15.90	9.85	12.42	24.89	26.94	30.18
15	31.70	17.59	25.37	18.57	18.66	18.68	16.15	10.10	10.70	25.40	27.10	29.66
16	31.90	18.15	25.37	18.97	16.82	17.05	16.41	9.84	7.34	25.65	27.21	28.56
17	32.07	18.91	25.47	19.20	17.13	17.41	16.54	8.26	8.07	25.76	27.38	25.10
18	32.12	19.65	25.63	19.46	17.30	17.12	16.51	8.61	9.26	25.94	27.65	26.08
19	26.13	20.17	25.74	19.80	17.57	14.50	16.35	10.29	11.30	26.05	27.76	26.45
20	27.16	20.19	25.75	20.12	17.78	14.97	16.11	12.22	12.07	24.77	26.32	26.99
21	27.66	17.39	24.01	20.78	17.78	15.74	16.10	13.74	8.29	17.23	25.05	27.31
22	26.89	15.84	22.47	21.01	9.23	16.45	16.41	14.60	7.88	18.27	26.17	27.43
23	24.04	16.54	22.31	21.31	11.19	16.83	16.68	15.17	8.64	19.25	26.24	27.46
24	24.31	17.24	21.87	21.51	13.03	16.97	17.00	15.70	9.99	19.86	26.57	24.22
25	24.07	17.84	18.67	21.86	14.19	11.68	17.21	16.24	11.71	20.40	27.05	25.13
26	25.49	18.29	14.80	21.87	14.98	8.93	17.50	16.55	13.66	20.80	27.33	25.66
27	26.17	18.80	15.28	17.43	16.02	9.52	17.69	17.09	14.65	20.85	27.65	26.20
28	26.32	19.25	15.47	17.32	16.78	9.41	17.86	17.55	15.70	21.34	27.88	26.57
29	26.31	19.86	14.40	17.55	---	8.96	18.02	17.89	16.71	22.11	27.84	27.01
30	26.56	20.16	14.20	17.43	---	7.88	18.32	18.00	17.45	22.69	28.15	27.38
31	26.95	---	14.98	16.54	---	6.84	---	18.26	---	23.34	28.13	---
MEAN	29.47	20.54	21.59	18.60	16.03	15.79	14.45	12.81	13.35	21.96	26.52	27.71
MAX	32.65	28.18	25.75	21.87	18.66	19.69	18.32	18.42	19.05	26.05	28.15	30.18
MIN	24.04	15.84	14.20	15.63	9.23	6.84	7.27	7.25	7.34	17.23	23.86	24.22

WTR YR 1989: HIGHEST 6.84, MARCH 31; LOWEST 32.65, OCTOBER 10.



SNYDER COUNTY

403939076591001. Local number, SN 130.

LOCATION.--Lat 40°39'39", long 76°59'10", Hydrologic Unit 02050301, at State Game Land Number 194.

Owner: U.S. Geological Survey.

AQUIFER.--Trimmers Rock Formation of Late Devonian age.

WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 100 ft, cased to 40 ft, open hole.

INSTRUMENTATION.--Continuous strip-chart recorder.

DATUM.--Elevation of land surface is 740 ft above National Geodetic Vertical Datum of 1929, from topographic map.

Measuring point: Top of plywood cover, 3.6 ft above land-surface datum.

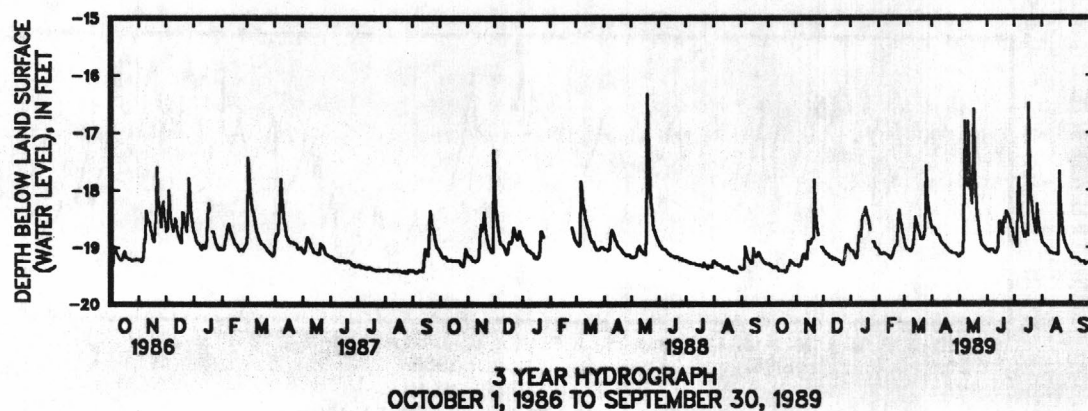
PERIOD OF RECORD.--June 1968 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 12.45 ft below land-surface datum, Sept. 26, 1975; lowest, 19.57 ft below land-surface datum, Nov. 23, 1980.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.29	19.30	19.05	19.07	19.07	18.89	18.66	19.16	19.06	18.86	18.91	19.10
2	19.28	19.30	19.07	19.07	19.10	18.95	18.65	19.11	19.05	18.91	18.94	19.15
3	19.32	19.33	19.07	19.06	19.12	19.00	18.66	19.11	19.08	18.95	18.95	19.18
4	19.31	19.34	19.11	19.14	19.13	19.03	18.68	19.11	19.03	18.99	18.97	19.19
5	19.34	19.32	19.13	19.16	19.11	19.04	18.73	19.08	19.03	18.10	18.98	19.19
6	19.36	19.29	19.12	19.18	19.09	19.04	18.77	18.73	19.04	17.78	18.99	19.19
7	19.36	19.19	19.15	19.19	19.12	19.07	18.78	18.80	19.04	18.14	19.02	19.19
8	19.35	19.14	19.18	19.16	19.12	19.07	18.78	17.64	19.08	18.36	19.06	19.19
9	19.36	19.11	19.18	18.83	19.13	19.06	18.82	17.90	19.09	18.52	19.07	19.19
10	19.34	19.12	19.17	18.74	19.14	19.00	18.87	17.93	19.10	18.64	19.10	19.21
11	19.36	19.20	19.21	18.80	19.14	18.92	18.90	16.80	19.08	18.75	19.09	19.23
12	19.39	19.20	19.20	18.80	19.17	18.67	18.92	17.53	19.08	18.82	19.10	19.25
13	19.41	19.20	19.19	18.53	19.18	18.47	18.95	17.92	18.98	18.82	19.11	19.26
14	19.40	18.90	19.19	18.42	19.20	18.52	18.97	18.16	18.56	18.72	19.12	19.26
15	19.40	18.89	19.22	18.45	19.17	18.59	18.96	18.23	18.54	18.79	19.11	19.26
16	19.41	18.94	19.22	18.39	19.13	18.68	19.00	17.90	18.62	18.79	19.12	19.25
17	19.42	18.94	19.22	18.30	19.08	18.72	19.01	16.59	18.71	16.49	19.13	19.29
18	19.41	18.84	19.24	18.38	19.00	18.77	19.03	17.57	18.77	17.70	19.14	19.31
19	19.40	18.84	19.26	18.46	18.97	18.85	19.06	18.00	18.55	18.10	19.12	19.28
20	19.44	18.83	19.26	18.49	18.97	18.86	19.07	18.25	18.48	18.15	17.67	19.28
21	19.43	17.82	19.29	18.62	18.94	18.86	19.08	18.44	18.57	18.32	18.14	19.27
22	19.34	18.29	19.31	18.69	18.52	18.82	19.08	18.58	18.37	18.49	18.36	19.27
23	19.33	18.49	19.30	---	18.34	18.75	19.10	18.68	18.40	18.61	18.53	19.27
24	19.32	18.65	19.28	---	18.47	18.69	19.10	18.83	---	18.70	18.77	19.30
25	19.22	18.78	19.13	18.90	18.54	17.58	19.10	18.90	---	18.75	18.86	19.29
26	19.25	---	18.97	18.90	18.61	17.99	19.10	18.94	18.52	18.24	18.91	19.24
27	19.26	---	18.95	18.96	18.73	18.19	19.10	18.97	18.63	18.43	18.97	19.25
28	19.28	---	18.95	18.99	18.80	18.33	19.13	18.98	18.67	18.59	19.01	19.23
29	19.29	18.99	18.99	19.01	---	18.46	19.15	19.00	18.67	18.71	19.04	19.22
30	19.31	19.00	19.01	19.01	---	18.56	19.17	19.03	18.81	18.78	19.07	19.25
31	19.32	---	19.05	19.04	---	18.64	---	19.04	---	18.85	19.10	---
MEAN	19.35	18.97	19.15	18.82	18.97	18.71	18.95	18.35	18.81	18.48	18.92	19.23
MAX	19.44	19.34	19.31	19.19	19.20	19.07	19.17	19.16	19.10	18.99	19.14	19.31
MIN	19.22	17.82	18.95	18.30	18.34	17.58	18.65	16.59	18.37	16.49	17.67	19.10

WTR YR 1989: HIGHEST 16.49, JULY 17; LOWEST 19.44, OCTOBER 20.



SULLIVAN COUNTY

413026076352901. Local number, SU 34.

LOCATION.--Lat 41°30'26", long 76°35'29", Hydrologic Unit 02050206, near Forksville.

Owner: U.S. Geological Survey.

AQUIFER.--Shale of Catskill Formation of Late Devonian age.

WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 50 ft, cased to 34 ft, open hole.

INSTRUMENTATION.--Digital recorder with 60-minute recording interval. Pa. Department of Environmental Resources satellite telemeter at station.

DATUM.--Elevation of land surface is 1,060 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 2.0 ft above land-surface datum.

