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Water Resources Data Pennsylvania Water Year 1988

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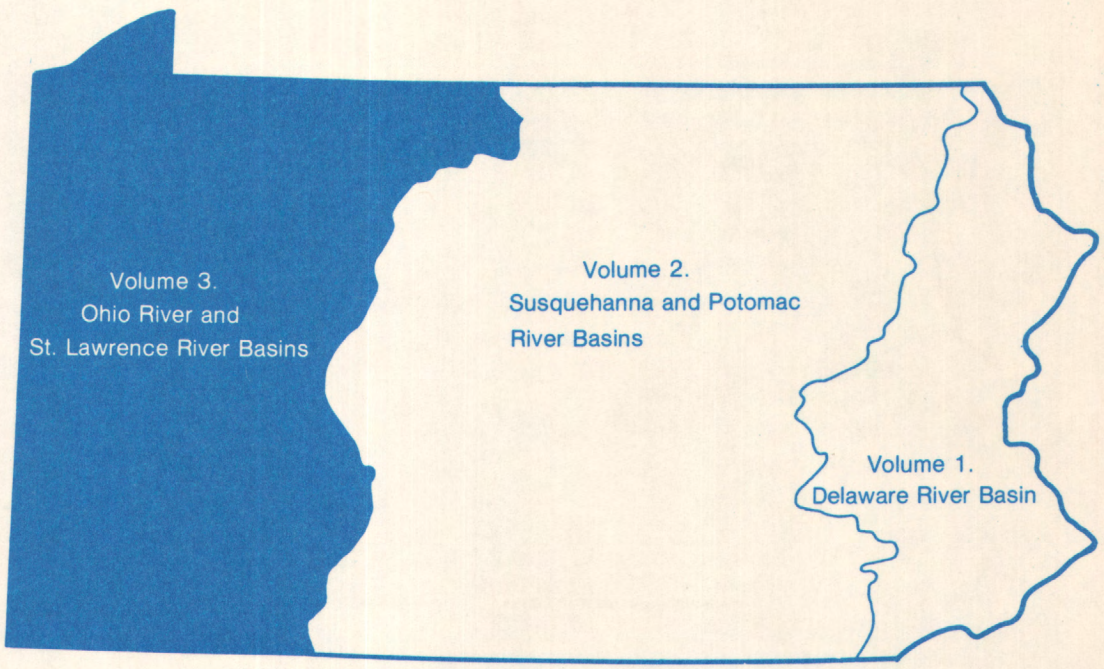
Volume 3. Ohio River and St. Lawrence River Basins



U.S. GEOLOGICAL SURVEY WATER -DATA REPORT PA-88-3
Prepared in cooperation with the Pennsylvania Department of Environmental Resources, the U.S. Army Corps of Engineers, Pittsburgh District, and with other State, municipal and Federal agencies

CALENDAR FOR WATER YEAR 1988

1987

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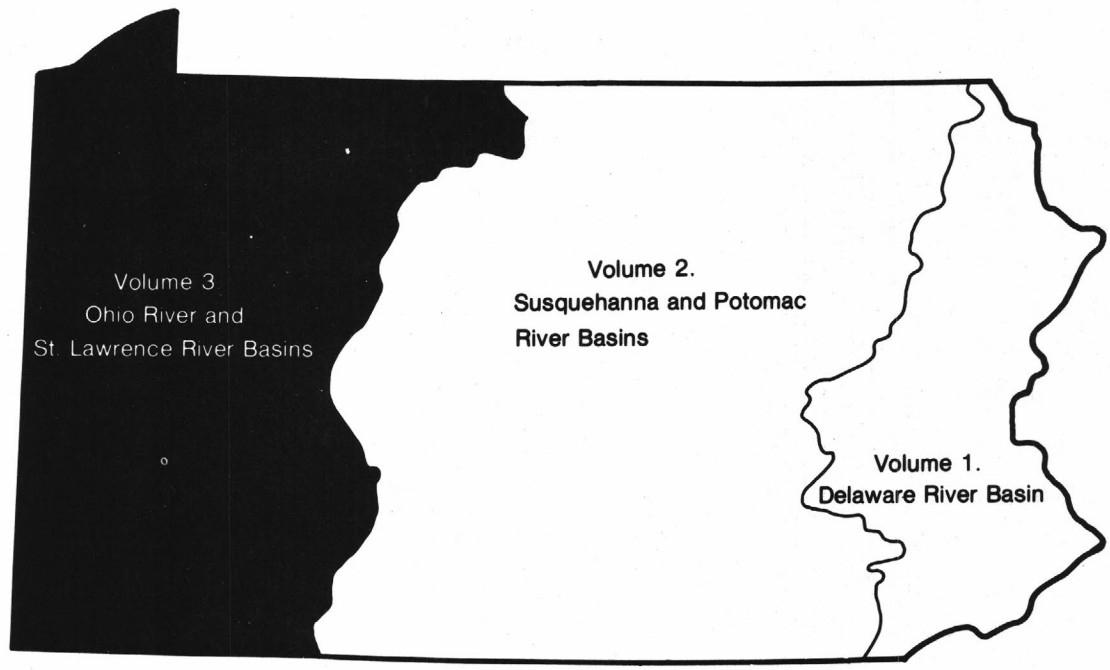
Water Resources Data Pennsylvania Water Year 1988

Volume 3. Ohio River and St. Lawrence River Basins

by Joseph B. Lescinsky, Martin B. Coll, Jr., Raymond W. Siwicki



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT PA-88-3
Prepared in cooperation with the Pennsylvania Department of Environmental Resources, the U.S. Army Corps of Engineers, Pittsburgh District, and with other State, municipal and Federal agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

MANUEL LUJAN, Secretary

GEOLOGICAL SURVEY

Dallas L. Peck, Director

For additional information write to
District Chief, Water Resources Division
U.S. Geological Survey
P.O. Box 1107
Harrisburg, Pennsylvania 17108

1989

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 groundwater 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 three volumes:

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

This report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey who collected, compiled, analyzed, verified, and organized the data, and who typed, edited, and assembled the report. 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:

Donald R. Williams	Thomas M. Noonan	Michael D. Lichte
Theodore F. Buckwalter	Emitt C. Witt III	Michael Janiszewski
James I. Sams III	Laurence R. Etchison	Curtis L. Schreffler
Gregory M. Wehner	Lonnie J. Fekula	

Thomas Sinwell typed the text of the report.

This report was prepared in cooperation with the State of Pennsylvania and with other agencies under the general supervision of David E. Click, District Chief.

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15. Supplementary Notes

Prepared in cooperation with the State of Pennsylvania and with other agencies.

16. Abstract (Limit: 200 words)

Water resources data for the 1988 water year for Pennsylvania consist of records of discharge and water quality of stream; contents and elevations of lakes and reservoirs; and water levels of ground-water wells. This report, Volume 3, includes records from the Ohio and St. Lawrence River basins. Specifically, it contains: (1) discharge records for 82 continuous record streamflow-gaging stations and 29 partial-record stations; (2) elevation and contents records for 3 lakes and reservoirs; (3) water-quality records for 14 streamflow-gaging stations, for 47 ungaged streamsites, and (4) water-level records for 20 network observation wells and 18 project wells. Locations of these sites are shown on figures 4-6. Additional water data were collected at various sites not involved in the systematic data-collection program and are published as miscellaneous measurements and analyses. These data, together with the data in Volume 1 and 2, represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State, Local, and Federal agencies in Pennsylvania.

17. Document Analysis a. Descriptors

*Pennsylvania, *Hydrologic date, *Ground water, *Surface water, *Water Quality, Gaging Stations, Streamflow, Flow rates, Lakes, Reservoirs, Chemical analysis, Sediments, Water Temperature, Water analysis, Water levels, Water wells, Data collection, Sites.

b. Identifiers/Open-Ended Terms

c. COSATI Field/Group

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CONTENTS

	Page
Preface	iii
List of continuous surface-water gaging stations, in downstream order, for which records are published	vi
List of continuous ground-water wells, by county, for which records are published	viii
Introduction	1
Cooperation	1
Summary of hydrologic conditions	2
Streamflow	2
Ground water	3
Water quality	3
Special networks and programs	5
Explanation of records	5
Station identification numbers	5
Downstream order system	5
Latitude and longitude system	6
Records of stage and water discharge	6
Data collection and computation	6
Data presentation	7
Identifying estimated daily discharge	8
Accuracy of the records	9
Other records available	9
Records of surface-water quality	9
Classification of records	9
Arrangement of records	9
On-site measurements and sample collection	9
Water temperature	10
Sediment	10
Laboratory measurements	10
Data presentation	10
Remark codes	11
Records of ground-water levels	11
Data collection and computation	11
Data presentation	12
Records of ground-water quality	12
Data collection and computation	12
Data presentation	13
Access to WATSTORE Data	13
Definition of terms	14
Publications on Techniques of Water-Resources Investigations	22
Surface-water records	
Continuous surface-water and water-quality station records	27
Discharge at partial-record stations and miscellaneous sites	149
Low-flow partial-record stations	149
Crest-stage partial-record stations	150
Analysis of samples collected at water-quality partial-record stations and miscellaneous sites	154
Station records, ground water	
Ground-water levels	177
Index	215

ILLUSTRATIONS

Figure 1.--Comparison of discharge at Oil Creek at Rouseville during 1988 water year with median discharge for period 1951-80	2
2.--Relation between mean 1988 seasonal water levels and long-term water levels	4
3.--System for numbering wells and miscellaneous sites	6
4-6.--Maps showing:	
4.--Location of data-collection stations and observation wells	24
5.--Location of partial-record data-collection stations	25
6.--Location of data-collection stations for Indiana County study	26

GAGING STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED

(Letter after station name designates type of data: (d) discharge, (c) chemical, (b) biological, (t) water temperature, (s) sediment, (r) radiochemical)

Page

OHIO RIVER BASIN
Allegheny River (head of Ohio River) at Port Allegheny (d) ... 27
POTATO CREEK BASIN
Potato Creek at Smethport (d) ... 28
Allegheny River at Eldred (d) ... 29
OSWAYO CREEK BASIN
Oswayo Creek at Shinglehouse (d) ... 30
Allegheny River at Salamanca, NY (d) ... 31
KINZUA CREEK BASIN
Kinzua Creek near Guffey (d) ... 32
Allegheny River at Kinzua Dam (d) ... 33
CONEWANGO CREEK BASIN
Conewango Creek at Russell (d) ... 34
BROKENSTRAW CREEK BASIN
Brokenstraw Creek at Youngsville (d) ... 35
Allegheny River at West Hickory (d) ... 36
TIONESTA CREEK BASIN
Tionesta Creek at Tionesta Dam (d) ... 37
OIL CREEK BASIN
Oil Creek at Rouseville (d) ... 38
FRENCH CREEK BASIN
French Creek near Wattsburg (d) ... 39
West Branch French Creek near Lowville (d) ... 40
French Creek near Union City (d) ... 41
Woodcock Creek at Blooming Valley (d) ... 42
Woodcock Creek at Woodcock Creek Dam (d) ... 43
French Creek at Utica (d) ... 44
Allegheny River at Franklin (d) ... 45
Little Scrubgrass Creek near Lisbon (dct) ... 46
CLARION RIVER BASIN
East Branch Clarion River:
Sevenmile Run near Rasselas (d) ... 52
East Branch Clarion River at East Branch Clarion River Dam (d) ... 53
West Branch Clarion River at Wilcox (d) ... 54
Clarion River at Johnsonburg (d) ... 55
Clarion River at Cooksburg (d) ... 56
Clarion River near Piney (d) ... 57
Allegheny River at Parker (d) ... 58
REDBANK CREEK BASIN
Redbank Creek at St. Charles (d) ... 59
MAHONING CREEK BASIN
Mahoning Creek at Punxsutawney (d) ... 60
Little Mahoning Creek at McCormick (d) ... 61
Mahoning Creek at Mahoning Creek Dam (d) ... 62
Allegheny River at Kittanning (d) ... 63
CROOKED CREEK BASIN
Plum Creek:
South Branch Plum Creek near Home (dct) ... 64
Crooked Creek at Idaho (d) ... 66
Crooked Creek at Crooked Creek Dam (d) ... 67
KISKIMINETAS RIVER BASIN
Stonycreek River (head of Kiskiminetas River):
Bens Creek:
North Fork Bens Creek at North Fork Reservoir (c) ... 68
Stonycreek River at Ferndale (d) ... 70
Little Conemaugh River at East Conemaugh (d) ... 71
Conemaugh River (continuation of Stonycreek River) at Seward (d) ... 72
Blacklick Creek at Josephine (d) ... 73
Two Lick Creek:
Yellow Creek:
Little Yellow Creek near Strongstown (dct) ... 74
Lake in Kiskiminetas River Basin ... 76
Yellow Creek near Homer City (d) ... 77
Two Lick Creek at Graceton (d) ... 78
Cherry Run near Homer City (dct) ... 79
Conemaugh River at Tunnelton (d) ... 81
Loyalhanna Creek at Kingston (d) ... 82
Loyalhanna Creek at Loyalhanna Dam (d) ... 83
Kiskiminetas River at Vandergrift (d) ... 84
BUFFALO CREEK BASIN
Buffalo Creek near Freeport (d) ... 85
Allegheny River at Natrona (d) ... 86
Allegheny River at New Kensington (cbtsr) ... 87
PINE CREEK BASIN
Pine Creek:
Little Pine Creek near Etna (d) ... 89

Page

OHIO RIVER BASIN--Continued
MONONGAHELA RIVER BASIN
Cheat River:
Big Sandy Creek:
Stony Fork:
Stony Fork Tributary near Gibbon Glade (dcts) ... 90
Dunkard Creek at Shannopin (d) ... 100
Monongahela River at Greensboro (d) ... 101
Tenmile Creek:
South Fork Tenmile Creek at Jefferson (d) ... 102
Redstone Creek at Waltersburg (d) ... 103
Monongahela River at Elizabeth (d) ... 104
Youghiogheny River at Friendsville, MD (d) ... 105
Youghiogheny River at Youghiogheny River Dam (d) ... 106
Casselman River at Grantsville, MD (d) ... 107
Casselman River at Markleton (d) ... 108
Laurel Hill Creek at Ursina (d) ... 109
Youghiogheny River below Confluence (d) ... 110
Big Meadow Run at Ohiopyle (dct) ... 111
Indian Creek:
Poplar Run near Normalville (dcts) ... 118
Youghiogheny River at Connellsville (d) ... 128
Youghiogheny River at Sutersville (d) ... 129
Turtle Creek:
Abers Creek near Murrysville (d) ... 130
Monongahela River at Braddock (dcbts) ... 131
Ohio River:
CHARTIERS CREEK BASIN
Chartiers Creek at Carnegie (d) ... 133
Ohio River at Sewickley (d) ... 134
BEAVER RIVER BASIN
Mahoning River (head of Beaver River):
Shenango River at Pymatuning Dam (d) ... 135
Little Shenango River at Greenville (d) ... 136
Shenango River near Transfer (d) ... 137
Shenango River at Sharpsville (d) ... 138
Beaver River at Wampum (d) ... 139
Connoquenessing Creek near Zelienople (d) ... 140
Slippery Rock Creek:
Muddy Creek near Portersville (d) ... 141
Slippery Rock Creek at Wurtemburg (d) ... 142
Beaver River at Beaver Falls (dcbts) ... 143
Lakes and reservoirs in Beaver River Basin ... 145
RACCOON CREEK BASIN
Raccoon Creek at Moffatts Mill (d) ... 146
STREAMS TRIBUTARY TO LAKE ERIE
Raccoon Creek near West Springfield (d) ... 147
Elk Creek:
Brandy Run near Girard (d) ... 148

GROUND-WATER LEVELS

Page

ALLEGHENY COUNTY
Well 403734080063001 Local number AG:700 ... 177
ARMSTRONG COUNTY
Well 404626079344001 Local number AR:77 ... 178
BEAVER COUNTY
Well 403006080252301 Local number BV:156 ... 179
BUTLER COUNTY
Well 410501079524401 Local number BT:311 ... 180
CAMBRIA COUNTY
Well 401935078550601 Local number CA:1 ... 181
CRAWFORD COUNTY
Well 413542080245001 Local number CW:413 ... 182
ELK COUNTY
Well 412458078324601 Local number EK:108 ... 183
ERIE COUNTY
Well 415607080044601 Local number ER:82 ... 184
FAYETTE COUNTY
Well 394843079351401 Local number FA:17 ... 185
FOREST COUNTY
Well 412823079030601 Local number FO:11 ... 186
GREENE COUNTY
Well 394655080014301 Local number GR:118 ... 187
INDIANA COUNTY
Well 403702079093301 Local number IN:1 ... 188
Well 404541079082001 Local number IN:120 ... 197
Well 404723079105201 Local number IN:121 ... 198
Well 403511079125501 Local number IN:364 ... 199
Well 403521079122701 Local number IN:389 ... 200
Well 404509079104001 Local number IN:390 ... 201
Well 404509079104003 Local number IN:392 ... 202
Well 404509079104004 Local number IN:393 ... 203
Well 403450079120301 Local number IN:801 ... 204
Well 403556079215201 Local number IN:803 ... 205
Well 403408078543701 Local number IN:822 ... 206
Well 403144078561602 Local number IN:833 ... 207
Well 402632078573101 Local number IN:856 ... 208
Well 403025079211501 Local number IN:859 ... 209
Well 404231078540901 Local number IN:860 ... 210
Well 404230078540901 Local number IN:861 ... 211
Well 403629079041901 Local number IN:864 ... 212
Well 404050078514201 Local number IN:868 ... 213
Well 404327078485001 Local number IN:880 ... 214
JEFFERSON COUNTY
Well 410650078575801 Local number JE:23 ... 189
LAWRENCE COUNTY
Well 410538080280801 Local number LA:1201 ... 190
McKEAN COUNTY
Well 413852078341401 Local number MC:110 ... 191
MERCER COUNTY
Well 412350080223701 Local number MR:1364 ... 192
SOMERSET COUNTY
Well 400008079142801 Local number SO:2 ... 193
WARREN COUNTY
Well 414159079213601 Local number WR:50 ... 194
WASHINGTON COUNTY
Well 400233080261301 Local number WS:155 ... 195
WESTMORELAND COUNTY
Well 402138079031802 Local number WE:300 ... 196

INTRODUCTION

The Water Resources Division of the U.S. Geological Survey, in cooperation with State and Federal agencies, obtains 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, Volume 1, 2, and 3."

This report, Volume 3, includes records on both surface and ground water in the Ohio and St. Lawrence River Basins. Specifically, it contains: (1) Discharge records for 82 streamflow-gaging stations, for 29 partial-record or miscellaneous streamflow stations, and for 3 crest-stage, partial-record streamflow stations; (2) elevation and content records for 3 lakes and reservoirs; (3) water-quality records for 14 streamflow-gaging stations, and for 47 ungaged streamsites; and (4) water-level records for 38 observation wells.

This series of annual reports for Pennsylvania began with the 1961 water year report that contained only data relating to the quantities of surface water. For the 1964 water year, a similar report was introduced that contained only data relating to water quality. Beginning with the 1975 water year, the report format was changed to present, in one volume, data on quantities of surface water, quality of surface and ground-water, and ground-water levels.

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 through 1970 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 through 1970 water years were published annually under the title "Quality of Surface Waters of the United States," and water levels for the 1935 through 1974 water years were published under the title "Ground-Water Levels in the United States." The above mentioned Water-Supply Papers may be consulted in the libraries of the principal cities of the United States and may be purchased from Distribution Branch, Text Products Section, U.S. Geological Survey, 604 South Pickett Street, Alexandria, VA 22304.

Publications similar to this report are published annually by the Geological Survey for all States. These official Survey reports have an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this volume is identified as "U.S. Geological Survey Water-Data Report PA-88-3." For archiving and general distribution, the reports for 1971-74 water years also are identified as water-data reports. These water-data reports are for sale in paper copy or in microfiche by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.

Additional information, including current prices, for ordering specific reports may be obtained from the District Chief at the address given on the back of title page or by contacting the Hydrologic Information Specialist, 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 provided data are acknowledged in station descriptions. Organizations that assisted in collecting data through cooperative agreement with the Survey are:

The Pennsylvania State 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;
Office of Environmental Protection, Mark McClellan, Deputy Secretary;
  Bureau of Water Quality Management, Daniel B. Drawbaugh, Director;
  Bureau of Mining and Reclamation, Ernest F. Giovannitti, Director.

New York State Department of Environmental Conservation, Thomas C. Jorling, commissioner.

Indiana County Commissioners.

Assistance in the form of funds or services was given by: Corps of Engineers, U.S. Army, in collecting records for 60 gaging stations. Assistance was also furnished by the National Weather Service, NOAA, U.S. Department of Commerce.

The following organizations aided in collecting records:

Allegheny Power Service Corp.; Greater Johnstown Water Authority: Latrobe Municipal Authority: Manufactures Water Co.; Municipal Authority of Westmoreland County; and Pennsylvania Electric Co.

Streamflow

Streamflow in western Pennsylvania in the Upper Ohio and St. Lawrence River basins was normal. At the index station for the Ohio River basin--Oil Creek at Rouseville--the mean discharge for the 1988 water year was 80 percent of the median discharge during the 1951-80 reference period. The monthly mean streamflow was in the normal range in November through March, May, and July through September, whereas the monthly mean streamflow was excessive in October. The monthly mean streamflow in April and June was deficient.

A comparison of the monthly and yearly mean discharge during the 1988 water year with that of the 1951-80 reference period for Oil Creek at Rouseville is shown in figure 1.

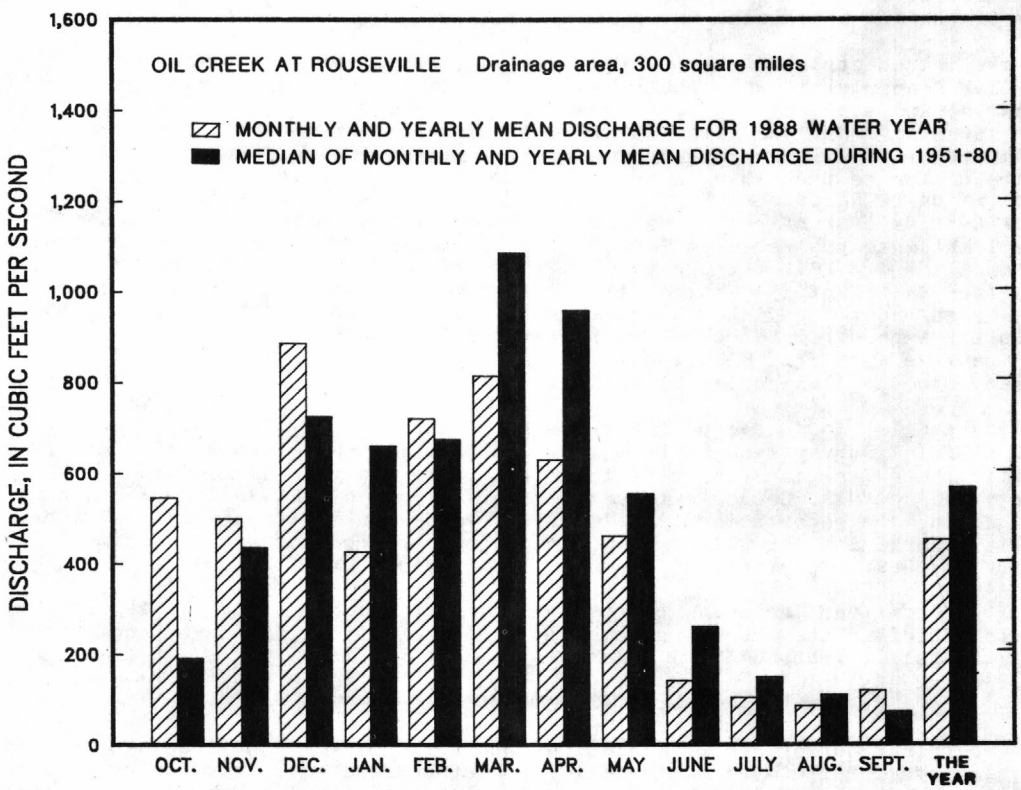

Figure 1.--Comparison of discharge at Oil Creek at Rouseville during 1988 water year with median discharge for period 1951-80.

Ground Water

During the 1988 water year, ground-water levels reached annual highs at most observation wells during April and May. Water levels were at or above normal levels over most of the upper Ohio River basin in Pennsylvania. At most observation wells, ground-water levels reached annual lows during September 1988. Most wells in the observation-well network tap bedrock, which consists mostly of sandstone and shale.

Figure 2 shows the seasonal distribution of normal, below-normal, and above-normal water levels. These maps are based on water-level fluctuations in 15 key wells. The water levels of the 1988 water year are averaged by season and compared to the long-term means for these seasons. Water levels during the fall and winter seasons were normal to above normal, except for the southwestern part of the Ohio River Basin, which was below normal. During the spring, the same genereal conditions prevailed, with the exception of Lawrence County, which was below normal. In the summer, water levels declined to normal or below-normal range at 13 of the 15 wells in the basin.

Water Quality

The highest dissolved-solids concentrations generally occurred during periods of low flow at all three NASQAN (National Stream Quality Accounting Network) sites. The ratios of dissolved solids to specific conductance for the Allegheny River at New Kensington, the Monongahela River at Braddock, and the Beaver River at Beaver Falls averaged 0.66, 0.63, and 0.59, respectively. The dissolved-oxygen saturation levels generally were the highest on the Allegheny River at New Kensington, with a range of 83 to 107 percent of saturation and an average of 92 percent of saturation. The dissolved-oxygen saturation levels were lowest on the Beaver River at Beaver Falls, with a range of 80 to 96 percent of saturation and an average of 88 percent of saturation. The saturation levels on the Monongahela River at Braddock ranged from 72 to 102 percent of saturation, with an average of 90 percent of saturation.

Trace-element analyses of samples collected at the three NASQAN sites indicate that all concentrations of arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver were considerably less than U.S. Environmental Protection Agency maximum contaminant levels for domestic water supply. Dissolved-manganese concentrations exceeded the recommended of 50 micrograms per liter in most of the samples collected at all three sites.

The following table gives the range and median pH values and the range and mean values for specific conductance and dissolved-solids concentrations at the three NASQAN sites.

	pH			Specific conductance (microsiemens per centimeter at 25° C)			Dissolved solids (milligrams per liter)		
Site	Max	Min	Median	Max	Min	Mean	Max	Min	Mean
Allegheny River at New Kensington	7.6	7.0	7.4	300	220	268	262	143	178
Monongahela River at Braddock	7.8	7.2	7.5	520	315	414	375	179	259
Beaver River at Beaver Falls	8.1	7.6	7.8	530	450	489	305	269	290

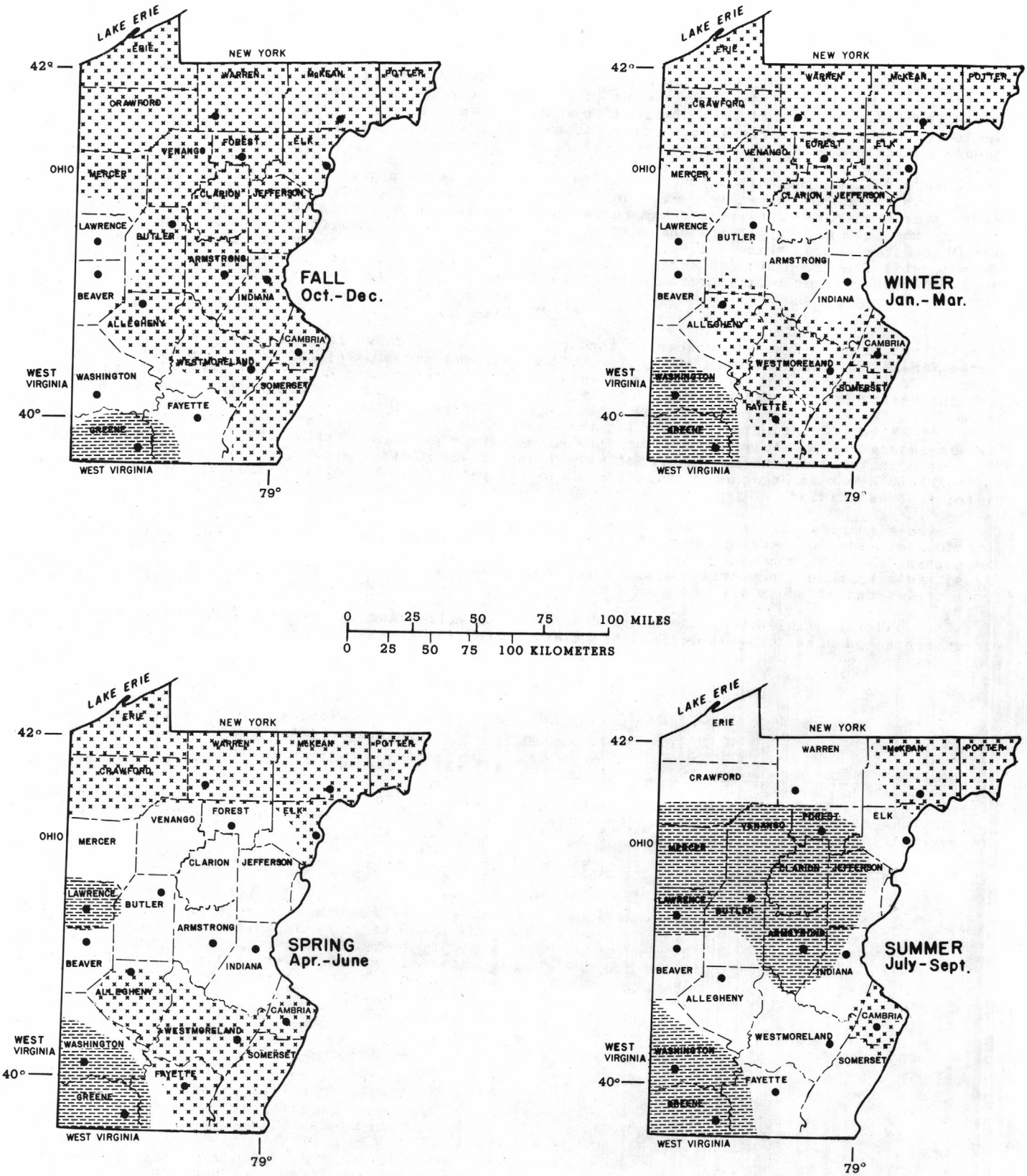

Figure 2.--Relation between mean 1988 seasonal water levels and long-term water levels.

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Bench-Mark Network is a network of 57 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 1988 water year that began October 1, 1987, and ended September 30, 1988. 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 4-6. 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 indention in a list of stations in the front of the report. Each indention represents one rank. This downstream-order system of indention 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 03073000, includes a 2-digit part number "03" plus a 6-digit downstream-order number "073000." The part number designates major river basins; for example, part "03" is the Ohio River 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 3 below.

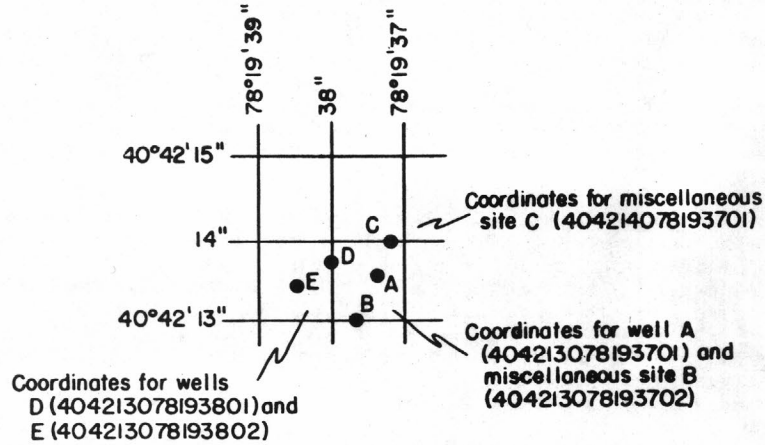

Figure 3.--System for numbering wells and miscellaneous sites (latitude and longitude).

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 4-6.

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-backwater 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.

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 ommitted 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.

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

Identifying Estimated Daily Discharge

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

Accuracy of the Records

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

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

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

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic feet per second per square mile and of runoff, in inches, are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes 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 District office (telephone number: 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 4 and 6.

Arrangement of Records

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

On-site Measurements and Sample Collection

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-Resurces 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 waste-heat 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.

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:

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

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 figure 4. The locations of observation wells for projects are shown in figure 6.

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. 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.

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.

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 terratories 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 radiochemical 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 or 1,233 cubic meters.

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

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

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

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.

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°C ± 1.0°C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

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

Fecal streptococcal bacteria are bacteria found also in 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°C ± 1.0°C on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Bed material is the 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, about 646,000 gallons or 2,447 cubic meters.

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 or 0.02832 cubic meters per second.

Cubic feet per second per square mile [$(ft^3/s)/mi^2$][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.

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

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

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

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

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

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 ($CaCO_3$).

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

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as delineated by the Office of Water Data Coordination on the State Hydrologic Unit Maps; each hydrologic unit is identified by an 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 (ug/g) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the element per unit mass (gram) of material analyzed.

Micrograms per liter (UG/L, ug/L) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

Milligrams per liter (MG/L, mg/L) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter 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:

Classification	Size (mm)	Method of analysis
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 ($1x10^{-12}$) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields 3.7 x 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/(m^2.time)] for periphyton and macrophytes and [mg C/(m^3.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 [mgO /(m^2.time)] for periphyton and macrophytes and [mgO /(m^3.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.

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

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

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

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

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

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

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

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

Suspended-sediment discharge (tons/day) is the rate at which dry mass of sediment passes a section of a stream or is the quantity of sediment, as measured by dry mass or volume, that passes a section in a given time. it is calculated in units of tons per day as follows: concentration (mg/L) x discharge (ft^3/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 ($7\ Q_{10}$) is the discharge at the 10-year recurrence interval taken from a frequency curve of annual values of the lowest mean discharge for 7 consecutive days (the 7-day low flow).

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

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

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

Surface area of a lake is that area outlined on the latest 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 planimetered. All areas shown are those for the stage when the planimetered 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-micrometer filter.

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that is retained on a 0.45 um membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures 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 um membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total."

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

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

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).

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

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-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.

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. J. 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 and dispersion in streams by dye tracing, by E. F. Hubbard, F. A. Kilpatrick, L. A. Martens, and J. F. Wilson, Jr.: USGS--TWRI Book 3, Chapter A9. 1982. 44 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-B1. Aquifer-test design, observation, and data analysis, by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages.

3-B2. Introduction to ground-water hydraulics, a programed test 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.

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

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

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

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

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

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

5-A1. Methods for determination of inorganic substances in water and fluvial sediments, by M. W. Skougstad and others, editors: USGS--TWRI Book 5, Chapter A1. 1979. 626 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 analysis of organic substances in water, by D. F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chapter A3. 1972. 40 pages.

5-A4. Methods for collection and analysis of aquatic biological and microbiological samples, edited by P. E. Greeson, T. A. Ehlke, G. A. Irwin, B. W. Lium, and K. V. Slack: USGS--TWRI Book 5, Chapter A4. 1977. 332 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. Schaffrannek, 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.

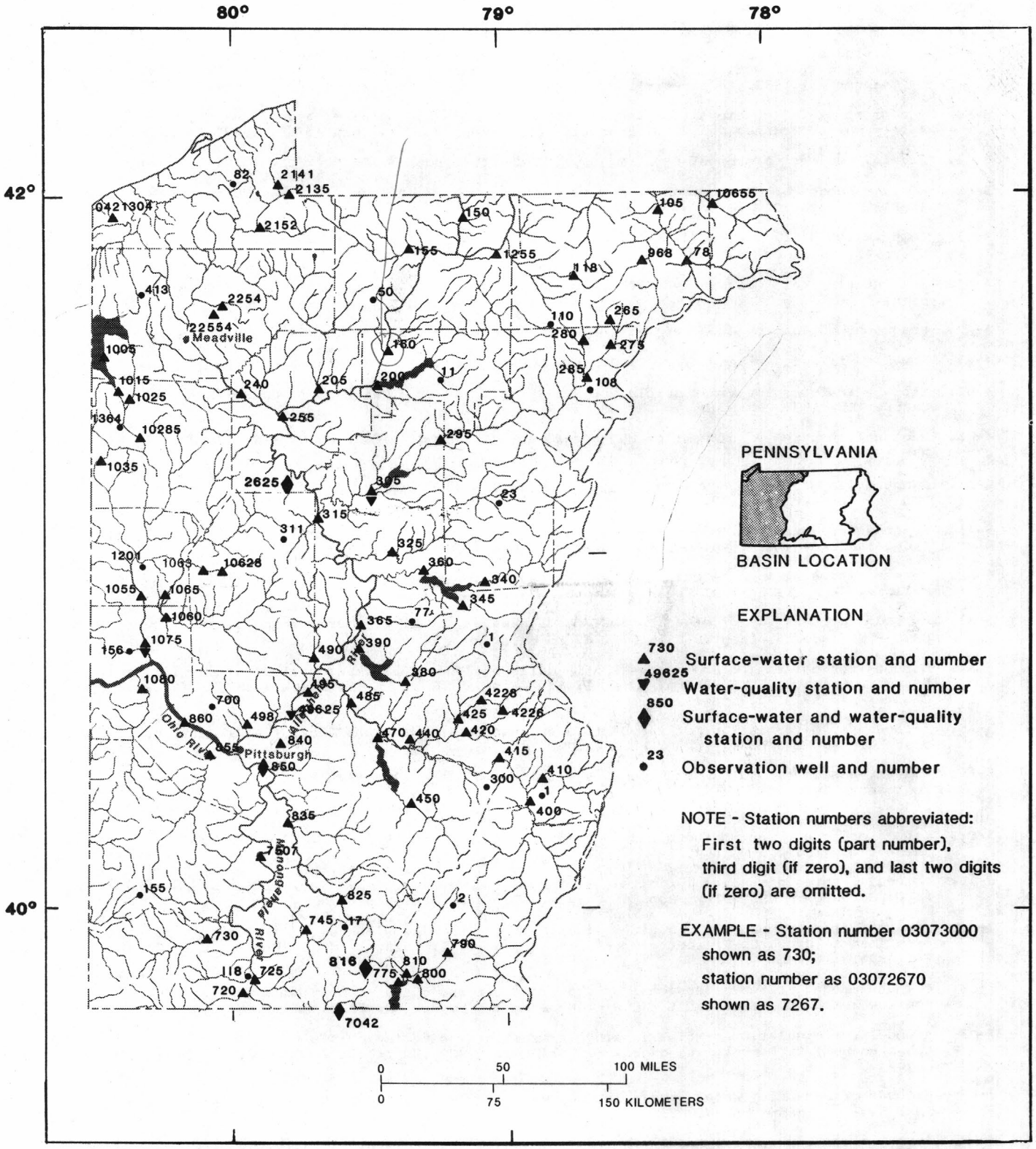

Figure 4.--Location of data-collection stations and observation wells.

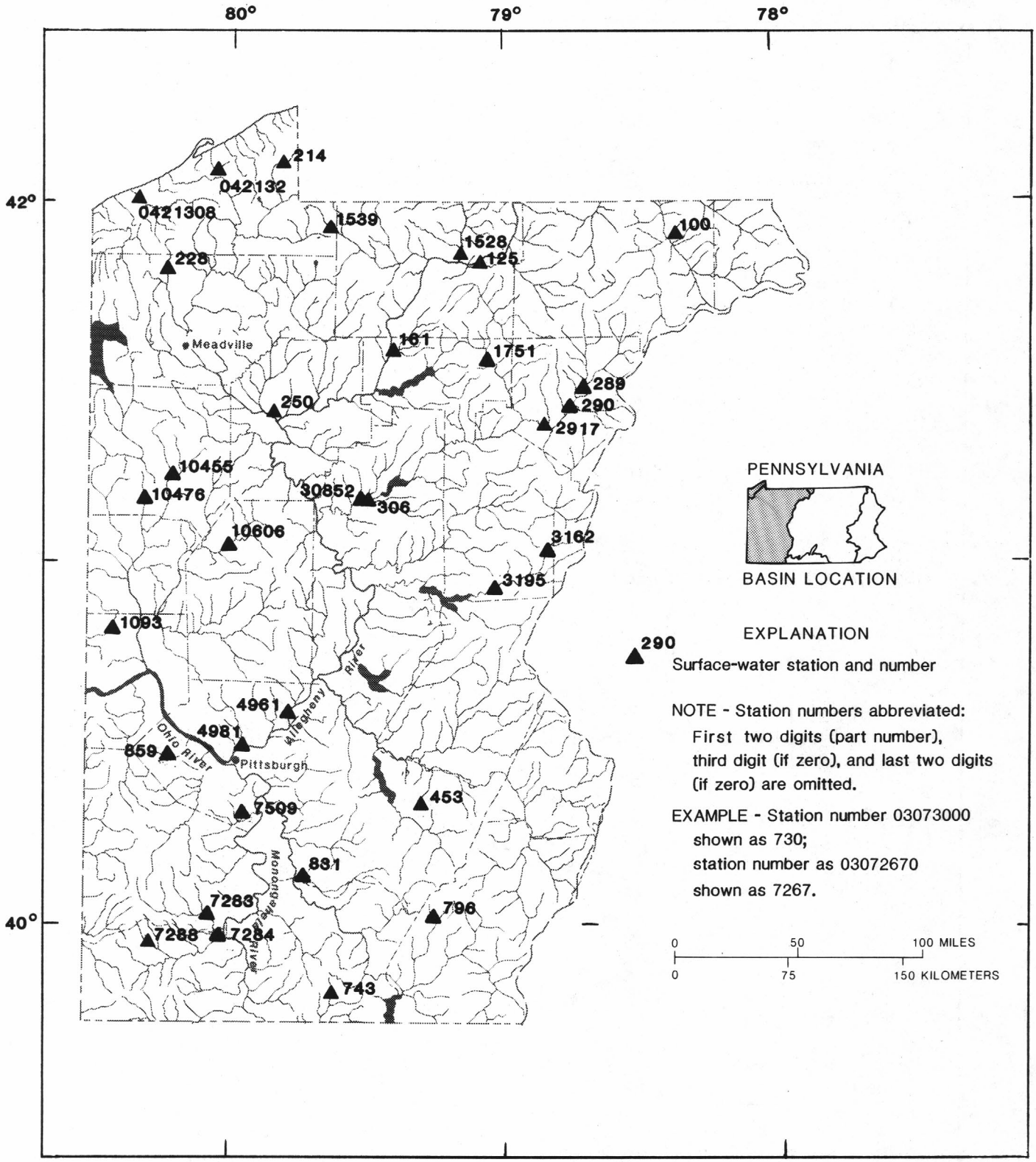

Figure 5.--Location of partial-record data-collection stations.

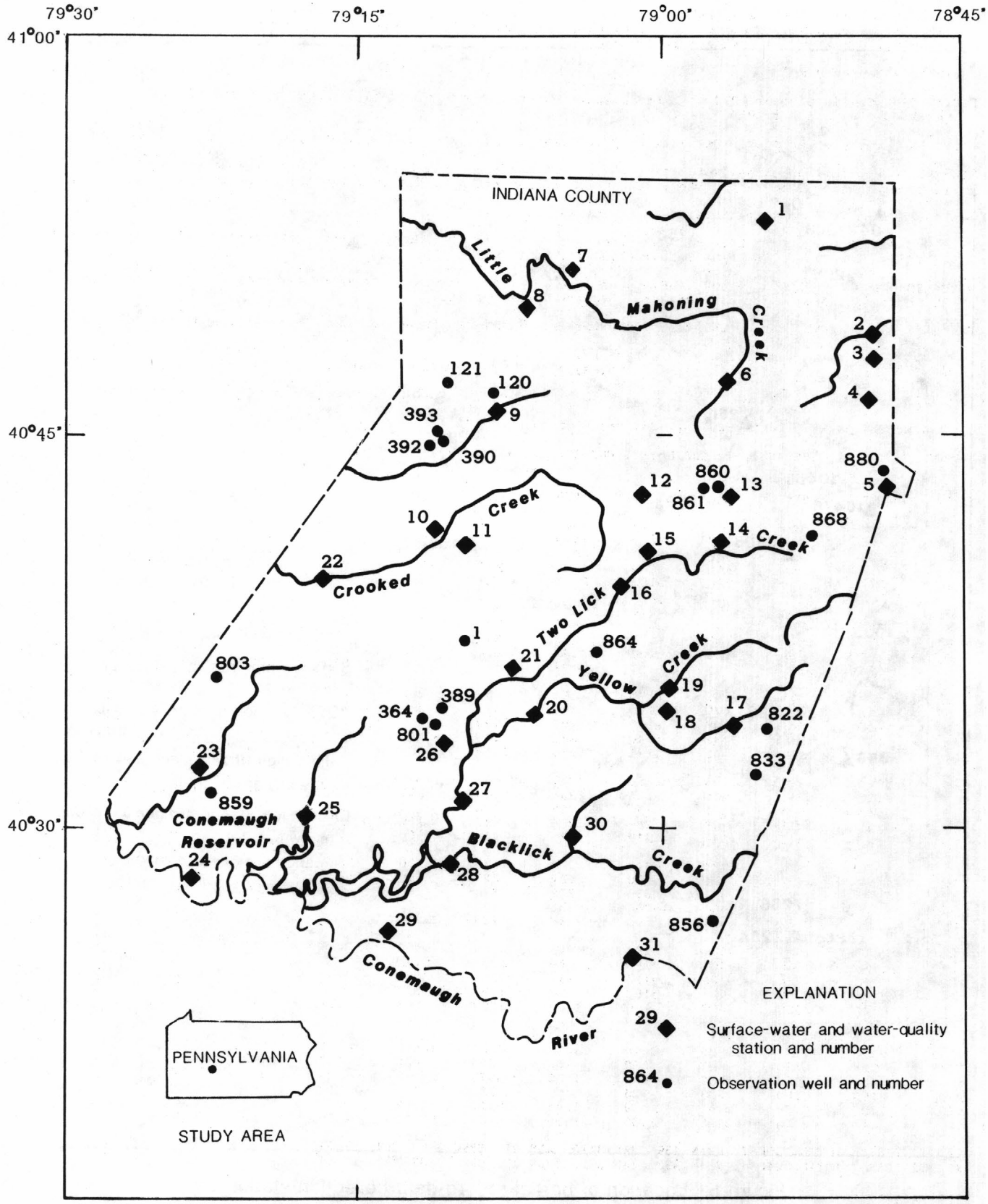

Figure 6.--Location of data-collection stations for Indiana County study.

OHIO RIVER MAIN STEM

03007800 ALLEGHENY RIVER AT PORT ALLEGANY, PA

LOCATION.--Lat 41°49'07", long 78°17'35", McKean County, Hydrologic Unit 05010001, on right bank 40 ft upstream from bridge on U.S. Highway 6 at Port Allegany, 1.1 mi upstream from Twomile Creek, 1.4 mi downstream from Allegheny Portage Creek, and at mile 285.5.

DRAINAGE AREA.--248 mi^2.

PERIOD OF RECORD.--October 1974 to current year. Discharge measurements obtained by Corps of Engineers March 1971 to October 1974.

GAGE.--Water-stage recorder. Datum of gage is 1,454.88 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--14 years, 464 ft^3/s, 25.41 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,900 ft^3/s, Feb. 14, 1984, gage height, 12.93 ft; minimum, 13 ft^3/s, Aug. 23, 1988, gage height, 1.35 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 23, 1972, reached a stage of at least 17.5 ft, discharge, 21,700 ft^3/s, from Corps of Engineers discharge measurement.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 27	0700	*4,040	*9.58	No other peak greater than base discharge.			

Minimum discharge, 13 ft^3/s, Aug. 23, gage height, 1.35 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	329	154	1680	439	e300	154	823	283	232	40	31	39
2	308	154	1270	350	1320	151	690	296	224	42	26	31
3	450	150	988	e290	1530	217	639	300	321	38	23	26
4	384	152	841	e230	1420	214	1310	296	267	34	21	61
5	374	178	679	e180	1070	182	1100	292	214	32	19	126
6	361	170	555	e220	835	193	1010	303	187	30	34	76
7	401	171	464	287	673	218	923	268	173	28	34	53
8	378	195	420	e270	629	245	767	238	164	26	26	43
9	338	217	464	e220	539	470	633	226	155	24	20	36
10	316	224	554	e170	434	831	522	290	137	23	18	32
11	424	235	542	e170	364	799	452	252	126	24	18	27
12	415	245	579	e170	344	800	398	234	115	25	52	25
13	409	247	556	e160	297	1150	354	232	105	23	46	32
14	399	246	482	e140	289	1140	319	247	97	20	31	32
15	381	227	502	e125	286	1010	298	223	89	20	25	25
16	354	213	508	e150	256	842	280	307	90	20	19	21
17	326	214	430	e135	236	698	257	320	94	28	17	21
18	304	604	372	e140	223	586	246	376	81	42	16	36
19	280	611	339	239	214	510	226	1470	73	33	17	35
20	264	643	589	410	239	454	204	2130	68	46	15	28
21	254	578	784	e340	204	372	196	1730	64	147	14	27
22	227	492	726	e300	199	325	180	1240	59	127	13	26
23	218	429	692	e230	242	324	182	955	58	58	14	37
24	198	401	601	e200	211	402	257	911	54	48	65	43
25	197	357	578	e190	186	763	205	739	50	46	48	34
26	181	348	539	e180	175	3520	189	615	47	40	35	28
27	176	308	493	e180	179	3870	191	509	48	40	33	24
28	196	284	489	e170	161	2650	202	430	44	50	33	22
29	180	1080	487	e180	166	1690	226	362	41	43	70	20
30	171	2050	403	e190	---	1220	296	307	41	32	109	20
31	163	---	399	e220	---	963	---	264	---	38	55	---
TOTAL	9356	11577	19005	6875	13221	26963	13575	16645	3518	1267	997	1086
MEAN	302	386	613	222	456	870	452	537	117	40.9	32.2	36.2
MAX	450	2050	1680	439	1530	3870	1310	2130	321	147	109	126
MIN	163	150	339	125	161	151	180	223	41	20	13	20
CFSM	1.22	1.56	2.47	.89	1.84	3.51	1.82	2.17	.47	.16	.13	.15
IN.	1.40	1.74	2.85	1.03	1.98	4.04	2.04	2.50	.53	.19	.15	.16

CAL YR 1987 TOTAL 160087 MEAN 439 MAX 3110 MIN 27 CFSM 1.77 IN. 24.01
WTR YR 1988 TOTAL 124085 MEAN 339 MAX 3870 MIN 13 CFSM 1.37 IN. 18.61

e Estimated

03009680 POTATO CREEK AT SMETHPORT, PA

LOCATION.--Lat 41°48'35", long 78°25'50", McKean County, Hydrologic Unit 05010001, on left bank 30 ft upstream from U.S. Highway 6 at east borough limits of Smethport, and 500 ft downstream from Marvin Creek.

DRAINAGE AREA.--160 mi^2.

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,454.84 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several observations of water temperature were made during the year. Gage-height telemeter at station.

AVERAGE DISCHARGE.--14 years, 303 ft^3/s, 25.72 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,350 ft^3/s, Feb. 14, 1984, gage height, 11.29 ft; minimum daily, 12 ft^3/s, Aug. 22, 1988.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 22, 1972, reached a stage of 15.54 ft, discharge, 12,800 ft^3/s, on basis of contracted-opening measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 29	2315	*2,700	*8.88	No other peak greater than base discharge.			

Minimum daily discharge, 12 ft^3/s, Aug. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	212	e92	1020	e230	e400	e115	431	209	146	e27	e24	28
2	185	e90	787	e180	e1100	e130	379	191	137	e28	e20	26
3	239	e88	596	e145	910	e175	460	182	317	e27	e18	24
4	172	e90	518	e170	866	182	1670	178	251	e23	e16	88
5	148	e135	425	e135	648	163	954	185	158	e22	e15	159
6	139	126	360	e170	508	169	772	215	128	e21	e25	65
7	195	131	305	e160	418	175	682	186	112	e19	31	42
8	192	167	280	e135	e350	202	564	162	101	e18	26	34
9	163	190	378	e120	e310	422	459	161	95	e17	24	30
10	143	176	473	e115	e270	626	387	270	82	e17	23	28
11	252	166	388	e105	e230	507	333	217	75	e18	22	26
12	224	164	393	e100	e210	538	292	193	68	e18	36	26
13	189	161	372	e98	e200	990	260	193	60	e17	27	30
14	171	160	317	e96	e190	789	239	206	54	e16	63	32
15	161	144	376	e94	e180	656	226	181	49	e18	28	27
16	151	133	417	e96	e170	540	219	320	55	e21	23	25
17	143	138	323	e98	e160	454	199	293	58	e24	e19	26
18	138	364	276	e140	e150	394	195	330	45	31	e17	44
19	130	243	249	e250	e145	353	176	1170	41	28	e16	37
20	126	229	588	e430	e160	317	159	923	40	40	e15	31
21	132	216	676	e310	e145	262	158	791	39	251	e14	30
22	117	207	522	e240	e170	242	142	617	36	100	e12	28
23	119	205	480	e210	e150	238	163	494	35	43	e19	43
24	111	198	416	e190	e140	343	325	634	34	108	74	43
25	114	184	e390	e170	e130	601	214	461	31	67	37	33
26	106	201	e320	e160	e120	1840	190	376	30	43	32	29
27	103	178	e280	e140	e115	1360	186	306	31	35	29	27
28	113	160	e240	e130	e110	955	192	256	29	e30	29	26
29	e105	1070	e210	e135	e105	730	223	221	e28	e25	53	25
30	e98	1670	e180	e140	---	588	245	192	e27	e22	69	25
31	e96	---	e160	e230	---	483	---	164	---	27	34	---
TOTAL	4687	7476	12715	5122	8760	15539	11094	10477	2392	1201	890	1137
MEAN	151	249	410	165	302	501	370	338	79.7	38.7	28.7	37.9
MAX	252	1670	1020	430	1100	1840	1670	1170	317	251	74	159
MIN	96	88	160	94	105	115	142	161	27	16	12	24
CFSM	.94	1.56	2.56	1.03	1.89	3.13	2.31	2.11	.50	.24	.18	.24
IN.	1.09	1.74	2.96	1.19	2.04	3.61	2.58	2.44	.56	.28	.21	.26

CAL YR 1987 TOTAL 110739 MEAN 303 MAX 2930 MIN 23 CFSM 1.90 IN. 25.75
WTR YR 1988 TOTAL 81490 MEAN 223 MAX 1840 MIN 12 CFSM 1.39 IN. 18.95

e Estimated

03010500 ALLEGHENY RIVER AT ELDRED, PA

LOCATION.--Lat 41°57'48", long 78°23'11", McKean County, Hydrologic Unit 05010001, on right bank at site of former highway bridge, 600 ft upstream from bridge on State Highway 346, 1,000 ft upstream from Knapp Creek, 0.5 mi north of Eldred, and at mile 267.8.

DRAINAGE AREA.--550 mi².

PERIOD OF RECORD.--July 1939 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,416.53 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--49 years, 947 ft³/s, 23.38 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 65,400 ft³/s, June 23, 1972, gage height, 29.05 ft from flood-mark, from rating curve extended above 21,000 ft³/s on basis of slope-area measurement at gage height 27.6 ft; minimum, 22 ft³/s, Sept. 29, 30, 1959, gage height, 1.27 ft.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 28	1000	*4,660	*12.55				

Minimum discharge, 24 ft³/s, Aug. 23, gage height, 1.49 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	802	352	3950	e760	e1200	414	1600	734	525	90	78	e90
2	690	339	3490	e660	e2300	381	1420	688	476	88	70	e72
3	831	338	2440	e580	3170	535	1330	674	639	90	59	e60
4	781	334	1870	e520	2890	584	3230	658	914	82	54	e130
5	696	337	1550	e450	2300	465	3530	642	560	73	49	e280
6	657	428	1300	e440	1720	478	2770	695	446	67	51	e150
7	712	430	1100	e430	1330	573	2200	654	393	62	74	e120
8	790	524	962	e420	1310	580	1840	573	364	57	78	e96
9	705	636	1030	e520	1170	930	1510	523	339	53	58	e80
10	632	662	1450	e430	1030	1810	1270	684	314	50	48	e70
11	758	617	1330	e390	910	1730	1090	704	284	50	43	e60
12	923	609	1290	e350	803	1620	945	610	264	52	41	e54
13	808	600	1280	e320	713	2290	846	575	241	51	94	e68
14	763	583	1130	e300	e680	2450	771	605	223	46	89	e64
15	723	549	1050	e290	e600	2110	721	566	205	42	93	e56
16	681	499	1310	e280	e560	1740	682	650	196	39	56	e47
17	633	476	1110	e320	e520	1450	641	853	219	48	42	e46
18	596	881	928	e420	e500	1230	595	769	199	57	36	e80
19	554	1090	832	e760	e480	1100	575	2100	173	81	34	e74
20	514	1020	1150	e900	e450	1000	514	3230	159	79	32	e62
21	506	1000	2170	1390	e560	811	488	3200	148	466	30	e60
22	471	837	1790	1090	475	711	464	2610	140	607	26	e58
23	442	827	1600	894	686	745	460	1920	140	234	25	e74
24	431	789	1430	e700	660	829	897	1670	130	197	34	e96
25	413	742	1290	e580	545	1400	768	1560	118	217	153	e74
26	407	716	1260	e500	472	3150	649	1250	109	157	99	e58
27	383	700	1100	e450	496	4080	607	1050	103	122	77	e52
28	390	627	1020	e420	415	4610	614	884	103	108	69	e47
29	404	1300	1020	e400	448	4040	627	770	97	112	76	e46
30	388	3570	850	e440	---	2890	767	674	91	92	178	e43
31	371	---	804	e700	---	1960	---	588	---	76	e240	---
TOTAL	18855	22412	44886	17104	29393	48696	34421	33363	8312	3645	2186	2367
MEAN	608	747	1448	552	1014	1571	1147	1076	277	118	70.5	78.9
MAX	923	3570	3950	1390	3170	4610	3530	3230	914	607	240	280
MIN	371	334	804	280	415	381	460	523	91	39	25	43
CFSM	1.11	1.36	2.63	1.00	1.84	2.86	2.09	1.96	.50	.21	.13	.14
IN.	1.28	1.52	3.04	1.16	1.99	3.29	2.33	2.26	.56	.25	.15	.16

CAL YR 1987 TOTAL 346833 MEAN 950 MAX 5070 MIN 68 CFSM 1.73 IN. 23.46
WTR YR 1988 TOTAL 265640 MEAN 726 MAX 4610 MIN 25 CFSM 1.32 IN. 17.97

e Estimated

03010655 OSWAYO CREEK AT SHINGLEHOUSE, PA

LOCATION.--Lat 41°57'42", long 78°11'54", Potter County, Hydrologic Unit 05010001, on right bank 200 ft upstream from bridge on State Highway 44 at Shinglehouse and 0.7 mi upstream from Honeoye Creek.

DRAINAGE AREA.--98.7 mi^2.

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,460.34 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark).

REMARKS.--Records good except for estimated daily discharges, which are fair. Several observations of water temperature were made during the year. Gage-height telemeter at station.

AVERAGE DISCHARGE.--14 years, 160 ft^3/s, 22.01 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,300 ft^3/s, Oct. 28, 1981, gage height, 11.05 ft; maximum gage height, 11.82 ft, Jan. 20, 1986 (backwater from ice); minimum discharge, 5.1 ft^3/s, Oct. 10, 1980, gage height, 3.12 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 26	1215	*1,360	*8.20	No other peak greater than base discharge.			

Minimum discharge, 7.8 ft^3/s, Sept. 16, gage height, 3.29 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	106	53	597	e150	204	61	304	230	95	e16	15	16
2	102	52	477	e100	416	62	262	238	99	e15	e14	16
3	139	51	375	e76	512	84	250	227	151	e14	e12	17
4	121	52	315	e90	481	84	551	206	125	13	e11	27
5	117	56	255	e70	379	77	544	190	107	12	e9.4	35
6	112	e50	213	e90	302	82	474	178	e80	e11	e12	27
7	122	e62	182	e80	253	83	398	157	e72	e11	15	e20
8	113	e78	169	e70	e200	95	326	140	e66	e10	14	e16
9	102	e98	188	e66	e160	167	271	130	e60	e10	e12	e13
10	95	e94	213	e64	e130	278	227	140	e54	e11	e11	e11
11	131	e88	224	e60	e115	281	197	128	e48	e12	e11	8.2
12	124	86	238	e58	e100	279	175	118	e45	e11	e10	8.1
13	e110	88	225	e56	e96	375	158	113	e40	e11	13	8.8
14	e100	86	197	e56	e90	393	145	113	e36	e10	12	9.1
15	e96	78	196	e54	e86	360	139	106	e32	e12	18	8.4
16	e90	74	194	e56	e80	304	130	120	e43	15	19	7.9
17	e86	74	167	e58	e76	253	119	121	52	20	16	8.3
18	e82	e180	144	e80	e72	215	115	131	45	20	17	10
19	e78	e170	132	e130	e68	191	108	335	42	17	15	12
20	e76	155	210	184	e85	171	101	565	38	18	e12	12
21	83	154	273	159	82	141	97	570	35	124	e9.0	13
22	76	168	279	133	108	122	91	462	33	54	e13	14
23	74	131	269	126	92	120	105	366	41	25	e18	19
24	69	123	233	e115	85	137	175	311	34	19	e32	22
25	69	113	216	e105	80	245	e140	255	e29	17	e26	20
26	63	112	e180	e98	85	1170	e120	210	e25	17	e20	18
27	62	101	e160	e90	71	1190	e135	175	e23	17	16	20
28	66	96	e140	e82	69	791	157	152	e20	16	20	24
29	61	307	e110	e86	63	567	181	133	e18	15	24	33
30	58	640	e150	e110	---	443	221	118	e17	15	29	37
31	56	---	e210	e150	---	352	---	105	---	17	19	---
TOTAL	2839	3670	7131	2902	4640	9173	6416	6543	1605	605	494.4	510.8
MEAN	91.6	122	230	93.6	160	296	214	211	53.5	19.5	15.9	17.0
MAX	139	640	597	184	512	1190	551	570	151	124	32	37
MIN	56	50	110	54	63	61	91	105	17	10	9.0	7.9
CFSM	.93	1.24	2.33	.95	1.62	3.00	2.17	2.14	.54	.20	.16	.17
IN.	1.07	1.38	2.69	1.09	1.75	3.46	2.42	2.47	.60	.23	.19	.19

CAL YR 1987 TOTAL 58023 MEAN 159 MAX 1160 MIN 17 CFSM 1.61 IN. 21.87
WTR YR 1988 TOTAL 46529.2 MEAN 127 MAX 1190 MIN 7.9 CFSM 1.29 IN. 17.54

e Estimated

03011020 ALLEGHENY RIVER AT SALAMANCA, NY

LOCATION.--Lat 42°09'23", long 78°42'56", Cattaraugus County, Hydrologic Unit 05010001, on left bank 230 ft upstream from Main Street bridge in Salamanca, 1.3 mi downstream from Great Valley Creek, and 1.6 mi upstream from Little Valley Creek.

DRAINAGE AREA.--1,608 mi^2.

PERIOD OF RECORD.--September 1903 to current year. Monthly discharge only for some periods, published in WSP 1305. Prior to October 1964, published as "at Red House."

REVISED RECORDS.--WSP 1385: 1907, 1909–12, 1913(M), 1914–15, 1916–17(M), 1925, 1927. WSP 1907: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,358.00 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Sept. 3, 1917, nonrecording gage and Sept. 4, 1917 to Sept. 30, 1964, water-stage recorder at site 7.5 mi downstream at different datum. Oct. 1, 1964 to Sept. 30, 1967, at present site at datum 0.04 ft lower.

REMARKS.--Records good except those for estimated daily discharges and period of questionable gage-height record, June 10 to July 21, which are fair. U.S. Army Corps of Engineers satellite and gage-height telemeters at station. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--85 years, 2,777 ft^3/s, 23.45 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 73,000 ft^3/s June 23, 1972, gage height, 24.01 ft from floodmarks; minimum daily, 79 ft^3/s Sept. 10, 11, 1971.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 17,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage Height (ft)	Date	Time	Discharge (ft^3/s)	Gage Height (ft)
Apr. 4	2000	*13,700	*8.81	No peak greater than base discharge.			

Minimum discharge, 142 ft^3/s Aug. 22-23, gage height, 2.71 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2920	1030	9680	e2500	4290	e1300	4530	3630	1440	340	296	332
2	2530	976	8310	e2100	7630	e1200	4110	3120	1450	340	272	259
3	3090	943	6540	e1600	8690	e1200	3820	2840	e1300	339	261	223
4	2840	933	5210	e1300	7460	e1300	11400	2610	e1180	326	254	255
5	2330	995	4460	e1100	5980	e1300	11400	2430	e1060	311	230	349
6	2020	1160	3790	e1100	4350	e1400	8410	2560	e990	294	220	426
7	2080	1240	3280	e1100	3490	e1500	6510	2370	e910	281	223	424
8	2440	1640	2950	e1100	e3200	e1600	5380	2020	e820	271	220	316
9	2200	2460	3500	e1000	e2800	e3200	4500	1800	e770	259	220	262
10	1870	2620	5290	e1000	e2500	6340	3770	2820	725	248	217	233
11	2150	2260	4830	e980	e2200	5790	3210	3260	673	243	199	214
12	2830	2040	4300	e940	e2000	5120	2760	2780	626	247	195	200
13	2540	1910	3990	e900	e1500	6880	2430	2400	593	244	187	203
14	2200	1770	3530	e860	e1300	7150	2170	2370	559	237	192	202
15	1990	1610	3310	e840	e1600	6010	2020	2170	537	228	219	192
16	1840	1470	3920	e820	e1900	4990	1850	3270	532	221	214	191
17	1690	1370	3590	e780	e1900	4200	1750	4700	557	270	192	189
18	1580	1850	3050	e900	e1800	3610	1640	4080	534	309	178	205
19	1470	2560	2770	e1300	e1700	e3200	1550	7870	491	298	166	225
20	1360	2370	4090	e1900	e1600	e2800	1500	10800	447	330	153	257
21	1520	2330	7720	e3000	e1500	e2300	1470	9290	426	719	148	299
22	1440	2030	6250	e2700	e1500	e2000	1390	7830	399	2820	148	248
23	1390	1910	5160	e2200	e2000	e2100	1410	6120	461	1240	142	319
24	1340	2040	4500	e1900	e2700	3240	3400	5120	457	e710	172	384
25	1290	2010	4280	e1700	e2000	5000	3470	4810	394	e600	185	351
26	1220	2100	4280	e1500	e1700	11000	2710	3910	379	e510	250	304
27	1150	2060	3800	e1300	e1600	12600	2460	3230	380	e420	247	e275
28	1200	1900	3340	e1200	e1400	10900	2430	2680	379	e390	241	e251
29	1220	3720	e3000	e1100	e1400	9470	2560	2230	364	e350	261	e220
30	1190	11100	e2300	e1100	---	7540	3850	1900	345	e340	326	e199
31	1120	---	e2100	e1800	---	5550	---	1640	---	e330	356	---
TOTAL	58050	64407	137120	43620	83690	141790	109860	118660	20178	14065	6784	8007
MEAN	1873	2147	4423	1407	2886	4574	3662	3828	673	454	219	267
MAX	3090	11100	9680	3000	8690	12600	11400	10800	1450	2820	356	426
MIN	1120	933	2100	780	1300	1200	1390	1640	345	221	142	189
CFSM	1.16	1.34	2.75	.88	1.79	2.84	2.28	2.38	.42	.28	.14	.17
IN.	1.34	1.49	3.17	1.01	1.94	3.28	2.54	2.75	.47	.33	.16	.19

CAL YR	1987	TOTAL	982257	MEAN	2691	MAX	14500	MIN	276	CFSM	1.67	IN. 22.72
WTR YR	1988	TOTAL	806231	MEAN	2203	MAX	12600	MIN	142	CFSM	1.37	IN. 18.65

e Estimated

03011800 KINZUA CREEK NEAR GUFFEY, PA

LOCATION.--Lat 41°45'59", long 78°43'08", McKean County, Hydrologic Unit 05010001, in Allegheny National Forest, on right bank 130 ft upstream from bridge on U.S. Highway 219, 0.2 mi upstream from Wintergreen Run, 1.0 mi downstream from Pine Run, and 1.5 mi west of Guffey.

DRAINAGE AREA.--46.4 mi².