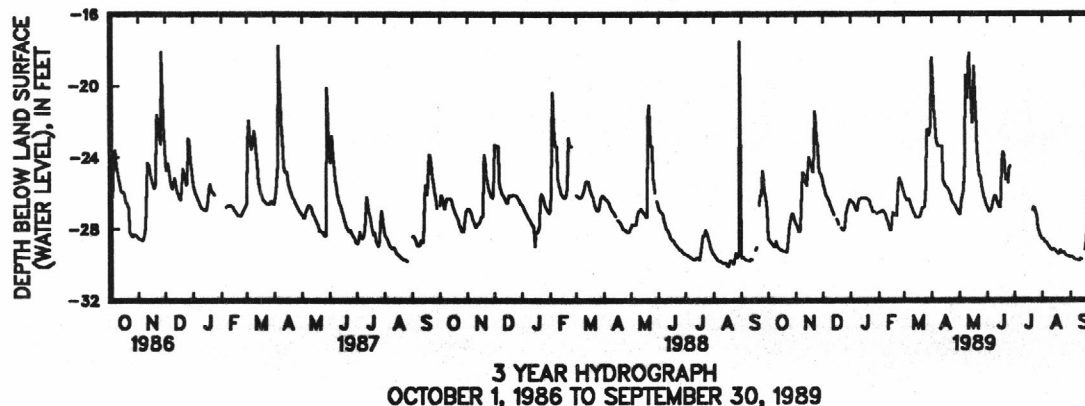
PERIOD OF RECORD.--April 1965 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 7.42 ft below land-surface datum, June 23, 1972; lowest, 31.12 ft below land-surface datum, Sept. 4, 1966.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28.55	27.75	25.48	26.40	27.06	26.02	18.46	27.15	26.78	---	28.58	29.60
2	28.58	27.86	25.72	26.46	27.06	26.14	19.95	27.14	26.90	---	28.58	29.60
3	28.65	28.00	25.90	26.50	27.02	26.30	21.18	26.52	27.02	---	28.66	29.56
4	28.72	28.12	26.08	26.64	26.94	26.38	22.04	26.16	27.04	---	28.72	29.63
5	28.80	28.13	26.18	26.76	26.94	26.38	22.80	25.98	26.92	---	28.74	29.66
6	28.88	27.92	26.26	26.86	27.00	26.32	23.10	25.82	26.78	---	28.80	29.72
7	28.94	25.84	26.38	26.96	27.06	26.46	23.36	24.10	26.50	---	28.90	29.74
8	28.98	24.86	26.52	26.96	27.18	26.58	23.36	19.40	26.22	---	29.00	29.74
9	29.00	24.84	26.66	26.46	27.34	26.72	23.36	20.66	26.15	---	29.07	29.76
10	28.68	25.04	26.78	26.29	27.50	26.88	23.36	20.68	26.16	---	29.14	29.78
11	28.99	25.30	26.96	26.36	27.62	27.00	23.36	18.76	26.33	---	29.18	29.78
12	29.02	25.48	27.10	---	27.80	27.12	23.36	18.18	26.54	---	29.20	29.66
13	29.06	25.56	27.20	26.24	28.06	27.22	25.22	19.88	26.66	---	29.18	29.70
14	29.12	24.94	---	26.26	28.06	27.34	25.40	21.04	26.78	---	29.12	---
15	29.16	24.00	---	26.28	28.03	27.36	25.56	22.04	26.76	---	29.20	---
16	29.18	24.22	27.46	26.24	27.06	27.36	25.60	22.04	25.97	---	29.26	---
17	29.20	24.31	27.58	26.24	27.12	27.36	25.66	18.90	24.23	---	29.32	29.15
18	29.22	24.42	27.74	26.26	27.18	27.32	25.72	19.66	23.70	---	29.38	29.04
19	29.22	24.76	---	26.32	27.22	27.22	25.80	21.32	23.80	---	29.40	---
20	29.24	24.82	---	26.34	27.24	26.95	25.94	22.66	23.90	---	29.38	---
21	29.26	23.42	27.92	26.42	27.24	26.82	26.08	23.66	25.23	26.95	29.20	26.66
22	29.26	21.44	28.02	26.56	26.04	26.80	26.25	24.50	25.17	26.77	29.26	26.12
23	28.58	22.24	28.04	26.68	25.22	26.76	26.40	25.00	24.97	26.84	29.34	26.12
24	28.08	23.10	28.04	26.86	25.12	26.74	26.54	25.00	25.40	27.02	29.32	25.47
25	27.78	23.36	27.86	27.00	25.34	25.52	26.60	25.20	24.67	27.24	29.32	24.78
26	27.40	24.40	27.22	27.04	25.42	22.48	26.68	25.58	24.47	27.58	29.42	25.34
27	27.16	24.80	26.90	27.00	25.62	22.44	26.76	25.94	---	27.98	29.48	25.90
28	27.12	24.92	26.73	---	25.86	22.73	26.88	26.18	---	28.18	29.52	26.22
29	27.20	24.98	26.62	27.12	---	22.78	26.98	26.34	---	28.36	29.54	26.54
30	27.40	25.18	26.39	27.14	---	22.23	27.08	26.52	---	28.48	29.54	26.92
31	27.62	---	26.34	27.07	---	18.72	---	26.66	---	28.56	29.56	---
MEAN	28.58	25.13	26.89	26.61	26.87	25.82	24.63	23.51	25.81	27.63	29.17	28.17
MAX	29.26	28.13	28.04	27.14	28.06	27.36	27.08	27.15	27.04	28.56	29.56	29.78
MIN	27.12	21.44	25.48	26.24	25.12	18.72	18.46	18.18	23.70	26.77	28.58	24.78

WTR YR 1989: HIGHEST 18.18, MAY 12; LOWEST 29.78, SEPTEMBER 10, 11.



SUSQUEHANNA COUNTY

415323075451301. Local number, SQ 61.

LOCATION.--Lat 41°53'23", long 75°45'13", Hydrologic Unit 02050101, at State Game Land Number 175.

Owner: U.S. Geological Survey.

AQUIFER.--Sandstone and shale of Susquehanna Group of Late Devonian age.

WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 175 ft, cased to 80 ft, open hole.

INSTRUMENTATION.--Continuous strip-chart recorder.

DATUM.--Elevation of land surface is 1,270 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 3.0 ft above land-surface datum.

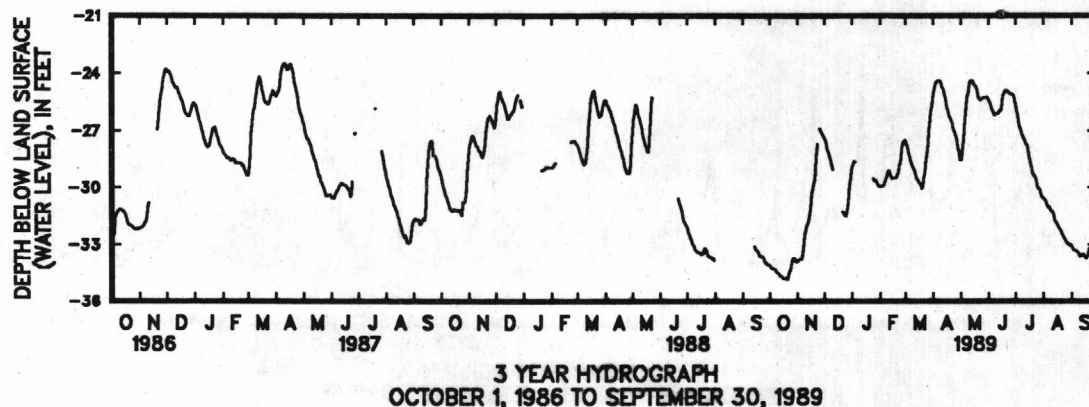
PERIOD OF RECORD.--July 1972 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 21.49 ft below land-surface datum, Apr. 3, 1978; lowest, 37.24 ft below land-surface datum, Aug. 30, 1982.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34.10	33.90	27.46	28.88	29.95	27.55	25.03	28.54	25.39	25.63	30.58	33.09
2	34.21	33.80	27.56	28.76	29.93	27.67	24.75	28.49	25.50	25.94	30.63	33.22
3	34.26	33.80	27.82	28.62	29.91	27.83	24.58	28.09	25.63	26.21	30.65	33.29
4	34.27	33.79	28.01	28.66	29.94	28.11	24.42	27.48	25.80	26.48	30.77	33.31
5	34.27	33.79	28.16	---	29.79	28.32	24.42	26.96	25.94	26.70	30.95	33.31
6	34.30	33.70	28.27	---	29.67	28.52	24.39	26.39	26.01	26.90	31.04	33.34
7	34.30	33.23	28.47	---	29.58	28.71	24.39	25.75	26.17	26.97	31.00	33.38
8	34.41	32.88	28.69	---	29.40	28.82	24.41	25.26	26.17	27.14	31.11	33.45
9	34.49	32.47	28.82	---	29.20	28.92	24.48	25.05	26.11	27.30	31.19	33.55
10	34.53	32.25	29.05	---	29.12	29.05	24.66	24.86	26.09	27.43	31.24	33.64
11	34.58	31.99	---	---	29.13	29.12	24.77	24.50	26.09	27.54	31.28	33.65
12	34.64	31.88	---	---	29.29	29.40	24.92	24.41	26.10	27.67	31.46	33.60
13	34.68	31.75	---	---	29.44	29.52	25.10	24.40	25.95	27.75	31.67	33.53
14	34.68	31.52	---	---	29.53	29.56	25.31	24.41	25.99	27.76	31.78	33.50
15	34.75	31.14	---	---	29.50	29.65	25.56	24.48	25.84	28.06	31.84	33.61
16	34.83	30.71	---	---	29.50	29.77	25.82	24.58	25.50	28.42	31.95	33.72
17	34.83	30.32	---	---	29.50	29.81	25.98	24.66	25.20	28.61	32.07	33.74
18	34.83	30.03	---	---	29.48	29.94	26.19	24.71	25.02	28.86	32.14	33.72
19	34.79	29.79	---	---	29.41	30.05	26.32	24.92	24.93	29.07	32.18	33.54
20	34.84	29.57	---	---	29.34	29.93	26.44	25.12	24.90	29.24	32.27	33.24
21	34.84	29.10	31.28	---	29.19	29.51	26.54	25.30	24.90	29.37	32.39	33.18
22	34.58	28.39	31.39	---	28.86	29.21	26.73	25.38	24.94	29.35	32.48	33.12
23	34.38	27.72	31.46	---	28.70	28.83	26.97	25.39	24.98	29.54	32.58	33.11
24	34.38	---	31.50	29.52	28.45	28.53	27.06	---	25.06	29.66	32.68	32.92
25	34.16	26.91	31.51	29.62	27.96	28.03	27.21	25.33	25.05	30.03	32.76	32.75
26	33.79	26.92	31.21	29.60	27.61	27.63	27.41	25.30	25.08	30.07	32.87	32.84
27	33.73	27.04	30.83	29.65	27.61	27.00	27.66	25.28	25.12	30.07	32.98	---
28	33.73	27.15	30.29	29.73	27.53	26.40	27.87	25.27	25.14	30.20	32.96	32.71
29	33.80	27.24	29.85	29.87	---	25.97	28.19	25.26	25.16	30.36	33.01	32.75
30	33.92	27.33	29.46	29.94	---	25.72	28.53	25.25	25.44	30.52	33.08	32.98
31	33.96	---	29.08	29.92	---	25.38	---	25.30	---	30.52	33.00	---
MEAN	34.38	30.69	29.53	29.40	29.16	28.47	25.87	25.54	25.51	28.37	31.89	33.30
MAX	34.84	33.90	31.51	29.94	29.95	30.05	28.53	28.54	26.17	30.52	33.08	33.74
MIN	33.73	26.91	27.46	28.62	27.53	25.38	24.39	24.40	24.90	25.63	30.58	32.71

WTR YR 1989: HIGHEST 24.39, APRIL 6, 7; LOWEST 34.84, OCTOBER 20, 21.