PERIOD OF RECORD.--Occasional low-flow measurements, published as "at Tallyho," water years 1959-65. October 1965 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,540 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--23 years, 77.6 ft³/s, 22.71 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 5,220 ft³/s, June 22, 1972, gage height, 8.99 ft, from rating curve extended above 1,300 ft³/s on basis of slope-area measurement at gage height 8.33 ft; minimum, 2.0 ft³/s, July 29, 1978, minimum gage height, 1.82 ft, Sept. 11, 12, 13, 14, 1982.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Nov. 29	1930	*594	*4.49	Mar. 26	0400	591	*4.49

Minimum daily discharge, 4.3 ft³/s, Aug. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	77	33	171	e66	e150	e29	110	66	32	e9.0	e8.0	e7.0
2	73	33	151	e50	e300	e35	99	57	30	e9.0	e7.2	e5.5
3	86	33	132	e40	196	40	147	52	100	e8.5	e6.4	e5.6
4	67	34	118	e36	168	38	407	49	76	e8.2	e7.8	e22
5	58	41	100	e43	135	41	213	54	43	e7.9	e6.6	e18
6	54	31	86	e54	113	50	179	65	34	e7.7	e5.8	e11
7	88	31	75	e64	104	36	163	53	29	e7.4	e5.2	e8.7
8	86	51	74	e48	100	40	141	44	26	e7.0	e4.8	e7.2
9	75	59	112	e40	102	97	117	49	25	e7.0	e4.5	e5.9
10	65	56	130	e36	80	138	98	87	23	e7.2	e10	e5.7
11	98	50	98	e31	65	114	85	61	21	e7.8	e9.0	e5.7
12	87	48	98	e28	58	146	75	51	20	e7.6	e8.2	e5.7
13	75	48	91	e26	e52	289	68	53	18	e6.8	e7.2	12
14	69	47	80	e25	e48	196	62	55	17	e6.1	e6.4	8.5
15	65	33	90	e24	e45	158	59	49	16	e6.9	e5.7	6.1
16	61	28	97	e25	e42	129	59	91	18	e5.9	e5.2	5.7
17	55	35	79	e26	e40	109	54	78	20	e9.0	e5.0	8.2
18	47	80	75	e39	e38	95	53	73	15	e8.6	e4.3	14
19	44	58	70	e64	e36	84	48	178	14	e9.0	e5.0	11
20	42	53	151	e200	e35	77	43	135	13	e12	e4.8	10
21	43	49	159	193	e34	66	43	119	e13	e164	e4.6	11
22	39	53	122	143	e45	67	38	107	e12	e53	e4.5	12
23	40	53	113	e100	e40	65	60	92	e12	e36	e5.5	20
24	37	50	100	e72	e35	116	142	86	e11	e85	e14	20
25	39	49	106	e56	e33	194	81	76	e11	e40	e9.0	17
26	36	51	94	e50	e32	439	65	65	e10	e23	e9.8	14
27	35	41	e80	e44	e31	291	62	55	e10	e18	e8.4	14
28	39	35	e68	e40	e30	207	63	48	e9.5	e14	e12	13
29	38	273	e58	e40	e30	169	70	43	e9.4	e12	e14	13
30	38	283	e50	e44	---	143	83	38	e9.0	e11	e13	13
31	35	---	e58	e50	---	118	---	34	---	e9.0	e8.6	---
TOTAL	1791	1819	3086	1797	2217	3816	2987	2163	696.9	623.6	230.5	330.5
MEAN	57.8	60.6	99.5	58.0	76.4	123	99.6	69.8	23.2	20.1	7.44	11.0
MAX	98	283	171	200	300	439	407	178	100	164	14	22
MIN	35	28	50	24	30	29	38	34	9.0	5.9	4.3	5.5
CFSM	1.25	1.31	2.15	1.25	1.65	2.65	2.15	1.50	.50	.43	.16	.24
IN.	1.44	1.46	2.47	1.44	1.78	3.06	2.39	1.73	.56	.50	.18	.26

CAL YR 1987 TOTAL 27457 MEAN 75.2 MAX 733 MIN 10 CFSM 1.62 IN. 22.01
WTR YR 1988 TOTAL 21557.5 MEAN 58.9 MAX 439 MIN 4.3 CFSM 1.27 IN. 17.28

e Estimated

03012550 ALLEGHENY RIVER AT KINZUA DAM, PA

LOCATION.--Lat 41°50'29", long 79°00'44", Warren County, Hydrologic Unit 05010001, in Allegheny National Forest, on left bank 0.5 mi downstream from Kinzua Dam, 2.5 mi east of Hemlock, and at mile 197.6.

DRAINAGE AREA.--2,180 mi².

PERIOD OF RECORD.--October 1935 to current year. Published as "near Kinzua" (station 03012500) prior to October 1968 and as "at Warren" (station 03012600) October 1968 to September 1972.

REVISED RECORDS.--WSP 1275: 1936-37. WDR PA-73-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,192.55 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Nov. 1, 1964, water-stage recorder at site 1.0 mi upstream at different datum. Nov. 1, 1964, to Aug. 4, 1966, nonrecording gage, and Aug. 5, 1966, to Sept. 30, 1972, water-stage recorder at site 6.4 mi downstream at different datum.

REMARKS.--No estimated daily discharge. Records good. Flow regulated since October 1965 by Allegheny Reservoir, 0.5 mi upstream. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--53 years, 3,818 ft³/s, 23.78 in/yr, adjusted for storage since October 1965.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 60,500 ft³/s, Mar. 8, 1956, gage height, 19.95 ft, site and datum then in use; minimum not determined.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,400 ft³/s, Apr. 2, gage height, 11.51 ft; minimum daily, 602 ft³/s, Aug. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3650	2890	2130	5230	3220	661	10600	2380	2250	1450	962	1580
2	3580	3310	4150	4490	3240	664	10500	3370	1770	1590	900	1530
3	3590	3610	8520	3910	3270	668	9460	3360	1650	1600	802	1510
4	3610	3850	10600	3180	5260	675	7740	3360	1660	1770	746	1230
5	3620	3750	10300	1600	9070	676	9030	3620	1660	1920	615	881
6	3630	3620	10300	649	8160	670	9020	3760	1910	1570	607	803
7	4180	3640	10500	647	6510	680	7160	3750	2020	1610	602	808
8	4920	3570	10300	651	4330	675	9260	3720	1590	1620	801	1060
9	5140	4130	10300	656	1290	678	10600	3300	1330	1570	940	1370
10	4970	4910	10200	652	669	687	10700	3180	1400	1570	934	1470
11	5110	5180	10200	657	668	690	7920	3160	1320	1400	1090	1480
12	4960	5170	10100	653	1820	700	3520	3200	1260	1250	1190	1660
13	4960	5240	9940	670	2710	704	2210	3210	1120	1280	1200	1690
14	4940	5130	10000	1070	2690	707	2220	3050	1030	1280	1200	1720
15	4840	5030	9920	1710	2710	1080	1770	3050	770	1260	1200	1630
16	4540	5000	9850	1980	5020	3930	1480	3060	695	1270	1190	1690
17	4060	5180	8430	1970	9010	5780	1490	3510	720	1220	1420	1620
18	4070	5160	4800	1980	9840	5490	1040	3790	726	1250	1490	1540
19	4100	5240	2700	2990	9610	4970	751	3800	708	1250	1450	1700
20	4000	5040	2690	4070	9640	4930	753	4330	917	1210	1420	1730
21	2970	4940	2690	4330	9280	4100	768	6300	1020	1030	1580	1770
22	1230	4940	4670	5180	7500	3230	761	8760	1030	744	1650	1720
23	1260	5100	7890	5530	3660	2370	764	10100	971	610	1680	1720
24	1680	5040	8220	5360	1250	2110	767	9760	984	618	1670	1670
25	1780	5030	8520	5400	659	2110	759	9320	982	619	1630	1640
26	1780	4950	8410	3890	652	2620	762	9240	985	623	1610	1580
27	1790	4850	8290	1510	657	5090	756	6640	990	623	1610	1670
28	2010	5030	8210	652	662	8070	759	3710	1160	633	1610	1600
29	2520	3520	7450	1370	661	9670	737	3710	1270	639	1590	1550
30	2910	2100	6310	2350	---	10500	1170	3680	1260	774	1570	1520
31	2890	---	5270	2980	---	10400	---	3060	---	931	1380	---
TOTAL	109290	134150	241860	77967	123718	95985	125227	142240	37158	36784	38339	45142
MEAN	3525	4472	7802	2515	4266	3096	4174	4588	1239	1187	1237	1505
MAX	5140	5240	10600	5530	9840	10500	10700	10100	2250	1920	1680	1770
MIN	1230	2100	2130	647	652	661	737	2380	695	610	602	803
†	-807	-1390	-1690	-311	+29.6	+3400	+995	-65.0	-224	-494	-823	-1020
MEAN‡	2718	3082	6112	2204	4296	6496	5169	4523	1015	693	413	485
CFSM‡	1.25	1.41	2.80	1.01	1.97	2.98	2.37	2.07	.46	.32	.19	.22
IN.‡	1.44	1.57	3.23	1.16	2.12	3.44	2.64	2.39	.51	.37	.22	.25

CAL YR 1987 TOTAL 1439116 MEAN 3943 MAX 19000 MIN 652 ADJ -44.5 MEAN‡ 3898 CFSM‡ 1.79 IN.‡ 24.24
WTR YR 1988 TOTAL 1207860 MEAN 3300 MAX 10700 MIN 602 ADJ -199 MEAN‡ 3101 CFSM‡ 1.42 IN.‡ 19.34

† Change in contents, equivalent in cubic feet per second, in Allegheny Reservoir.
‡ Adjusted for change in reservoir contents.

03015000 CONEWANGO CREEK AT RUSSELL, PA

LOCATION.--Lat 41°56'17", long 79°08'00", Warren County, Hydrologic Unit 05010002, on left bank at highway bridge at Russell, 0.5 mi upstream from Akeley Run, and 8.0 mi upstream from mouth.

DRAINAGE AREA.--816 mi^2.

PERIOD OF RECORD.--October 1939 to current year. Monthly discharge only for October, November 1939, published in WSP 1305.

REVISED RECORDS.--WSP 1083: 1936 (M).

GAGE.--Water-stage recorder. Datum of gage is 1,221.77 ft above National Geodetic Vertical Datum of 1929. Prior to Apr. 10, 1941, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by Chautauqua Lake. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--49 years, 1,520 ft^3/s, 25.29 in/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,400 ft^3/s, Apr. 7, 1947, gage height, 10.69 ft; minimum not determined; minimum daily, 57 ft^3/s, Oct. 17, 1960.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1936 reached a stage of 10.9 ft from floodmark, discharge, 14,600 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,250 ft^3/s, Apr. 4, gage height, 6.33 ft; minimum daily, 84 ft^3/s, Aug. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2180	1380	2580	e1300	2740	1600	2650	2570	537	e170	e220	e370
2	2150	1370	2360	e1150	3780	1500	1920	2570	536	e160	e180	e270
3	1870	1300	2140	e980	3820	1670	1700	2150	663	e150	e150	e210
4	1550	1250	1980	e860	3710	1710	4140	1580	742	e150	e140	e500
5	1260	1230	1880	e900	3230	1570	4060	1090	568	e140	e135	e920
6	1010	1250	1790	e1050	2440	1440	3930	1440	469	e140	e270	e660
7	887	1260	1700	e1150	1910	1450	3750	1380	404	e135	e250	e470
8	1170	1340	1660	e1050	1780	1560	3330	1090	355	e130	e210	e360
9	1670	1500	2130	e980	1700	2220	2810	922	340	e130	e180	e310
10	1770	1710	2950	e940	1570	3050	2360	959	313	e125	e160	e260
11	1780	1630	2990	e1050	1470	2970	1700	1210	295	e140	e150	e220
12	1870	1450	2960	e800	1410	2770	1270	1170	282	e170	e140	e200
13	1740	1300	2700	e640	1340	2890	1100	852	268	e160	e130	e230
14	1290	1200	2350	e780	1260	2890	1010	695	257	e150	e120	e270
15	991	1120	2260	e900	1440	2650	957	640	247	e140	e115	e250
16	878	1050	2620	e800	2130	2250	927	1040	248	e130	e110	193
17	798	993	2640	e780	2150	1920	873	2100	e300	e170	e100	189
18	730	1290	2470	e900	e1900	1730	802	2120	235	e240	e98	202
19	684	1550	2250	e1500	e1600	1640	741	2330	222	e210	e92	232
20	603	1530	2890	2230	e1450	1600	702	2430	218	e230	e90	269
21	540	1410	3820	3000	2200	1510	726	2180	218	261	e88	276
22	567	1240	3650	3010	1920	1400	783	1660	213	226	e84	257
23	595	1110	3620	2930	2980	1420	793	1220	233	230	e88	310
24	617	1180	3420	2540	3260	2140	1570	1280	e260	282	e92	471
25	666	1280	2980	2050	3060	2740	1900	1750	221	329	e115	481
26	801	1510	2770	1680	2720	3690	1510	1670	212	282	e135	383
27	819	1490	2620	1410	2260	4200	1150	1420	e210	230	e170	313
28	957	1380	2340	1240	1850	4230	1020	965	e190	200	e300	272
29	1010	1860	2010	e1150	1680	4210	1020	726	e180	191	e520	241
30	1180	2770	1720	e1000	---	4040	1910	607	e170	e200	e600	230
31	1340	---	1510	e1400	---	3590	---	550	---	e230	e500	---
TOTAL	35973	41933	77760	42150	64760	74250	53114	44366	9606	5831	5732	9819
MEAN	1160	1398	2508	1360	2233	2395	1770	1431	320	188	185	327
MAX	2180	2770	3820	3010	3820	4230	4140	2570	742	329	600	920
MIN	540	993	1510	640	1260	1400	702	550	170	125	84	189
†	-47.8	-186	+91.4	-89.1	+46.6	+93.5	+115	-41.3	-101	-2.2	-58.7	0
MEAN‡	1112	1212	2599	1271	2280	2488	1885	1390	219	186	126	327
CFSM‡	1.36	1.48	3.18	1.56	2.79	3.05	2.31	1.70	.27	.23	.15	.40
IN.‡	1.57	1.65	3.67	1.80	3.01	3.52	2.58	1.96	.30	.26	.17	.45

CAL YR 1987 TOTAL 458796 MEAN 1257 MAX 4780 MIN 156 ADJ -2.2 MEAN‡ 1255 CFSM‡ 1.54 IN.‡ 20.84
WTR YR 1988 TOTAL 465294 MEAN 1271 MAX 4230 MIN 84 ADJ -15.2 MEAN‡ 1256 CFSM‡ 1.54 IN.‡ 20.94

† Change in contents, equivalent in cubic feet per second, in Chautauqua Lake.
‡ Adjusted for change in reservoir contents.

e Estimated

03015500 BROKENSTRAW CREEK AT YOUNGSVILLE, PA

LOCATION.--Lat 41°51'09", long 79°19'03", Warren County, Hydrologic Unit 05010001, on right bank 150 ft downstream from bridge on Main Street at Youngsville, 500 ft upstream from Matthews Run, and 3.7 mi upstream from mouth. Records include flow of Matthews Run.

DRAINAGE AREA.--321 mi², including that of Matthews Run.

PERIOD OF RECORD.--October 1909 to current year. Monthly discharge only for some periods, published in WSP 1305. Flow of Matthews Run included in records since October 1938.

REVISED RECORDS.--WSP 743: Drainage area. WSP 1083: 1913 (M). WSP 1275: 1920, 1932, 1936. WSP 1305: 1910-15, 1928-29.

GAGE.--Water-stage recorder. Datum of gage is 1,186.92 ft above National Geodetic Vertical Datum, adjustment of 1907. Prior to Sept. 30, 1933, nonrecording gage at site 150 ft upstream at datum 2.00 ft higher. Oct. 1, 1933, to June 15, 1939, nonrecording gage at site 150 ft upstream, and June 16, 1939, to Sept. 30, 1961, water-stage recorder at present site, both at datum 1.00 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--79 years, 587 ft³/s, 24.84 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 18,000 ft³/s, Mar. 25, 1913, gage height, 14.2 ft, present datum; minimum observed, 19 ft³/s, Oct. 14, 1934.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Apr. 4	0300	*4,540	*7.01	No other peak greater than base discharge.			

Minimum discharge, 25 ft³/s, Aug. 22, gage height, 1.25 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1450	475	1770	e450	e1200	463	567	904	203	82	141	142
2	1180	455	1170	e340	2850	434	529	590	208	80	106	106
3	892	455	902	e400	2260	587	808	471	339	78	97	82
4	767	422	799	e330	1270	599	3710	414	384	73	98	292
5	581	427	728	e340	779	459	2760	427	288	71	88	441
6	462	431	661	e410	633	446	1690	668	230	68	97	314
7	495	490	603	e500	579	467	1080	605	200	64	87	220
8	967	725	590	e600	e470	561	1030	451	181	59	72	164
9	1170	842	930	e500	e420	1560	819	395	170	56	62	127
10	983	880	e1950	e450	e390	2290	684	486	158	55	57	104
11	800	655	e1500	e370	e370	1760	586	532	151	64	55	87
12	784	527	e1200	e310	e340	1200	513	424	143	73	53	75
13	627	464	e1000	e250	e320	1830	457	371	136	61	50	94
14	508	417	e860	e300	e300	1690	429	351	130	56	46	105
15	434	368	e740	e370	e400	1120	406	329	124	54	44	90
16	389	334	1350	e300	e580	823	406	885	142	52	40	72
17	351	325	1080	e240	e820	685	428	1240	154	84	38	69
18	321	785	822	e360	e640	602	411	899	135	116	38	73
19	297	840	725	e540	e540	572	368	997	122	103	36	77
20	289	653	1720	e1200	e440	540	334	846	114	104	34	180
21	321	544	2670	e1800	e820	459	353	724	125	224	31	165
22	400	432	2260	e1200	e640	418	383	617	116	208	29	127
23	430	417	1270	e800	1590	520	395	501	144	160	31	182
24	415	498	861	e540	1700	1390	773	431	149	280	39	231
25	420	602	809	e470	1190	1910	719	571	122	232	47	197
26	426	788	e1200	e410	784	2720	514	441	108	172	59	147
27	433	849	e1150	e380	666	2780	432	343	100	147	62	119
28	704	642	e820	e330	535	1870	397	296	94	121	80	102
29	772	1570	579	e300	528	1150	439	264	90	104	251	89
30	771	2180	e400	e270	---	839	922	237	85	109	291	81
31	638	---	e540	e500	---	654	---	218	---	180	201	---
TOTAL	19477	19492	33659	15560	24054	33398	23342	16928	4845	3390	2460	4354
MEAN	628	650	1086	502	829	1077	778	546	161	109	79.4	145
MAX	1450	2180	2670	1800	2850	2780	3710	1240	384	280	291	441
MIN	289	325	400	240	300	418	334	218	85	52	29	69
CFSM	1.96	2.02	3.38	1.56	2.58	3.36	2.42	1.70	.50	.34	.25	.45
IN.	2.26	2.26	3.90	1.80	2.79	3.87	2.71	1.96	.56	.39	.29	.50

CAL YR 1987 TOTAL 230661 MEAN 632 MAX 5530 MIN 72 CFSM 1.97 IN. 26.73
WTR YR 1988 TOTAL 200959 MEAN 549 MAX 3710 MIN 29 CFSM 1.71 IN. 23.29

e Estimated

03016000 ALLEGHENY RIVER AT WEST HICKORY, PA

LOCATION.--Lat 41°34'15", long 79°24'29", Forest County, Hydrologic Unit 05010003, on right bank at downstream side of bridge on State Highway 127 at West Hickory, 0.6 mi upstream from Siggins Run, 0.8 mi downstream from East Hickory Creek, and at mile 158.9.

DRAINAGE AREA.--3,660 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 1,059.90 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 12, 1941, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by Allegheny Reservoir 39 mi upstream since October 1965 and since 1949 by Chautauqua Lake. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--47 years, 6,635 ft³/s, 24.62 in/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 101,000 ft³/s, Mar. 8, 1956, gage height, 17.20 ft; maximum gage height, 17.83 ft, Jan. 25, 1964 (backwater from ice); minimum discharge not determined.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 26,900 ft³/s, Apr. 4, gage height, 8.97 ft; maximum gage height, 9.65 ft, Jan. 20 (backwater from ice); minimum daily, 928 ft³/s, Aug. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7870	4870	8210	8050	7500	3130	14600	5370	3460	1500	1340	1980
2	7990	4910	7470	7690	12100	2910	13600	7130	2840	1730	1320	2030
3	7570	5480	11100	6220	11300	3130	13000	6730	2870	1760	1250	1920
4	6720	5480	14100	5830	10200	3390	22400	6040	3140	1770	1130	2310
5	6060	5710	13800	5050	12900	3070	17200	5460	2820	1990	1020	2020
6	5540	5610	13300	3350	13700	2900	17700	6050	2600	2040	1190	1680
7	5330	5500	13200	e2800	10500	2910	13400	6320	2780	1640	1050	1470
8	6970	6090	13000	e2500	9110	2960	13300	5710	2670	1750	928	1350
9	8220	6680	13600	e2500	4900	4390	15100	5300	2020	1760	1120	1640
10	8280	7920	15600	e2500	3310	7860	14400	4980	1930	1710	1190	1830
11	8190	8300	15800	e2500	2950	6930	13000	5190	1930	1740	1180	1820
12	8380	7850	15300	e2600	2870	5950	7510	5110	1850	1520	1410	1810
13	7990	7470	14700	e2700	4410	7290	4250	4930	1820	1420	1470	2150
14	7440	7220	14000	e2900	4530	6960	3990	4620	1500	1450	1480	2060
15	6730	6950	13800	e3200	4640	5830	3850	4380	1420	1480	1440	2030
16	6250	6680	14900	e4100	6150	6330	3150	5640	1180	1440	1420	1940
17	5590	6580	14300	e5000	11200	9300	3080	7300	1150	1500	1420	2030
18	5290	7730	10900	e6200	13000	8850	2990	8090	1110	1470	1700	1980
19	5160	8010	6810	e8000	12600	7930	2250	8560	1060	1550	1690	1920
20	5030	7970	7960	e10000	12900	7710	2120	8660	1030	1590	1650	2270
21	5000	7480	11400	11100	13100	7110	2110	9440	1280	2430	1610	2460
22	2930	7010	10600	10600	12100	5510	2140	11500	1310	1670	1830	2290
23	2470	6810	13400	10300	9960	4920	2170	12200	1340	1230	1840	2350
24	2560	7100	13900	9550	8030	5550	3330	12200	1360	1240	1900	2490
25	3010	7390	13200	8770	5930	7670	3970	11900	1340	1290	1870	2500
26	3100	7630	13200	7920	4950	10400	3550	11700	1310	1200	1880	2350
27	3180	7890	12600	4660	4380	12700	2920	10800	1220	1140	1880	2160
28	3560	7460	12100	2820	3740	15100	2610	5480	1250	1050	1950	2170
29	4170	8970	11200	2550	3370	15500	2590	4880	1480	995	2180	2030
30	4820	9160	9680	3690	---	16200	3540	4700	1520	990	2410	1950
31	4980	---	7970	4690	---	15500	---	4430	---	1310	2290	---
TOTAL	176380	209910	381100	170340	236330	225890	229820	220800	54590	47355	48038	60990
MEAN	5690	6997	12290	5495	8149	7287	7661	7123	1820	1528	1550	2033
MAX	8380	9160	15800	11100	13700	16200	22400	12200	3460	2430	2410	2500
MIN	2470	4870	6810	2500	2870	2900	2110	4380	1030	990	928	1350
†	-855	-1580	-1600	-400	+76.2	+3490	+1110	-106	-325	-496	-88.2	-1020
MEAN‡	4835	5417	10690	4782	8225	10780	8771	7017	1495	1032	668	1013
CFSM‡	1.32	1.48	2.92	1.31	2.25	2.94	2.40	1.92	.41	.28	.18	.28
IN.‡	1.52	1.65	3.37	1.51	2.43	3.39	2.68	2.21	.46	.32	.21	.31

CAL YR 1987 TOTAL 2367507 MEAN 6486 MAX 25500 MIN 987 ADJ -46.7 MEAN‡ 6439 CFSM‡ 1.76 IN.‡ 23.89
WTR YR 1988 TOTAL 2061543 MEAN 5633 MAX 22400 MIN 928 ADJ -214 MEAN‡ 5402 CFSM‡ 1.48 IN.‡ 20.06

† Change in contents, equivalent in cubic feet per second, in Allegheny Reservoir and Chautauqua Lake.
‡ Adjusted for change in reservoir contents.

e Estimated

03020000 TIONESTA CREEK AT TIONESTA DAM, PA

LOCATION.--Lat 41°28'44", long 79°26'26", Forest County, Hydrologic Unit 05010003, on left bank 100 ft downstream from outlet tunnel at Tionesta Dam, 1.5 mi southeast of Tionesta, and 1.2 mi upstream from mouth.

DRAINAGE AREA.--479 mi².

PERIOD OF RECORD.--June 1940 to current year. Prior to October 1970, published as "at Tionesta Creek Dam."

GAGE.--Water-stage recorder. Datum of gage is 1,043.43 ft above National Geodetic Vertical Datum of 1929, unadjusted. July 1, 1954, to Dec. 6, 1960, water-stage recorder at present site and at datum 1.5 ft higher. See WSP 1305 or 1725 for history of changes prior to July 1, 1954.

REMARKS.--Records good except those for estimated daily discharge, which are fair. Flow completely regulated since 1941 by Tionesta Lake 0.2 mi upstream. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--48 years, 887 ft³/s, 25.15 in/yr, adjusted for storage since January 1941.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 13,500 ft³/s, Mar. 12, 1964; maximum gage height, 11.31 ft, Mar. 13, 1964 (backwater from Allegheny River); minimum daily discharge, 0.4 ft³/s, Feb. 28, 29, May 22 to June 16, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,510 ft³/s, Apr. 8, gage height, 5.65 ft; minimum daily, 33 ft³/s, July 13-21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	711	400	2440	520	418	529	1350	798	383	77	184	191
2	925	400	2720	524	794	528	1220	703	383	77	152	127
3	925	400	2210	509	1780	530	1020	647	383	77	131	74
4	1010	397	1520	441	2880	534	566	645	386	77	131	67
5	984	397	1270	397	3230	535	1560	642	387	71	121	124
6	627	397	1260	310	2610	534	2440	643	387	64	115	217
7	488	397	1240	257	1120	535	1140	728	287	e56	115	250
8	539	400	894	259	778	536	2460	711	241	e52	115	247
9	766	474	714	259	1200	617	3420	568	241	e52	117	191
10	678	746	1060	261	1320	1480	3290	807	194	e52	117	156
11	540	918	1530	353	1290	2250	2710	1430	163	e48	97	156
12	544	702	1510	407	1080	1750	2350	1520	164	e40	85	156
13	626	527	1340	407	706	1880	1840	1060	166	e33	85	156
14	672	527	1230	406	552	2730	1360	848	165	e33	85	156
15	668	527	1220	404	553	2930	1030	917	165	e33	71	156
16	581	526	1220	401	710	2450	722	1090	115	e33	62	156
17	465	523	1230	398	808	1760	539	1690	128	e33	e48	127
18	403	455	1130	397	804	1140	540	1910	128	e33	e50	109
19	403	402	1040	481	798	905	542	1300	127	e33	e50	110
20	404	481	1060	689	796	910	541	964	122	e33	e50	123
21	403	547	1670	1110	798	906	540	1610	129	e33	e50	132
22	403	544	2280	1290	791	697	538	1990	128	1130	e50	132
23	403	540	2230	1180	1020	537	537	1720	128	1580	e50	132
24	400	540	1760	1000	1090	768	538	1550	128	1070	e50	132
25	324	540	1470	767	923	929	543	1140	128	689	e64	132
26	265	543	1230	665	755	1130	702	665	127	363	101	132
27	266	544	948	664	652	1950	700	664	117	252	120	132
28	343	544	743	658	653	2400	533	662	90	250	120	123
29	403	551	648	430	575	2360	534	659	77	218	120	117
30	401	1260	650	354	---	2290	697	595	77	184	142	117
31	400	---	557	410	---	1820	---	440	---	184	178	---
TOTAL	16970	16149	42024	16608	31484	40850	36502	31316	5844	6960	3026	4330
MEAN	547	538	1356	536	1086	1318	1217	1010	195	225	97.6	144
MAX	1010	1260	2720	1290	3230	2930	3420	1990	387	1580	184	250
MIN	265	397	557	257	418	528	533	440	77	33	48	67
†	-8.1	+82.3	-87.8	+11.4	-14.8	+23.6	-6.7	-13.0	+3.4	+14.6	-1.6	-10.1
MEAN‡	539	620	1268	547	1071	1342	1210	997	198	240	96.0	134
CFSM‡	1.12	1.29	2.65	1.14	2.24	2.80	2.53	2.08	.41	.50	.20	.28
IN.‡	1.29	1.44	3.06	1.31	2.42	3.23	2.82	2.40	.46	.58	.23	.31

CAL YR 1987 TOTAL 345051 MEAN 945 MAX 5310 MIN 76 ADJ +0.8 MEAN‡ 946 CFSM‡ 1.97 IN.‡ 24.18
WTR YR 1988 TOTAL 252063 MEAN 689 MAX 3420 MIN 33 ADJ -0.7 MEAN‡ 688 CFSM‡ 1.44 IN.‡ 19.55

† Change in contents, equivalent in cubic feet per second, in Tionesta Lake.
‡ Adjusted for change in reservoir contents.

e Estimated

03020500 OIL CREEK AT ROUSEVILLE, PA

LOCATION.--Lat 41°28'54", long 79°41'44", Venango County, Hydrologic Unit 05010003, on right bank 100 ft downstream from bridge on State Highway 8, about 300 ft upstream from Cherrytree Run, and 1 mi north of Rouseville. Records include flow of Cherrytree Run.

DRAINAGE AREA.--300 mi^2, including that of Cherrytree Run.

PERIOD OF RECORD.--June 1932 to current year.

REVISED RECORDS.--WSP 743: Drainage area. WSP 1053: 1936-37(M), 1943(M).

GAGE.--Water-stage recorder. Datum of gage is 1,028.32 ft above National Geodetic Vertical Datum of 1929. Prior to June 9, 1941, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--56 years, 536 ft^3/s, 24.26 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,000 ft^3/s, Jan. 22, 1959, gage height, 11.97 ft; minimum observed, 22 ft^3/s, July 29, Sept. 5, 7, 1934; minimum gage height, 1.48 ft, Aug. 20, 1971.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 20	--	ice jam	*9.37	Apr. 4	0730	*4,270	6.66

Minimum discharge, 46 ft^3/s, Aug 22, 23, gage height, 1.54 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1180	386	1190	564	1090	440	497	572	190	75	167	81
2	771	387	982	442	2430	385	468	386	191	72	109	70
3	794	364	785	298	1460	509	518	328	358	72	139	65
4	604	367	724	e250	977	502	3420	305	411	70	124	345
5	485	401	654	e220	703	370	1770	323	249	68	94	382
6	382	377	589	e220	512	390	1050	586	200	66	104	213
7	639	358	543	e210	461	452	1040	468	175	64	111	138
8	1190	366	527	e380	e410	457	980	348	163	62	93	107
9	1210	431	884	e370	e380	1110	737	323	152	62	75	91
10	644	454	1470	e350	e350	1880	603	393	144	60	70	81
11	755	355	897	e340	e330	1070	516	413	135	67	66	74
12	682	318	800	e340	e310	895	461	348	129	74	67	71
13	534	299	736	e340	e290	1390	428	318	124	68	68	92
14	451	281	588	e340	e270	1100	398	311	117	65	61	107
15	399	261	806	e330	e400	838	381	289	111	62	61	87
16	357	245	1250	e310	801	679	385	945	114	61	56	73
17	328	243	841	e330	609	578	405	959	131	84	55	73
18	311	594	696	e400	552	523	387	681	107	79	57	82
19	291	478	630	e600	518	502	350	910	105	72	57	81
20	275	385	1690	e950	887	486	320	866	99	106	54	125
21	281	374	2840	1350	793	385	324	806	96	400	49	213
22	310	327	1340	754	603	360	323	625	91	247	47	129
23	387	312	966	546	1450	449	302	494	91	130	50	128
24	360	485	802	468	1280	1120	486	415	97	182	63	149
25	356	566	815	421	818	1180	457	365	90	131	71	117
26	346	665	875	357	656	2130	349	328	86	104	68	98
27	361	566	657	308	607	1820	310	291	82	97	62	87
28	741	458	565	284	457	1150	298	257	80	89	80	79
29	548	1850	538	281	502	872	304	239	76	82	211	76
30	553	2050	425	317	---	682	674	220	76	82	178	76
31	440	---	388	555	---	549	---	220	---	302	108	---
TOTAL	16965	15003	27493	13235	20906	25253	18941	14332	4270	3255	2675	3590
MEAN	547	500	887	427	721	815	631	462	142	105	86.3	120
MAX	1210	2050	2840	1350	2430	2130	3420	959	411	400	211	382
MIN	275	243	388	210	270	360	298	220	76	60	47	65
CFSM	1.82	1.67	2.96	1.42	2.40	2.72	2.10	1.54	.47	.35	.29	.40
IN.	2.10	1.86	3.41	1.64	2.59	3.13	2.35	1.78	.53	.40	.33	.45

CAL YR 1987 TOTAL 214972 MEAN 589 MAX 6090 MIN 102 CFSM 1.96 IN. 26.66
WTR YR 1988 TOTAL 165918 MEAN 453 MAX 3420 MIN 47 CFSM 1.51 IN. 20.57

e Estimated

03021350 FRENCH CREEK NEAR WATTSBURG, PA

LOCATION.--Lat 42°00'55", long 79°46'58", Erie County, Hydrologic Unit 05010004, on right bank at downstream side of bridge on Tanner Road, 1,200 ft east of State Highway 74, 1.1 mi west of Pennsylvania-New York border, 1.5 mi northwest of Wattsburg, and 2.4 mi above confluence with West Branch French Creek.

DRAINAGE AREA.--92.0 mi².

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,304.84 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark).

REMARKS.--Records good except for estimated daily discharges, which are fair. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--14 years, 227 ft³/s, 33.51 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,350 ft³/s, Sept. 14, 1979, gage height, 11.95 ft; minimum, 4.4 ft³/s, Aug. 21, 22, 23, 1988, gage height, 3.35 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Apr. 4	0930	*2,240	*7.59				

Minimum discharge, 4.4 ft³/s, Aug. 21, 22, 23, gage height, 3.35 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	602	165	294	165	e1450	130	153	326	38	15	29	26
2	244	164	256	122	1030	127	144	e170	51	13	16	15
3	431	143	218	96	379	206	384	e120	47	12	13	12
4	272	132	215	e70	225	167	1920	e105	42	11	12	187
5	170	119	207	e70	186	124	569	e105	37	11	9.8	191
6	124	133	195	e90	132	113	287	e200	34	10	9.9	124
7	467	170	182	e110	164	132	315	e130	30	10	9.9	67
8	1040	199	191	e120	142	241	283	e90	28	9.6	9.2	38
9	856	371	650	e115	130	911	210	e64	27	9.4	8.1	25
10	358	273	974	e110	e115	899	165	e150	25	8.9	7.4	17
11	326	168	377	e105	e100	360	135	e100	23	9.6	6.9	13
12	278	135	307	e105	e90	342	120	e62	22	10	6.5	12
13	195	121	288	e105	e78	705	108	52	21	9.4	7.0	14
14	153	108	221	e105	e105	351	96	66	19	8.9	6.9	16
15	125	96	437	e100	217	242	90	58	19	8.4	7.8	13
16	109	86	637	e94	393	198	90	291	20	10	6.6	11
17	96	84	299	e100	293	174	100	303	20	29	6.2	12
18	88	246	248	e240	240	159	95	167	18	20	5.8	21
19	81	233	215	e500	216	157	90	210	17	17	5.3	19
20	72	174	809	e670	421	141	78	196	15	21	5.0	14
21	91	133	1270	1120	290	131	e150	277	15	35	4.7	15
22	140	103	428	341	260	118	118	160	15	35	4.6	23
23	160	97	252	198	998	319	138	107	21	66	4.6	89
24	129	140	211	158	603	1280	74	394	22	323	5.8	113
25	195	160	465	130	293	1010	174	382	18	100	8.8	54
26	151	247	454	e100	226	1450	e110	165	15	47	8.6	32
27	149	190	241	e96	191	1040	e90	105	15	28	7.4	22
28	244	144	187	e88	160	454	e80	74	14	18	33	17
29	302	457	146	e80	151	324	287	58	13	13	162	14
30	405	578	115	e110	---	239	970	49	14	25	121	13
31	233	---	133	e400	---	177	---	43	---	64	53	---
TOTAL	8286	5569	11122	6013	9278	12421	7623	4779	715	1007.2	601.8	1239
MEAN	267	186	359	194	320	401	254	154	23.8	32.5	19.4	41.3
MAX	1040	578	1270	1120	1450	1450	1920	394	51	323	162	191
MIN	72	84	115	70	78	113	74	43	13	8.4	4.6	11
CFSM	2.91	2.02	3.90	2.11	3.48	4.36	2.76	1.68	.26	.35	.21	.45
IN.	3.35	2.25	4.50	2.43	3.75	5.02	3.08	1.93	.29	.41	.24	.50

CAL YR 1987 TOTAL 67626.2 MEAN 185 MAX 1620 MIN 5.8 CFSM 2.01 IN. 27.34
WTR YR 1988 TOTAL 68654.0 MEAN 188 MAX 1920 MIN 4.6 CFSM 2.04 IN. 27.76

e Estimated

03021410 WEST BRANCH FRENCH CREEK NEAR LOWVILLE, PA

LOCATION.--Lat 42°04'54", long 79°51'02", Erie County, Hydrologic Unit 05010004, on left bank on upstream side of highway bridge on Knoyle Road, 1,000 ft downstream from Townley Run, 2.5 mi southwest of Hornby, and 4.2 mi northwest of Lowville.

DRAINAGE AREA.--52.3 mi².

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,300 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--14 years, 131 ft³/s, 34.02 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,390 ft³/s, Mar. 21, 1978, Aug. 5, 1983, gage height, 10.81 ft; minimum, 2.3 ft³/s, July 11, 14, 15, 1988, gage height, 3.25 ft.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Apr. 29	2015	*1,360	*9.92				

Minimum discharge, 2.3 ft³/s, July 11, 14, 15, Aug. 23, gage height, 3.25 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	397	118	157	e74	e530	70	72	224	29	5.4	46	17
2	163	121	156	e60	450	83	70	94	39	4.9	26	12
3	303	101	136	e47	182	119	206	70	34	4.5	18	9.6
4	177	90	132	e40	e130	93	872	58	27	4.3	15	22
5	107	77	127	e40	e100	e80	291	59	24	4.0	13	81
6	68	81	120	e45	e76	e70	133	89	21	3.8	19	62
7	459	88	111	e56	e94	e64	153	61	19	3.5	21	42
8	921	86	120	e66	e86	e140	142	50	17	3.3	13	32
9	721	212	445	e64	e76	429	106	45	17	3.1	11	26
10	276	166	573	e62	e66	404	83	75	15	2.7	9.0	17
11	213	95	244	e58	e58	181	71	61	14	3.8	8.5	9.8
12	179	76	189	e60	e52	160	65	48	12	4.0	8.3	8.5
13	134	71	178	e60	e48	269	61	44	12	3.5	7.3	15
14	106	63	132	e58	e44	166	57	49	13	2.9	7.4	16
15	83	57	275	e56	e100	124	47	39	10	2.5	9.1	11
16	70	55	331	e52	299	106	50	98	8.5	3.3	7.2	8.7
17	64	53	177	e56	238	100	53	101	11	17	5.6	14
18	62	109	137	e100	212	102	51	75	9.7	9.9	4.7	24
19	80	119	115	e200	189	90	48	121	8.6	9.5	4.2	17
20	76	93	555	e380	324	85	43	156	7.9	20	3.7	16
21	110	71	705	722	246	88	73	142	7.8	27	3.1	29
22	152	59	246	281	214	93	58	78	7.0	29	2.7	36
23	169	54	143	136	757	213	60	57	15	75	2.8	110
24	111	67	122	92	428	795	80	619	14	188	5.9	94
25	198	72	255	74	229	580	62	376	10	54	11	43
26	148	128	222	e62	172	824	50	127	7.8	45	10	28
27	134	96	127	e56	135	688	43	85	6.8	37	6.2	21
28	195	76	97	e50	114	282	42	59	6.1	20	18	19
29	219	208	81	e46	88	179	439	45	7.3	14	104	21
30	279	246	e64	e60	---	131	871	41	7.3	42	56	35
31	182	---	e94	e180	---	82	---	35	---	204	26	---
TOTAL	6556	3008	6566	3393	5737	6890	4452	3281	437.8	850.9	502.7	896.6
MEAN	211	100	212	109	198	222	148	106	14.6	27.4	16.2	29.9
MAX	921	246	705	722	757	824	872	619	39	204	104	110
MIN	62	53	64	40	44	64	42	35	6.1	2.5	2.7	8.5
CFSM	4.04	1.92	4.05	2.09	3.78	4.25	2.84	2.02	.28	.52	.31	.57
IN.	4.66	2.14	4.67	2.41	4.08	4.90	3.17	2.33	.31	.61	.36	.64

CAL YR 1987 TOTAL 42658.9 MEAN 117 MAX 1100 MIN 6.4 CFSM 2.23 IN. 30.34
WTR YR 1988 TOTAL 42571.0 MEAN 116 MAX 921 MIN 2.5 CFSM 2.22 IN. 30.28

e Estimated

03021520 FRENCH CREEK NEAR UNION CITY, PA

LOCATION.--Lat 41°54'28", long 79°53'49", Erie County, Hydrologic Unit 05010004, on left bank at upstream side of bridge on State Highway 97, 0.4 mi upstream from South Branch French Creek, 0.9 mi downstream from Union City Dam, and 3.2 mi west of Union City.

DRAINAGE AREA.--221 mi².

PERIOD OF RECORD.--October 1909 to current year. Published as North Branch French Creek at Kimmeytown May 1910 to September 1914, as "at Kimmeytown" October 1915 to September 1932, and as "at Carters Corners" (station 03021500) October 1932 to September 1971. Monthly discharge only for some periods published in WSP 1305.

REVISED RECORDS.--WSP 743: Drainage area. WSP 1275: 1934, 1936-37 (M), 1939 (M), 1942 (M). WSP 1305: 1910-11, 1913, 1914 (M), 1915-16, 1925. 1928. WDR PA-79-3: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,191.16 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Dec. 22, 1948, nonrecording gage at site 4.5 mi upstream at datum 43.4 ft higher. Dec. 22, 1948, to Sept. 30, 1971, water-stage recorder at site 4.6 mi upstream at datum 43.4 ft higher. Oct. 1, 1971 to Oct. 10, 1974, at present site at different datum. Oct. 11, 1974 to Nov. 4, 1977 at site 0.7 mi upstream at different datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flood flow regulated beginning October 1971 by Union City Reservoir 0.9 mi upstream, serving as a retarding basin. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--79 years, 439 ft³/s, 26.98 in/yr, adjusted for storage since 1971.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,000 ft³/s, Apr. 5, 1947, gage height, 13.50 ft, site and datum then in use, by slope-area measurement of peak flow; maximum gage height observed, 16.0 ft, Feb. 20, 1918 (backwater from ice), site and datum then in use; minimum discharge observed, 3.9 ft³/s, Aug. 15, 18-21, 1930.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,250 ft³/s, Dec. 22, Mar. 28, gage height, 4.91 ft, maximum gage height, 6.08 ft, Jan 13 (backwater from ice); minimum daily, 36 ft³/s, Aug. 6-27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	910	e811	948	487	982	592	1110	892	131	56	312	91
2	961	e679	900	428	1130	441	1060	864	127	56	121	68
3	940	e579	828	429	1140	436	1020	792	146	61	76	62
4	950	e465	723	344	1120	464	1170	662	127	56	63	216
5	884	e380	620	224	1090	389	1180	458	109	56	e44	347
6	690	e350	562	e200	1030	322	1170	412	97	56	e36	314
7	642	e384	535	e260	956	330	1140	374	89	56	e36	215
8	1030	e465	507	e280	869	404	1110	274	80	56	e36	132
9	1190	e572	692	e280	742	692	1080	222	75	56	e36	97
10	1240	e760	1080	e270	523	946	1030	271	71	56	e36	80
11	1230	e710	1150	e250	409	985	967	297	66	56	e36	66
12	1210	e568	1110	e250	325	971	894	232	63	56	e36	63
13	1180	e399	1080	e260	316	977	795	191	59	56	e36	63
14	1120	e315	1030	e250	301	984	617	187	57	56	e36	66
15	1030	e332	987	e246	334	951	399	172	57	56	e36	66
16	e909	e266	1050	e231	569	905	247	372	58	56	e36	64
17	e698	e242	1060	e231	677	860	245	634	58	60	e36	64
18	e438	e411	1030	e368	654	751	231	539	61	58	e36	66
19	e289	e550	967	e676	582	592	219	480	59	54	e36	74
20	e276	e538	987	e873	671	479	191	507	61	54	e36	65
21	e285	e438	1160	e1100	775	398	233	529	58	87	e36	63
22	e428	e300	1230	e1170	743	316	277	500	58	96	e36	75
23	e630	e270	1220	e1160	865	367	270	368	60	77	e36	136
24	e654	e313	1190	e1100	1000	853	436	286	58	304	e36	274
25	e635	345	1160	e1030	1050	1070	422	743	58	354	e36	195
26	e661	448	1150	878	1020	1180	306	773	58	167	e36	112
27	e591	509	1130	625	966	1220	229	580	57	105	e36	84
28	e674	441	1070	471	894	1230	206	296	56	84	e70	70
29	e755	519	988	335	780	1220	272	241	56	64	243	65
30	e870	917	852	281	---	1190	762	204	56	62	305	64
31	e892	---	580	602	---	1160	---	164	---	263	169	---
TOTAL	24892	14276	29576	15589	22513	23675	19288	13516	2226	2790	2195	3417
MEAN	803	476	954	503	776	764	643	436	74.2	90.0	70.8	114
MAX	1240	917	1230	1170	1140	1230	1180	892	146	354	312	347
MIN	276	242	507	200	301	316	191	164	56	54	36	62
†	+3.4	+8.9	-23.6	+17.4	-6.4	+123	-92.8	-52.0	-2.0	+5.9	-5.6	-0.3
MEAN‡	806	485	930	520	770	887	550	384	72.2	95.9	65.2	114
CFSM‡	3.65	2.19	4.21	2.35	3.48	4.01	2.49	1.74	.33	.43	.30	.52
IN.‡	4.21	2.44	4.85	2.71	3.75	4.62	2.78	2.01	.37	.50	.35	.58

CAL YR 1987 TOTAL 174043 MEAN 477 MAX 1290 MIN 51 ADJ -0.1 MEAN‡ 477 CFSM‡ 2.16 IN.‡ 29.29
WTR YR 1988 TOTAL 173953 MEAN 475 MAX 1240 MIN 36 ADJ -1.8 MEAN‡ 473 CFSM‡ 2.14 IN.‡ 29.17

† Change in contents, equivalent in cubic feet per second, in Union City Reservoir.
‡ Adjusted for change in reservoir contents.

.e Estimated

03022540 WOODCOCK CREEK AT BLOOMING VALLEY, PA

LOCATION.--Lat 41°41'26", long 80°02'54", Crawford County, Hydrologic Unit 05010004, on left bank at upstream side of bridge, 0.7 mi northeast of Blooming Valley, and 3.4 mi upstream from Woodcock Creek Dam.

DRAINAGE AREA.--31.1 mi^2.

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,200 ft, above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--14 years, 56.9 ft^3/s, 24.84 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,980 ft^3/s, Feb. 17, 1976, gage height, 11.48 ft, from rating curve extended above 600 ft^3/s on basis of slope-area measurement of peak flow; maximum gage height, 12.27 ft, Feb. 25, 1977 (backwater from ice); minimum discharge, 2.3 ft^3/s, Aug. 21, 22, 23, 1988, gage height, 5.64 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr. 4	0145	*515	*7.78				

Minimum discharge, 2.3 ft^3/s, Aug. 21, 22, 23, gage height, 5.64 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	97	e47	e100	e31	e90	44	40	45	9.2	3.2	8.0	4.4
2	64	e47	e84	e28	e230	43	37	32	13	3.2	4.9	3.5
3	66	e46	e74	e25	106	58	97	28	11	3.1	5.6	3.1
4	47	e45	e70	e24	69	47	355	24	11	3.0	4.2	71
5	38	e60	e66	e22	e52	e43	112	31	9.1	3.0	3.4	44
6	40	e47	e62	e20	e46	e39	72	47	8.1	2.8	4.2	16
7	149	e43	e58	e19	e41	e42	80	30	7.7	2.8	3.8	9.3
8	202	e43	e54	e18	e38	e46	65	24	7.2	2.7	3.2	6.7
9	137	e48	e76	e19	e36	e130	50	21	6.8	2.7	2.9	5.2
10	77	e50	e115	e21	e34	137	42	33	6.4	2.8	2.9	4.3
11	93	e40	e98	e25	e33	74	36	24	6.1	3.3	2.9	3.7
12	73	e37	83	e28	e31	68	32	19	5.7	3.3	2.8	3.6
13	57	e33	68	e31	e30	107	29	18	5.3	2.9	2.7	4.5
14	54	e31	55	e22	e29	76	28	18	5.1	2.8	2.8	4.9
15	47	e29	143	e19	e27	61	27	16	4.8	2.7	3.1	4.8
16	e36	e28	125	e16	e98	51	30	76	5.7	2.7	2.9	3.8
17	e28	e26	79	e26	e72	46	29	35	6.8	3.1	2.7	3.8
18	e25	e56	69	e50	e60	44	28	34	5.5	3.2	3.6	5.3
19	e23	e52	65	e100	e58	43	24	60	4.8	3.7	3.1	5.5
20	e20	e47	306	e180	e150	43	22	61	4.4	4.0	2.7	6.1
21	e22	e40	216	95	98	40	28	40	4.1	22	2.5	8.7
22	e30	e34	92	53	118	41	23	30	4.0	11	2.4	7.5
23	e48	e31	75	43	221	92	28	25	5.6	6.6	2.5	9.3
24	e35	e37	67	37	114	135	45	21	4.7	9.7	2.9	9.8
25	e29	e45	79	34	70	129	29	19	3.9	6.1	4.8	7.6
26	e26	e60	68	e33	65	201	24	17	3.5	6.4	5.3	6.3
27	e27	e52	53	e31	54	137	21	15	3.7	5.3	3.6	5.2
28	e96	e45	47	e30	56	83	22	13	3.4	4.1	10	4.7
29	e70	e64	44	e29	46	63	59	11	3.4	3.4	26	4.3
30	e70	e160	e39	e29	---	52	94	10	3.2	7.1	13	4.0
31	e60	---	e35	e54	---	43	---	9.3	---	23	6.6	---
TOTAL	1886	1423	2665	1192	2172	2258	1608	886.3	183.2	165.7	152.0	280.9
MEAN	60.8	47.4	86.0	38.5	74.9	72.8	53.6	28.6	6.11	5.35	4.90	9.36
MAX	202	160	306	180	230	201	355	76	13	23	26	71
MIN	20	26	35	16	27	39	21	9.3	3.2	2.7	2.4	3.1
CFSM	1.96	1.53	2.76	1.24	2.41	2.34	1.72	.92	.20	.17	.16	.30
IN.	2.26	1.70	3.19	1.43	2.60	2.70	1.92	1.06	.22	.20	.18	.34

CAL YR 1987 TOTAL 20242.5 MEAN 55.5 MAX 859 MIN 5.4 CFSM 1.78 IN. 24.21
WTR YR 1988 TOTAL 14872.1 MEAN 40.6 MAX 355 MIN 2.4 CFSM 1.31 IN. 17.79

e Estimated

03022554 WOODCOCK CREEK AT WOODCOCK CREEK DAM, PA

LOCATION.--Lat 41°41'45", long 80°06'30", Crawford County, Hydrologic Unit 05010004, on left bank 0.5 mi downstream from Woodcock Creek Dam, 2.6 mi southeast of Saegertown, and 3.0 mi upstream from mouth.

DRAINAGE AREA.--45.6 mi².

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,126.92 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Nov. 4, 1976, water-stage recorder at site 0.5 mi downstream at datum 10.08 ft lower.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow completely regulated by Woodcock Creek Lake 0.5 mi upstream. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--14 years, 88.1 ft³/s, 26.24 in/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,040 ft³/s, June 17, 1986, gage height, 5.41 ft; minimum daily, 4.2 ft³/s, Apr. 21, 1976.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 470 ft³/s, Dec. 21, gage height, 4.17 ft, maximum gage height, 4.88 ft, Dec. 1 (backwater from beaver dam); minimum daily, 6.4 ft³/s, July 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	183	e160	e460	24	79	61	106	162	e8.8	8.6	7.0	e8.0
2	195	e160	e460	24	83	69	105	161	e8.8	8.6	7.1	70
3	189	e122	306	24	115	70	109	103	e8.8	8.6	7.3	87
4	189	e120	210	39	144	70	62	43	e8.8	8.6	7.3	110
5	140	e120	166	49	150	70	106	e24	e8.8	8.6	7.8	e38
6	81	e122	131	49	149	70	115	e24	e8.8	8.6	8.0	e41
7	125	e122	120	49	147	70	61	e24	e8.8	8.6	7.7	e24
8	205	e122	78	33	191	70	117	e24	e8.8	8.6	7.6	e18
9	228	e105	135	23	217	73	148	e24	e8.8	8.6	7.6	e13
10	226	e94	247	23	169	110	148	e27	e8.8	8.6	8.0	e8.0
11	224	e94	233	23	121	110	147	e32	e8.8	8.7	7.8	e8.0
12	224	e94	160	23	100	93	125	e32	e8.8	8.7	8.0	e8.0
13	220	e90	129	23	93	95	67	e28	e8.8	8.4	8.2	e8.0
14	176	e90	115	23	67	95	28	e24	e8.8	8.5	e8.0	e8.0
15	128	e88	113	23	51	95	28	e24	e8.8	8.4	e8.0	e8.0
16	98	e60	175	23	102	94	28	77	e8.8	8.5	e8.0	e8.0
17	98	e34	210	23	136	94	28	e88	e8.8	8.4	e8.0	e8.0
18	99	e34	206	37	136	82	46	e86	e8.8	8.8	e8.0	e8.0
19	99	e58	161	93	179	74	57	e66	e8.8	6.6	e8.0	e8.0
20	100	e64	145	220	209	74	57	e56	e8.8	6.9	e8.0	e8.0
21	103	e60	320	327	207	60	57	e80	e8.8	6.5	e8.0	e8.0
22	93	e58	449	303	184	35	57	128	e8.8	6.4	e8.0	e8.0
23	e84	e58	291	153	241	17	39	95	e8.8	6.7	e8.0	e8.0
24	e82	e56	135	43	281	36	27	73	e8.8	6.5	e8.0	e8.0
25	e82	e76	93	23	212	54	27	52	e8.8	6.5	e8.0	e8.0
26	e82	e90	152	23	129	56	27	e21	e8.8	6.5	e8.0	e8.0
27	e83	e110	152	23	104	56	27	e19	8.6	6.6	e8.0	e8.0
28	e100	e115	105	22	70	86	27	e18	8.6	6.8	e8.0	e8.0
29	e145	e120	91	22	48	107	29	e18	8.6	6.8	e8.0	e8.0
30	e170	e240	56	37	---	107	104	e18	8.6	8.6	e8.0	e8.0
31	e170	---	24	64	---	107	---	14	---	7.3	e8.0	---
TOTAL	4421	2936	5828	1888	4114	2360	2109	1665	263.2	243.1	243.4	577.0
MEAN	143	97.9	188	60.9	142	76.1	70.3	53.7	8.77	7.84	7.85	19.2
MAX	228	240	460	327	281	110	148	162	8.8	8.8	8.2	110
MIN	81	34	24	22	48	17	27	14	8.6	6.4	7.0	8.0
†	-26.2	-13.3	-28.6	+5.8	-3.6	+41.0	+22.4	-8.0	-1.7	+0.6	+1.1	-3.9
MEAN‡	117	84.6	159	66.7	138	117	92.7	45.7	7.07	8.44	8.95	15.3
CFSM‡	2.56	1.86	3.49	1.46	3.03	2.56	2.03	1.00	.16	.18	.20	.34
IN.‡	2.95	2.08	4.02	1.68	3.27	2.95	2.26	1.15	.18	.21	.23	.38

CAL YR 1987 TOTAL 34992.3 MEAN 95.9 MAX 479 MIN 8.3 ADJ -0.4 MEAN‡ 95.5 CFSM‡ 2.09 IN.‡ 28.43
WTR YR 1988 TOTAL 26647.7 MEAN 72.8 MAX 460 MIN 6.4 ADJ -0.6 MEAN‡ 72.2 CFSM‡ 1.58 IN.‡ 21.36

† Change in contents, equivalent in cubic feet per second, in Woodcock Creek Lake.
‡ Adjusted for change in reservoir contents.

e Estimated

03024000 FRENCH CREEK AT UTICA, PA

LOCATION.--Lat 41°21'15", long 79°57'22", Venango County, Hydrologic Unit 05010004, on right bank at upstream side of bridge on SR 3017 at Utica and 2,000 ft upstream from Mill Creek.

DRAINAGE AREA.--1,028 mi².

PERIOD OF RECORD.--August 1932 to current year.

REVISED RECORDS.--WSP 743: Drainage area. WSP 823: 1936 (M). WSP 1275: 1933, 1936.

GAGE.--Water-stage recorder. Datum of gage is 1,019.44 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 27, 1933, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated since 1971 by Union City Reservoir 50 mi upstream, serving as a retarding basin, and since January 1974 by Woodcock Creek Lake, 25 mi upstream. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--56 years, 1,835 ft³/s, 24.24 in/yr, adjusted for storage since 1971.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,800 ft³/s, Mar. 7, 1964, gage height, 13.2 ft, from floodmark in gage well; minimum, 43 ft³/s, July 30, 1934, gage height, 1.03 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1912, 15.7 ft in March 1913, discharge 35,600 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,700 ft³/s, Oct. 9, gage height, 8.85 ft; minimum daily, 91 ft³/s, July 10, 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e5600	e1400	e3700	e1700	3390	2290	2590	3400	604	140	659	578
2	e3900	e1300	e3100	e1500	6030	2020	2430	3080	613	133	734	399
3	e4000	e1300	e2800	e1250	5510	1970	2510	2530	567	127	560	301
4	e3100	e1400	e2400	e1050	4560	2060	6230	1930	571	124	380	872
5	e2400	e1500	e2100	e920	3680	1830	6810	1660	579	118	308	1780
6	e1800	e1400	e1900	e880	3110	1680	5270	1620	511	113	294	1540
7	e2600	e1300	e1700	e840	e2500	1680	4100	1650	450	106	248	1080
8	e4400	e1400	e2300	e800	e2100	1740	3580	1380	405	101	200	790
9	e7000	e1500	3010	e960	e1800	2280	3270	1160	363	96	179	601
10	e3700	e1550	4450	1070	e1500	3740	2910	1170	335	91	169	478
11	e4300	e1200	4320	1030	e1300	3690	2610	1300	302	97	158	393
12	e3900	e1050	4010	994	e1150	3070	2340	1230	269	102	148	339
13	e3000	e980	3680	977	e1050	3170	2090	1060	251	96	138	360
14	e2400	e940	3150	947	e960	3430	1830	942	239	95	132	326
15	e2100	e860	3320	964	e1500	3060	1630	878	229	92	134	318
16	e1900	e820	4110	946	2520	2730	1430	1550	243	91	122	300
17	e1700	e1200	3870	903	3020	2510	1280	2390	249	94	110	280
18	e1500	e2000	3470	1240	2990	2320	1220	2270	233	92	115	289
19	e1400	e1500	3150	2240	2820	2140	1160	1950	225	147	121	303
20	e1250	e1300	4400	3370	3690	1990	1080	2020	208	180	115	396
21	e1350	e1150	6640	5240	3820	1790	1050	2000	197	582	104	386
22	e1550	e1050	6530	4470	3340	1580	1080	1770	186	366	92	318
23	e1500	e1300	5140	3700	5020	1500	1120	1580	178	389	92	324
24	e1450	e1700	4110	2960	6060	2700	1400	1320	187	490	101	385
25	e1400	e2000	3520	2430	4920	3770	1790	1120	210	534	105	516
26	e1450	e2300	3570	2100	4070	4910	1510	1350	209	699	118	554
27	e1600	e1800	3300	1790	3340	5310	1240	1490	185	567	120	446
28	e3000	e1550	2900	1470	2710	4620	1070	1290	169	403	162	365
29	e2400	e5400	2650	1210	2510	3920	1040	953	160	322	427	307
30	e1900	e6000	2320	1340	---	3290	2380	800	149	287	794	271
31	e1500	---	2060	1860	---	2850	---	687	---	475	793	---
TOTAL	81050	50150	107680	53151	90970	85640	70050	49530	9276	7349	7932	15595
MEAN	2615	1672	3474	1715	3137	2763	2335	1598	309	237	256	520
MAX	7000	6000	6640	5240	6060	5310	6810	3400	613	699	794	1780
MIN	1250	820	1700	800	960	1500	1040	687	149	91	92	271
†	-22.8	-4.4	-52.2	+23.2	-10.0	+164	-70.4	-60.0	-3.7	+6.5	-4.5	-4.2
MEAN‡	2592	1668	3422	1738	3127	2927	2265	1538	305	244	252	516
CFSM‡	2.52	1.62	3.33	1.69	3.04	2.85	2.20	1.50	.30	.24	.24	.50
IN.‡	2.90	1.81	3.84	1.95	3.28	3.29	2.45	1.73	.33	.28	.28	.56

CAL YR 1987 TOTAL 722918 MEAN 1981 MAX 12200 MIN 268 ADJ -0.5 MEAN‡ 1980 CFSM‡ 1.93 IN.‡ 26.15
WTR YR 1988 TOTAL 628373 MEAN 1717 MAX 7000 MIN 91 ADJ -2.4 MEAN‡ 1715 CFSM‡ 1.67 IN.‡ 22.70

† Change in contents, equivalent in cubic feet per second, in Union City Reservoir and Woodcock Creek Lake.
‡ Adjusted for change in reservoir contents.

e Estimated

03025500 ALLEGHENY RIVER AT FRANKLIN, PA

LOCATION.--Lat 41°23'22", long 79°49'14", Venango County, Hydrologic Unit 05010003, on right bank at upstream side of Eighth Street bridge on U.S. Highway 322 at Franklin, 1,000 ft downstream from French Creek, and at mile 124.4.

DRAINAGE AREA.--5,982 mi².

PERIOD OF RECORD.--October 1914 to current year. Monthly discharge only for some periods, published in WSP 1305. Gage-height records collected at same site since April 1905 are contained in reports of U.S. Weather Bureau.

REVISED RECORDS.--WSP 743: Drainage area. WSP 783: 1913 (M). WSP 1003: 1920 (M). WSP 1305: 1926 (M) 1928-29 (M). WSP 1385: 1920, 1932.

GAGE.--Water-stage recorder. Datum of gage is 955.84 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 16, 1932, nonrecording gage, and Sept. 16-30, 1932, water-stage recorder, at present site at datum 2.00 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by Allegheny Reservoir 74 mi upstream since 1965, by Chautauqua Lake since 1949, by Tionesta Lake since 1940, by Union City Reservoir since 1971, and by Woodcock Creek Lake since January 1974. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--74 years, 10,530 ft³/s, 23.90 in/yr, adjusted for storage 1940-75.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 138,000 ft³/s, Mar. 13, 1920; maximum gage height observed, 26.0 ft, Feb. 27, 1917 (backwater from ice) and Feb. 26, 1926 (backwater from ice); minimum discharge, 334 ft³/s, July 30, 1934, gage height, 1.63 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 17, 1865, reached a stage of 25.0 ft, and that of Mar. 26, 1913, a stage of 24.6 ft, from graph based on gage readings, discharge, 196,000 ft³/s and 191,000 ft³/s, respectively, from rating curve extended above 120,000 ft³/s. Maximum discharge since at least 1864 is that of Mar. 17, 1865.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 39,400 ft³/s, Apr. 4, gage height, 10.78 ft; minimum 1,480 ft³/s, Aug. 9, gage height, 2.47 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10700	9050	17800	11600	e10000	7250	20200	e9800	5720	2060	2670	3200
2	11600	8650	16300	11300	16500	6700	18700	10700	5010	2130	2600	2970
3	11200	8710	17200	9530	22400	6670	17900	10700	4880	2370	2390	2650
4	10100	8660	19300	8780	21100	7170	30700	9550	5310	2360	2090	3810
5	8940	8860	19200	6960	20500	6670	29700	8730	4890	2420	1890	5110
6	8040	8600	18400	4920	21000	6240	28600	e9400	4400	2610	1780	4260
7	7380	8340	17800	3710	e17000	6210	22600	e10000	4250	2410	2010	3420
8	8630	8580	17500	4050	e15000	6240	20800	e9600	4110	2200	1650	2900
9	11300	9180	18200	4690	e6200	7720	23400	e8800	3660	2250	1510	2610
10	12600	10600	22800	4300	e5400	13200	22200	e8400	3150	2210	1720	2690
11	11800	11600	23300	e3800	e4800	15000	20600	e8800	2990	2230	1740	2700
12	11500	11100	22400	e3300	e4700	13200	15100	e9600	2880	2190	1710	2610
13	11000	10300	21300	e3000	e7200	13100	10700	8310	2800	1910	1930	2980
14	10200	9880	19600	e3300	e7400	14900	8690	7490	2670	1860	1930	2980
15	9460	9370	19600	e3800	e7800	14000	7970	7120	2370	1910	1920	2850
16	8870	8970	22100	e4300	e12000	12600	7010	9110	2330	1840	1830	2720
17	8250	8790	21400	e4800	e20000	13400	6140	12300	2060	1960	1810	2770
18	7640	10100	18200	e5400	19000	13400	5960	13800	1960	1950	1940	2800
19	7170	10800	13800	7970	17900	12100	5450	14000	1870	2060	2180	2710
20	6880	10900	14600	10900	18800	11300	4810	13600	1790	2250	2080	2950
21	e6200	10500	22600	17100	19800	10600	4740	14700	1750	4430	2010	3560
22	e4000	9840	22400	18000	19300	9380	4700	16300	2060	3840	2010	3240
23	e3400	9400	21900	17000	18300	8350	4770	17100	2060	4250	2350	3190
24	e3500	9820	21700	15700	18900	9610	5520	16800	2110	3690	2560	3420
25	e4600	10700	19900	13800	14900	12100	7100	15600	2130	3230	2390	3480
26	e4700	11400	19600	12400	12400	16000	e6200	15000	2070	2940	2410	3460
27	e4800	11800	18400	11400	10500	20500	e5600	14500	2010	2460	2390	3150
28	e5400	11200	17200	e7000	8860	22300	e5000	10500	1920	2140	2510	2980
29	e7800	14100	16100	e5000	7990	22700	e4600	7780	1900	1930	3200	2800
30	9240	19200	14000	e6200	---	22600	e6200	7230	2090	1880	3670	2630
31	9490	---	12100	e8000	---	21800	---	6700	---	2550	3710	---
TOTAL	256390	309000	586700	252010	405650	383010	381660	342020	89200	76520	68590	93600
MEAN	8271	10300	18930	8129	13990	12360	12720	11030	2973	2468	2213	3120
MAX	12600	19200	23300	18000	22400	22700	30700	17100	5720	4430	3710	5110
MIN	3400	8340	12100	3000	4700	6210	4600	6700	1750	1840	1510	2610

CAL YR 1987 TOTAL 3895170 MEAN 10670 MAX 48600 MIN 1720
WTR YR 1988 TOTAL 3244350 MEAN 8864 MAX 30700 MIN 1510

e Estimated

03026250 LITTLE SCRUBGRASS CREEK NEAR LISBON, PA

LOCATION.--Lat 41°12'14", long 79°46'58", Venango County, Hydrologic Unit 05010003, on right bank 0.8 mi upstream from Lockard Run, 0.8 mi northeast of Lisbon, and 1.6 mi upstream from mouth.

DRAINAGE AREA.--24.0 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February to October 1988 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 1,030 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period February to October, 438 ft^3/s, Apr. 3, 1988, gage height 3.24 ft; minimum, 3.4 ft^3/s, Aug. 17, 1988, gage height, 0.34 ft.