TIOGA COUNTY

414513077333701. Local number, TI 100.

LOCATION.--Lat 41°45'13", long 77°33'37", Hydrologic Unit 02050205, at State Game Land Number 208.

Owner: U.S. Geological Survey.

AQUIFER.--Sandstone of Lock Haven Formation of Late Devonian age.

WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 77 ft, cased to 67 ft, open hole.

INSTRUMENTATION.--Continuous strip-chart recorder.

DATUM.--Elevation of land surface is 1,310 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 4.0 ft above land-surface datum.

REMARKS.--Water-quality records for 1973-75 are available in files of district office.

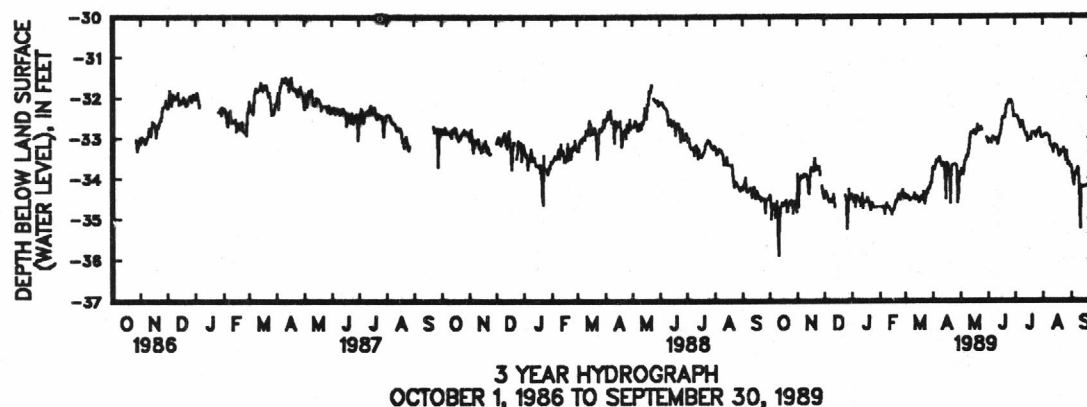
PERIOD OF RECORD.--July 1972 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 31.02 ft below land-surface datum, Mar. 27, 1978; lowest, 35.88 ft below land-surface datum, Oct. 11, 1988.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34.40	33.88	34.49	34.39	34.69	34.39	33.71	33.92	33.12	32.44	32.95	33.68
2	34.46	34.70	34.31	34.59	34.69	34.49	33.77	33.75	33.03	32.46	32.96	33.82
3	34.99	34.06	34.38	34.41	34.71	34.49	33.73	33.76	33.07	32.46	32.92	33.98
4	34.62	34.02	34.38	34.70	34.68	34.42	33.54	33.90	33.08	32.50	32.90	34.16
5	34.63	33.91	34.56	34.50	34.76	34.52	33.61	33.75	33.12	32.55	32.90	33.95
6	34.62	33.97	34.59	34.41	34.87	34.54	33.54	33.57	32.97	32.65	32.94	33.85
7	34.97	33.97	34.51	34.45	34.73	34.50	33.50	33.54	33.02	32.74	32.94	33.83
8	34.76	33.88	34.56	34.52	34.60	34.49	33.46	33.43	33.05	32.62	32.99	33.73
9	34.55	33.88	34.59	34.55	34.72	34.48	33.62	33.46	33.00	32.59	33.16	33.79
10	35.25	33.90	34.53	34.68	34.72	34.45	33.70	33.31	33.02	32.66	33.22	34.13
11	35.88	33.90	34.39	34.67	34.70	34.35	33.68	33.24	33.15	32.80	33.23	35.22
12	34.72	34.08	34.69	34.36	34.77	34.52	33.61	32.91	33.11	32.85	33.36	34.22
13	34.92	34.33	---	34.73	34.80	34.50	33.70	32.85	32.94	32.94	33.17	34.18
14	34.64	34.36	---	34.57	34.88	34.43	34.12	32.86	32.93	32.88	33.17	34.23
15	34.59	33.80	---	34.59	34.78	34.53	34.49	32.89	32.76	33.07	33.22	34.21
16	34.68	33.72	---	34.56	34.77	34.59	33.60	32.80	32.60	32.99	33.18	34.18
17	34.62	33.76	---	34.58	34.70	34.53	33.63	32.81	32.49	33.00	33.28	34.21
18	34.56	33.78	---	34.46	34.54	34.44	33.69	32.91	32.48	33.04	33.39	34.21
19	34.52	33.82	---	34.56	34.58	34.48	34.02	32.85	32.51	32.96	33.45	34.16
20	34.82	33.50	---	34.65	34.54	34.53	34.61	32.67	32.47	32.86	33.42	34.17
21	34.80	33.79	---	34.77	34.39	34.32	33.71	32.74	32.19	32.86	33.30	34.14
22	34.62	33.77	---	34.65	34.40	34.62	33.66	32.82	32.19	32.85	33.30	34.08
23	34.55	33.69	---	34.58	34.53	34.49	33.64	32.77	32.12	32.94	33.36	34.12
24	34.65	33.77	34.40	34.72	34.44	34.48	33.65	32.73	32.07	32.98	33.25	34.26
25	34.53	33.70	34.59	---	34.34	34.27	33.63	32.80	32.14	32.84	33.38	34.18
26	34.63	33.90	35.22	---	34.27	34.37	33.67	---	32.07	---	33.56	34.15
27	34.85	---	34.70	---	34.44	34.21	33.73	---	32.09	32.81	33.32	34.29
28	34.56	34.18	34.26	---	34.50	34.25	34.58	---	32.20	32.76	33.64	34.19
29	34.65	34.34	34.52	---	---	34.10	34.31	---	32.47	32.94	33.66	---
30	34.71	34.49	34.49	---	---	34.11	33.84	32.98	32.48	33.00	33.60	---
31	34.83	---	34.39	---	---	33.75	---	33.02	---	32.99	33.72	---
MEAN	34.73	33.96	34.53	34.57	34.63	34.41	33.79	33.15	32.66	32.80	33.25	34.12
MAX	35.88	34.70	35.22	34.77	34.88	34.62	34.61	33.92	33.15	33.07	33.72	35.22
MIN	34.40	33.50	34.26	34.36	34.27	33.75	33.46	32.67	32.07	32.44	32.90	33.68

WTR YR 1989: HIGHEST 32.07, JUNE 24; LOWEST 35.88, OCTOBER 11.



UNION COUNTY

405928077115501. Local number, UN 51.

LOCATION.--Lat 40°59'28", long 77°11'55", Hydrologic Unit 02050206, at Raymond B. Winter Park.

Owner: U.S. Geological Survey.

AQUIFER.--Shale of Reedsville Formation of Late Ordovician age.

WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 115 ft, cased to 91 ft, open hole.

INSTRUMENTATION.--Digital recorder with 60-minute recording interval. Pa. Department of Environmental Resources satellite telemeter at station.

DATUM.--Elevation of land surface is 1,550 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of plywood cover, 3.6 ft above land-surface datum.

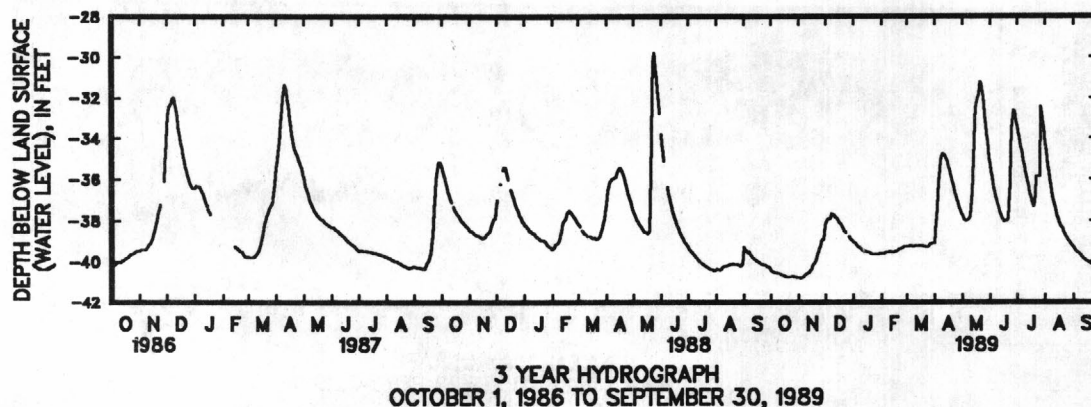
PERIOD OF RECORD.--October 1967 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 25.26 ft below land-surface datum, Apr. 10, 1978; lowest, 42.24 ft below land-surface datum, Jan. 29 to Feb. 1, 1981.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40.43	40.76	38.07	39.02	39.58	39.24	39.07	37.71	35.30	33.46	34.30	39.27
2	40.45	40.78	37.98	39.06	39.59	39.24	38.02	37.80	35.64	33.72	34.66	39.36
3	40.47	40.80	37.89	39.09	39.58	39.23	37.88	37.91	35.89	33.97	35.02	39.42
4	40.48	40.78	37.89	39.18	39.57	39.22	36.77	37.96	36.17	34.21	35.36	39.48
5	40.51	40.77	37.89	39.21	39.54	39.21	36.09	37.99	36.37	34.41	35.69	39.52
6	40.52	40.75	37.89	39.26	39.52	39.21	35.87	38.00	36.63	34.62	36.00	39.55
7	40.53	40.69	37.64	39.28	39.52	39.23	35.14	37.96	36.84	34.86	36.29	39.59
8	40.55	40.66	37.69	39.31	39.52	39.23	34.89	37.91	37.02	35.11	36.58	39.65
9	40.56	40.62	37.69	39.38	39.52	39.23	34.75	37.88	37.15	35.34	36.84	39.69
10	40.56	40.57	37.70	39.41	39.50	39.21	34.77	37.73	37.34	35.58	37.04	39.74
11	---	40.55	37.81	39.45	39.48	39.21	34.81	37.35	37.50	35.85	37.22	39.79
12	40.62	40.53	37.84	39.43	39.53	39.22	34.86	36.64	37.59	36.05	37.40	39.84
13	40.64	40.47	37.87	39.49	39.52	39.21	34.98	35.87	37.73	36.25	37.60	39.86
14	40.65	40.41	37.91	39.49	39.52	39.20	35.07	34.17	37.85	36.49	37.75	39.90
15	40.67	40.35	38.04	39.49	39.51	39.22	35.20	33.17	37.93	36.68	37.89	39.95
16	40.69	40.25	38.07	39.51	39.50	39.22	35.41	32.52	38.01	36.84	38.02	39.96
17	40.70	40.15	38.13	39.53	39.50	39.22	35.54	32.19	38.01	37.01	38.18	40.00
18	40.73	40.09	38.20	39.53	39.45	39.21	35.73	32.03	37.98	37.17	38.26	40.03
19	40.74	40.01	38.28	39.56	39.42	39.23	35.96	31.87	37.98	37.29	38.30	40.05
20	40.75	39.89	38.36	39.58	39.41	39.23	36.12	31.49	37.98	37.23	38.35	40.09
21	40.75	39.77	38.48	39.61	39.37	39.23	36.29	31.23	37.87	36.73	38.50	40.11
22	40.74	39.65	38.53	39.60	39.35	39.27	36.47	31.35	37.27	35.89	38.58	40.12
23	---	39.49	38.59	39.60	39.33	39.28	36.65	31.56	36.19	35.87	38.69	40.15
24	40.71	39.34	---	39.61	39.31	39.27	36.81	31.99	34.67	35.87	38.77	40.16
25	40.71	39.21	---	39.63	39.29	39.21	36.95	32.34	33.55	35.87	38.83	40.16
26	40.72	39.03	---	39.61	39.25	39.14	37.11	32.89	32.93	35.87	38.91	40.21
27	40.73	38.91	38.77	39.62	39.24	39.10	37.25	33.36	32.65	32.45	38.98	40.23
28	40.75	38.89	38.86	39.63	39.24	39.10	37.37	33.81	32.71	32.78	39.05	40.24
29	40.75	38.89	38.89	39.61	---	39.09	37.51	34.20	---	33.13	39.11	40.27
30	40.77	38.25	38.92	39.58	---	39.09	37.65	34.59	33.20	33.50	39.19	40.29
31	40.77	---	38.99	39.58	---	39.07	---	34.97	---	33.91	39.23	---
MEAN	40.64	40.04	38.17	39.45	39.45	39.20	36.23	34.79	36.34	35.29	37.57	39.89
MAX	40.77	40.80	38.99	39.63	39.59	39.28	39.07	38.00	38.01	37.29	39.23	40.29
MIN	40.43	38.25	37.64	39.02	39.24	39.07	34.75	31.23	32.65	32.45	34.30	39.27