DISCHARGE, CUBIC FEET PER SECOND, YEAR FEBRUARY 1988 TO OCTOBER 1988
MEAN VALUES

DAY	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
1			56	25	41	20	14	5.6	6.2	4.9	3.7	
2			160	24	40	17	20	5.8	5.2	4.2	3.8	
3			100	26	113	16	21	5.7	4.9	4.1	3.9	
4			60	25	190	15	19	5.6	4.5	26	4.5	
5			42	25	78	39	15	5.4	4.9	14	3.9	
6			35	27	61	48	13	5.4	7.8	7.2	4.5	
7			30	29	94	28	12	5.2	5.6	5.8	3.9	
8			26	27	60	22	11	5.0	4.8	5.1	3.7	
9			22	35	48	26	10	5.0	4.5	4.8	3.7	
10			19	53	41	50	9.9	4.9	4.4	4.8	4.0	
11			2	41	36	29	9.5	5.3	4.4	4.1	7.2	
12			20	40	32	23	9.1	5.0	4.1	4.2	6.5	
13			18	66	29	22	8.7	4.8	3.9	9.7	4.8	
14			20	51	27	21	8.2	4.9	3.9	6.1	4.3	
15			25	46	26	18	8.2	4.7	3.7	4.8	4.0	
16			22	41	26	117	11	4.5	3.6	4.3	3.8	
17			23	39	25	48	10	4.5	4.8	4.4	3.7	
18			25	37	24	56	8.2	4.4	5.8	5.2	8.1	
19			28	37	23	135	8.1	8.6	5.5	5.1	6.3	
20			70	37	20	87	7.8	6.6	4.5	5.5	4.8	
21			45	36	20	76	7.3	25	4.0	4.8	5.3	
22			22	36	19	52	7.2	7.9	3.8	5.1	8.9	
23			45	35	24	39	6.7	6.1	6.8	5.7	6.7	
24			43	37	32	42	6.2	7.2	8.6	5.4	7.1	
25			35	54	22	32	6.3	5.5	5.7	4.6	6.5	
26			33	148	19	27	6.3	5.1	9.3	4.1	5.1	
27			28	109	18	23	6.1	4.9	5.4	3.9	4.6	
28			26	70	17	20	6.0	4.8	4.8	4.0	4.9	
29			25	58	18	18	5.9	4.5	15	3.6	4.7	
30			---	49	23	16	5.8	4.9	8.7	3.6	4.3	
31			---	42	---	14	---	14	5.8	---	4.0	
TOTAL			1125	1405	1246	1196	297.5	196.8	174.9	179.1	155.2	
MEAN			38.8	45.3	41.5	38.6	9.92	6.35	5.64	5.97	5.01	
MAX			160	148	190	135	21	25	15	26	8.9	
MIN			18	24	17	14	5.8	4.4	3.6	3.6	3.7	
CFSM			1.62	1.89	1.73	1.61	.41	.26	.24	.25	.21	
IN.			1.74	2.18	1.93	1.85	.46	.31	.27	.28	.24	

03026250 LITTLE SCRUBGRASS CREEK NEAR LISBON, PA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February to October 1988 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: February to October 1988.
pH: February to October 1988.
WATER TEMPERATURE: February to October 1988.

INSTRUMENTATION.--Water-quality monitor February to October 1988. Digital recorder set for 60-minute recording interval.

SPECIFIC CONDUCTANCE, MICROSIEMENS PER CENTIMETER AT 25°C, WATER YEAR FEBRUARY 1988 TO NOVEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	496	483	488	342	334	339	529	516	522
2	---	---	---	503	488	495	346	342	344	537	517	527
3	---	---	---	510	471	491	348	237	329	550	536	542
4	302	253	274	514	487	495	306	237	270	556	544	550
5	329	291	309	537	491	512	340	309	328	555	377	499
6	373	326	354	532	461	494	364	343	355	388	371	377
7	415	370	395	461	446	455	360	324	334	419	388	402
8	423	404	413	463	452	457	371	336	353	443	420	430
9	450	426	439	457	400	441	393	373	384	453	355	439
10	467	444	454	407	389	396	411	393	404	403	375	382
11	479	469	475	430	407	418	426	410	419	418	395	406
12	494	479	484	433	417	429	438	426	432	448	417	434
13	524	494	504	438	377	393	438	430	434	476	447	456
14	561	505	526	399	381	391	450	437	442	476	467	471
15	545	452	514	416	400	408	453	447	450	504	475	486
16	476	450	459	427	416	420	457	452	455	435	279	315
17	490	439	478	433	426	430	469	455	460	358	314	340
18	453	436	445	439	431	434	464	452	459	367	287	355
19	444	403	435	441	436	438	470	456	462	293	261	275
20	398	358	367	455	429	439	462	450	455	315	285	302
21	393	363	378	480	441	457	486	462	476	341	316	325
22	416	387	403	486	443	462	491	481	486	368	344	354
23	418	387	405	467	440	455	490	424	465	392	369	380
24	409	385	395	442	426	429	425	415	421	406	386	396
25	436	409	421	426	300	413	442	423	433	422	406	413
26	451	434	443	311	247	284	456	441	447	444	422	432
27	468	452	458	271	250	260	545	452	498	469	443	454
28	482	463	473	288	272	280	543	536	539	490	469	480
29	485	476	480	309	289	300	545	525	537	512	491	499
30	---	---	---	324	311	317	533	515	524	525	507	513
31	---	---	---	335	323	328	---	---	---	538	520	527
MONTH	561	253	430	537	247	416	545	237	424	556	261	428

03026250 LITTLE SCRUBGRASS CREEK NEAR LISBON, PA--Continued

SPECIFIC CONDUCTANCE, MICROSIEMENS PER CENTIMETER AT 25°C, WATER YEAR FEBRUARY 1988 TO NOVEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	547	530	537	725	672	714	707	686	697	642	605	624
2	533	523	529	730	669	715	726	654	683	653	636	645
3	534	508	523	742	719	729	715	649	689	677	642	661
4	531	516	522	735	716	726	718	693	707	641	467	540
5	562	529	540	733	714	722	714	650	700	556	504	533
6	594	548	561	735	715	723	661	616	633	585	561	571
7	614	592	599	739	713	721	715	665	698	619	589	605
8	652	599	611	713	702	708	705	679	694	633	606	623
9	634	623	628	724	699	709	713	674	696	637	615	624
10	658	619	635	725	708	716	704	681	693	652	633	643
11	668	646	655	719	701	710	728	675	691	655	641	646
12	669	651	660	728	713	720	711	676	694	666	613	661
13	666	654	659	736	718	727	706	661	689	631	560	590
14	675	665	671	738	713	729	703	691	698	626	593	616
15	715	645	671	737	701	722	700	686	691	639	583	613
16	695	593	661	738	730	734	728	698	710	662	628	639
17	662	644	653	746	735	741	710	575	657	670	624	644
18	667	631	654	734	720	727	647	527	604	679	625	656
19	675	668	672	721	626	690	724	651	674	676	657	667
20	679	673	676	753	684	729	713	676	694	675	627	654
21	688	678	682	749	498	621	705	698	701	664	651	657
22	696	684	688	653	630	643	708	696	700	664	640	653
23	727	687	697	656	605	645	794	490	675	629	567	602
24	697	659	691	723	636	684	699	575	635	646	610	624
25	708	671	698	730	703	717	718	600	657	654	647	651
26	710	697	703	733	707	719	669	579	615	655	647	651
27	718	704	711	737	717	728	677	645	661	668	647	655
28	766	714	723	731	721	726	662	639	652	724	660	674
29	722	708	713	735	725	730	644	546	601	669	649	654
30	722	704	714	801	674	732	626	607	618	679	666	671
31	---	---	---	708	586	659	617	604	609	---	---	---
MONTH	766	508	645	801	498	710	794	490	671	724	467	632

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	679	645	673	647	640	643						
2	668	650	662	---	---	---						
3	663	649	659	---	---	---						
4	813	668	707	---	---	---						
5	676	647	669	---	---	---						
6	672	647	662	---	---	---						
7	695	641	674	---	---	---						
8	695	648	667	---	---	---						
9	693	683	687	---	---	---						
10	745	613	694	---	---	---						
11	668	601	640	---	---	---						
12	686	649	671	---	---	---						
13	668	623	644	---	---	---						
14	640	623	632	---	---	---						
15	647	641	644	---	---	---						
16	647	638	644	---	---	---						
17	650	644	646	---	---	---						
18	655	553	620	---	---	---						
19	681	636	657	---	---	---						
20	644	640	642	---	---	---						
21	648	630	642	---	---	---						
22	658	611	637	---	---	---						
23	649	615	633	---	---	---						
24	626	612	616	---	---	---						
25	630	612	624	---	---	---						
26	625	589	617	---	---	---						
27	643	596	626	---	---	---						
28	642	618	631	---	---	---						
29	635	621	627	---	---	---						
30	647	636	643	---	---	---						
31	647	639	643	---	---	---						
MONTH	813	553	649	647	640	643						

03026250 LITTLE SCRUBGRASS CREEK NEAR LISBON, PA--Continued

PH (STANDARD UNITS), WATER YEAR FEBRUARY 1988 TO NOVEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	7.71	7.50	7.62	---	---	---	7.94	7.83	7.89
2	---	---	---	8.00	7.79	7.88	---	---	---	7.95	7.84	7.89
3	---	---	---	7.98	7.61	7.78	---	---	---	7.93	7.86	7.89
4	7.73	7.63	7.68	7.94	7.60	7.79	---	---	---	7.96	7.86	7.90
5	7.83	7.73	7.78	7.98	7.70	7.83	---	---	---	7.88	7.69	7.83
6	7.91	7.81	7.87	7.90	7.43	7.72	---	---	---	7.78	7.67	7.72
7	8.48	7.88	8.14	---	---	---	---	---	---	7.79	7.66	7.72
8	8.58	8.12	8.35	---	---	---	---	---	---	7.80	7.62	7.71
9	8.18	7.98	8.08	---	---	---	---	---	---	7.78	7.52	7.69
10	8.15	8.00	8.08	---	---	---	---	---	---	7.81	7.47	7.69
11	7.99	7.89	7.94	---	---	---	---	---	---	7.89	7.74	7.83
12	7.87	7.68	7.78	---	---	---	---	---	---	7.96	7.78	7.86
13	7.75	7.45	7.53	---	---	---	7.96	7.87	7.91	8.01	7.81	7.90
14	7.55	7.39	7.50	---	---	---	7.98	7.86	7.93	7.99	7.81	7.91
15	7.72	7.51	7.57	---	---	---	8.00	7.93	7.96	8.04	7.67	7.83
16	7.75	7.16	7.51	---	---	---	8.00	7.97	7.98	7.81	7.59	7.75
17	7.08	6.14	6.57	---	---	---	8.03	7.95	7.97	7.78	7.43	7.62
18	6.12	5.98	6.05	---	---	---	8.05	7.95	8.00	7.88	7.64	7.69
19	6.83	5.95	6.12	---	---	---	8.04	7.96	8.00	7.91	7.51	7.69
20	6.78	6.31	6.49	---	---	---	8.08	7.99	8.02	7.63	7.42	7.53
21	6.92	6.32	6.61	---	---	---	8.07	7.99	8.03	7.64	7.42	7.54
22	7.04	6.73	6.86	---	---	---	8.06	7.97	8.01	7.75	7.42	7.57
23	7.25	7.02	7.09	---	---	---	8.03	7.88	7.96	7.76	7.42	7.59
24	7.44	7.27	7.38	---	---	---	7.98	7.87	7.94	7.80	7.64	7.70
25	7.50	7.32	7.43	---	---	---	8.01	7.92	7.97	7.65	7.54	7.61
26	7.65	7.23	7.44	---	---	---	8.07	7.93	7.98	7.72	7.39	7.56
27	7.60	7.40	7.49	---	---	---	8.02	7.83	7.92	7.79	7.48	7.63
28	7.76	7.57	7.65	---	---	---	7.94	7.83	7.91	7.83	7.46	7.66
29	7.76	7.65	7.70	---	---	---	7.94	7.89	7.91	7.86	7.51	7.69
30	---	---	---	---	---	---	7.92	7.86	7.90	7.89	7.55	7.71
31	---	---	---	---	---	---	---	---	---	7.89	7.55	7.73
MONTH	8.58	5.95	7.41	8.00	7.43	7.77	8.08	7.83	7.96	8.04	7.39	7.73

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	7.90	7.60	7.73	7.86	7.73	7.79	7.95	7.78	7.85	8.03	7.92	7.98
2	7.80	7.65	7.72	7.90	7.78	7.84	7.99	7.84	7.91	8.12	7.94	8.01
3	7.65	7.52	7.59	7.91	7.82	7.87	8.08	7.91	7.98	8.11	7.83	7.98
4	7.62	7.49	7.56	7.90	7.80	7.85	8.17	7.96	8.04	7.87	7.67	7.81
5	7.73	7.41	7.57	7.92	7.83	7.87	8.19	7.94	8.04	7.98	7.86	7.92
6	7.79	7.54	7.65	7.95	7.85	7.90	8.10	7.96	8.03	8.05	7.90	7.96
7	7.59	7.42	7.50	---	---	---	8.10	7.92	8.01	8.05	7.91	7.97
8	7.58	7.45	7.50	---	---	---	8.11	7.97	8.03	8.06	7.93	7.99
9	7.56	7.42	7.49	---	---	---	8.19	7.97	8.05	8.17	7.94	8.03
10	7.57	7.41	7.51	---	---	---	8.18	7.91	8.04	8.13	7.97	8.03
11	7.62	7.48	7.55	---	---	---	8.10	7.79	7.96	8.19	7.95	8.05
12	7.68	7.56	7.61	---	---	---	8.07	7.81	7.93	8.19	7.82	8.03
13	7.71	7.59	7.65	---	---	---	8.13	7.89	7.97	7.95	7.76	7.87
14	7.73	7.64	7.68	---	---	---	8.14	7.89	7.99	8.03	7.90	7.95
15	7.79	7.69	7.73	---	---	---	8.14	7.94	8.02	8.05	7.93	7.99
16	7.74	7.60	7.69	---	---	---	8.16	7.94	8.03	8.17	7.98	8.05
17	7.69	7.64	7.66	---	---	---	8.22	7.95	8.06	8.05	7.90	7.96
18	7.82	7.68	7.74	---	---	---	8.10	7.88	7.98	8.12	7.89	7.99
19	7.78	7.74	7.76	---	---	---	8.09	7.94	7.99	8.12	7.81	7.95
20	7.81	7.71	7.76	---	---	---	8.13	7.95	8.02	8.06	7.95	8.00
21	7.80	7.72	7.76	---	---	---	8.15	7.95	8.02	8.12	7.98	8.05
22	7.85	7.75	7.80	---	---	---	8.11	7.98	8.03	8.21	8.01	8.10
23	7.85	7.72	7.80	8.08	7.97	8.01	8.00	7.81	7.93	8.11	7.95	8.03
24	7.84	7.74	7.79	8.06	7.98	8.01	8.00	7.84	7.92	8.12	7.92	8.01
25	7.82	7.73	7.78	8.11	7.96	8.02	8.11	7.90	7.99	8.14	8.04	8.08
26	7.87	7.76	7.83	8.15	8.00	8.05	8.01	7.90	7.94	8.13	8.03	8.07
27	7.88	7.78	7.83	8.14	7.99	8.05	8.08	7.84	7.95	8.13	8.04	8.08
28	7.83	7.73	7.77	8.15	7.97	8.04	8.04	7.83	7.91	8.17	8.05	8.09
29	7.81	7.75	7.79	8.15	7.99	8.05	7.94	7.87	7.90	8.21	8.10	8.14
30	7.83	7.71	7.77	8.17	7.90	8.02	7.99	7.85	7.92	8.22	8.06	8.13
31	---	---	---	7.88	7.63	7.76	8.03	7.88	7.96	---	---	---
MONTH	7.90	7.41	7.69	8.17	7.63	7.94	8.22	7.78	7.98	8.22	7.67	8.01

03026250 LITTLE SCRUBGRASS CREEK NEAR LISBON, PA--Continued

PH (STANDARD UNITS), WATER YEAR FEBRUARY 1988 TO NOVEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.18	8.05	8.09	8.05	7.98	8.02						
2	8.17	8.06	8.10	---	---	---						
3	8.22	8.09	8.14	---	---	---						
4	8.18	8.03	8.11	---	---	---						
5	8.14	8.07	8.10	---	---	---						
6	8.10	8.04	8.06	---	---	---						
7	8.12	8.05	8.08	---	---	---						
8	8.10	8.03	8.06	---	---	---						
9	8.11	8.04	8.07	---	---	---						
10	8.10	8.01	8.04	---	---	---						
11	8.02	7.99	8.00	---	---	---						
12	8.08	7.94	8.01	---	---	---						
13	8.06	7.99	8.02	---	---	---						
14	8.01	7.89	7.98	---	---	---						
15	8.03	7.94	8.00	---	---	---						
16	8.05	7.88	8.00	---	---	---						
17	8.07	7.97	8.02	---	---	---						
18	7.98	7.90	7.93	---	---	---						
19	8.00	7.93	7.97	---	---	---						
20	8.02	7.97	7.99	---	---	---						
21	8.01	7.97	7.99	---	---	---						
22	8.02	7.99	8.01	---	---	---						
23	8.01	7.91	7.99	---	---	---						
24	8.00	7.96	7.99	---	---	---						
25	8.02	7.99	8.00	---	---	---						
26	8.03	7.99	8.00	---	---	---						
27	8.02	7.92	7.99	---	---	---						
28	8.03	7.98	8.01	---	---	---						
29	8.04	7.94	8.02	---	---	---						
30	8.04	7.93	8.02	---	---	---						
31	8.02	7.89	7.99	---	---	---						
MONTH	8.22	7.88	8.03	8.05	7.98	8.02						

TEMPERATURE, WATER (DEG. C), WATER YEAR FEBRUARY 1988 TO NOVEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	3.0	1.5	2.0	10.5	9.0	10.0	11.0	6.0	8.5
2	---	---	---	3.5	.0	2.0	12.0	9.5	11.0	10.5	7.0	9.0
3	---	---	---	3.5	1.5	2.5	13.0	10.5	11.5	12.0	7.0	10.0
4	2.5	1.0	2.0	2.0	1.0	1.5	12.0	9.5	11.0	12.0	8.5	10.5
5	.5	.0	.5	1.0	.0	.5	14.0	7.5	10.5	11.5	11.0	11.0
6	.0	.0	.0	2.5	.0	1.0	13.0	10.0	11.5	14.5	10.0	12.0
7	.0	.0	.0	3.5	1.5	2.5	11.0	9.5	10.5	15.5	9.0	12.5
8	.0	.0	.0	5.5	1.5	3.5	10.0	7.5	8.5	16.0	10.0	13.5
9	.0	.0	.0	5.0	4.0	4.5	9.5	6.0	7.5	15.0	13.0	14.0
10	.0	.0	.0	5.0	3.0	4.0	11.0	5.5	8.0	15.5	12.0	13.5
11	.0	.0	.0	5.5	1.5	3.5	11.5	5.5	8.5	15.0	12.0	13.5
12	.0	.0	.0	6.0	2.5	4.5	12.0	7.0	9.5	15.0	9.0	12.5
13	.0	.0	.0	5.5	2.5	4.0	12.0	7.5	9.5	15.0	11.5	13.5
14	.0	.0	.0	2.5	1.0	2.0	10.0	7.5	9.0	15.5	11.0	13.5
15	.0	.0	.0	2.0	.0	1.0	8.5	6.0	7.0	17.0	10.5	14.0
16	.5	.0	.0	2.0	.5	1.0	5.5	4.5	5.0	18.0	14.5	16.0
17	2.0	.5	1.0	3.0	.5	1.5	10.0	3.5	6.5	16.5	12.0	14.5
18	2.5	.5	1.5	2.5	1.0	1.5	9.5	7.0	8.5	15.0	13.0	13.5
19	2.0	1.0	1.5	3.5	1.0	2.0	7.0	4.0	5.5	14.5	12.5	13.5
20	2.5	1.0	2.0	2.5	.5	1.5	8.5	3.5	6.0	15.0	13.0	14.0
21	.5	.0	.0	.5	.0	.0	8.0	6.0	7.5	15.5	13.0	14.0
22	2.0	.0	.0	2.0	.0	.5	9.5	4.0	6.5	17.0	13.0	15.0
23	3.0	1.5	2.5	7.0	1.5	4.0	12.0	7.5	9.5	17.5	14.0	16.0
24	1.5	.0	.5	8.5	5.5	7.0	11.0	7.0	8.5	16.5	15.0	16.0
25	.0	.0	.0	10.5	6.5	8.5	10.5	5.0	8.0	14.5	10.5	12.0
26	1.0	.0	.0	9.5	7.0	8.0	12.0	5.5	9.0	13.5	8.0	11.0
27	2.0	1.0	1.5	7.0	4.5	5.5	10.5	8.0	9.5	16.0	11.0	13.5
28	1.5	.0	.5	8.0	3.0	5.5	9.0	7.5	8.5	17.0	12.0	15.0
29	3.0	1.0	2.0	12.0	6.0	8.5	8.0	7.0	7.0	17.5	13.0	15.5
30	---	---	---	11.5	8.5	10.0	9.0	6.5	7.5	19.0	15.0	17.0
31	---	---	---	10.5	5.5	8.5	---	---	---	19.5	15.0	17.5
MONTH	3.0	.0	.5	12.0	.0	3.5	14.0	3.5	8.5	19.5	6.0	13.5

03026250 LITTLE SCRUBGRASS CREEK NEAR LISBON, PA--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR FEBRUARY 1988 TO NOVEMBER 1988

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

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

03026500 SEVENMILE RUN NEAR RASSELAS, PA

LOCATION.--Lat 41°37'52", long 78°34'37", McKean County, Hydrologic Unit 05010005, on right bank 300 ft upstream from highway bridge, 600 ft upstream from Fivemile Run, and 3.2 mi northeast of Rasselas.

DRAINAGE AREA.--7.84 mi^2.

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

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,690.73 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--37 years, 14.5 ft^3/s, 25.11 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,300 ft^3/s, Sept. 13, 1987, gage height, 5.30 ft, from rating curve extended above 600 ft^3/s on basis of slope-area measurement at gage height 4.60 ft; minimum, 0.07 ft^3/s, Sept. 21, 1955.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 29	1830	*258	*3.99	No other peak greater than base discharge.			

Minimum discharge, 0.61 ft^3/s, Aug. 22, gage height, 1.59 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.8	4.9	52	e9.0	e19	e5.0	19	8.7	5.6	.90	.82	.71
2	9.2	5.0	38	e7.8	e56	e5.4	17	8.1	5.0	.90	.81	.68
3	10	4.9	28	e6.8	45	7.0	25	7.8	9.7	.86	.78	.68
4	8.4	5.0	24	e6.2	e32	6.6	103	7.6	10	.83	.74	4.3
5	7.3	7.1	20	e7.4	e25	8.2	53	8.0	6.5	.82	.73	6.7
6	6.8	6.3	17	e10	e19	12	39	9.1	4.9	.79	1.3	2.4
7	13	6.7	15	e14	e17	6.4	33	7.9	4.3	.76	.91	1.5
8	14	8.6	14	e9.0	e15	7.0	27	7.0	3.8	.73	.78	1.1
9	12	9.8	20	e7.6	e13	16	22	7.3	3.5	.73	.72	.91
10	11	9.2	25	e6.6	e12	26	19	12	3.2	.72	.69	.84
11	15	8.6	20	e5.6	e10	24	16	9.9	3.0	.74	.69	.79
12	14	8.5	20	e5.0	e9.2	31	14	9.1	2.6	.74	.68	.77
13	12	8.3	18	e4.7	e8.6	60	13	9.0	2.4	.69	.67	1.0
14	11	8.1	15	e4.3	e7.8	41	12	8.9	2.1	.79	.66	.87
15	10	7.2	18	e4.1	e7.4	31	11	8.1	2.0	1.4	.66	.76
16	9.5	6.6	19	e4.4	e7.0	25	10	14	2.1	.83	.64	.71
17	8.7	6.8	16	e4.5	e6.8	21	9.2	12	2.2	1.1	.65	.88
18	8.1	14	14	e8.0	e6.4	18	9.1	14	1.7	.93	.66	1.0
19	7.3	10	13	e15	e6.2	16	8.2	34	1.5	1.3	.64	.88
20	7.1	10	30	e21	e5.8	15	7.3	27	1.4	2.2	.64	.86
21	7.0	9.4	35	e13	e5.6	17	7.3	24	1.3	12	.63	.91
22	6.1	12	26	e11	e7.6	18	6.5	20	1.2	4.4	.62	.85
23	6.2	8.2	23	e10	e6.8	12	6.7	17	1.3	2.1	.91	1.3
24	5.5	8.8	19	e9.0	e6.0	19	10	18	1.1	5.1	2.3	1.5
25	5.6	8.2	23	e8.0	e5.6	33	7.8	15	1.1	3.0	.89	.96
26	5.1	9.0	20	e7.8	e5.4	91	7.0	13	1.1	1.7	.85	.86
27	5.1	8.1	17	e7.2	e5.2	57	6.9	11	1.1	1.3	.74	.82
28	5.6	7.5	e15	e6.6	e5.2	39	7.3	9.5	.94	1.1	.77	.79
29	5.7	89	e14	e6.4	e5.2	31	8.5	8.3	.96	.92	1.5	.77
30	5.8	87	e12	e6.2	---	25	10	7.2	.90	.87	1.4	.75
31	5.2	---	e14	e8.0	---	21	---	6.2	---	.91	.81	---
TOTAL	267.1	402.8	654	254.2	380.8	744.6	544.8	378.7	88.50	52.16	26.29	37.85
MEAN	8.62	13.4	21.1	8.20	13.1	24.0	18.2	12.2	2.95	1.68	.85	1.26
MAX	15	89	52	21	56	91	103	34	10	12	2.3	6.7
MIN	5.1	4.9	12	4.1	5.2	5.0	6.5	6.2	.90	.69	.62	.68
CFSM	1.10	1.71	2.69	1.05	1.67	3.06	2.32	1.56	.38	.21	.11	.16
IN.	1.27	1.91	3.10	1.21	1.81	3.53	2.59	1.80	.42	.25	.12	.18

CAL YR 1987 TOTAL 5911.9 MEAN 16.2 MAX 363 MIN 1.6 CFSM 2.07 IN. 28.05
WTR YR 1988 TOTAL 3831.80 MEAN 10.5 MAX 103 MIN .62 CFSM 1.34 IN. 18.18

e Estimated

03027500 EAST BRANCH CLARION RIVER AT EAST BRANCH CLARION RIVER DAM, PA

LOCATION.--Lat 41°33'11", long 78°35'47", Elk County, Hydrologic Unit 05010005, on left bank 700 ft upstream from Middle Fork, 0.5 mi downstream from East Branch Clarion River Dam, and 1.2 mi northeast of Glen Hazel.

DRAINAGE AREA.--73.2 mi².

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

REVISED RECORDS.--WSP 1235: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,517.58 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark).

REMARKS.--No estimated daily discharge. Records fair. Flow completely regulated since June 1952 by East Branch Clarion River Lake 0.5 mi upstream. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--40 years, 137 ft³/s, 25.41 in/yr, adjusted for storage since 1952.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,590 ft³/s, May 10, 1957, gage height, 7.25 ft; minimum, 0.20 ft³/s, July 25, 1969, gage height, 1.06 ft; minimum daily, 0.40 ft³/s, July 24-27, 1969.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 28, 1946, reached a stage of 8.3 ft, from graph based on gage readings at site 1,000 ft downstream and at different datum, discharge, 4,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 526 ft³/s, Dec. 1, gage height, 3.68 ft; minimum daily, 39 ft³/s, Mar. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	501	109	474	173	61	49	45	51	135	129	126	159
2	500	109	514	172	65	43	44	51	116	129	127	158
3	499	109	506	170	70	44	47	51	105	129	127	158
4	495	109	428	132	70	44	47	52	103	129	137	161
5	421	96	375	91	67	44	47	52	102	129	143	145
6	293	85	372	81	64	44	47	52	97	129	143	137
7	186	85	370	81	62	42	47	51	96	129	143	136
8	149	85	251	81	61	39	47	51	96	128	158	135
9	132	86	174	81	60	44	47	52	96	127	166	135
10	105	86	174	81	59	47	47	53	95	127	165	135
11	97	85	176	81	59	48	47	52	94	127	165	135
12	96	85	176	81	58	50	47	52	94	127	161	135
13	96	85	176	81	57	58	46	52	94	127	167	135
14	96	85	176	67	57	56	46	53	94	127	167	135
15	110	71	174	59	57	52	45	53	94	127	145	135
16	120	61	174	59	57	48	45	53	116	128	131	135
17	120	61	174	59	56	45	44	53	118	127	162	137
18	120	74	174	59	56	44	45	53	118	127	162	135
19	119	82	174	59	56	43	44	53	118	133	162	135
20	118	82	174	59	57	42	44	53	118	128	160	137
21	118	82	174	90	57	41	44	108	118	131	160	127
22	118	83	174	112	58	41	44	194	128	91	160	127
23	118	84	214	111	57	40	44	220	129	103	160	129
24	118	84	241	111	57	41	45	219	129	94	162	128
25	118	83	241	82	57	44	44	261	129	103	162	127
26	118	83	238	62	57	47	44	286	129	125	163	127
27	118	82	236	62	57	49	44	284	129	125	160	127
28	106	82	235	63	57	52	44	283	129	124	160	127
29	101	82	209	63	57	50	143	281	129	124	163	127
30	103	241	174	63	---	48	172	280	129	124	160	127
31	109	---	173	61	---	46	---	192	---	124	160	---
TOTAL	5618	2716	7695	2687	1723	1425	1586	3651	3377	3831	4787	4086
MEAN	181	90.5	248	86.7	59.4	46.0	52.9	118	113	124	154	136
MAX	501	241	514	173	70	58	172	286	135	133	167	161
MIN	96	61	173	59	56	39	44	51	94	91	126	127
†	-106	+15.1	-37.4	-3.2	+86.9	+179	+128	+50.4	-79.0	-102	-148	-128
MEAN‡	75.0	106	211	83.5	146	225	181	168	34.0	22.0	6.0	8.0
CFSM‡	1.02	1.45	2.88	1.14	1.99	3.07	2.47	2.30	.46	.30	.08	.11
IN.‡	1.18	1.62	3.32	1.31	2.15	3.54	2.76	2.65	.51	.34	.09	.12

CAL YR 1987 TOTAL 50925 MEAN 140 MAX 895 MIN 25 ADJ +0.8 MEAN‡ 141 CFSM‡ 1.93 IN.‡ 26.42
WTR YR 1988 TOTAL 43182 MEAN 118 MAX 514 MIN 39 ADJ -12.5 MEAN‡ 106 CFSM‡ 1.45 IN.‡ 19.59

† Change in contents, equivalent in cubic feet per second, in East Branch Clarion River Lake.
‡ Adjusted for change in reservoir contents.

03028000 WEST BRANCH CLARION RIVER AT WILCOX, PA

LOCATION.--Lat 41°34'31", long 78°41'33", Elk County, Hydrologic Unit 05010005, on right bank 20 ft downstream from highway bridge at Wilcox, 100 ft downstream from Wilson Run, and 0.1 mi upstream from Penn Central Railroad bridge.

DRAINAGE AREA.--63.0 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 1,502.02 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 18, 1953, nonrecording gage at site 20 ft upstream at same datum. Nov. 18 to Dec. 8, 1953, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--35 years, 125 ft³/s, 26.94 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,490 ft³/s, Sept. 28, 1967, gage height, 10.01 ft, from rating curve extended above 3,000 ft³/s; minimum, 4.2 ft³/s, Sept. 21, 1955, gage heigbt, 1.27 ft.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Nov. 29	1600	1,040	4.45	Apr. 4	0230	*1,090	*4.55

Minimum daily discharge, 7.2 ft³/s, Aug. 9, 17, 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	94	49	393	132	181	60	175	100	e50	11	11	9.4
2	89	51	298	96	437	64	157	e88	47	11	10	e8.8
3	98	50	240	e89	331	78	209	e84	79	10	10	e8.0
4	79	57	171	e68	e230	72	678	e80	63	9.7	9.5	54
5	72	83	147	e80	e190	67	409	e84	46	9.3	9.4	52
6	69	75	154	e98	e160	77	326	104	39	9.0	13	21
7	110	74	135	e84	e140	71	291	90	36	8.7	11	15
8	105	86	126	e72	e130	78	235	81	33	8.5	9.6	13
9	95	98	166	e64	e120	152	197	85	31	8.5	e7.2	12
10	88	95	154	e60	e110	213	172	127	28	8.5	e9.0	10
11	130	94	169	e56	e98	203	153	104	26	8.7	e12	9.5
12	118	95	143	e52	e90	231	137	98	24	8.8	e11	8.4
13	112	94	158	e50	e82	401	123	101	23	8.5	e9.4	20
14	108	90	147	e48	e76	319	114	100	21	8.6	e8.6	12
15	99	82	172	e46	e70	270	107	92	20	13	e8.0	9.2
16	88	71	156	e45	e66	222	101	147	22	9.7	e7.8	8.2
17	83	76	159	e49	e62	188	93	121	23	16	e7.2	11
18	83	126	145	e60	e60	166	92	135	19	12	e7.6	e23
19	83	93	135	e100	e56	149	83	207	17	15	e7.6	e16
20	79	89	253	e200	e54	134	75	180	16	23	e7.4	e13
21	73	83	264	174	e52	110	76	e160	15	112	e7.2	e11
22	62	77	237	142	e90	106	67	e140	14	37	8.0	9.7
23	63	86	192	e120	91	112	76	e130	15	39	13	16
24	57	87	152	e98	77	145	126	e115	13	81	37	15
25	61	80	148	e82	69	214	90	e105	12	34	12	11
26	59	92	155	e78	68	582	84	e94	12	21	14	9.5
27	62	80	148	e74	68	424	84	e84	12	17	9.8	8.7
28	66	73	142	e72	66	323	89	e76	11	15	11	8.5
29	57	494	134	e70	63	269	103	e66	12	13	23	8.4
30	57	510	110	e68	---	226	115	e60	11	12	16	8.5
31	52	---	122	e100	---	191	---	e56	---	16	10	---
TOTAL	2551	3290	5425	2627	3387	5917	4837	3294	790	614.5	347.3	439.8
MEAN	82.3	110	175	84.7	117	191	161	106	26.3	19.8	11.2	14.7
MAX	130	510	393	200	437	582	678	207	79	112	37	54
MIN	52	49	110	45	52	60	67	56	11	8.5	7.2	8.0
CFSM	1.31	1.74	2.78	1.35	1.85	3.03	2.56	1.69	.42	.31	.18	.23
IN.	1.51	1.94	3.20	1.55	2.00	3.49	2.86	1.95	.47	.36	.21	.26

CAL YR 1987 TOTAL 49326 MEAN 135 MAX 1240 MIN 14 CFSM 2.15 IN. 29.13
WTR YR 1988 TOTAL 33519.6 MEAN 91.6 MAX 678 MIN 7.2 CFSM 1.45 IN. 19.79

e Estimated

03028500 CLARION RIVER AT JOHNSONBURG, PA

LOCATION.--Lat 41°29'10", long 78°40'43", Elk County, Hydrologic Unit 05010005, on left bank at downstream side of highway bridge at Johnsonburg, 0.1 mi downstream from Johnson Run, and 0.4 mi downstream from confluence of East and West Branches.

DRAINAGE AREA.--204 mi².

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

REVISED RECORDS.--WSP 1235: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,423.03 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 8, 1951, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated since June 1952 by East Branch Clarion River Lake 7.9 mi upstream and at low flow by industrial plants above station. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--43 years, 383 ft³/s, 25.50 in/yr, adjusted for storage since 1952.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,700 ft³/s, May 28, 1946, gage height, 9.2 ft, from graph based on gage readings; maximum gage height, 9.94 ft, June 22, 1972; minimum discharge, 6 ft³/s, Sept. 18, 1952, gage height, 0.68 ft, result of regulation above station; minimum daily, 20 ft³/s, Oct. 5, 1948, Nov. 6, 1951.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in July 1942 reached a stage of 16.7 ft, from floodmark.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,620 ft³/s, Nov. 29, gage height, 5.33 ft; minimum daily, 110 ft³/s, Jan. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e700	e190	1210	394	361	168	365	224	e225	136	147	174
2	e680	e190	1070	343	828	160	339	213	199	139	145	175
3	e720	e190	916	304	671	204	381	207	240	144	141	173
4	e660	e190	800	317	741	191	1350	204	218	141	144	264
5	e560	209	682	211	574	166	826	212	185	137	155	243
6	e480	191	633	190	422	177	682	230	166	130	165	185
7	e410	190	595	189	372	189	624	203	151	130	166	168
8	e380	212	493	208	384	199	504	187	143	127	172	160
9	e330	227	465	205	334	368	412	189	140	128	181	156
10	e300	220	523	185	316	515	374	277	133	126	180	153
11	e380	216	466	169	277	458	344	232	132	127	179	151
12	e350	220	482	e150	266	494	314	215	127	129	173	146
13	e320	220	458	e130	224	812	283	228	123	127	182	174
14	e300	215	420	e120	217	675	260	243	120	127	181	163
15	e280	191	496	e115	230	574	241	221	117	131	163	149
16	e270	165	529	e110	215	454	228	414	130	151	150	142
17	e260	166	446	e115	193	394	211	380	148	185	174	154
18	e250	279	420	e140	189	360	208	415	136	151	172	156
19	e250	231	407	e170	185	333	189	585	133	150	172	148
20	e230	221	655	e370	226	306	172	499	132	169	171	148
21	e230	217	719	368	187	248	174	484	131	312	168	151
22	e220	201	644	353	189	232	156	491	132	185	166	148
23	e220	211	622	345	241	246	167	466	140	146	186	162
24	e210	221	596	342	217	300	278	542	141	278	248	162
25	e210	215	595	307	196	385	203	464	140	167	192	148
26	e210	231	541	254	187	993	185	e380	143	171	208	142
27	e210	215	480	220	190	781	184	e380	142	160	183	142
28	e200	206	458	199	176	633	194	e290	139	153	181	137
29	e190	1080	437	197	178	526	266	e270	138	147	228	136
30	e190	1360	367	220	---	436	367	e250	138	144	209	136
31	e190	---	352	254	---	385	---	e235	---	164	184	---
TOTAL	10390	8290	17977	7194	8986	12362	10481	9830	4482	4812	5466	4846
MEAN	335	276	580	232	310	399	349	317	149	155	176	162
MAX	720	1360	1210	394	828	993	1350	585	240	312	248	264
MIN	190	165	352	110	176	160	156	187	117	126	141	136
†	-106	+15.1	-37.4	-3.2	+86.9	+179	+128	+50.4	-79.0	-102	-148	-128
MEAN‡	229	291	543	229	397	578	477	367	70.0	53.0	28.0	34.0
CFSM‡	1.12	1.43	2.66	1.12	1.95	2.83	2.34	1.80	.34	.26	.14	.17
IN.‡	1.29	1.60	3.07	1.29	2.10	3.26	2.61	2.08	.38	.30	.16	.19

CAL YR 1987 TOTAL 144212 MEAN 395 MAX 2570 MIN 57 ADJ +0.8 MEAN‡ 396 CFSM‡ 1.94 IN.‡ 26.50
WTR YR 1988 TOTAL 105116 MEAN 287 MAX 1360 MIN 110 ADJ -12.5 MEAN‡ 274 CFSM‡ 1.34 IN.‡ 18.33

† Change in contents, equivalent in cubic feet per second, in East Branch Clarion River Lake.
‡ Adjusted for change in reservoir contents.

e Estimated

03029500 CLARION RIVER AT COOKSBURG, PA

LOCATION.--Lat 41°19'50", long 79°12'33", Jefferson County, Hydrologic Unit 05010005, on left bank at downstream side of bridge on State Highway 36 at Cooksburg, 300 ft downstream from Toms Run, and 2.7 mi upstream from Cathers Run.

DRAINAGE AREA.--807 mi^2.

PERIOD OF RECORD.--October 1938 to current year. Monthly discharge only for October, November 1938, published in WSP 1305.

REVISED RECORDS.--WSP 1305: 1939 (M). WDR PA-85-3: 1979 (M).

GAGE.--Water-stage recorder. Datum of gage is 1,147.00 ft above National Geodetic Vertical Datum of 1929. Prior to May 17, 1939, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by East Branch Clarion River Lake since June 1952 and at low flow by industrial plants above station. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--50 years, 1,454 ft^3/s, 24.47 in/yr, adjusted for storage since 1952.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 53,300 ft^3/s, June 23, 1972, gage height, 18.84 ft; minimum, 41 ft^3/s, Aug. 30, 1939, gage height, 1.22 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1935, 19 ft, Mar. 17, 1936, from floodmarks, discharge, about 56,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 10,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 30	0700	*9,040	*8.46				

Minimum daily discharge, 219 ft^3/s, July 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1490	598	4630	1390	1260	838	1580	1270	835	250	390	354
2	1250	579	3780	1330	2860	806	1530	1010	729	250	294	302
3	1380	592	3040	999	4350	875	1430	954	679	252	259	280
4	1370	579	2690	1040	3990	1040	5180	912	877	251	250	340
5	1200	576	2290	918	3820	911	4250	906	732	246	238	827
6	1070	596	1940	e840	2820	872	3190	1060	612	242	245	599
7	967	581	1750	e740	2190	948	2900	1050	540	235	361	421
8	1150	579	1600	e800	2060	944	3000	908	493	229	328	350
9	1080	645	1580	900	1810	1310	2380	854	458	225	270	310
10	951	694	2330	e840	1610	2770	2030	1300	434	221	266	290
11	897	688	2080	e720	1390	2520	1770	1630	411	226	262	275
12	1130	653	1980	e660	1220	2360	1560	1370	394	224	259	265
13	1040	652	2010	e600	1100	3550	1380	1220	374	222	326	293
14	943	649	1740	e540	917	3300	1230	1370	352	219	280	410
15	879	638	1710	e500	1010	2750	1150	1240	335	223	264	392
16	844	600	2610	e470	1050	2300	1090	1900	334	231	252	303
17	812	550	2230	e450	970	1940	1030	2760	370	231	234	284
18	780	614	1900	e600	889	1710	968	2540	388	389	228	339
19	749	954	1710	e1000	859	1550	940	3440	336	309	244	428
20	726	791	2060	e1900	943	1410	844	3250	313	283	240	352
21	708	770	3780	3570	1130	1180	799	2960	301	399	237	325
22	700	710	2990	1980	920	1050	778	2550	292	787	234	362
23	662	678	2630	1670	1130	1050	730	2200	284	512	247	336
24	659	757	2350	1490	1320	1140	1360	2190	282	307	359	356
25	630	818	2200	1390	1120	1310	1440	2200	277	498	526	390
26	622	824	2230	1220	981	3370	1110	1760	269	315	397	323
27	605	909	1870	985	960	3440	1000	1530	268	303	389	292
28	638	840	1670	845	907	2780	976	1330	266	295	324	278
29	688	1220	1610	800	848	2330	1010	1180	262	266	309	270
30	630	7000	1380	919	---	2040	1270	1060	254	255	628	261
31	625	---	1150	1000	---	1770	---	966	---	276	498	---
TOTAL	27875	27334	69520	33106	46434	56164	49905	50870	12751	9171	9638	10607
MEAN	899	911	2243	1068	1601	1812	1663	1641	425	296	311	354
MAX	1490	7000	4630	3570	4350	3550	5180	3440	877	787	628	827
MIN	605	550	1150	450	848	806	730	854	254	219	228	261
†	-106	+15.1	-37.4	-3.2	+86.9	+179	+128	+50.4	-79.0	-102	-148	-128
MEAN‡	793	926	2206	1065	1688	1991	1791	1691	346	194	163	226
CFSM‡	.98	1.15	2.73	1.32	2.09	2.47	2.22	2.10	.43	.24	.20	.28
IN.‡	1.13	1.28	3.15	1.52	2.25	2.85	2.48	2.42	.48	.28	.23	.31

CAL YR 1987 TOTAL 512574 MEAN 1404 MAX 9370 MIN 290 ADJ +0.8 MEAN‡ 1405 CFSM‡ 1.74 IN.‡ 22.86
WTR YR 1988 TOTAL 403375 MEAN 1102 MAX 7000 MIN 219 ADJ -12.5 MEAN‡ 1090 CFSM‡ 1.35 IN.‡ 18.38

† Change in contents, equivalent in cubic feet per second, in East Branch Clarion River Lake.
‡ Adjusted for change in reservoir contents.

e Estimated

03030500 CLARION RIVER NEAR PINEY, PA

LOCATION.--Lat 41°11'33", long 79°26'25", Clarion County, Hydrologic Unit 05010005, on left bank 0.2 mi downstream from hydroelectric plant of Pennsylvania Electric Co., 2.3 mi northeast of Piney, 2.4 mi upstream from Piney Creek, and 3 mi southwest of Clarion.

DRAINAGE AREA.--951 mi².

PERIOD OF RECORD.--October 1944 to current year (monthly discharge only October 1944 to September 1947).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,002.06 ft above National Geodetic Vertical Datum of 1929 (Pennsylvania Electric Co. bench mark). Prior to Dec. 23, 1947, records from hydroelectric plant 0.2 mi upstream.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by East Branch Clarion River Lake since June 1952 and by hydroelectric plant at Piney Dam 0.2 mi upstream since 1924, combined capacity of reservoirs, 113,200 acre-ft. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--44 years, 1,776 ft³/s, 25.36 in/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 74,500 ft³/s, June 23, 1972, gage height, 28.24 ft, from flood-mark, from rating curve extended above 17,000 ft³/s on basis of slope-area measurement at gage height 20.70 ft, in gage well, 21.8 ft, from outside high-water profile; minimum not determined.

EXTREMES OUTSIDE PERIOD OF RECORD.--The flood of Mar. 18, 1936 reached a discharge of 50,000 ft³/s, as determined by Pennsylvnia Electric Co., elevation, 1,028.5 ft, at lower pool of dam.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,580 ft³/s, Apr. 4, gage height, 8.61 ft; minimum daily, 33 ft³/s, Oct. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1680	34	e5410	e1100	2920	1040	1770	1060	1120	404	435	440
2	1590	e740	e4360	e1470	3750	1070	1830	1440	563	84	154	407
3	1540	e800	e4410	121	5060	1420	1870	1440	709	84	437	425
4	1550	720	e3450	e2250	5660	1420	5640	1400	e780	84	402	210
5	1470	610	e2880	e837	5120	768	6310	1470	708	408	405	551
6	1860	e770	e1100	e731	4060	381	5210	1430	1100	871	92	606
7	1440	35	e2290	e745	1600	1250	3300	387	814	88	92	585
8	1400	356	e1530	e765	2210	1420	3410	514	726	91	429	595
9	1430	974	e2170	118	2200	1400	3140	1480	345	70	414	597
10	468	e740	e2860	e588	2160	3440	2230	1470	429	78	222	50
11	827	632	e2860	e1440	2150	3140	2060	2210	55	415	205	49
12	1450	976	e1950	e760	1820	2720	1870	1850	55	410	417	402
13	1460	950	e2250	e785	740	3900	1850	2180	811	406	88	641
14	1410	335	e2260	e1110	762	4540	1840	768	67	189	88	654
15	1060	38	e2060	e1240	1140	2890	1450	1600	547	106	415	422
16	e1470	1040	e2910	149	2180	3070	1070	2380	374	88	87	e300
17	635	698	e2610	123	1080	2920	566	3540	1180	98	602	46
18	35	710	e3150	e787	1090	1900	1600	3290	100	69	213	72
19	1020	708	e2170	e1850	1230	1430	1430	4640	79	415	101	534
20	1040	1330	e1710	e2180	746	1290	1440	4690	393	409	101	777
21	1030	e940	e4400	e2480	1070	1690	1090	3950	378	423	101	514
22	703	47	e4450	3580	1550	1450	1140	2850	595	834	420	505
23	733	e1170	e3470	1350	e1580	1460	388	2470	405	240	419	257
24	33	e790	e2680	1120	1780	1450	927	2660	440	430	124	35
25	361	e1420	e2570	2230	1760	1620	2000	2800	108	436	422	36
26	1040	37	e2600	2190	2140	3740	1470	1830	106	436	407	497
27	1090	1770	e2090	1090	360	4460	1470	1640	433	e384	68	468
28	894	350	e2140	1070	546	2930	1430	1970	233	443	66	538
29	1020	e2890	e2200	1070	1410	2050	1070	1270	92	614	731	534
30	1050	e5610	e2180	38	---	2970	1050	1290	231	129	409	257
31	34	---	e1520	719	---	2170	---	1390	---	104	444	---
TOTAL	32823	28220	84690	36086	59874	67399	61921	63359	13976	9340	9010	12004
MEAN	1059	941	2732	1164	2065	2174	2064	2044	466	301	291	400
MAX	1860	5610	5410	3580	5660	4540	6310	4690	1180	871	731	777
MIN	33	34	1100	38	360	381	388	387	55	69	66	35
†	-124	+61.2	-65.1	+50.8	-65.1	+180	+124	+52.6	-67.9	-101	-138	-166
MEAN‡	935	1002	2667	1215	2130	2354	2188	2097	398	200	153	234
CFSM‡	.98	1.05	2.80	1.28	2.24	2.48	2.30	2.20	.42	.21	.16	.25
IN.‡	1.13	1.17	3.23	1.48	2.42	2.86	2.57	2.54	.47	.24	.18	.28

CAL YR 1987 TOTAL 640238 MEAN 1754 MAX 12100 MIN 33 ADJ -2.2 MEAN‡ 1752 CFSM‡ 1.84 IN.‡ 25.07
WTR YR 1988 TOTAL 478702 MEAN 1308 MAX 6310 MIN 33 ADJ -14.3 MEAN‡ 1294 CFSM‡ 1.36 IN.‡ 18.57

† Change in contents, equivalent in cubic feet per second, in East Branch Clarion River Lake and Piney Reservoir. Records of contents in Piney Reservoir furnished by Pennsylvania Electric Co.
‡ Adjusted for change in reservoir contents.

e Estimated

03031500 ALLEGHENY RIVER AT PARKER, PA

LOCATION.--Lat 41°06'02", long 79°40'53", Armstrong County, Hydrologic Unit 05010006, on right bank 500 ft downstream from bridge on State Highway 368 at Parker, 1.1 mi downstream from Clarion River, and at mile 83.4.

DRAINAGE AREA.--7,671 mi².

PERIOD OF RECORD.--October 1932 to current year. Prior to October 1963, published as "at Parkers Landing." Gage-height records collected at same site since 1885 are contained in reports of U.S. Weather Bureau.

GAGE.--Water-stage recorder. Datum of gage is 845.14 ft above National Geodetic Vertical Datum, adjustment of 1907. Prior to Oct. 1, 1932, U.S. Weather Bureau gages at different datums. Oct. 1-28, 1932, nonrecording gage at datum 27.00 ft lower.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated since 1965 by Allegheny Reservoir, since 1949 by Chautauqua Lake, since 1941 by Tionesta Lake, since 1971 by Union City Reservoir, since 1974 by Woodcock Creek Lake, since 1952 by East Branch Clarion River Lake, and since 1924 by Piney Reservoir. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--56 years, 13,550 ft³/s, 23.99 in/yr, adjusted for storage from October 1940 to September 1975.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 175,000 ft³/s, Jan. 22, 1959; maximum gage height, 29.60 ft, Jan. 21, 1959 (backwater from ice); minimum discharge, 409 ft³/s, July 30, 1934, gage height, 0.67 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 17, 1865, reached a stage of 29.4 ft, present datum, discharge, 250,000 ft³/s, from rating curve extended above 137,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 53,900 ft³/s, Apr. 4, gage height, 11.12 ft; minimum discharge, 1,930 ft³/s, Aug. 9, gage height, 1.47 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15500	10200	28100	14200	13600	9740	24700	10700	7960	2570	3250	4350
2	16900	9860	24900	14000	29000	9210	22700	12800	6810	2700	3450	3740
3	16200	10100	23400	12400	34300	8740	22100	13400	5770	2500	3250	3710
4	14700	9920	25800	11400	32400	9690	40800	12300	6530	2660	3190	3780
5	13900	10300	23900	10200	29800	8830	44200	11700	6270	2650	2780	5790
6	12700	10400	23100	6750	28800	8170	38400	12200	6110	3200	2720	6080
7	12100	9250	21600	e5600	22800	8490	31800	11800	5570	3560	2370	4660
8	14200	8900	21300	e4800	18900	8370	27300	11000	4950	2560	2390	4130
9	17700	9840	21700	e5200	16700	9550	28500	10800	5180	2510	2360	3700
10	18700	11800	27200	e5300	13100	16800	27400	11500	4120	2490	2260	3460
11	16600	12700	29200	e5400	11100	20800	25300	11600	3580	2460	2280	3020
12	17200	12700	27500	e6200	10500	18500	21600	12600	3300	2890	2290	3130
13	16500	12500	27300	e6000	8850	18400	14900	11800	3730	2730	2430	3460
14	15200	11600	24600	e5600	8420	22500	12700	9870	3250	2490	2280	4110
15	14200	10300	24400	e5300	9670	19400	11000	9950	2970	2300	2250	3820
16	12500	10300	27200	e5300	13000	17500	9030	13300	3190	2190	2560	3500
17	11800	10000	27600	e5300	15200	17700	8570	18000	3680	2120	2200	3170
18	10300	10900	24700	e7000	20400	18300	8040	19400	2980	2280	2690	3130
19	9640	12300	19800	e9400	21100	15800	8010	23400	2370	2320	2550	3420
20	9870	12800	18500	e22000	21800	14300	7180	21600	2250	2850	2530	3640
21	9360	12600	32400	23500	24000	14500	6490	22000	2510	3820	2390	4180
22	9170	11500	31200	25000	22000	12600	6740	20600	2530	6210	2460	4310
23	7170	10800	28400	21500	21700	11300	5830	21400	2930	4790	2630	3860
24	6810	11000	28000	19100	24400	11500	5860	21400	2700	4930	3500	3910
25	6850	12400	25100	17700	19600	15200	9190	20300	2790	4490	3050	3800
26	7960	12800	24900	16200	16500	22700	9660	18800	2420	3930	3240	3960
27	8180	13600	23500	12900	13400	30100	8490	17500	2360	3600	3140	4200
28	9700	13400	22000	9690	10600	28900	7600	15100	2640	3160	2800	3820
29	10100	17300	20600	7780	10600	28200	6890	10500	2390	2980	3230	3790
30	11200	30900	18300	8060	---	28500	7320	9270	2230	2670	4900	3420
31	10700	---	15600	9000	---	26500	---	8550	---	2740	4400	---
TOTAL	383610	362970	761800	337780	542240	510790	508300	455140	116070	95350	87820	117050
MEAN	12370	12100	24570	10900	18700	16480	16940	14680	3869	3076	2833	3902
MAX	18700	30900	32400	25000	34300	30100	44200	23400	7960	6210	4900	6080
MIN	6810	8900	15600	4800	8420	8170	5830	8550	2230	2120	2200	3020

CAL YR 1987 TOTAL 5120520 MEAN 14030 MAX 66200 MIN 2480
WTR YR 1988 TOTAL 4278920 MEAN 11690 MAX 44200 MIN 2120

e Estimated

03032500 REDBANK CREEK AT ST. CHARLES, PA

LOCATION.--Lat 40°59'40", long 79°23'40", Armstrong County, Hydrologic Unit 05010006, on left bank 400 ft downstream from highway bridge on SR 1005 at St. Charles, 0.3 mi downstream from Leatherwood Creek, and 3 mi west of New Bethlehem.

DRAINAGE AREA.--528 mi².

PERIOD OF RECORD.--Annual maximums, water years 1910-18. October 1918 to current year. Monthly discharge only for some periods, published in WSP 1305. Figures of daily discharge for November 1920 to June 1921, published in WSP 523, are unreliable and should not be used.

REVISED RECORDS.--WSP 743: Drainage area. WSP 1385: 1919, 1936-39, WDR PA-72-1: 1923 (M), 1926 (M), 1928 (M), 1936, 1937 (M), 1938 (M), 1943, 1945 (P), 1952 (M), 1953 (M), 1955 (M), 1956 (P), 1958 (M), 1959 (M), 1964, 1966 (M). See also PERIOD OF RECORD.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 973.14 ft above National Geodetic Vertical Datum of 1912. Prior to July 10, 1940, nonrecording gage at site 500 ft upstream at datum 3.10 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--70 years, 869 ft³/s, 22.35 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,000 ft³/s, Mar. 18, 1936, gage height, 18.60 ft, from floodmarks, site and datum then in use; minimum observed, 19 ft³/s, Oct. 1, 1918.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 7,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 2	1800	*7,280	a*10.16	No other peak greater than base discharge.			

(a) Ice jam.

Minimum daily discharge, 30 ft³/s, Aug. 16, 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	543	215	2350	998	e620	655	e860	622	414	e50	59	103
2	436	201	1600	833	e3600	623	e840	548	390	e49	59	76
3	480	191	1200	e600	4420	684	e740	494	356	e50	55	63
4	498	187	1070	e500	5110	e1500	e1200	466	381	e50	50	121
5	408	181	964	e430	3810	e1350	e920	509	369	e49	45	372
6	356	174	833	e390	2480	e1150	e780	675	301	e48	45	320
7	364	167	726	e370	1620	e1000	e1150	637	254	e49	63	181
8	497	162	681	e460	e1200	908	1530	549	226	e48	83	135
9	524	162	811	e520	e940	973	1330	507	203	e43	71	111
10	440	171	1340	e480	e800	1610	1150	977	186	e40	57	98
11	440	184	1210	e400	e660	1510	1030	1070	174	e46	49	89
12	508	183	1100	e340	e580	1300	940	869	166	e50	42	82
13	479	181	1070	e370	e520	1840	852	759	156	e58	39	95
14	410	180	916	e370	e470	1810	776	755	147	e52	36	138
15	366	178	1020	e300	e490	1460	728	689	137	e48	32	160
16	339	173	1650	e290	e520	1230	674	836	131	46	30	117
17	315	169	1370	e300	e560	e1000	632	978	129	45	30	e74
18	295	199	1100	e430	e620	e900	609	870	e125	47	44	e90
19	273	291	974	e700	e700	e760	596	1850	e110	53	e60	125
20	258	316	1710	e1600	e920	e700	538	1960	e92	62	e52	149
21	248	271	2620	2110	1180	e640	487	1620	e82	115	43	141
22	240	232	1970	1360	922	e580	453	1290	e80	e210	39	e120
23	227	192	1540	995	1150	e590	431	1050	e72	154	41	e90
24	216	245	1300	e720	1250	684	521	1350	e68	119	e120	e70
25	208	274	1420	e600	1040	e600	647	1440	e66	98	79	e88
26	198	300	1570	e500	889	e2500	542	1090	e62	83	90	110
27	201	325	1260	e450	845	1870	481	892	e60	135	81	98
28	239	334	1090	e400	747	1430	471	752	e56	91	70	89
29	270	896	1030	e380	680	1210	508	649	e54	52	111	83
30	259	2920	832	e410	---	1070	578	552	e52	50	213	79
31	238	---	658	e500	---	966	---	480	---	64	168	---
TOTAL	10773	9854	38985	19106	39343	35103	22994	27785	5099	2154	2056	3667
MEAN	348	328	1258	616	1357	1132	766	896	170	69.5	66.3	122
MAX	543	2920	2620	2110	5110	2500	1530	1960	414	210	213	372
MIN	198	162	658	290	470	580	431	466	52	40	30	63
CFSM	.66	.62	2.38	1.17	2.57	2.14	1.45	1.70	.32	.13	.13	.23
IN.	.76	.69	2.75	1.35	2.77	2.47	1.62	1.96	.36	.15	.14	.26

CAL YR 1987 TOTAL 284317 MEAN 779 MAX 5870 MIN 89 CFSM 1.48 IN. 20.03
WTR YR 1988 TOTAL 216919 MEAN 593 MAX 5110 MIN 30 CFSM 1.12 IN. 15.28

e Estimated

03034000 MAHONING CREEK AT PUNXSUTAWNEY, PA

LOCATION.--Lat 40°56'21", long 79°00'31", Jefferson County, Hydrologic Unit 05010006, on right bank 75 ft downstream from Williams Run, 1.9 mi downstream from Sawmill Run, and 2 mi west of Punxsutawney.

DRAINAGE AREA.--158 mi².

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

REVISED RECORDS.--WDR PA-87-3: 1977-86 (P).

GAGE.--Water-stage recorder. Datum of gage is 1,206.14 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Oct. 1, 1946, at site 2.9 mi upstream at datum 13.30 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are fair. Diurnal fluctuations at low flow by mine pumpage into stream above station. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--50 years, 275 ft³/s, 23.64 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,300 ft³/s, June 23, 1972, gage height, 15.94 ft, from floodmark in gage well, from rating curve extended above 4,300 ft³/s on basis of slope-area measurement at gage height 13.01 ft; maximum gage height, 16.22 ft, July 20, 1977; minimum discharge, 2.6 ft³/s, Sept. 26, 1939.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 18, 1936, reached a stage of 15.6 ft, from floodmark at former site and datum, discharge, 12,500 ft³/s, from rating curve extended above 4,300 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 2	1430	*3,770	*7.28	Feb. 4	1200	2,630	6.04

Minimum daily discharge, 12 ft³/s, July 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	102	63	598	341	234	202	269	142	144	e25	33	32
2	90	62	442	276	e2350	192	264	130	134	e24	29	29
3	140	61	340	e230	e1330	240	249	121	149	e24	27	28
4	112	61	312	e190	e1800	458	362	118	151	e23	26	75
5	96	60	262	e160	e1200	409	321	141	114	e22	26	72
6	89	57	224	e200	e700	382	289	162	101	e22	99	45
7	103	54	201	e160	e600	402	363	138	92	e21	63	36
8	116	53	190	e145	500	360	382	125	85	e20	39	33
9	107	61	235	e150	402	460	331	127	86	e18	e29	31
10	95	68	319	e150	353	668	303	294	79	e16	e25	29
11	110	66	273	e140	299	511	274	255	73	e15	e23	28
12	119	63	274	e130	279	449	247	217	68	e17	e22	27
13	105	63	248	e135	235	516	226	202	65	e18	e20	42
14	95	66	216	e130	e220	451	211	210	62	e17	e19	43
15	89	66	267	e125	e200	394	200	181	59	e15	e18	33
16	85	62	361	e115	e190	341	188	244	60	e15	e18	e28
17	80	64	301	e100	e180	304	180	216	65	e14	e17	e25
18	76	141	259	e120	e190	278	179	283	58	e12	e21	36
19	74	121	238	e160	e210	265	169	968	e52	e20	e26	34
20	72	103	548	e530	e390	249	152	706	e48	36	33	e27
21	75	97	670	447	392	213	145	535	e45	65	28	40
22	70	85	503	319	323	200	135	416	e42	58	26	35
23	67	83	428	262	374	207	130	337	e38	38	32	33
24	64	90	360	239	360	222	133	434	e35	34	59	33
25	62	86	381	e200	292	218	124	502	e33	33	39	e30
26	61	82	364	e180	257	609	113	381	e31	32	35	e27
27	64	80	311	e170	244	520	109	311	e29	43	33	e25
28	78	75	288	e160	220	430	116	258	e28	33	29	e24
29	80	782	281	e145	209	374	140	222	e27	30	52	e24
30	74	1120	225	e160	---	331	173	189	e25	28	73	e23
31	68	---	233	e180	---	286	---	163	---	31	40	---
TOTAL	2718	3995	10152	6149	14533	11141	6477	8728	2078	819	1059	1027
MEAN	87.7	133	327	198	501	359	216	282	69.3	26.4	34.2	34.2
MAX	140	1120	670	530	2350	668	382	968	151	65	99	75
MIN	61	53	190	100	180	192	109	118	25	12	17	23
CFSM	.55	.84	2.07	1.26	3.17	2.27	1.37	1.78	.44	.17	.22	.22
IN.	.64	.94	2.39	1.45	3.42	2.62	1.52	2.05	.49	.19	.25	.24

CAL YR 1987 TOTAL 89102 MEAN 244 MAX 2170 MIN 36 CFSM 1.55 IN. 20.98
WTR YR 1988 TOTAL 68876 MEAN 188 MAX 2350 MIN 12 CFSM 1.19 IN. 16.22

e Estimated

03034500 LITTLE MAHONING CREEK AT McCORMICK, PA

LOCATION.--Lat 40°50'10", long 79°06'37", Indiana County, Hydrologic Unit 05010006, on left bank 200 ft upstream from highway bridge at McCormick, 1 mi west of Georgeville, 1.7 mi upstream from Ross Run, and 4 mi southeast of Smicksburg.

DRAINAGE AREA.--87.4 mi².

PERIOD OF RECORD.--October 1939 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,164.88 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to May 10, 1940, nonrecording gage at site 200 ft upstream at same datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--49 years, 152 ft³/s, 23.62 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,200 ft³/s, June 23, 1972, maximum gage height, 14.03 ft, Feb. 25, 1977 (backwater from ice); minimum discharge, 0.3 ft³/s, Sept. 28, 1959.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Nov. 30	2400	2,050	8.23	Feb. 2	1630	*3,190	*9.97

Minimum discharge, 2.4 ft³/s, Aug. 17, gage height, 1.28 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	70	34	395	265	e100	77	103	83	37	7.7	5.5	8.3
2	60	32	278	229	e1770	71	101	71	37	7.7	5.1	5.9
3	90	32	205	210	1160	87	91	66	40	8.1	4.0	4.5
4	72	31	197	166	1230	319	178	64	43	8.0	3.3	19
5	63	32	167	e150	745	282	140	79	37	7.8	3.4	33
6	58	29	133	e130	423	229	114	116	31	7.7	24	17
7	71	26	116	e110	264	205	192	84	29	7.8	24	9.7
8	89	23	110	e94	227	164	181	72	27	7.4	11	6.8
9	74	25	165	e80	167	183	140	71	29	6.1	6.3	5.6
10	56	36	281	e72	134	324	119	226	30	5.8	4.6	5.0
11	57	37	214	e62	106	224	104	185	25	5.7	3.9	4.6
12	58	35	194	e58	98	181	92	129	23	7.5	3.4	4.1
13	51	36	157	e70	79	209	81	112	22	7.8	3.1	6.3
14	45	41	124	e64	e70	170	73	121	21	4.9	2.9	21
15	42	42	213	e50	e76	136	69	94	19	3.6	2.8	11
16	40	37	311	e50	e74	113	65	108	17	3.1	2.6	7.0
17	38	36	216	e56	e72	102	63	95	20	2.9	2.5	6.5
18	37	93	173	e80	e80	95	64	134	19	2.6	4.1	23
19	36	70	144	e150	e76	95	66	373	16	2.8	8.3	16
20	35	56	405	e480	e250	94	57	254	13	3.9	7.5	13
21	37	51	400	401	216	78	54	222	12	24	6.2	17
22	36	41	280	242	164	74	51	150	12	32	4.7	14
23	33	41	230	181	173	81	48	112	11	14	5.2	10
24	31	43	185	142	160	131	51	108	11	8.5	20	9.7
25	32	38	193	e110	116	112	47	88	9.8	7.2	15	11
26	31	36	206	e94	100	431	44	73	9.0	6.2	9.0	9.3
27	32	37	174	e86	95	312	42	60	8.8	6.8	9.5	8.1
28	41	35	154	e80	83	228	44	53	9.0	9.1	7.7	7.1
29	43	666	155	e76	78	176	66	47	8.5	6.2	10	6.1
30	40	898	109	e80	---	136	123	43	8.0	4.6	30	5.7
31	37	---	129	e94	---	109	---	40	---	5.0	15	---
TOTAL	1535	2669	6413	4212	8386	5228	2663	3533	634.1	242.5	264.6	325.3
MEAN	49.5	89.0	207	136	289	169	88.8	114	21.1	7.82	8.54	10.8
MAX	90	898	405	480	1770	431	192	373	43	32	30	33
MIN	31	23	109	50	70	71	42	40	8.0	2.6	2.5	4.1
CFSM	.57	1.02	2.37	1.55	3.31	1.93	1.02	1.30	.24	.09	.10	.12
IN.	.65	1.14	2.73	1.79	3.57	2.23	1.13	1.50	.27	.10	.11	.14

CAL YR 1987 TOTAL 43195 MEAN 118 MAX 1190 MIN 18 CFSM 1.35 IN. 18.39
WTR YR 1988 TOTAL 36105.5 MEAN 98.6 MAX 1770 MIN 2.5 CFSM 1.13 IN. 15.37

e Estimated

03036000 MAHONING CREEK AT MAHONING CREEK DAM, PA

LOCATION.--Lat 40°55'39", long 79°17'29", Armstrong County, Hydrologic Unit 05010006, on left bank at downstream side of highway bridge at McCrea Furnace, 700 ft downstream from Camp Run, 0.9 mi downstream from Mahoning Creek Dam, 1 mi southwest of Eddyville, and 2.1 upstream from Pine Run.

DRAINAGE AREA.--344 mi².

PERIOD OF RECORD.--August 1938 to current year. Monthly discharge only for August 1938, published in WSP 1305.

REVISED RECORDS.--WSP 1305: 1941 (adjusted monthly runoff).