WTR YR 1989: HIGHEST 31.23, MAY 21; LOWEST 40.80, NOVEMBER 3.



YORK COUNTY

400320076451501. Local number, YO 180.

LOCATION.--Lat 40°03'20", long 76°45'15", Hydrologic Unit 02050308, near Zions View.

Owner: New York Wire Cloth Company.

AQUIFER.--Shale of New Oxford Formation of Late Triassic age.

WELL CHARACTERISTICS.--Drilled unused well, diameter 8 in., depth 490 ft, casing information not available.

INSTRUMENTATION.--Continuous strip-chart recorder.

DATUM.--Elevation of land surface is 360 ft above National Geodetic Vertical Datum of 1929, from topographic map.

Measuring point: Top of casing at land-surface datum.

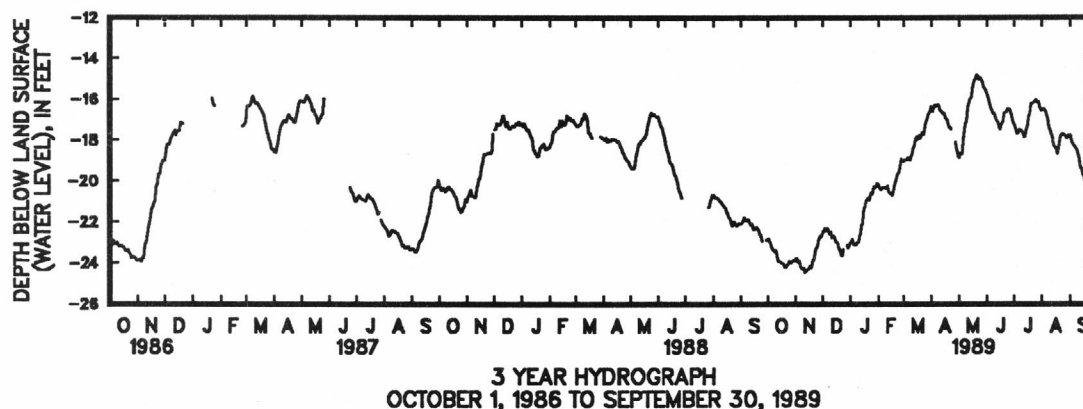
PERIOD OF RECORD.--March 1962 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 14.81 ft below land-surface datum, May 21, 1989; lowest, 37.55 ft below land-surface datum, Nov. 3, 4, 1963.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22.84	23.77	22.44	23.00	20.19	19.05	16.59	18.85	15.76	17.23	16.55	17.76
2	22.81	23.76	22.44	22.93	20.35	18.96	16.60	18.64	15.89	17.37	16.50	17.90
3	22.94	23.95	22.32	22.84	20.44	19.00	16.39	18.70	16.13	17.55	16.50	18.07
4	23.01	23.96	22.44	23.10	20.44	19.00	16.30	18.72	16.23	17.71	16.54	18.21
5	23.18	23.88	22.40	23.09	20.33	18.86	16.38	18.51	16.41	17.71	16.62	18.28
6	23.33	24.10	22.31	23.09	20.31	18.85	16.31	18.00	16.52	17.60	16.77	18.31
7	23.36	24.29	22.40	23.10	20.33	18.99	16.31	17.49	16.65	17.50	16.97	18.38
8	23.41	24.29	22.57	23.02	20.30	18.97	16.28	17.25	16.74	17.52	17.18	18.45
9	23.44	24.31	22.49	22.98	20.37	18.83	16.41	17.07	16.72	17.53	17.41	18.55
10	23.37	24.23	22.49	22.95	20.30	18.69	16.58	16.77	16.91	17.57	17.53	18.71
11	23.61	24.46	22.78	22.70	20.23	18.46	16.59	16.41	17.01	17.73	17.66	18.94
12	23.82	24.43	22.70	22.53	20.48	18.29	16.62	16.13	17.08	17.86	17.84	19.20
13	23.92	24.34	22.67	22.14	20.58	18.17	16.69	16.00	17.15	17.82	18.03	19.37
14	23.88	24.34	22.70	22.07	20.60	17.95	16.73	15.97	17.31	17.52	18.26	19.43
15	23.93	24.31	22.95	21.54	20.57	17.83	16.71	15.84	17.48	17.46	18.33	19.67
16	23.99	24.22	22.96	21.37	20.71	18.00	16.92	15.50	17.32	17.24	18.35	19.73
17	23.99	24.14	22.99	21.20	20.60	17.90	16.99	15.20	17.24	16.87	18.52	19.92
18	24.01	24.24	23.15	21.00	20.33	17.78	17.03	15.09	17.13	16.73	18.67	20.06
19	24.10	24.16	23.32	20.89	20.10	17.92	17.24	15.01	17.01	16.49	18.51	20.06
20	24.20	23.83	23.34	20.84	20.08	17.83	17.38	14.86	16.70	16.23	18.21	20.05
21	24.22	23.86	23.54	20.94	19.79	17.63	17.40	14.81	16.66	16.23	17.98	20.03
22	24.08	23.69	23.64	20.82	19.69	17.71	17.48	14.89	16.63	---	17.80	19.78
23	24.09	23.30	23.53	20.66	19.61	17.74	---	15.03	16.52	---	17.74	19.78
24	24.00	23.28	23.34	20.56	19.50	17.52	---	14.96	16.47	---	17.71	19.99
25	23.89	23.13	---	20.65	19.28	17.11	---	15.02	16.48	16.06	17.78	20.01
26	23.93	22.97	---	20.27	18.93	17.07	---	15.07	16.53	16.13	17.77	19.86
27	23.99	22.79	---	20.32	---	16.96	18.12	15.21	16.65	16.13	17.84	20.02
28	23.88	22.69	23.12	20.33	18.97	16.75	18.36	15.38	16.78	16.13	17.91	19.95
29	23.87	22.74	23.27	20.24	---	16.67	18.59	15.47	17.01	16.37	17.91	19.79
30	23.86	22.65	23.16	20.10	---	16.58	18.79	15.50	17.15	16.52	17.78	19.93
31	23.90	---	23.05	20.14	---	16.37	---	15.62	---	16.56	17.86	---
MEAN	23.70	23.80	22.88	21.66	20.13	17.98	16.99	16.22	16.74	17.05	17.65	19.27
MAX	24.22	24.46	23.64	23.10	20.71	19.05	18.79	18.85	17.48	17.86	18.67	20.06
MIN	22.81	22.65	22.31	20.10	18.93	16.37	16.28	14.81	15.76	16.06	16.50	17.76

WTR YR 1989: HIGHEST 14.81, MAY 21; LOWEST 24.46, NOVEMBER 11.



INDEX

Page	Page
ACCESS TO WATSTORE DATA.....	18
ACRE-FOOT, DEFINITION OF.....	19
ADAMS COUNTY, GROUND-WATER RECORDS IN.....	232-235
ADENOSINE TRIPHOSPHATE (ATP), DEFINITION OF....	19
AGRICULTURAL FIELD RUNOFF SITE NO. 1 NEAR CHURCHTOWN.....	180-183
AKRON, COCALICO CREEK NEAR.....	225
ALGAE, DEFINITION OF.....	19
ALGAL GROWTH POTENTIAL (AGP), DEFINITION OF.....	19
ALLENWOOD, WHITE DEER HOLE CREEK AT.....	223
ANALYSIS OF SURFACE-WATER SAMPLES COLLECTED AT PARTIAL-RECORD STATIONS.....	230
ANDERSON CREEK AT CURWENSVILLE.....	221, 227
ANSONIA, MARSH CREEK AT.....	227
PINE CREEK AT.....	227
AQUIFER, DEFINITION OF.....	19
ARCHBALD, LACKAWANNA RIVER AT.....	49
ARTESIAN, DEFINITION OF.....	19
ARTIFICIAL SUBSTRATE, DEFINITION OF.....	24
ASH MASS, DEFINITION OF.....	19
ATGLEN, VALLEY CREEK NEAR.....	230-231
AUGHWICK CREEK, NEAR THREE SPRINGS.....	119
AXEMANN, SPRING CREEK NEAR.....	79
BABB CREEK AT MORRIS.....	222
BACK CREEK NEAR CHAMBERSBURG.....	226
BACTERIA, DEFINITION OF.....	19
BALD EAGLE CREEK, AT BLANCHARD.....	84
AT CASTANEA.....	227
AT TYRONE.....	109
BELOW SPRING CREEK AT MILESBURG.....	81
NEAR BEECH CREEK STATION.....	87
NEAR FAWN GROVE.....	210-214
NEAR MILESBURG.....	82-83
BARD, LITTLE WILLS CREEK AT.....	226, 228
BASE DISCHARGE, DEFINITION OF.....	20
BEAVERDAM BRANCH JUNIATA RIVER AT HOLLIDAYSBURG.....	228
BEAVERTOWN, MIDDLE CREEK NEAR.....	223
BECK CREEK NEAR CLEONA.....	225
BEDFORD COUNTY, GROUND-WATER RECORDS IN.....	236
BED LOAD, DEFINITION OF.....	23
BED LOAD DISCHARGE, (TONS PER DAY), DEFINITION OF.....	23
BED MATERIAL, DEFINITION OF.....	19
BEECH CREEK AT MONUMENT.....	86
BEECH CREEK STATION, BALD EAGLE CREEK NEAR.....	87
BELDEN, DUNNING CREEK AT.....	112
BELLEGROVE, QUITTAPAHILLA CREEK NEAR.....	146
BENEZETTE, TROUT RUN AT.....	222
BENNETT BRANCH SINNEMAHONING CREEK AT DRIFTWOOD.....	227
BENTLEY CREEK AT RIDGEBURY.....	219
BIOCHEMICAL OXYGEN DEMAND (BOD), DEFINITION OF.....	19
BIOMASS, DEFINITION OF.....	19
BIRCH RUN NEAR FAYETTEVILLE.....	226
BIRCHARDVILLE, MIDDLE BRANCH WYALUSING CREEK TRIBUTARY NEAR.....	219
BIXLER RUN NEAR LOYSVILLE.....	127
BLACK MOSHANNON CREEK NEAR PHILIPSBURG.....	222
BLAIR COUNTY, GROUND-WATER RECORDS IN.....	237
BLANCHARD, BALD EAGLE CREEK AT.....	84
MARSH CREEK AT.....	85
BLOCKHOUSE CREEK NEAR ENGLISH CENTER.....	89
BLOOMSBURG, FISHING CREEK AT.....	221
FISHING CREEK NEAR.....	55
BLUE-GREEN ALGAE, DEFINITION OF.....	22
BOTTOM MATERIAL: SEE BED MATERIAL	
BOWER, WEST BRANCH SUSQUEHANNA RIVER AT.....	62
BOWERY RUN NEAR QUARRYVILLE.....	225
BOWMAN CREEK NEAR NOXEN.....	220
BRADFORD COUNTY, GROUND-WATER RECORDS IN.....	238
BRUSH CREEK AT GAPSVILLE.....	224
BRUSH RUN, SITE 1, NEAR McSHERRYSTOWN.....	150
SITE 2, NEAR McSHERRYSTOWN.....	152-159
SITE 3, NEAR McSHERRYSTOWN.....	160
SITE 4, NEAR McSHERRYSTOWN.....	161
TILE DRAIN TO, NEAR McSHERRYSTOWN.....	151
BUCK, CONOWINGO CREEK NEAR.....	218
BUFFALO CREEK, AT LEWISBURG.....	223
NEAR NEWPORT.....	224
BUFFALO RUN TRIBUTARY NEAR MANNS CHOICE.....	223
BUTLER CREEK AT GIBSON.....	220
CAMERON COUNTY, GROUND-WATER RECORDS IN.....	239
CAMP HILL, YELLOW BREECHES CREEK NEAR.....	142
CANTON, TOWANDA CREEK AT.....	219
CARLISLE, LETORT SPRING RUN NEAR.....	133
CARSONVILLE, CLARK CREEK NEAR.....	132
DeHART RESERVOIR NEAR.....	131
CASTANEA, BALD EAGLE CREEK AT.....	227
CASTLE FIN, MUDDY CREEK AT.....	225, 227
CATAWISSA, CATAWISSA CREEK AT.....	221
CEDAR RUN, PINE CREEK AT.....	88
CEDAR SPRINGS, FISHING CREEK NEAR.....	227
CELLS/VOLUME, DEFINITION OF.....	19
CENTRE COUNTY, GROUND-WATER RECORDS IN.....	240
CFS-DAY, DEFINITION OF.....	19
CHAMBERSBURG, BACK CREEK NEAR.....	226
CHEMICAL OXYGEN DEMAND (COD), DEFINITION OF....	20
CHEMUNG RIVER BASIN, RESERVOIRS IN.....	39-40
CHEST CREEK NEAR MAHAFFEY.....	221
CHICKIES CREEK NEAR MARIETTA.....	228
CHILLISQUAKE CREEK AT WASHINGTONVILLE.....	101
CHLOROPHYLL, DEFINITION OF.....	20
CHRISTIANA, EAST BRANCH OCTORARO CREEK AT.....	230-231
CHURCHTOWN, AGRICULTURAL FIELD RUNOFF SITE NO. 1 NEAR.....	180-183
LITTLE CONESTOGA CREEK, NEAR.....	194-202
UNNAMED TRIBUTARY TO, SITE 9, AT.....	193
CLARK CREEK BASIN, RESERVOIR IN.....	131
CLARK CREEK NEAR CARSONVILLE.....	132
CLEARFIELD CREEK, AT DIMELING.....	65
AT FLINTON.....	221
CLEONA, BECK CREEK NEAR.....	225
CLINTON COUNTY, GROUND-WATER RECORDS IN.....	241
COCALICO CREEK NEAR AKRON.....	225
CODORUS CREEK, AT PLEASUREVILLE.....	170-174
AT SPRING GROVE.....	165
NEAR YORK.....	167-169
SOUTH BRANCH, NEAR YORK.....	166
CODORUS CREEK BASIN, RESERVOIRS IN.....	175
COLOR UNIT, DEFINITION OF.....	20
CONESTOGA RIVER, AT CONESTOGA.....	205-209
AT LANCASTER.....	203
CONOCOCHAEQUE CREEK NEAR FAYETTEVILLE.....	226
CONODOGUINET CREEK, AT ENOLA.....	228
AT ORRSTOWN.....	224
NEAR HOGESTOWN.....	134
CONOWINGO CREEK NEAR BUCK.....	218
CONTENTS, DEFINITION OF.....	20
CONTINUOUS RECORD STATION, DEFINITION OF.....	20
CONTROL, DEFINITION OF.....	20
CONTROL STRUCTURE, DEFINITION OF.....	20
COOPERATION.....	1-2
COREY CREEK NEAR MAINESBURG.....	34
COVINGTON, TIOGA RIVER AT.....	219
COWANESQUE RIVER, AT ELKLAND.....	216
AT NELSON.....	219
AT WESTFIELD.....	37
NEAR LAWRENCEVILLE.....	38
COWANESQUE LAKE.....	39-40
CRAIGHEAD, YELLOW BREECHES CREEK AT.....	224
CREST-STAGE PARTIAL-RECORD STATIONS, ANNUAL MAXIMUM DISCHARGE AT.....	216-218
CROOKED CREEK BELOW CATLIN HOLLOW AT MIDDLEBURY CENTER.....	216
CROSS FORK, KETTLE CREEK AT.....	72