GAGE.--Water-stage recorder. Datum of gage is 1,003.39 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Feb. 1, 1940, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow completely regulated since 1941 by Mahoning Creek Lake 0.9 mi upstream. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--50 years, 597 ft³/s, 23.57 in/yr, adjusted for storage since June 1941.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,400 ft³/s, Mar. 8, 1942, gage height, 8.10 ft; minimum daily, 4.6 ft³/s, July 26, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,120 ft³/s, Feb. 5, gage height, 6.42 ft; minimum daily, 30 ft³/s, July 17, 18, 20, 22, Aug. 12-17, 19-22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	211	162	1980	392	388	376	709	197	330	52	52	104
2	242	162	2110	468	808	376	651	128	320	52	52	77
3	241	162	1340	520	2000	379	647	83	275	52	53	43
4	240	162	987	579	3390	397	579	e55	229	52	40	37
5	239	161	882	581	3960	744	613	e40	229	52	31	76
6	239	161	863	364	3980	1060	659	e180	229	41	32	138
7	241	162	673	277	3160	1100	669	332	227	31	31	128
8	239	160	447	272	2010	1080	752	340	219	31	100	106
9	239	161	387	341	1670	884	798	e250	143	31	110	78
10	239	160	663	395	1480	1060	793	e297	92	31	79	56
11	242	159	720	e380	1070	1310	784	e720	167	31	51	56
12	240	157	638	275	809	1080	652	768	219	44	30	45
13	239	156	636	215	613	842	528	508	142	54	30	36
14	239	156	629	e250	373	936	448	451	88	54	30	35
15	220	156	557	e270	279	929	403	451	87	54	30	35
16	181	182	719	263	527	777	403	545	87	43	30	36
17	162	200	859	259	634	601	347	594	101	30	30	36
18	162	200	726	264	501	569	292	609	110	30	31	36
19	162	200	633	404	502	549	292	630	110	31	30	47
20	162	248	654	727	514	501	292	811	81	30	30	71
21	161	278	1160	1310	644	568	292	1310	59	32	30	82
22	121	277	1570	1560	780	474	255	1540	59	30	30	67
23	85	275	1200	1100	898	376	233	1350	59	42	32	57
24	82	273	779	497	975	378	232	1100	58	52	31	57
25	83	271	647	414	893	385	232	1160	57	52	56	57
26	98	269	839	510	707	526	208	1200	57	52	78	57
27	111	266	960	e430	546	870	191	840	57	52	77	57
28	111	264	619	e370	494	1010	192	556	67	52	52	43
29	138	282	533	e310	424	1010	193	462	48	52	62	33
30	162	753	554	267	---	992	194	385	52	53	78	32
31	162	---	445	336	---	861	---	331	---	53	93	---
TOTAL	5693	6635	26409	14600	35029	23000	13533	18223	4058	1348	1521	1818
MEAN	184	221	852	471	1208	742	451	588	135	43.5	49.1	60.6
MAX	242	753	2110	1560	3980	1310	798	1540	330	54	110	138
MIN	82	156	387	215	279	376	191	40	48	30	30	32
†	-3.6	-42.4	-114	+9.8	-8.9	+20.8	+6.7	+49.6	0	+1.6	0	-1.7
MEAN‡	180	179	738	482	1199	763	458	638	135	45.1	49.1	58.9
CFSM‡	.52	.52	2.14	1.40	3.48	2.21	1.33	1.85	.39	.13	.14	.17
IN.‡	.60	.58	2.47	1.61	3.75	2.55	1.48	2.13	.44	.15	.16	.19

CAL YR 1987 TOTAL 189594 MEAN 519 MAX 3110 MIN 39 ADJ -1.8 MEAN‡ 517 CFSM‡ 1.50 IN.‡ 20.19
WTR YR 1988 TOTAL 151867 MEAN 415 MAX 3980 MIN 30 ADJ +0.1 MEAN‡ 415 CFSM‡ 1.21 IN.‡ 16.11

† Change in contents, equivalent in cubic feet per second, in Mahoning Creek Lake.
‡ Adjusted for change in reservoir contents.

e Estimated

03036500 ALLEGHENY RIVER AT KITTANNING, PA

LOCATION.--Lat 40°49'13", long 79°31'54", Armstrong County, Hydrologic Unit 05010006, on right bank 600 ft upstream from dam at lock 7 at Kittanning, 5.7 mi upstream from Crooked Creek, 9.7 mi downstream from Mahoning Creek, and at mile 45.8.

DRAINAGE AREA.--8,973 mi^2.

PERIOD OF RECORD.--August 1904 to September 1928, October 1934 to current year. Monthly discharge only for some periods, published in WSP 1305.

REVISED RECORDS.--WSP 873: Drainage area. WSP 1305: 1906 (M), 1914, 1925. WSP 1435: 1936-37, 1939.

GAGE.--Water-stage recorder and concrete dam control. Datum of gage is 771.32 ft above National Geodetic Vertical Datum, adjustment of 1912. Prior to Sept. 30, 1928, nonrecording gage at site 4,000 ft downstream at different datum. Oct. 1, 1934, to Apr. 19, 1939, nonrecording gage at present site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated since 1965 by Allegheny Reservoir, since 1949 by Chautauqua Lake, since 1941 by Tionesta Lake, since 1971 by Union City Reservoir, since 1974 by Woodcock Creek Lake, since 1952 by East Branch Clarion River Lake, since 1924 by Piney Reservoir, and since 1941 by Mahoning Creek Lake. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--78 years (1904-28, 1934-88), 15,790 ft^3/s, 23.90 in/yr, adjusted for storage 1940-75.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 269,000 ft^3/s, Mar. 26, 1913, gage height, 30.7 ft, from flood-mark, site and datum then in use; minimum observed, 570 ft^3/s, Sept. 15-17, 1913.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 55,800 ft^3/s, Apr. 5, gage height, 17.02 ft; minimum daily, 2,400 ft^3/s, July 17, 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16400	11000	33000	16400	13200	11700	27300	10900	e9000	e2700	e3700	e4800
2	17700	10500	30000	15600	33600	10700	25100	13700	e7600	e2900	e4500	e4200
3	17500	10700	26200	14300	48600	10400	24200	14800	e6600	e2800	e3500	e3800
4	16500	10900	27800	12000	44300	11600	38400	13900	e7600	e2900	e3700	e3900
5	15100	10700	26400	11500	40600	12000	49400	13300	e7200	e2800	e3400	e5000
6	13900	10800	25700	6770	36100	11100	40700	14000	e6800	e3300	e3300	e5800
7	13300	10500	23000	5520	29600	10700	36400	14000	e6200	e3700	e3100	e4500
8	14400	9610	23200	4680	24000	11200	31000	12700	e5800	e3200	e2900	e3900
9	17700	10400	22500	5420	20700	11600	30900	12000	e6000	e2800	e3100	e3500
10	19800	11900	28000	5460	17200	16900	30500	13400	e4600	e2700	e2900	e3100
11	17800	13200	31400	5560	14800	24400	28600	13900	e4100	e2600	e2700	e3000
12	18000	13800	30200	6640	13400	22200	25000	15100	e4000	e3000	e2700	e3200
13	17800	13300	28600	6420	11000	21200	18600	13800	e4000	e3100	e2900	e3600
14	16500	12400	26700	6340	8620	25900	15000	13100	e4400	e2900	e2800	e4000
15	15300	11300	26100	5800	10100	23100	13200	10900	e3500	e2600	e2600	e3700
16	13900	10600	29000	5910	13500	20700	11800	14000	e3600	e2500	e3000	e3500
17	13000	11200	30400	5900	17200	19500	10500	19800	e3800	e2400	e2600	e3200
18	11400	11300	27800	7660	22200	21000	9460	20900	e4100	e2400	e3000	e3200
19	10100	13000	23700	10200	23400	18500	9880	26100	e2600	e2800	e2800	e3700
20	10700	13400	20800	18400	24300	16800	9150	26100	e2500	e3300	e3000	e4200
21	10300	13900	33100	25400	26300	16200	8310	25400	e2700	e3800	e2900	e4700
22	10000	12800	36000	28300	23800	15100	7950	23900	e2700	e6400	e2800	e5000
23	8430	11300	31700	25700	24900	13100	7750	24700	e3000	e6000	e2900	e4800
24	7770	12000	30500	21900	27000	12700	7320	24900	e2800	e5600	e3600	e4300
25	7560	12700	28200	19600	23500	15800	9180	24300	e2900	e5200	e3200	e4300
26	8170	14200	27400	18000	19200	23300	11300	22400	e2600	e4800	e3300	e4200
27	9050	13800	26600	15200	17000	32900	10200	20600	e2500	e4300	e3100	e4500
28	9940	15400	24200	10500	13400	31900	9380	18600	e2800	e4000	e2900	e4400
29	10800	16500	22700	8660	12000	31800	8690	13700	e2700	e3700	e3300	e4200
30	11400	34300	21000	8060	---	30800	8460	11200	e2500	e3400	e4500	e4100
31	12100	---	18400	9070	---	29800	---	10900	---	e3100	e5000	---
TOTAL	412320	387410	840300	366870	653520	584600	573630	527000	131200	107700	99700	122300
MEAN	13300	12910	27110	11830	22540	18860	19120	17000	4373	3474	3216	4077
MAX	19800	34300	36000	28300	48600	32900	49400	26100	9000	6400	5000	5800
MIN	7560	9610	18400	4680	8620	10400	7320	10900	2500	2400	2600	3000

CAL YR 1987 TOTAL 5837700 MEAN 15990 MAX 71300 MIN 2790
WTR YR 1988 TOTAL 4806550 MEAN 13130 MAX 49400 MIN 2400

e Estimated

03037400 SOUTH BRANCH PLUM CREEK NEAR HOME, PA

LOCATION.--Lat 40°45'35", long 79°08'20", Indiana County, Hydrologic Unit 05010006, on right bank at downstream side of bridge abutment on State Highway 85, 0.9 mi downstream of Leisure Run, 2.3 mi northwest of Home, and 3.1 mi southeast of Plumville.

DRAINAGE AREA.--9.38 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1986 to September 1988 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 1,116.11 ft above National Geodetic Vertical Datum of 1929.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 714 ft^3/s, Nov. 26, 1986, gage height, 7.27 ft; no flow on many days in June, July, and August, 1988.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft^3/s and maximum (*).

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 29	1245	283	5.18	Feb. 2	0845	*569	*6.71
Jan. 20	0145	458	6.19	Feb. 4	0800	297	5.28

No flow on many days in June, July, and August.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.1	1.6	34	31	e11	6.2	9.5	3.3	.81	.0	.0	.07
2	7.3	1.6	25	e25	343	5.7	8.2	3.0	.92	.0	.0	.01
3	9.6	1.5	20	e19	132	9.3	7.8	2.7	.93	.0	.0	.01
4	7.5	1.5	23	e14	e90	34	14	2.6	.78	.0	.0	2.6
5	6.4	1.5	20	e11	e60	34	10	7.5	.54	.0	.0	.75
6	6.2	1.3	17	e8.0	e40	26	11	7.8	.39	.0	.15	.31
7	12	1.1	14	e6.6	e22	21	25	5.8	.27	.0	.17	.15
8	13	1.1	13	e7.6	e15	17	22	4.8	.17	.0	.02	.10
9	11	2.2	18	e6.6	e11	21	18	5.5	.55	.0	.0	.07
10	9.5	2.3	20	e5.6	e9.4	25	14	14	.16	.0	.0	.03
11	9.6	2.1	18	e4.9	e8.0	19	12	10	.10	.0	.0	.01
12	7.8	2.2	18	e5.2	e7.2	17	9.2	7.7	.03	.0	.0	.01
13	6.3	2.4	14	e4.5	e6.4	19	7.4	7.6	.01	.0	.0	.59
14	5.2	2.2	12	e3.7	e5.8	16	6.3	6.9	.01	.0	.0	.29
15	4.4	1.9	27	e3.5	e6.8	13	5.5	5.3	.0	.0	.0	.09
16	3.9	1.8	29	e3.7	e7.0	11	5.0	6.4	.01	.0	.0	.02
17	3.5	2.4	23	e5.0	e6.8	10	4.4	4.6	.10	.0	.0	.91
18	3.2	9.2	18	e8.0	e7.0	10	5.0	8.3	.01	.0	.01	.54
19	2.9	5.6	16	17	e9.0	11	4.0	12	.0	.0	.01	.29
20	2.9	5.2	53	127	e13	11	3.4	10	.0	.0	.01	.91
21	2.9	4.1	37	28	19	10	3.2	8.3	.0	1.8	.0	.63
22	2.3	3.4	29	19	19	9.3	2.8	6.2	.0	.39	.0	.30
23	2.1	3.2	22	15	17	10	2.8	4.9	.0	.11	.20	.35
24	1.9	3.0	17	13	15	11	2.7	6.6	.0	.10	.52	.54
25	1.8	2.8	20	11	13	12	2.2	4.1	.0	.07	.07	.41
26	1.7	2.9	21	e9.4	12	40	2.0	3.1	.0	.04	.38	.40
27	2.6	2.6	18	e8.0	9.5	30	1.8	2.5	.0	.04	.16	.41
28	2.9	2.4	17	e7.2	7.8	22	2.6	1.9	.0	.04	.03	.40
29	2.2	103	16	e6.4	6.9	17	3.9	1.6	.0	.01	1.2	.28
30	1.9	60	14	e7.6	---	13	4.7	1.3	.0	.0	.54	.25
31	1.7	---	16	e9.2	---	10	---	.98	---	.01	.17	---
TOTAL	163.3	238.1	659	450.7	929.6	520.5	230.4	177.28	5.79	2.61	3.64	11.73
MEAN	5.27	7.94	21.3	14.5	32.1	16.8	7.68	5.72	.19	.084	.12	.39
MAX	13	103	53	127	343	40	25	14	.93	1.8	1.2	2.6
MIN	1.7	1.1	12	3.5	5.8	5.7	1.8	.98	.00	.00	.00	.01
CFSM	.56	.85	2.27	1.55	3.42	1.79	.82	.61	.02	.01	.01	.04
IN.	.65	.94	2.61	1.79	3.69	2.06	.91	.70	.02	.01	.01	.05

CAL YR 1987 TOTAL 4697.85 MEAN 12.9 MAX 159 MIN .17 CFSM 1.37 IN. 18.63
WTR YR 1988 TOTAL 3392.65 MEAN 9.27 MAX 343 MIN .00 CFSM .99 IN. 13.45

e Estimated

03037400 SOUTH BRANCH PLUM CREEK NEAR HOME, PA--Continued

PERIOD OF RECORD.--October 1986 to September 1988.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY TOTAL (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)
OCT												
19...	1815	3.0	185	7.2	10.0	64	16	6.1	4.9	--	34	28
MAY												
31...	1915	1.6	165	7.4	24.0	64	16	5.6	5.8	1.8	42	21
JUN												
07...	1620	.88	161	7.6	26.0	58	17	5.8	6.5	2.3	46	24
AUG												
17...	1420	0	--	--	--	--	--	--	--	--	--	--

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, TOTAL (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	RESIDUE AT 105 DEG. C, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)
OCT												
19...	11	<0.1	--	126	1.6	100	<130	<4	<4	<500	<500	0
MAY												
31...	10	<0.1	5.6	84	0.71	400	<130	<4	<4	<500	<500	0
JUN												
07...	12	<0.1	4.6	144	0.58	300	<130	<4	<4	<500	<500	0
AUG												
17...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)
OCT												
19...	0	<50	<50	<20	<20	10	<10	290	150	<4	<4	150
MAY												
31...	0	<50	<50	<20	<20	10	10	960	310	<4	<4	330
JUN												
07...	0	<50	<50	<20	<20	10	12	890	290	<4	<4	370
AUG												
17...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	STRON-TIUM, TOTAL RECOV-ERABLE (UG/L AS SR)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT											
19...	150	--	--	<25	<25	--	--	<100	<100	20	10
MAY											
31...	310	<1.0	<1.0	<25	<25	<15	<15	<100	<100	<10	<10
JUN											
07...	350	<1.0	<1.0	30	<25	<15	<15	<100	<100	10	10
AUG											
17...	--	--	--	--	--	--	--	--	--	--	--

03038000 CROOKED CREEK AT IDAHO, PA

LOCATION.--Lat 40°39'17", long 79°20'56", Armstrong County, Hydrologic Unit 05010006, on right bank at downstream end of old bridge abutment at Idaho, 0.4 mi downstream from Keystone Generation Station, 1.5 mi downstream from Plum Creek, and 2.4 mi west of Shelocta.

DRAINAGE AREA.--191 mi^2.

PERIOD OF RECORD.--October 1937 to current year. Monthly discharge only for some periods published in WSP 1305.

REVISED RECORDS.--WSP 1385: 1938, 1945.

GAGE.--Water-stage recorder and concrete weir control. Datum of gage is 961.04 ft above National Geodetic Vertical Datum of 1929 (Baltimore and Ohio Railroad bench mark).

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated to some extent since March 1968 by Keystone Lake 7 mi upstream, usable capacity, 22,010 acre-ft. Evaporation from operation of steam-electric plant 0.4 mi upstream, which began during July 1967, can amount to as much as 30 ft^3/s. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--51 years, 293 ft^3/s, 20.83 in/yr, adjusted for storage since March 1968.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,200 ft^3/s, June 23, 1972, gage height, 15.93 ft; minimum daily, 1.0 ft^3/s, Oct. 22, 1966, result of abnormal regulation.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1936 reached a stage of 18.6 ft, from floodmark, discharge, 19,400 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 2	2000	*5,750	*10.50	No other peak greater than base discharge.			

Minimum daily discharge, 17 ft^3/s, Aug. 15, 17, Sept. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	112	34	683	478	358	150	263	127	52	20	25	19
2	85	32	488	374	4550	132	253	107	66	24	19	26
3	140	31	359	313	3710	160	224	99	79	23	23	27
4	107	31	418	313	3090	610	339	95	83	25	22	33
5	88	35	393	160	1760	646	297	149	66	19	19	42
6	78	34	287	e130	872	542	268	274	37	23	26	22
7	121	24	214	e100	542	459	461	208	34	21	23	21
8	161	21	234	e85	453	374	443	178	31	20	24	25
9	126	24	241	e78	368	374	379	162	36	19	22	25
10	128	58	308	e71	e300	484	330	335	36	22	20	19
11	127	44	243	e68	245	379	287	307	26	24	22	24
12	109	41	226	e82	232	338	252	249	28	21	19	20
13	92	40	208	99	180	384	217	221	27	20	20	71
14	78	42	202	73	160	363	194	261	28	20	20	29
15	72	40	330	55	e130	e320	183	202	27	24	17	23
16	76	37	452	63	e150	e280	166	223	29	26	19	19
17	73	33	385	65	e140	241	154	206	32	20	17	26
18	67	117	255	166	e150	228	159	220	34	22	28	19
19	61	102	233	187	e170	249	165	455	32	24	22	28
20	59	93	638	1120	e320	258	132	603	29	29	22	30
21	66	93	711	593	323	216	124	585	18	106	25	23
22	55	61	492	412	254	201	109	424	24	40	22	27
23	36	57	416	332	299	237	101	312	25	26	30	22
24	35	62	343	276	304	285	108	297	21	29	42	17
25	35	60	342	249	241	281	95	227	21	25	23	21
26	32	52	368	201	213	708	81	166	20	28	18	22
27	36	59	318	160	209	622	76	133	20	38	26	21
28	62	55	304	138	180	497	83	109	20	22	21	29
29	54	1020	338	141	163	414	112	91	19	22	32	22
30	44	1290	276	156	---	344	160	75	25	27	29	23
31	38	---	232	194	---	283	---	63	---	24	34	---
TOTAL	2453	3722	10937	6932	20066	11059	6215	7163	1025	833	731	775
MEAN	79.1	124	353	224	692	357	207	231	34.2	26.9	23.6	25.8
MAX	161	1290	711	1120	4550	708	461	603	83	106	42	71
MIN	32	21	202	55	130	132	76	63	18	19	17	17

CAL YR 1987 TOTAL 93088 MEAN 255 MAX 3960 MIN 21
WTR YR 1988 TOTAL 71911 MEAN 196 MAX 4550 MIN 17

e Estimated

03039000 CROOKED CREEK AT CROOKED CREEK DAM, PA

LOCATION.--Lat 40°43'13", long 79°30'42", Armstrong County, Hydrologic Unit 05010006, on right bank 0.4 mi downstream from Crooked Creek Dam, 3.5 mi south of Ford City, and 6.7 mi upstream from mouth.

DRAINAGE AREA.--278 mi^2.

PERIOD OF RECORD.--October 1909 to current year. Published as "at Hileman's Farm" 1910-29 and as "near Ford City" 1930-39. Monthly discharge only for some periods, published in WSP 1305.

REVISED RECORDS.--WSP 743: Drainage area. WSP 1305: 1910-12, 1915-16, 1917 (M), 1918, 1922-27, 1928 (M), 1930 (M). WSP 1435: 1919-21, 1932-33, 1935.

GAGE.--Water-stage recorder. Datum of gage is 799.51 ft above National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Aug. 1, 1933, nonrecording gage at site 2 mi downstream at different datum. July 31, 1933, to Dec. 5, 1939, nonrecording gage at site 1.5 mi downstream at different datum.

REMARKS.--No estimated daily discharge. Records good. Flow completely regulated since 1940 by Crooked Creek Lake 0.4 mi upstream and since 1968 by Keystone Lake, combined capacity, 115,910 acre-ft. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--79 years, 421 ft^3/s, 20.57 in/yr, adjusted for storage from May 1940 to September 1968.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,000 ft^3/s, Mar. 18, 1936, gage height, 17.86 ft, from floodmark, site and datum then in use, from rating curve extended above 8,000 ft^3/s on basis of contracted-opening measurement of peak flow; minimum observed, 0.1 ft^3/s, Sept. 8, 11, 20, 25, 26, 1932.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,730 ft^3/s, Feb. 5, gage height, 6.04 ft; minimum daily, 13 ft^3/s, July 26, 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	173	54	1370	399	330	198	405	100	118	18	19	50
2	219	24	1410	466	618	208	367	94	112	16	19	51
3	217	24	1120	504	1130	209	282	121	108	16	27	40
4	217	24	755	501	2030	215	243	133	107	16	43	34
5	125	40	637	382	2590	510	336	136	108	15	49	42
6	48	51	631	213	2680	957	386	160	107	19	50	49
7	48	50	492	180	2600	1100	391	200	58	22	49	49
8	145	50	382	180	2500	810	586	304	15	23	51	50
9	207	50	380	180	2390	588	690	441	15	23	36	39
10	205	50	382	180	2270	607	681	472	15	23	31	33
11	138	50	382	135	1610	662	600	470	60	22	33	34
12	97	50	382	105	1120	530	436	468	97	30	34	25
13	97	50	382	105	681	372	290	271	64	37	34	18
14	98	50	337	73	427	470	246	169	34	36	35	32
15	96	50	276	135	420	565	247	312	26	32	37	43
16	96	50	477	162	353	479	246	313	18	30	38	44
17	97	50	615	162	250	407	212	246	27	31	38	45
18	97	50	543	161	189	299	180	248	32	34	24	45
19	90	117	495	216	342	259	128	253	33	36	17	45
20	62	187	498	556	435	260	78	527	35	36	18	45
21	48	201	776	990	547	348	80	933	37	36	19	46
22	33	153	940	894	592	399	102	1080	37	108	19	36
23	24	95	740	716	503	303	158	622	39	159	19	22
24	24	65	537	521	422	247	157	350	39	81	19	20
25	25	57	496	393	372	251	123	442	39	18	25	19
26	25	57	497	281	241	373	139	299	39	13	31	21
27	25	57	497	219	272	605	121	127	39	13	32	22
28	67	57	432	215	303	983	75	127	39	14	33	26
29	96	87	395	134	242	1120	85	128	27	15	42	29
30	96	616	396	175	---	834	100	128	22	17	49	29
31	94	---	376	291	---	542	---	122	---	18	49	---
TOTAL	3129	2566	18028	9824	28459	15710	8170	9796	1546	1007	1019	1083
MEAN	101	85.5	582	317	981	507	272	316	51.5	32.5	32.9	36.1
MAX	219	616	1410	990	2680	1120	690	1080	118	159	51	51
MIN	24	24	276	73	189	198	75	94	15	13	17	18

CAL YR 1987 TOTAL 132078 MEAN 362 MAX 2390 MIN 13
WTR YR 1988 TOTAL 100337 MEAN 274 MAX 2680 MIN 13

03039925 NORTH FORK BENS CREEK AT NORTH FORK RESERVOIR, PA

LOCATION.--Lat 40°15'58", long 79°01'01", Somerset County, Hydrologic Unit 05010007, at abandoned concrete bridge, 1,800 feet upstream from North Fork Reservoir, 3.2 mi north on SR 4029 from Forwardstown.

DRAINAGE AREA.--3.45 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1984 to September 1985, October 1987 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 1,600 ft above National Geodetic Vertical datum of 1929, from topographic map.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 92 ft^3/s, Mar. 31, 1985, gage height, 4.26 ft; minimum daily, 0.57 ft^3/s, Sept. 18, 1985.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 67 ft^3/s, Nov. 29, gage height, 3.92 ft; minimum daily, 1.0 ft^3/s, July 15-18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	2.5	24	13	9.2	4.4	8.8	14	5.1	1.2	1.7	5.5
2	7.1	2.5	17	11	36	4.1	8.0	11	4.8	1.3	1.5	4.6
3	12	2.5	13	9.6	36	7.3	7.2	9.7	4.3	1.2	1.4	4.0
4	11	2.5	11	8.4	36	39	7.3	8.6	3.9	1.2	1.3	17
5	9.7	2.5	8.6	7.9	27	31	6.4	12	3.5	1.2	1.4	15
6	8.7	2.4	7.5	8.4	20	21	6.4	15	3.3	1.2	6.1	11
7	8.1	2.4	6.4	8.1	16	17	10	16	3.1	1.1	2.4	8.7
8	7.5	2.3	5.9	8.5	12	15	10	15	3.0	1.1	2.0	7.1
9	6.4	2.3	7.5	6.3	11	20	10	13	5.4	1.1	1.7	5.9
10	5.9	2.5	12	4.1	9.2	32	9.3	15	3.1	1.1	1.6	5.1
11	5.9	2.5	12	3.7	7.8	25	8.5	13	2.8	1.1	1.5	4.4
12	5.4	2.5	11	3.4	7.3	20	7.8	11	2.6	1.1	1.4	3.9
13	5.2	2.7	9.5	3.3	6.3	19	7.1	10	2.4	1.1	1.4	6.5
14	4.8	4.2	7.9	3.0	6.5	16	6.2	9.5	2.2	1.1	1.3	4.3
15	4.6	5.4	9.5	2.9	5.2	14	5.8	8.4	2.1	1.0	1.3	3.7
16	4.3	5.6	9.2	3.0	5.0	12	5.4	7.7	2.0	1.0	1.4	3.4
17	4.1	5.8	8.4	2.5	4.4	9.8	5.0	6.8	2.0	1.0	1.2	24
18	4.0	6.4	7.7	3.5	4.4	8.9	4.8	12	2.0	1.0	1.6	20
19	3.8	5.9	6.8	4.0	4.4	8.1	4.4	21	1.9	1.2	1.5	15
20	3.7	5.9	13	22	5.3	7.4	4.1	27	1.7	7.1	1.4	12
21	3.5	5.9	16	15	5.1	6.3	3.9	33	1.6	8.9	1.2	9.4
22	3.4	5.6	14	12	5.5	5.7	3.6	25	1.6	3.3	1.1	7.7
23	3.2	5.4	12	10	5.7	6.2	3.6	18	1.5	3.8	1.8	7.0
24	3.1	7.2	10	9.1	5.8	8.0	3.6	18	1.5	4.4	11	6.0
25	2.7	8.4	11	8.3	5.7	9.7	3.4	13	1.4	3.5	3.8	6.6
26	2.6	8.4	12	7.3	5.4	19	3.3	11	1.4	3.1	3.0	6.3
27	2.8	8.1	12	6.7	5.2	17	3.2	9.6	1.4	2.7	2.4	5.9
28	3.1	7.7	12	5.9	4.8	15	3.4	8.3	1.3	2.4	2.1	5.6
29	2.7	37	11	5.7	4.4	12	8.9	7.3	1.3	2.1	15	5.2
30	2.5	35	9.0	5.1	---	11	19	6.3	1.3	1.9	13	4.7
31	2.5	---	8.1	5.6	---	9.5	---	5.7	---	1.8	8.4	---
TOTAL	160.0	200.0	335.0	227.3	316.6	450.4	198.4	410.9	75.5	66.3	97.9	245.5
MEAN	5.16	6.67	10.8	7.33	10.9	14.5	6.61	13.3	2.52	2.14	3.16	8.18
MAX	12	37	24	22	36	39	19	33	5.4	8.9	15	24
MIN	2.5	2.3	5.9	2.5	4.4	4.1	3.2	5.7	1.3	1.0	1.1	3.4
CFSM	1.50	1.93	3.13	2.13	3.16	4.21	1.92	3.84	.73	.62	.92	2.37
IN.	1.73	2.16	3.61	2.45	3.41	4.86	2.14	4.43	.81	.71	1.06	2.65

WATER YEAR 1988 TOTAL 2783.8 MEAN 7.61 MAX 39 MIN 1.0 CFSM 2.20 IN. 30.02

03039925 NORTH FORK BENS CREEK AT NORTH FORK RESERVOIR, PA.--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1984-1985, October 1986 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	ACIDITY LAB 2ND DVT (MG/L AS H)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY FIELD GRAN PLOT (UEQ/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)
OCT												
27...	0930	2.54	45	5.9	5.0	.050	3.2	.85	1.9	.76	34	8.6
NOV												
23...	0930	4.39	48	6.1	1.5	.050	3.4	.94	1.7	.69	16	9.2
DEC												
21...	1045	16.7	46	5.6	4.0	.038	3.3	.93	1.4	.64	4	10
JAN												
22...	1130	12.1	41	5.4	1.0	.036	2.5	.77	.85	.53	-4	11
FEB												
26...	1100	5.40	49	5.4	.5	.039	2.6	.79	1.5	.51	0	9.6
MAR												
23...	1030	4.80	48	5.3	3.0	.030	3.0	.87	2.0	.59	8	9.1
APR												
20...	1015	4.50	50	5.3	7.0	.020	3.4	.98	2.5	.66	6	9.1
MAY												
31...	1215	5.70	49	5.7	13.0	.024	2.8	.78	2.0	.52	16	9.0
JUN												
30...	1130	1.20	52	5.6	12.0	.030	3.7	.96	3.4	.62	20	8.4
JUL												
26...	1100	3.08	51	5.8	16.0	.020	3.1	.77	2.1	.42	18	9.0
AUG												
31...	1000	8.40	42	5.6	13.0	.015	3.0	.85	1.2	.45	0	10
SEP												
21...	1030	9.60	48	5.7	12.5	.036	2.6	.75	1.6	.43	28	9.6

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	BROMIDE DIS-SOLVED (MG/L AS BR)	SILICA, DIS-SOLVED (MG/L AS SIO2)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)
OCT											
27...	4.5	.08	.02	3.5	<.001	.019	20	3	7	1.2	.41
NOV											
23...	3.5	.07	<.01	3.9	.012	<.001	30	5	12	1.1	.55
DEC											
21...	2.7	.08	<.01	3.5	<.002	<.001	100	6	43	2.1	.54
JAN											
22...	2.7	.06	<.01	2.9	.038	<.001	80	<2	33	1.1	.65
FEB											
26...	3.3	.06	<.01	3.1	.017	<.001	60	6	19	1.0	.51
MAR											
23...	5.0	.05	<.01	3.2	.01	<.001	50	<2	8	1.0	.60
APR											
20...	5.4	.09	<.01	3.6	.005	<.001	40	<2	15	.6	.56
MAY											
31...	5.6	.06	<.01	3.2	.01	<.001	30	<2	17	1.9	.56
JUN											
30...	7.5	.08	<.01	3.9	.038	<.001	40	13	5	2.9	.53
JUL											
26...	5.5	.07	<.01	3.3	.017	.002	20	<2	7	1.4	.58
AUG											
31...	2.8	.08	<.01	3.8	.017	<.001	60	<2	37	--	.55
SEP											
21...	4.1	.06	<.01	3.2	.007	<.001	40	4	24	1.6	.46

03040000 STONYCREEK RIVER AT FERNDALE, PA

LOCATION.--Lat 40°17'08", long 78°55'15", Cambria County, Hydrologic Unit 05010007, on right bank 50 ft upstream from highway bridge at Ferndale, 0.4 mi downstream from Bens Creek, 1.2 mi upstream from Johnstown city limits, and 5.2 mi upstream from confluence with Little Conemaugh River.

DRAINAGE AREA.--451 mi^2.

PERIOD OF RECORD.--October 1913 to March 1936, October 1938 to current year. Monthly discharge only for some periods, published in WSP 1305. Monthly figures adjusted for storage and diversion for October 1918 to September 1921, published in WSP 503, 523, have been found in error and should not be used. Published as "at Johnstown" 1914-36, and as "Stony Creek at Ferndale" 1938-79. Gage-height records collected in this vicinity since 1885 are contained in reports of U.S. Weather Bureau.