INDEX--Continued

	Page		Page
CUBIC FOOT PER SECOND (ft ³ /s), DEFINITION OF..	20	FORKSVILLE, LOYALSOCK CREEK NEAR.....	222
CUBIC FEET PER SECOND PER SQUARE MILE		FOSTER JOSEPH SAYERS LAKE.....	102-103
[(ft ³ /s)/mi ²], DEFINITION OF.....	20	FRANKLIN COUNTY, GROUND-WATER RECORDS IN.....	244
CUMBERLAND COUNTY, GROUND-WATER		FRANKSTOWN BRANCH JUNIATA RIVER,	
RECORDS IN.....	242	AT EAST FREEDOM.....	223
CURWENSVILLE, ANDERSON CREEK AT.....	221, 227	AT WILLIAMSBURG.....	108
WEST BRANCH SUSQUEHANNA RIVER AT.....	63	FREEBURG, MIDDLE CREEK NEAR.....	227
CURWENSVILLE LAKE.....	102-103	FULTON COUNTY, GROUND-WATER RECORDS IN.....	245
DALMATIA, EAST MAHATANGO CREEK NEAR.....	107		
DANVILLE, SUSQUEHANNA RIVER AT.....	56-61	GAGE HEIGHT (G.H.), DEFINITION OF.....	20
DATA COLLECTION PLATFORM (DCP), DEFINITION OF..	20	GAGING STATION, DEFINITION OF.....	20
DAUPHIN, STONY CREEK AT WATER TANK TRAIL NEAR..	224	GAGING STATIONS, LIST OF, IN DOWNSTREAM	
DAUPHIN COUNTY, GROUND-WATER RECORDS IN.....	243	ORDER.....	vi-vii
DEFINITION OF TERMS.....	19-25	GAPSVILLE, BRUSH CREEK AT.....	224
DeHART RESERVOIR NEAR CARSONVILLE.....	131	GETTYSBURG, MARSH CREEK NEAR.....	226
DIATOMS, DEFINITION OF.....	22	ROCK CREEK NEAR.....	228
DILLSBURG, DOGWOOD RUN NEAR.....	224	GIBSON, BUTLER CREEK AT.....	220
DIMELING, CLEARFIELD CREEK AT.....	65	GLENDALE LAKE.....	102-103
DISCHARGE, AT MISCELLANEOUS SITES.....	227-229	GLENWOOD, TUNKHANNOCK CREEK AT.....	220
AT PARTIAL-RECORD STATIONS.....	216-226	GREEN ALGAE, DEFINITION OF.....	22
BASE, DEFINITION OF.....	20		
DEFINITION OF.....	20	HAMMOND LAKE.....	39-40
DISSOLVED, DEFINITION OF.....	20	HARDNESS, DEFINITION OF.....	20
DISSOLVED-SOLIDS CONCENTRATION, DEFINITION OF..	20	HARPERS TAVERN, SWATARA CREEK AT.....	145
DOGWOOD RUN NEAR DILLSBURG.....	224	HARRISBURG, SUSQUEHANNA RIVER AT.....	135-141
DORNSIFE, MAHANOHY CREEK AT.....	123	HARVEYVILLE, HUNTINGTON CREEK NEAR.....	221
DOWNSTREAM ORDER SYSTEM.....	11	HERSHEY, SWATARA CREEK NEAR.....	147-149
DRAINAGE AREA, DEFINITION OF.....	20	HOGESTOWN, CONODOGUINET CREEK NEAR.....	134
DRAINAGE BASIN, DEFINITION OF.....	20	HOLLIDAYSBURG, BEAVERDAM BRANCH JUNIATA	
DRIFTWOOD, BENNETT BRANCH SINNEMAHONING		RIVER AT.....	228
CREEK AT.....	227	HOUSERVILLE, SPRING CREEK AT.....	78
DRIFTWOOD BRANCH SINNEMAHONING CREEK,		HUNTINGDON, JUNIATA RIVER AT.....	111
AT EMPORIUM.....	222	RAYSTOWN BRANCH JUNIATA RIVER BELOW	
AT STERLING RUN.....	69	RAYSTOWN DAM NEAR.....	117
DRY MASS, DEFINITION OF.....	19	STANDING STONE CREEK NEAR.....	223
DUNNING CREEK AT BELDEN.....	112	HUNTINGDON COUNTY, GROUND-WATER RECORDS IN....	246
		HUNTINGDON CREEK NEAR HARVEYVILLE.....	221
EAST BRANCH CODORUS CREEK TRIBUTARY		HYDE, WEST BRANCH SUSQUEHANNA RIVER AT.....	64
NEAR WINTERSTOWN.....	225	HYDROLOGIC BENCH-MARK NETWORK,	
EAST BRANCH LACKAWANNA RIVER		DEFINITION OF.....	21
AT UNION DALE.....	220	RECORDS AT.....	75-77
EAST BRANCH OCTORARO CREEK, AT CHRISTIANA.....	230-231	HYDROLOGIC CONDITIONS, SUMMARY OF.....	2
NEAR MT. VERNON.....	225	HYDROLOGIC UNIT, DEFINITION OF.....	21
EAST BRANCH WYALUSING CREEK AT LAWTON.....	219	HYNDMAN, WILLS CREEK BELOW.....	226
EAST FREEDOM, FRANKSTOWN BRANCH			
JUNIATA RIVER AT.....	223	INDIAN ROCK DAM.....	175
EAST MAHATANGO CREEK NEAR DALMATIA.....	107	INSTANTANEOUS DISCHARGE, DEFINITION OF.....	20
ELIMSPORT, WHITE DEER HOLE CREEK NEAR.....	217	INTRODUCTION.....	1
ELIZABETHVILLE, WISCONSINO CREEK NEAR.....	223	INWOOD, SWATARA CREEK NEAR.....	144
ELKLAND, COWANESQUE RIVER AT.....	216		
EMPORIUM, DRIFTWOOD BRANCH SINNEMAHONING		JUNIATA COUNTY, GROUND-WATER RECORDS IN.....	247
CREEK AT.....	222	JUNIATA RIVER, AT HUNTINGDON.....	111
SINNEMAHONING PORTAGE CREEK NEAR.....	222	AT MAPLETON DEPOT.....	118
WALDY RUN NEAR.....	68	AT NEWPORT.....	120-126
ENGLISH CENTER, BLOCKHOUSE CREEK NEAR.....	89	FRANKSTOWN BRANCH, AT EAST FREEDOM.....	223
LITTLE PINE CREEK NEAR.....	222	AT WILLIAMSBURG.....	108
ENOLA, CONODOGUINET CREEK AT.....	228	RAYSTOWN BRANCH, AT SAXTON.....	113-115
EXPLANATION OF, GROUND-WATER LEVEL RECORDS....	16-17	AT WOLFSBURG.....	217
GROUND-WATER-QUALITY RECORDS.....	17-18	BELOW RAYSTOWN DAM NEAR HUNTINGDON.....	117
STAGE AND WATER-DISCHARGE RECORDS.....	11-14	JUNIATA RIVER BASIN, LAKE IN.....	116
SURFACE-WATER-QUALITY RECORDS.....	14-16		
EYERS GROVE, LITTLE FISHING CREEK AT.....	221	KARTHAUS, WEST BRANCH SUSQUEHANNA RIVER AT.....	67
		KETTLE CREEK, AT CROSS FORK.....	72
FAWN GROVE, BALD EAGLE CREEK NEAR.....	210-214	NEAR WESTPORT.....	73
FAYETTEVILLE, BIRCH RUN NEAR.....	226	KETTLE CREEK LAKE.....	102-103
CONOCOCHEAQUE CREEK NEAR.....	226	KISHACOQUILLAS CREEK AT REEDSVILLE.....	217
FECAL COLIFORM BACTERIA, DEFINITION OF.....	19		
FECAL STREPTOCOCCAL BACTERIA, DEFINITION OF....	19	LACKAWANNA RIVER, AT ARCHBALD.....	49
FIRST FORK SINNEMAHONING CREEK, AT WHARTON.....	216	AT OLD FORGE.....	50
NEAR SINNEMAHONING.....	71	NEAR FOREST CITY.....	48
FIRST FORK SINNEMAHONING CREEK RESERVOIR.....	102-103	LACKAWANNA RIVER BASIN, LAKE IN.....	47
FISHING CREEK, AT BLOOMSBURG.....	221	LAKE MARBURG.....	175
AT FORKS.....	221	LAKES AND RESERVOIRS:	
AT MILL HALL.....	222	COWANESQUE LAKE.....	39-40
NEAR BLOOMSBURG.....	55	CURWENSVILLE LAKE.....	102-103
NEAR CEDAR SPRINGS.....	227	DeHART RESERVOIR.....	131
FLINTON, CLEARFIELD CREEK AT.....	221	FIRST FORK SINNEMAHONING CREEK RESERVOIR.....	102-103
FOREST CITY, LACKAWANNA RIVER NEAR.....	48	FOSTER JOSEPH SAYERS LAKE.....	102-103
FORKS, FISHING CREEK AT.....	221	GLENDALE LAKE.....	102-103
		HAMMOND LAKE.....	39-40

INDEX--Continued

	Page		Page
LAKES AND RESERVOIRS Con't:		MICROGRAMS PER GRAM ($\mu\text{g/g}$), DEFINITION OF.....	21
INDIAN ROCK DAM.....	175	MICROGRAMS PER LITER ($\mu\text{g/L}$, $\mu\text{g/L}$),	
KETTLE CREEK LAKE.....	102-103	DEFINITION OF.....	21
MARBURG LAKE.....	175	MIDDLE BRANCH WYALUSING CREEK TRIBUTARY	
RAYSTOWN LAKE.....	116	NEAR BIRCHARDVILLE.....	219
STILLWATER LAKE.....	47	MIDDLE CREEK, NEAR BEAVERTOWN.....	223
TIOGA LAKE.....	39-40	NEAR FREEBURG.....	227
LANCASTER, CONESTOGA RIVER AT.....	203	MIDDLEBURY CENTER, CROOKED CREEK BELOW	
LANCASTER COUNTY, GROUND-WATER RECORDS IN.....	248-272	CATLIN HOLLOW AT.....	216
LAND-SURFACE DATUM (LSD), DEFINITION OF.....	21	MIFFLIN COUNTY, GROUND-WATER RECORDS IN.....	275
LANDISVILLE, SWARR RUN NEAR.....	204	MILESBURG, BALD EAGLE CREEK BELOW SPRING	
LARRYS CREEK AT LARRYS CREEK.....	222	CREEK AT.....	81
LAWRENCEVILLE, COWANESQUE RIVER NEAR.....	38	BALD EAGLE CREEK NEAR.....	82-83
LAWTON, EAST BRANCH WYALUSING CREEK AT.....	219	SPRING CREEK AT.....	80
LATITUDE-LONGITUDE SYSTEM,		MILL HALL, FISHING CREEK AT.....	222
EXPLANATION OF.....	11	MILLIGRAMS PER LITER (MG/L, mg/L),	
LEFT BRANCH YOUNG WOMANS CREEK		DEFINITION OF.....	21
NEAR RENOVO.....	222	MISCELLANEOUS RECORD SITE, DEFINITION OF.....	21
LETORT SPRING RUN NEAR CARLISLE.....	133	DISCHARGE AT.....	227-229
LEWISBURG, BUFFALO CREEK AT.....	223	MONROETON, TOWANDA CREEK NEAR.....	44
WEST BRANCH SUSQUEHANNA RIVER AT.....	95-100	MONTDAL, SOUTH BRANCH TUNKHANNOCK CREEK NEAR..	220
LICKING CREEK NEAR SYLVAN.....	226, 228	MONTROSE, SNAKE CREEK NEAR.....	219
LITTLE CONESTOGA CREEK, NEAR CHURCHTOWN.....	194-202	MONUMENT, BEECH CREEK AT.....	86
NEAR ROCKHILL.....	225	MORGANTOWN, LITTLE CONESTOGA CREEK,	
SITE 1, NEAR MORGANTOWN.....	184-185	SITE 1, NEAR.....	184-185
SITE 2A, NEAR MORGANTOWN.....	186	SITE 2A, NEAR.....	186
SITE 3A, NEAR MORGANTOWN.....	187-192	SITE 3A, NEAR.....	187-192
UNNAMED TRIBUTARY TO, SITE 9, AT CHURCHTOWN.	193	MORRIS, BABB CREEK AT.....	222
LITTLE FISHING CREEK AT EYERS GROVE.....	221	MOSHANNON CREEK, AT OCEOLA MILLS.....	66
LITTLE JUNIATA RIVER AT SPRUCE CREEK.....	110	NEAR MOSHANNON.....	221
LITTLE LOST CREEK AT OAKLAND MILLS.....	224	MT. HOLLY SPRINGS, MOUNTAIN CREEK NEAR.....	224
LITTLE MUDDY CREEK NEAR REAMSTOWN.....	225	MT. VERNON, EAST BRANCH OCTORARO CREEK NEAR....	225
LITTLE PINE CREEK, NEAR ENGLISH CENTER.....	222	MOUNTAIN CREEK, AT PINE GROVE FURNACE.....	224
NEAR WATERVILLE.....	217	NEAR MT. HOLLY SPRINGS.....	224
LITTLE TONOLWAY CREEK AT WARFORDSBURG.....	226	MUDDY CREEK AT CASTLE FIN.....	225, 227
LITTLE WAPWALLOPEN CREEK NEAR WAPWALLOPEN.....	220	MUNCY CREEK, NEAR MUNCY.....	217, 222
LITTLE WILLS CREEK AT BARD.....	216, 218	NEAR SONESTOWN.....	94
LOCK HAVEN, TANGASCOOTAC CREEK NEAR.....	222	NATIONAL GEODETIC VERTICAL DATUM OF 1929	
WEST BRANCH SUSQUEHANNA RIVER AT.....	216	(NGVD), DEFINITION OF.....	21
LOVELTON, NORTH BRANCH MEHOOPANY CREEK NEAR....	220	NATIONAL STREAM QUALITY ACCOUNTING NETWORK	
LOWER LITTLE SWATARA CREEK AT PINE GROVE.....	224	(NASQAN), DEFINITION OF.....	21
LOYALSOCK CREEK, AT LOYALSOCKVILLE.....	93	STATIONS IN.....	56, 95, 113, 135
NEAR FORKSVILLE.....	222	NATIONAL TRENDS NETWORK (NTN),	
LOYSVILLE, BIXLER RUN NEAR.....	127	DEFINITION OF.....	21
LUZERNE, TOBY CREEK AT.....	52	NATURAL SUBSTRATE, DEFINITION OF.....	24
LUZERNE COUNTY, GROUND-WATER RECORDS IN.....	273	NEEDMORE, TONOLWAY CREEK NEAR.....	215
LYCOMING COUNTY, GROUND-WATER RECORDS IN.....	274	NELSON, COWANESQUE RIVER AT.....	219
LYCOMING CREEK, NEAR TROUT RUN.....	91	NESSCOPECK CREEK, AT NESSCOPECK.....	221, 227
NEAR WILLIAMSPORT.....	217	NEAR ST. JOHNS.....	220
MAHAFFEY, CHEST CREEK NEAR.....	221	NEW ALBANY, SOUTH BRANCH TOWANDA CREEK AT.....	216
MAHANOHY CREEK AT DORNSIDE.....	223	NEWBURG RUN AT NEWBURG.....	217
MAINESBURG, COREY CREEK NEAR.....	34	NEWPORT, BUFFALO CREEK NEAR.....	224
MANCHESTER, WEST CONEWAGO CREEK NEAR.....	162-164	JUNIATA RIVER AT.....	120-126
MANN'S CHOICE, BUFFALO RUN TRIBUTARY NEAR.....	223	NORTH BRANCH MEHOOPANY CREEK NEAR LOVELTON.....	220
RAYSTOWN BRANCH JUNIATA RIVER NEAR.....	223	NOXEN, BOWMAN CREEK NEAR.....	220
MANSFIELD, TIOGA RIVER NEAR.....	33	NUMBERING SYSTEM FOR WELLS AND	
MAPLETON DEPOT, JUNIATA RIVER NEAR.....	118	MISCELLANEOUS SITES.....	11
MARIETTA, CHICKIES CREEK NEAR.....	228	OAKLAND MILLS, LITTLE LOST CREEK AT.....	224
SUSQUEHANNA RIVER AT.....	176-179	OCTORARO CREEK, NEAR RICHARDSMERE.....	228
MARSH CREEK, AT ANSONIA.....	227	EAST BRANCH, AT CHRISTIANA.....	230-231
AT BLANCHARD.....	85	OLD FORGE, LACKAWANNA RIVER AT.....	50
NEAR GETTYSBURG.....	226	ORGANIC MASS, DEFINITION OF.....	19
NEAR MARSH CREEK.....	222	ORGANISM, DEFINITION OF.....	21
MARTIC FORGE, PEQUEA CREEK AT.....	228	ORGANISM COUNT/AREA, DEFINITION OF.....	21
McSHERRYSTOWN,		ORGANISM COUNT/VOLUME, DEFINITION OF.....	21
BRUSH RUN, SITE 1, NEAR.....	150	ORRSTOWN, CONODOGUINET CREEK AT.....	224
BRUSH RUN, SITE 2, NEAR.....	152-159	OSCEOLA MILLS, MOSHANNON CREEK AT.....	66
BRUSH RUN, SITE 3, NEAR.....	160	PARADISE, PEQUEA CREEK AT.....	225
BRUSH RUN, SITE 4, NEAR.....	161	PARAMETER CODE, DEFINITION OF.....	21
TILE DRAIN TO BRUSH RUN NEAR.....	151	PARTIAL-RECORD STATIONS,	
MEAN CONCENTRATION, DEFINITION OF.....	23	DEFINITION OF.....	22
MEAN DISCHARGE (MEAN), DEFINITION OF.....	20	DISCHARGE AT.....	216-226
MEASURING POINT (MP), DEFINITION OF.....	21	WATER-QUALITY DATA AT.....	230-231
MELROSE, STARRUCCA CREEK NEAR.....	219	PARTICLE-SIZE, DEFINITION OF.....	22
MESHOPPEN, SUSQUEHANNA RIVER AT.....	45	PARTICLE-SIZE CLASSIFICATION, DEFINITION OF....	22
MESHOPPEN CREEK NEAR SPRINGVILLE.....	220	PENFIELD, WILSON RUN AT.....	216
METAMORPHIC STAGE, DEFINITION OF.....	21	PENNS CREEK AT PENNS CREEK.....	106
METHYLENE BLUE ACTIVE SUBSTANCE (MBAS),			
DEFINITION OF.....	21		

INDEX--Continued

	Page		Page
PEQUEA CREEK, AT MARTIC FORGE.....	228	SINNEMAHOING CREEK, AT SINNEMAHOING.....	70
AT PARADISE.....	225	BENNETT BRANCH, AT DRIFTWOOD.....	227
PERCENT COMPOSITION, DEFINITION OF.....	22	DRIFTWOOD BRANCH, AT EMPORIUM.....	222
PERIPHYTON, DEFINITION OF.....	22	AT STERLING RUN.....	69
PERRY COUNTY, GROUND-WATER RECORDS IN.....	276	FIRST FORK, AT WHARTON.....	216
PESTICIDES, DEFINITION OF.....	22	NEAR SINNEMAHOING.....	71
PETERSBURG, SHAVER CREEK NEAR.....	223	SINNEMAHOING PORTAGE CREEK NEAR EMPORIUM.....	222
PHILIPSBURG, BLACK MOSHANNON CREEK NEAR.....	222	SNAKE CREEK NEAR MONTROSE.....	219
PHYTOPLANKTON, DEFINITION OF.....	22	SNOW SHOE, SOUTH FORK BEECH CREEK NEAR.....	222
PICOCURIE, DEFINITION OF.....	22	SNYDER COUNTY, GROUND-WATER RECORDS IN.....	278
PINE CREEK, AT ANSONIA.....	227	SODIUM-ADSORPTION-RATIO (SAR), DEFINITION OF... 23	
AT CEDAR RUN.....	88	SOLOMON CREEK AT WILKES-BARRE.....	53
AT WOODWARD.....	223	SOLUTE, DEFINITION OF.....	23
BELOW LITTLE PINE CREEK NEAR WATERVILLE.....	90	SONESTOWN, MUNCY CREEK NEAR.....	94
PINE GROVE, LOWER LITTLE SWATARA CREEK AT.....	224	SOUTH BRANCH CODORUS CREEK NEAR YORK.....	166
SWATARA CREEK NEAR.....	143	SOUTH BRANCH TOWANDA CREEK AT NEW ALBANY.....	216
PINE GROVE FURNACE, MOUNTAIN CREEK AT.....	224	SOUTH BRANCH TUNKHANNOCK CREEK NEAR MONTDALE... 220	
PLANKTON, DEFINITION OF.....	22	SOUTH FORK BEECH CREEK NEAR SNOW SHOE.....	222
PLEASUREVILLE, CODORUS CREEK AT.....	170-174	SPECIAL NETWORKS AND PROGRAMS.....	9
POLYCHLORINATED BIPHENYLS (PCBs),		SPECIFIC CONDUCTANCE, DEFINITION OF.....	23
DEFINITION OF.....	22	SPRING BROOK NEAR SPRING BROOK.....	220
PORT ROYAL, TUSCARORA CREEK NEAR.....	217	SPRING CREEK, AT HOUSEVILLE.....	78
POTTER COUNTY, GROUND-WATER RECORDS IN.....	277	AT MILESBURG.....	80
PRIMARY PRODUCTIVITY, DEFINITION OF.....	22	NEAR AXEMANN.....	79
PUBLICATIONS ON TECHNIQUES OF WATER-		SPRING GROVE, CODORUS CREEK AT.....	165
RESOURCES INVESTIGATIONS.....	26-27	SPRINGVILLE, MESHOPPEN CREEK NEAR.....	220
PURCELL, WEST BRANCH SIDELING MILL		SPRUCE CREEK, LITTLE JUNIATA RIVER AT.....	110
CREEK AT.....	226	STAGE-DISCHARGE RELATION, DEFINITION OF.....	23
QUARRYVILLE, BOWERY RUN NEAR.....	225	STAGE AND WATER-DISCHARGE RECORDS,	
QUITTAHILLA CREEK NEAR BELLEGROVE.....	146	EXPLANATION OF.....	11-14
RADIOCHEMICAL PROGRAM, DEFINITION OF.....	23	STANDING STONE CREEK NEAR HUNTINGDON.....	223
STATIONS AT.....	75, 135	STARRUCCA CREEK NEAR MELROSE.....	219
RAVINE, SWATARA CREEK AT.....	224	STATION IDENTIFICATION NUMBERS.....	11
RAYSTOWN BRANCH JUNIATA RIVER,		STERLING RUN, DRIFTWOOD BRANCH SINNEMAHOING	
AT SAXTON.....	113-115	CREEK AT.....	69
AT WOLFSBURG.....	217	STILLWATER LAKE NEAR FOREST CITY.....	47
BELOW RAYSTOWN DAM NEAR HUNTINGDON.....	117	ST. JOHNS, NESCOPECK CREEK NEAR.....	220
NEAR MANNS CHOICE.....	223	STONY CREEK AT WATER TANK TRAIL NEAR DAUPHIN... 224	
RAYSTOWN LAKE NEAR HUNTINGDON.....	116	STONY RUN AT REAMSTOWN.....	218
REAMSTOWN, STONY RUN AT.....	218	STREAMFLOW, DEFINITION OF.....	23
LITTLE MUDDY CREEK NEAR.....	225	SUBSTRATE, DEFINITION OF.....	24
RECOVERABLE FROM BOTTOM MATERIAL,		SUGAR CREEK, NEAR TOWANDA.....	227
DEFINITION OF.....	23	NEAR WEST BURLINGTON.....	219
RECURRENCE INTERVAL, DEFINITION OF.....	24	SUGAR RUN CREEK AT SUGAR RUN.....	220
REEDSVILLE, KISHACOQUILLAS CREEK AT.....	217	SULLIVAN COUNTY, GROUND-WATER RECORDS IN.....	279
RENOVO, LEFT BRANCH YOUNG WOMANS		SUMMARY OF HYDROLOGIC CONDITIONS.....	2-10
CREEK NEAR.....	222	SUNBURY, SUSQUEHANNA RIVER AT.....	104
WEST BRANCH SUSQUEHANNA RIVER AT.....	74	SURFACE AREA, DEFINITION OF.....	24
YOUNG WOMANS CREEK NEAR.....	75-77	SURFICIAL BED MATERIAL, DEFINITION OF.....	24
RESERVOIRS, ALSO SEE LAKES AND RESERVOIRS		SUSPENDED, DEFINITION OF.....	24
IN CHEMUNG RIVER BASIN.....	39-40	SUSPENDED, RECOVERABLE, DEFINITION OF.....	24
IN CLARK CREEK BASIN.....	131	SUSPENDED, TOTAL, DEFINITION OF.....	24
IN CODORUS CREEK BASIN.....	175	SUSPENDED SEDIMENT, DEFINITION OF.....	23
IN JUNIATA RIVER BASIN.....	116	SUSPENDED-SEDIMENT CONCENTRATION, DEFINITION OF 23	
IN LACKAWANNA RIVER BASIN.....	47	SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY),	
IN WEST BRANCH SUSQUEHANNA RIVER BASIN.....	102-103	DEFINITION OF.....	23
RICHARDSMERE, OCTORARO CREEK NEAR.....	228	SUSPENDED-SEDIMENT LOAD, DEFINITION OF.....	23
RIDGEBURY, BENTLEY CREEK AT.....	219	SUSQUEHANNA COUNTY, GROUND-WATER RECORDS IN... 280	
RINGTOWN, TREXLER RUN NEAR.....	221	SUSQUEHANNA RIVER, AT DANVILLE.....	56-61
ROCK CREEK NEAR GETTYSBURG.....	228	AT HARRISBURG.....	135-141
ROCKHILL, LITTLE CONESTOGA CREEK NEAR.....	225	AT MARIETTA.....	176-179
RUNOFF IN INCHES (IN, in), DEFINITION OF.....	23	AT MESHOPPEN.....	45
ST. JOHNS, NESCOPECK CREEK NEAR.....	220	AT SUNBURY.....	104
SAND SPRING RUN NEAR WHITE DEER.....	223	AT TOWANDA.....	41-43
SAXTON, RAYSTOWN BRANCH JUNIATA RIVER AT.....	113-115	AT WILKES-BARRE.....	51
SCHELLSBURG, SHAWNEE BRANCH AT.....	224	WEST BRANCH, AT BOWER.....	62
SEDIMENT, DEFINITION OF.....	23	AT CURWENSVILLE.....	63
7-DAY 10-YEAR LOW FLOW (Q7, 10),		AT HYDE.....	64
DEFINITION OF.....	23	AT KARTHAUS.....	67
SHAMOKIN CREEK NEAR SHAMOKIN.....	105	AT LEWISBURG.....	95-100
SHAVER CREEK NEAR PETERSBURG.....	223	AT LOCK HAVEN.....	216
SHAWNEE BRANCH AT SCHELLSBURG.....	224	AT RENOVOL.....	74
SHERMAN CREEK AT SHERMANS DALE.....	128-130	AT WILLIAMSPORT.....	92
SHERMANS DALE, SHERMAN CREEK AT.....	128-130	SWARR RUN NEAR LANDISVILLE.....	204
SILVARA, TUSCARORA CREEK NEAR.....	216	SWATARA CREEK, AT HARPERS TAVERN.....	145
SINNEMAHOING, SINNEMAHOING CREEK AT.....	70	AT RAVINE.....	224
FIRST FORK SINNEMAHOING CREEK NEAR.....	71	NEAR HERSHEY.....	147-149
		NEAR INWOOD.....	144
		NEAR PINE GROVE.....	143
		SYLVAN, LICKING CREEK NEAR.....	226, 228

INDEX--Continued

	Page		Page
TANGASCOOTAC CREEK NEAR LOCK HAVEN.....	222	WATER-QUALITY SAMPLES, ANALYSIS OF,	
TAXONOMY, DEFINITION OF.....	24	AT SURFACE-WATER PARTIAL-RECORD STATIONS.....	230
TECHNIQUES OF WATER-RESOURCES		WATERVILLE, LITTLE PINE CREEK NEAR.....	217
INVESTIGATIONS, PUBLICATIONS ON.....	26-27	PINE CREEK BELOW LITTLE PINE CREEK NEAR.....	90
THERMOGRAPH, DEFINITION OF.....	24	WATSTORE DATA, ACCESS TO.....	18
THREE SPRINGS, AUGHWICK CREEK NEAR.....	119	WDR (WATER DATA REPORTS), DEFINITION OF.....	25
TILE DRAIN TO BRUSH RUN		WEIGHTED AVERAGE, DEFINITION OF.....	25
NEAR McSHERRYSTOWN.....	151	WEST BRANCH OCTORARO CREEK AT WHITE ROCK.....	225
TIME-WEIGHTED AVERAGE, DEFINITION OF.....	24	WEST BRANCH SIDELING HILL CREEK AT PURCELL.....	226
TIOGA COUNTY, GROUND-WATER RECORDS IN.....	281	WEST BRANCH SUSQUEHANNA RIVER, AT BOWER.....	62
TIOGA JUNCTION, TIOGA RIVER AT.....	36	AT CURWENSVILLE.....	63
TIOGA LAKE.....	39-40	AT HYDE.....	64
TIOGA RIVER, AT COVINGTON.....	219	AT KARTHAUS.....	67
AT TIOGA.....	35	AT LEWISBURG.....	95-100
AT TIOGA JUNCTION.....	36	AT LOCK HAVEN.....	216
NEAR MANSFIELD.....	33	AT RENOVO.....	74
TOBY CREEK AT LUZERNE.....	52	AT WILLIAMSPORT.....	92
TOMHICKEN CREEK NEAR ZION GROVE.....	221	WEST BRANCH SUSQUEHANNA RIVER BASIN,	
TONOLOWAY CREEK NEAR NEEDMORE.....	215	RESERVOIRS IN.....	102-103
TONS PER ACRE-FOOT, DEFINITION OF.....	24	WEST BURLINGTON, SUGAR CREEK NEAR.....	219
TONS PER DAY (T/DAY), DEFINITION OF.....	24	WEST CONEWAGO CREEK NEAR MANCHESTER.....	162-164
TOTAL, DEFINITION OF.....	24	WESTFIELD, COMANESQUE RIVER AT.....	37
TOTAL COLIFORM BACTERIA, DEFINITION OF.....	19	WESTPORT, KETTLE CREEK NEAR.....	73
TOTAL DISCHARGE, DEFINITION OF.....	25	WET MASS, DEFINITION OF.....	19
TOTAL ORGANISM COUNT, DEFINITION OF.....	21	WHARTON, FIRST FORK SINNEMAHONING CREEK AT.....	216
TOTAL RECOVERABLE, DEFINITION OF.....	25	WHITE DEER, SAND SPRING RUN NEAR.....	223
TOTAL SEDIMENT DISCHARGE (TONS/DAY),		WHITE DEER CREEK AT.....	227
DEFINITION OF.....	23	WHITE DEER CREEK AT WHITE DEER.....	227
TOTAL SEDIMENT LOAD, DEFINITION OF.....	23	WHITE DEER HOLE CREEK, AT ALLENWOOD.....	223
TOWANDA, SUGAR CREEK NEAR.....	227	NEAR ELIMSPORT.....	217
SUSQUEHANNA RIVER AT.....	41-43	WHITE ROCK, WEST BRANCH OCTORARO CREEK AT.....	225
TOWANDA CREEK, AT CANTON.....	219	WICONISCO CREEK NEAR ELIZABETHVILLE.....	223
NEAR MONROETON.....	44	WILKES-BARRE, SOLOMON CREEK AT.....	53
TREXLER RUN NEAR RINGTOWN.....	221	SUSQUEHANNA RIVER AT.....	51
TRITIUM NETWORK, DEFINITION OF.....	25	WILLIAMSBURG, FRANKSTOWN BRANCH JUNIATA	
TROUT RUN AT BENEZETTE.....	222	RIVER AT.....	108
TROUT RUN, LYCOMING CREEK NEAR.....	91	WILLIAMSPORT, LYCOMING CREEK NEAR.....	217
TUNKHANNOCK CREEK, AT GLENWOOD.....	220	WEST BRANCH SUSQUEHANNA RIVER AT.....	92
NEAR TUNKHANNOCK.....	46	WILLS CREEK BELOW HYNDMAN.....	226
TUSCARORA CREEK, NEAR PORT ROYAL.....	217	WILSON RUN AT PENFIELD.....	216
NEAR SILVARA.....	216	WINTERSTOWN, EAST BRANCH CODORUS CREEK	
TYRONE, BALD EAGLE CREEK AT.....	109	TRIBUTARY NEAR.....	225
UNION COUNTY, GROUND-WATER RECORDS IN.....	282	WOLFSBURG, RAYSTOWN BRANCH JUNIATA RIVER AT....	217
UNION DALE, EAST BRANCH LACKAWANNA RIVER AT....	220	WOODWARD, PINE CREEK AT.....	223
UNNAMED TRIBUTARY TO LITTLE CONESTOGA CREEK,		WSP (WATER-SUPPLY PAPER), DEFINITION OF.....	25
SITE 9, AT CHURCHTOWN.....	193	WYALUSING CREEK NEAR WYALUSING.....	227
VALLEY CREEK NEAR ATGLEN.....	230-231	WYSOX CREEK NEAR WYSOX.....	219
WALDY RUN NEAR EMPORIUM.....	68	YELLOW BREECHES CREEK, AT CRAIGHEAD.....	224
WAPWALLOPEN, LITTLE WAPWALLOPEN CREEK NEAR....	220	NEAR CAMP HILL.....	142
WAPWALLOPEN CREEK NEAR.....	54	YORK, CODORUS CREEK NEAR.....	167-169
WARFORDSBURG, LITTLE TONOLOWAY		SOUTH BRANCH CODORUS CREEK NEAR.....	166
CREEK AT.....	226	YORK COUNTY, GROUND-WATER RECORDS IN.....	283
WASHINGTONVILLE, CHILLISQUAQUE CREEK NEAR....	101	YOUNG WOMANS CREEK, NEAR RENOVO.....	75-77
WATER YEAR, DEFINITION OF.....	25	LEFT BRANCH, NEAR RENOVO.....	222
WATER-QUALITY RECORDS, EXPLANATION OF.....	14-16	ZION GROVE, TOMHICKEN CREEK NEAR.....	221
		ZOOPLANKTON, DEFINITION OF.....	22

FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI).

Multiply inch-pound units	By	To obtain SI units
<i>Length</i>		
inches (in)	2.54×10^1	millimeters (mm)
	2.54×10^{-2}	meters (m)
feet (ft)	3.048×10^{-1}	meters (m)
miles (mi)	1.609×10^0	kilometers (km)
<i>Area</i>		
acres	4.047×10^3	square meters (m ²)
	4.047×10^{-1}	square hectometers (hm ²)
	4.047×10^{-3}	square kilometers (km ²)
square miles (mi ²)	2.590×10^0	square kilometers (km ²)
<i>Volume</i>		
gallons (gal)	3.785×10^0	liters (L)
	3.785×10^0	cubic decimeters (dm ³)
	3.785×10^{-3}	cubic meters (m ³)
million gallons	3.785×10^3	cubic meters (m ³)
	3.785×10^{-3}	cubic hectometers (hm ³)
cubic feet (ft ³)	2.832×10^1	cubic decimeters (dm ³)
	2.832×10^{-2}	cubic meters (m ³)
cfs-days	2.447×10^3	cubic meters (m ³)
	2.447×10^{-3}	cubic hectometers (hm ³)
acre-feet (acre-ft)	1.233×10^3	cubic meters (m ³)
	1.233×10^{-3}	cubic hectometers (hm ³)
	1.233×10^{-6}	cubic kilometers (km ³)
<i>Flow</i>		
cubic feet per second (ft ³ /s)	2.832×10^1	liters per second (L/s)
	2.832×10^1	cubic decimeters per second (dm ³ /s)
	2.832×10^{-2}	cubic meters per second (m ³ /s)
gallons per minute (gal/min)	6.309×10^{-2}	liters per second (L/s)
	6.309×10^{-2}	cubic decimeters per second (dm ³ /s)
	6.309×10^{-5}	cubic meters per second (m ³ /s)
million gallons per day	4.381×10^1	cubic decimeters per second (dm ³ /s)
	4.381×10^{-2}	cubic meters per second (m ³ /s)
<i>Mass</i>		
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons

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