REVISED RECORDS.--WSP 743: Drainage area. WSP 1305: 1915, 1918, 1923-26. WSP 1435: 1920-21, 1932, 1941 (M), 1943 (M), 1945-46 (M). WDR PA-78-3: 1977 (M). See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 1,184.06 ft above National Geodetic Vertical Datum of 1929. Prior to Mar. 19, 1936, nonrecording gage at site 3.5 mi downstream at different datum. Dec. 8, 1938, to Jan. 30, 1940, nonrecording gage at site 50 ft downstream at present datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Regulation by mine pumpage and reservoirs and diversion above station; the four largest reservoirs have a combined capacity of 42,360 acre-ft. Figures of daily discharge do not include diversion from Stoney-creek River and Quemahoning Creek Reservoir to plants of Bethlehem Steel Co., and from Mill Creek, Dalton Run, and North Fork Bens Creek Reservoirs for water supply of city of Johnstown. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--50 years, 768 ft^3/s, 23.12 in/yr, adjusted for storage and diversion 1938-81.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 59,000 ft^3/s, Mar. 18, 1936, gage height, 30.26 ft, from high-water mark, site and datum then in use, from rating curve extended above 13,000 ft^3/s on the basis of slope-area and contracted-opening measurements of peak flow; minimum observed, 5 ft^3/s, Sept. 8, 1929.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,020 ft^3/s, Mar. 4, gage height, 8.55 ft; minimum, 66 ft^3/s, Aug. 15, gage height, 2.25 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	344	134	2100	1180	998	520	624	1040	511	118	102	149
2	276	131	1350	1150	3610	487	585	800	526	115	97	125
3	437	127	1000	827	4350	709	527	658	472	112	92	113
4	360	123	875	733	3220	4790	611	601	423	109	88	543
5	288	121	759	519	2380	5470	618	742	383	105	86	526
6	261	118	644	424	1310	2770	540	1600	343	101	114	319
7	265	114	565	379	1320	1990	1830	1580	302	97	90	222
8	251	105	518	e340	1180	1550	2170	1190	278	92	84	162
9	230	112	634	e310	1070	1420	1510	1010	600	92	81	141
10	214	154	1070	e300	e860	1640	1200	1270	520	94	80	124
11	211	205	1010	e280	e740	1390	1020	1100	369	90	75	112
12	207	193	845	e290	e500	1190	896	924	298	86	74	102
13	198	187	705	e300	e440	1160	787	801	256	88	72	439
14	184	267	588	e260	e410	1080	721	714	229	88	70	311
15	172	365	759	e240	e430	955	678	654	215	85	68	192
16	165	381	1100	e260	e440	847	638	621	204	79	81	146
17	158	384	814	e290	e400	774	610	568	278	74	75	1480
18	149	354	665	e360	e450	723	580	2050	218	78	110	1030
19	147	298	592	e450	e480	696	555	5060	195	93	110	566
20	154	281	1500	e4220	e840	675	498	4150	184	303	108	473
21	164	276	2020	2740	1230	604	452	3770	171	576	97	384
22	155	253	1310	1460	878	527	408	2560	163	297	86	341
23	149	251	1000	1080	951	508	393	1810	156	397	96	303
24	142	390	857	914	927	470	489	2740	144	368	367	258
25	133	533	912	834	771	809	449	1900	137	218	170	392
26	130	433	1290	730	667	998	381	1370	134	162	122	531
27	136	378	1170	606	629	1150	349	1100	132	148	100	349
28	169	341	987	551	585	998	344	924	126	202	88	267
29	166	2220	908	495	543	848	478	790	121	133	565	218
30	148	3570	723	489	---	750	1210	677	117	116	382	205
31	144	---	654	566	---	685	---	587	---	107	204	---
TOTAL	6307	12799	29924	23577	32609	39183	22151	45361	8205	4823	4034	10523
MEAN	203	427	965	761	1124	1264	738	1463	273	156	130	351
MAX	437	3570	2100	4220	4350	5470	2170	5060	600	576	565	1480
MIN	130	105	518	240	400	470	344	568	117	74	68	102

CAL YR 1987 TOTAL 221853 MEAN 608 MAX 6750 MIN 54
WTR YR 1988 TOTAL 239496 MEAN 654 MAX 5470 MIN 68

e Estimated

03041000 LITTLE CONEMAUGH RIVER AT EAST CONEMAUGH, PA

LOCATION.--Lat 40°20'37", long 78°53'07", Cambria County, Hydrologic Unit 05010007, on right bank 100 ft downstream from bridge on State Highway 271 at East Conemaugh, 0.3 mi downstream from Clapboard Run, and 2.5 mi upstream from confluence with Stonycreek River.

DRAINAGE AREA.--183 mi².

PERIOD OF RECORD.--April 1939 to current year.

REVISED RECORDS.--WSP 1305: 1939-50 (adjusted monthly runoff). WDR PA-78-3: 1977 (M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,211.29 ft above National Geodetic Vertical Datum of 1929. Prior to February 1, 1940, July 21, 1977 to December 13, 1979, and February 7, 1984 to September 30, 1984, nonrecording gage at site 100 ft upstream at datum 3.0 ft lower. February 2, 1940 to July 20, 1977, December 14, 1979 to February 6, 1984 and October 1, 1984 to current year, water-stage recorder at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by reservoirs and diversion above station; the two most effective reservoirs have a combined capacity of 5,640 acre-ft. Figures of daily discharge do not include diversion at South Fork intake to Cambria plant of Bethlehem Steel Co., from Saltlick Run Reservior to city of Johnstown, and from Wilmore Reservior, capacity 3,145 acre-ft, to Franklin plant of Bethlehem Steel Co. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--49 years, 326 ft³/s, 24.19 in/yr, adjusted for storage and diversion 1940-81.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,000 ft³/s, July 20, 1977, gage height, 18.85 ft, from high-water mark, from rating curve extended above 5,200 ft³/s on basis of slope-area measurements of peak flow and at gage height 8.86 ft; minimum, 3.4 ft³/s, Sept. 28, Oct. 8, 9, 11, 1963, gage height, 1.08 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 17, 18, 1936, reached a discharge of 28,800 ft³/s, by slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,640 ft³/s, Mar. 4, gage height, 3.83 ft; maximum gage height, 4.33 ft, Feb. 2 (backwater from ice); minimum daily, 43 ft³/s, Aug. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	150	e82	511	485	e540	218	373	262	e220	e66	e64	e80
2	128	e81	390	378	e1500	211	351	248	e200	e66	e62	e66
3	227	89	305	290	1500	308	325	245	e180	e64	e62	e60
4	168	81	302	313	1400	1660	351	238	e170	e64	e60	e320
5	144	81	263	208	902	1320	330	258	e150	e62	e70	e200
6	133	e76	234	184	637	842	311	433	e140	e62	e80	e160
7	139	e74	207	e170	485	704	568	372	e130	e62	e56	e145
8	134	e72	201	e150	406	516	570	323	184	e62	e54	e140
9	123	81	222	e140	340	602	456	304	449	e66	e52	e180
10	118	90	320	e130	e270	981	412	506	269	e70	e50	e160
11	118	99	284	e120	e230	650	379	407	e180	e74	e49	e150
12	120	96	268	e140	e210	571	355	344	e140	e72	e48	e140
13	113	93	259	e130	e190	627	333	307	e110	e68	e46	e820
14	111	118	234	e115	e180	509	310	285	e100	66	e44	515
15	110	163	290	e110	e170	425	299	265	e90	69	e43	e220
16	109	168	349	e120	e170	375	287	262	e100	70	e52	e120
17	108	170	293	e140	e160	342	282	251	e130	70	e48	1430
18	106	e160	254	e180	e170	315	284	715	e110	73	e68	e900
19	102	e140	234	e230	e180	305	271	1480	e100	86	e64	e600
20	98	e130	558	e890	e170	293	239	1080	e90	217	e62	e340
21	101	e125	679	575	e300	280	215	899	e86	332	e54	e310
22	94	e120	469	381	290	287	202	650	e82	186	e49	e280
23	91	e115	408	317	315	309	199	520	e78	e240	133	e250
24	88	e170	361	292	301	421	232	920	e76	e230	249	e220
25	87	e210	392	e260	263	436	201	584	e74	e160	156	e340
26	85	e180	513	e250	243	635	184	477	e72	e120	e80	e300
27	87	e150	433	e230	242	801	176	414	e70	e100	e58	e240
28	99	135	392	e210	226	586	176	371	e68	e140	e50	e200
29	101	750	379	e210	220	500	211	330	e68	e100	e300	e160
30	87	912	299	e200	---	448	341	297	e66	e78	e150	e140
31	e80	---	258	e240	---	403	---	e250	---	e70	e90	---
TOTAL	3559	5011	10561	7788	12210	16880	9223	14297	3982	3265	2503	9186
MEAN	115	167	341	251	421	545	307	461	133	105	80.7	306
MAX	227	912	679	890	1500	1660	570	1480	449	332	300	1430
MIN	80	72	201	110	160	211	176	238	66	62	43	60

CAL YR 1987 TOTAL 98026 MEAN 269 MAX 2210 MIN 58
WTR YR 1988 TOTAL 98465 MEAN 269 MAX 1660 MIN 43

e Estimated

03041500 CONEMAUGH RIVER AT SEWARD, PA

LOCATION.--Lat 40°25'09", long 79°01'35", Westmoreland County, Hydrologic Unit 05010007, on left bank at upstream side of bridge on State Highway 56 at Seward, 2.0 mi downstream from Findley Run, and 9 mi northwest of Johnstown.

DRAINAGE AREA.--715 mi².

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

REVISED RECORDS.--WDR PA-78-3: 1936 (M), 1977 (M).

GAGE.--Water-stage recorder. Datum of gage is 1,076.01 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by steel mills and reservoirs above station, the eight most effective reservoirs have a combined capacity of 51,850 acre-ft. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--50 years, 1,280 ft³/s, 24.31 in/yr, adjusted for storage 1938-75.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 115,000 ft³/s, July 20, 1977, gage height, 27.06 ft, from high-water mark, from slope-area measurement of peak flow; minimum not determined; minimum daily, 105 ft³/s, Dec. 28, 29, 31, 1938.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 18, 1936 reached a stage of 26.4 ft, from floodmarks, discharge, 75,000 ft³/s, by contracted-opening measurement at site 6.7 mi downstream, adjusted for inflow.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,600 ft³/s, Mar. 4, gage height, 8.20 ft; minimum, 201 ft³/s, July 10, gage height, 2.14 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	760	297	3390	2030	2170	1000	1340	1740	930	290	323	449
2	600	300	2480	2160	6790	949	1250	1380	951	274	316	377
3	1050	301	1950	e1400	7050	1300	1160	1170	859	252	304	336
4	827	297	1780	e1000	5710	6790	1280	1070	765	251	283	1520
5	670	292	1560	e840	4490	7400	1260	1290	687	252	284	1570
6	600	294	1330	e760	3160	4250	1120	2500	630	247	364	943
7	611	281	1180	e640	2500	3310	2750	2550	562	234	279	670
8	577	270	1090	e620	2250	2740	3330	2050	517	223	268	514
9	522	294	1230	e580	1900	2700	2550	1760	1380	211	263	435
10	470	360	1960	e560	1690	3390	2120	2400	1050	210	255	387
11	470	443	1940	e540	1470	2840	1860	2080	702	229	244	350
12	470	431	1690	e520	1380	2460	1630	1730	574	231	246	332
13	441	431	1480	e500	1170	2440	1460	1520	511	236	242	1520
14	398	536	1260	e480	1080	2220	1300	1350	467	250	235	1180
15	365	750	1480	e470	e940	1930	1230	1220	438	260	243	719
16	365	806	2030	e460	e820	1700	1150	1190	416	243	257	538
17	343	823	1620	e460	e740	1530	1090	1090	488	231	250	2750
18	292	812	1340	e460	e740	1420	1050	2680	435	242	353	2710
19	322	682	1180	e740	e820	1360	994	6520	388	468	328	1570
20	336	656	2180	e4600	e1500	1320	905	5440	382	967	298	1260
21	350	646	3390	4170	2220	1180	816	5100	361	1990	273	1080
22	329	567	2500	2510	1600	1050	752	3800	342	990	263	e899
23	315	552	2030	1890	1790	1090	713	2970	331	1290	331	e740
24	311	716	1710	1570	1750	1530	876	3960	331	1860	959	e620
25	300	991	1750	1450	1470	1670	811	3020	311	813	431	e860
26	301	865	2330	1320	1280	2250	715	2330	301	557	334	e1100
27	315	757	2220	1090	1210	2570	644	1930	301	467	283	e800
28	376	695	1920	1060	1120	2170	646	1600	299	620	262	e560
29	360	3360	1810	992	1040	1870	886	1370	293	426	1840	e400
30	332	5290	1450	935	---	1640	2040	1190	287	364	1300	e370
31	319	---	1260	1070	---	1450	---	1040	---	335	643	---
TOTAL	14097	23795	56520	37877	61850	71519	39728	71040	16289	15513	12554	27559
MEAN	455	793	1823	1222	2133	2307	1324	2292	543	500	405	919
MAX	1050	5290	3390	4600	7050	7400	3330	6520	1380	1990	1840	2750
MIN	292	270	1090	460	740	949	644	1040	287	210	235	332

CAL YR 1987 TOTAL 419809 MEAN 1150 MAX 9660 MIN 192
WTR YR 1988 TOTAL 448341 MEAN 1225 MAX 7400 MIN 210

e Estimated

03042000 BLACKLICK CREEK AT JOSEPHINE, PA

LOCATION.--Lat 40°28'24", long 79°11'01", Indiana County, Hydrologic Unit 05010007, on right bank on upstream side of old concrete dam at Josephine, 0.9 mi upstream from Two Lick Creek, and 5 mi northeast of Blairsville.

DRAINAGE AREA.--192 mi².

PERIOD OF RECORD.--January 1952 to current year.

REVISED RECORDS.--WSP 1385: 1952-54 (M). WDR PA-78-3: 1977 (M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 975.82 ft above National Geodetic Vertical Datum of 1912. Prior to Aug. 25, 1953, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharge, which are fair. Some regulation at low flow by mine pumpage above station. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--36 years, 368 ft³/s, 26.03 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharges, 45,700 ft³/s, July 20, 1977, gage height, 19.89 ft, from floodmark in gage well, from rating curve extended above 16,000 ft³/s on basis of contracted-opening measurement at gage height 11.35 ft in gage well, 12.67 ft from outside floodmark and slope-area measurement at gage height 10.93 ft; minimum, 19 ft³/s, Sept. 14, 1952, Nov. 4, 1953.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Nov. 29	2100	4,120	6.57	Feb. 2	1500	*6,840	*7.86
Jan. 20	--	--	ice jam				

Minimum daily discharge, 32 ft³/s, Aug. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	225	83	981	529	e600	270	372	288	147	55	e45	57
2	179	e78	621	435	4950	254	348	238	159	55	e43	50
3	312	e74	468	330	2990	345	317	216	144	59	e41	53
4	268	e70	435	350	2760	1830	360	202	136	59	e40	121
5	219	e66	380	239	1640	1410	349	232	131	51	e39	237
6	197	e64	323	174	930	864	318	304	121	48	e50	118
7	200	e60	282	e160	660	703	577	258	106	43	63	83
8	196	e58	265	e145	596	576	570	236	97	40	e42	69
9	174	e64	314	e135	473	634	460	230	214	35	e39	61
10	149	92	469	e130	422	1170	406	405	202	47	38	e52
11	142	e110	408	e120	366	760	353	439	121	50	38	e48
12	153	e105	378	e125	345	613	317	346	104	46	e34	e45
13	141	113	346	e130	312	649	284	302	94	42	e34	301
14	125	141	292	e125	e270	556	259	284	87	45	e32	258
15	117	163	311	e120	e250	473	247	251	78	58	44	138
16	112	151	454	e125	e230	413	238	248	73	45	43	94
17	106	138	377	e135	e220	382	237	234	78	36	41	399
18	98	185	312	e150	e230	361	232	376	75	38	70	452
19	94	184	278	e190	e260	346	221	769	78	47	70	234
20	89	e160	476	e1030	e700	337	201	683	76	192	61	201
21	e94	e145	781	777	650	283	188	744	71	375	e50	275
22	e100	e135	553	506	454	259	175	552	63	274	e45	186
23	e94	e130	457	413	501	305	166	446	51	121	51	151
24	e90	154	386	362	472	490	176	549	52	127	92	e120
25	84	168	444	e290	384	519	164	401	58	101	71	e150
26	80	161	618	e260	338	1080	145	319	65	79	55	230
27	81	154	511	e240	337	882	131	275	66	68	50	173
28	e130	141	442	e230	304	669	128	242	61	62	41	142
29	111	1700	416	e220	274	536	170	217	56	e56	122	117
30	93	2290	320	e210	---	468	371	195	56	e52	216	98
31	88	---	287	e240	---	406	---	174	---	e48	81	---
TOTAL	4341	7337	13385	8625	22918	18843	8480	10655	2920	2454	1781	4713
MEAN	140	245	432	278	790	608	283	344	97.3	79.2	57.5	157
MAX	312	2290	981	1030	4950	1830	577	769	214	375	216	452
MIN	80	58	265	120	220	254	128	174	51	35	32	45
CFSM	.73	1.27	2.25	1.45	4.12	3.17	1.47	1.79	.51	.41	.30	.82
IN.	.84	1.42	2.59	1.67	4.44	3.65	1.64	2.06	.57	.48	.35	.91

CAL YR 1987 TOTAL 99761 MEAN 273 MAX 3060 MIN 41 CFSM 1.42 IN. 19.30
WTR YR 1988 TOTAL 106452 MEAN 291 MAX 4950 MIN 32 CFSM 1.51 IN. 20.63

e Estimated

03042200 LITTLE YELLOW CREEK NEAR STRONGSTOWN, PA

LOCATION.--40°33'44", long 78°56'44", Indiana County, Hydrologic Unit 05010007, on right bank 100 ft downstream from concrete box culvert on U.S. Highway 422, 1.4 mi northwest of Strongstown, 6 mi upstream from mouth, and 11 mi southeast of Indiana.

DRAINAGE AREA.--7.36 mi².

PERIOD OF RECORD.--September 1960 to September 1978, October 1986 to September 1988 (discontinued). Occasional low-flow measurement, water years 1959-60, and annual maximum, water year 1960.

GAGE.--Water-stage recorder. Datum of gage is 1,586.83 ft above National Geodetic Vertical Datum of 1929. Aug. 25, 1959 to Aug. 31, 1960, low-flow partial record station, Nov. 6, 1959 to Aug. 31, 1960, crest-stage gage at site 100 ft upstream at same datum.

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

AVERAGE DISCHARGE.--20 years (1960-78, 1987-88), 12.5 ft³/s, 23.15 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,250 ft³/s, July 20, 1977, gage height, 9.31 ft; minimum, 0.1 ft³/s, Aug 17, 1965; minimum gage height, 1.10 ft, Sept. 1, 1962.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Nov. 29	1330	229	4.17	Feb. 2	0900	*337	*4.56

Minimum discharge, 0.79 ft³/s, Aug. 16, 17, gage height, 1.84 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.3	3.1	30	21	e20	8.4	12	9.9	4.0	1.3	1.1	1.0
2	8.5	3.0	22	19	e220	8.3	11	8.7	4.2	1.2	1.5	1.1
3	16	2.9	17	17	89	17	9.7	8.0	3.7	1.1	1.1	1.0
4	9.6	2.9	15	11	91	58	13	7.4	3.6	1.1	.98	5.8
5	8.1	2.8	12	e9.2	49	35	10	11	3.3	1.2	1.3	2.9
6	7.3	2.7	10	e7.6	e29	27	10	11	3.0	1.2	2.8	1.8
7	7.6	2.8	9.3	e6.8	e20	22	20	9.0	2.8	1.0	1.7	1.4
8	7.1	2.6	9.7	e6.0	e15	18	15	8.1	2.6	1.1	1.1	1.1
9	6.0	3.5	19	e5.4	e12	24	13	8.9	7.9	.95	.94	.97
10	5.3	4.5	20	e5.0	e10	32	12	18	3.5	.92	.90	.93
11	5.6	4.2	16	e4.8	e9.0	22	10	13	2.9	.98	.87	.89
12	5.3	4.1	15	e4.5	e8.6	19	9.2	11	2.7	.98	.85	.93
13	4.7	4.6	11	e4.3	e8.0	22	8.4	9.9	2.4	.89	.85	12
14	4.4	6.3	9.7	e4.0	e7.6	17	7.6	9.4	2.2	.93	.83	3.9
15	4.1	5.7	19	e4.1	e7.6	14	7.3	8.2	2.1	1.3	.82	2.1
16	4.0	5.0	19	e4.1	e7.2	13	7.1	8.0	2.1	.99	.81	1.6
17	3.6	5.2	14	e4.2	e7.0	11	6.7	6.9	2.4	.95	.81	17
18	3.0	9.0	12	e5.0	e7.2	11	7.9	13	2.0	.94	1.7	7.2
19	2.9	6.7	10	e7.0	e7.4	9.9	7.4	24	1.8	2.0	1.1	4.4
20	3.1	6.6	35	e50	e13	9.7	6.5	19	1.7	12	.96	4.7
21	3.1	6.0	27	23	e11	9.0	6.2	17	1.6	17	.87	4.3
22	2.8	5.2	21	16	e16	9.8	5.6	14	1.5	4.9	.83	3.1
23	2.7	5.2	17	13	15	13	5.4	12	1.4	2.9	1.2	3.0
24	2.6	5.7	14	11	13	23	5.4	14	1.3	2.4	1.3	2.9
25	2.6	5.2	19	e9.4	12	20	4.9	10	1.3	1.8	.91	3.1
26	2.5	5.1	22	e8.6	13	48	4.7	8.3	1.3	1.6	.85	2.8
27	3.1	4.9	17	e7.8	9.6	31	4.6	7.1	1.4	1.4	.82	2.3
28	4.6	4.6	15	e7.2	8.7	23	5.4	6.2	1.6	1.3	.82	2.2
29	3.9	89	14	e6.8	8.5	19	9.6	5.5	1.7	1.1	5.4	2.1
30	3.5	53	13	e7.4	---	15	16	4.8	1.3	1.2	2.3	1.7
31	3.2	---	13	e9.0	---	13	---	4.4	---	1.2	1.2	---
TOTAL	158.1	272.1	516.7	319.2	744.4	622.1	271.6	325.7	75.3	69.83	39.52	100.22
MEAN	5.10	9.07	16.7	10.3	25.7	20.1	9.05	10.5	2.51	2.25	1.27	3.34
MAX	16	89	35	50	220	58	20	24	7.9	17	5.4	17
MIN	2.5	2.6	9.3	4.0	7.0	8.3	4.6	4.4	1.3	.89	.81	.89
CFSM	.69	1.23	2.26	1.40	3.49	2.73	1.23	1.43	.34	.31	.17	.45
IN.	.80	1.38	2.61	1.61	3.76	3.14	1.37	1.65	.38	.35	.20	.51

CAL YR 1987 TOTAL 3743.42 MEAN 10.3 MAX 114 MIN .91 CFSM 1.39 IN. 18.92
WTR YR 1988 TOTAL 3514.77 MEAN 9.60 MAX 220 MIN .81 CFSM 1.30 IN. 17.76

e Estimated

03042200 LITTLE YELLOW CREEK NEAR STRONGSTOWN, PA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1986 to September 1988.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY TOTAL (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)
OCT 19...	1150	2.7	400	8.6	7.0	200	60	13	12	1.7	66	130
JUN 01...	1145	4.2	420	7.8	18.0	180	50	13	13	1.4	74	120
AUG 17...	1035	.81	600	7.8	18.5	340	94	25	15	1.8	110	250

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, TOTAL (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	RESIDUE AT 105 DEG. C, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)
OCT 19...	14	0.1	8.0	306	0.10	<130	<130	<4	<4	<500	<500	0
JUN 01...	10	0.1	7.1	284	0.34	160	<130	<4	<4	<500	<500	0
AUG 17...	13	0.2	6.7	520	0.18	240	<130	<4	<4	<500	<500	0

DATE	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)
OCT 19...	0	<50	<50	<20	<20	<10	<10	150	<100	<4	<4	310
JUN 01...	0	<50	<50	<20	<20	20	12	280	150	<4	<4	140
AUG 17...	0	<50	<50	<20	<20	30	29	190	<100	<4	<4	80

DATE	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	STRON-TIUM, TOTAL RECOV-ERABLE (UG/L AS SR)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT 19...	310	<1.0	<1.0	<25	<25	--	--	270	260	<10	<10
JUN 01...	130	<1.0	<1.0	40	28	<15	<15	250	250	20	<10
AUG 17...	80	<1.0	<1.0	<25	<25	<15	<15	480	480	20	20

03042260 YELLOW CREEK LAKE AT YELLOW CREEK STATE PARK, PA

LOCATION.--Lat 40°35'27", long 79°03'11", Indiana County, Hydrologic Unit 05010007, in gatehouse at right end of dam on Yellow Creek, at Yellow Creek State Park, 3 mi southwest of Penn Run.

DRAINAGE AREA.--52.5 mi².

PERIOD OF RECORD.--July 1971 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical datum of 1929 (Pennsylvania Department of Environmental Resources bench mark).

REMARKS.--Lake is formed by an earthfill dam with concrete spillway. Storage began July 11, 1971. Usable capacity, 13,800 acre-ft between elevation 1,245.5 ft, sill of 4-foot and 1.5 foot outlet gates, and 1,280.00 ft (spillway crest). No dead storage. Figures given herein represent usable contents. Lake is used for recreation. Dam built by Pennsylvania Department of Forests and Waters and now maintained by Pennsylvania Department of Environmental Resources.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 24,100 acre-ft, July 20, 1977, elevation, 1,290.29 ft; minimum (after first filling), 2,810 acre-ft, Apr. 14, 1975, elevation, 1,261.47 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 16,100 acre-ft, Feb. 2, elevation, 1,282.52 ft; minimum, 12,400 acre-ft, July 18, elevation, 1,278.36 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (equivalent in cfs)
	03042260 Yellow Creek Lake		
Sept. 30	1,279.66	13,500	-
Oct. 31	1,279.31	13,200	- 4.88
Nov. 30	1,281.07	14,800	+ 26.9
Dec. 31	1,279.98	13,800	- 16.3
CAL YR 1987	-	-	0.0
Jan. 31	1,279.82	13,600	- 3.25
Feb. 29	1,279.80	13,600	0.0
Mar. 31	1,280.12	13,900	+ 4.88
Apr. 30	1,279.72	13,500	- 6.72
May 31	1,279.52	13,400	- 1.63
June 30	1,278.79	12,700	- 11.8
July 31	1,279.14	13,000	+ 4.88
Aug. 31	1,278.87	12,800	- 3.25
Sept. 30	1,279.23	13,100	+ 5.04
WTR YR 1988	-	-	+ 0.55

03042280 YELLOW CREEK NEAR HOMER CITY, PA

LOCATION.--Lat 40°34'18", long 79°06'13", Indiana County, Hydrologic Unit 0510007, on left bank 0.3 mi upstream from Central Indiana County Water Authority dam, 0.4 mi upstream from Ferrier Run, which has been diverted, and 3.5 mi northeast of Homer City.

DRAINAGE AREA.--57.4 mi^2, excludes that of Ferrier Run.

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

REVISED RECORDS.--WDR PA-76-3: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 1,140 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharge. Records good. Flow regulated since 1971 by Yellow Creek Lake (station 03042260) 4.2 mi upstream. Several observations of water temperature were made during the year. Satellite telemeter at station.

AVERAGE DISCHARGE.--21 years, 106 ft^3/s, 25.08 in/yr, adjusted for storage beginning June 1971.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,000 ft^3/s, July 20, 1977, gage height 12.60 ft, from rating curve extended above 810 ft^3/s on basis of computation of peak flow over dam and flow over dam measurement at gage height 7.46 ft; minimum, 1.4 ft^3/s, July 19, 1969, gage height, 1.99 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,960 ft^3/s, Feb. 2, gage height, 5.74 ft; minimum daily, 8.8 ft^3/s, Sept. 10, 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	18	404	113	106	73	125	58	36	9.5	12	9.8
2	53	17	285	118	1280	66	111	64	34	9.5	11	9.5
3	73	17	213	107	1320	71	100	56	29	9.5	10	9.5
4	76	16	183	104	945	162	110	54	25	9.5	10	13
5	71	16	157	113	672	254	110	61	22	9.5	10	11
6	64	15	132	142	413	249	106	77	20	9.5	9.9	10
7	63	14	116	184	263	219	123	77	18	9.5	9.9	9.9
8	61	14	106	179	212	185	133	74	17	9.5	9.7	9.9
9	55	15	106	81	175	173	128	72	25	9.5	9.5	9.0
10	50	18	116	45	149	208	120	106	24	9.5	9.5	8.8
11	47	20	117	46	129	201	110	118	21	9.1	9.5	8.8
12	44	20	117	43	114	182	99	115	18	9.1	9.5	8.9
13	40	21	114	34	99	176	88	107	16	9.1	9.5	22
14	36	23	108	34	84	166	77	102	15	9.1	9.5	11
15	33	29	114	43	77	147	67	96	14	12	9.5	11
16	30	32	134	34	77	132	59	87	13	9.5	9.5	10
17	27	33	138	22	71	118	53	78	13	9.5	9.5	21
18	26	46	126	26	70	107	52	117	12	9.5	11	32
19	24	52	117	35	75	99	52	160	11	10	10	33
20	24	50	155	127	109	95	47	175	11	15	9.9	32
21	24	52	230	168	129	86	43	180	9.9	22	9.5	31
22	22	50	210	159	123	73	39	166	9.5	21	9.5	28
23	21	48	185	139	129	75	37	143	9.4	22	11	26
24	20	46	160	120	130	100	34	135	9.1	21	10	26
25	18	46	145	111	119	118	32	121	9.5	19	9.7	24
26	17	46	150	102	107	198	29	102	9.5	19	9.5	21
27	17	48	145	88	98	239	27	87	9.5	17	9.5	19
28	19	46	135	75	89	221	26	72	9.5	15	9.5	18
29	20	211	126	64	80	189	32	59	9.5	14	14	17
30	20	532	110	58	---	166	51	50	9.5	13	11	16
31	19	---	98	63	---	140	---	42	---	12	9.9	---
TOTAL	1170	1611	4752	2777	7444	4688	2220	3011	488.9	391.9	312.0	516.1
MEAN	37.7	53.7	153	89.6	257	151	74.0	97.1	16.3	12.6	10.1	17.2
MAX	76	532	404	184	1320	254	133	180	36	22	14	33
MIN	17	14	98	22	70	66	26	42	9.1	9.1	9.5	8.8
MEAN‡	32.8	80.6	137	86.4	257	156	67.3	95.5	4.5	17.5	6.9	22.2
CFSM‡	.57	1.40	2.39	1.50	4.48	2.72	1.17	1.66	.08	.30	.12	.39
IN‡	.66	1.56	2.76	1.73	4.83	3.14	1.30	1.91	.09	.34	.14	.44

CAL YR 1987 TOTAL 30802.2 MEAN 84.4 MAX 1010 MIN 9.4 MEAN‡ 84.4 CFSM‡ 1.47 IN.‡ 22.20
WTR YR 1988 TOTAL 29381.9 MEAN 80.3 MAX 1320 MIN 8.8 MEAN‡ 79.7 CFSM‡ 1.39 IN.‡ 19.96

‡ Adjusted for change in contents in Yellow Creek Lake.

03042500 TWO LICK CREEK AT GRACETON, PA

LOCATION.--Lat 40°31'02", long 79°10'19", Indiana County, Hydrologic Unit 05010007, on right bank 0.8 mi upstream from highway bridge on road leading west from Graceton, 1.1 mi downstream from Tearing Run, 1.5 mi upstream from Cherry Run, and 8 mi northeast of Blairsville.

DRAINAGE AREA.--171 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is 981.63 ft above National Geodetic Vertical Datum of 1929.

REVISED RECORDS.--WDR PA-78-3: 1977 (M).

REMARKS.--No estimated daily discharge. Records good. Diurnal fluctuation caused by mine pumpage and by sewage-disposal plant above station. Flow regulated since December 1968 by Two Lick Creek Reservoir 10 mi upstream, capacity, 16,240 acre-ft and since July 1971 by Yellow Creek Lake (station 03042260) 11 mi upstream. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--37 years, 282 ft^3/s, 22.40 in/yr, adjusted for storage since December 1968.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,000 ft^3/s, July 20, 1977, gage height, 18.65 ft (backwater), from highwater mark, from rating curve extended above 4,500 ft^3/s on basis of slope-area measurement of peak flow and contracted-opening measurement at gage height 12.71 ft at site 1.6 mi above gage, adjusted to gage site; minimum, 2.0 ft^3/s, Sept. 14, 15, 1952, gage height, 1.27 ft; minimum daily, 8.7 ft^3/s, Sept. 14, 1952.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,270 ft^3/s, Feb. 2, gage height, 9.95 ft; minimum daily, 36 ft^3/s, Sept. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	170	67	909	378	474	157	278	191	92	42	42	40
2	145	68	667	392	4200	149	294	195	96	43	42	39
3	249	67	555	329	2850	189	196	170	88	39	42	39
4	241	62	514	272	2670	610	236	130	97	40	47	65
5	178	56	422	243	1620	666	204	184	89	39	49	48
6	136	54	361	699	1120	632	203	288	73	44	60	42
7	151	53	389	1110	620	582	315	163	69	43	50	40
8	205	53	382	1050	519	535	340	154	66	44	47	40
9	179	62	362	682	442	539	433	212	93	45	45	39
10	122	65	349	205	340	585	378	390	64	47	46	37
11	124	67	382	171	255	553	295	328	59	50	46	37
12	119	66	346	155	239	429	257	258	56	48	46	36
13	114	67	300	117	227	440	238	236	59	47	48	226
14	102	69	272	147	212	441	208	278	52	48	48	62
15	96	69	339	143	206	391	176	198	51	78	46	47
16	90	71	436	119	209	305	168	240	48	48	39	42
17	85	115	462	87	197	236	161	210	48	44	42	118
18	76	163	423	129	199	227	179	416	46	43	75	83
19	68	133	333	177	222	219	180	548	44	63	44	74
20	69	109	522	574	365	251	150	604	43	71	45	72
21	69	126	603	541	376	275	118	557	42	186	37	69
22	66	91	577	519	360	233	111	420	42	61	43	63
23	63	88	543	434	384	217	109	313	41	54	55	63
24	61	88	464	329	345	270	109	360	41	53	55	58
25	60	131	417	319	274	357	102	332	45	49	38	55
26	59	131	435	299	239	653	99	228	45	63	39	53
27	67	86	409	263	214	643	95	199	46	62	40	50
28	75	94	358	205	196	606	99	132	43	48	46	49
29	72	1240	314	172	175	562	119	118	42	46	119	47
30	70	1460	278	206	---	494	172	108	41	42	53	47
31	68	---	269	258	---	307	---	98	---	44	42	---
TOTAL	3449	5071	13392	10724	19749	12753	6022	8258	1761	1674	1516	1780
MEAN	111	169	432	346	681	411	201	266	58.7	54.0	48.9	59.3
MAX	249	1460	909	1110	4200	666	433	604	97	186	119	226
MIN	59	53	269	87	175	149	95	98	41	39	37	36
†	-5.7	+27.7	-40.7	0	-1.7	+6.5	+16.8	-3.2	-26.1	-3.2	-21.9	+6.7
MEAN‡	105	197	391	346	679	418	218	263	32.6	50.8	27.0	66.0
CFSM‡	.61	1.15	2.29	2.02	3.97	2.44	1.27	1.54	.19	.30	.16	.38
IN.‡	.70	1.28	2.64	2.33	4.28	2.81	1.42	1.78	.21	.34	.18	.42

CAL YR 1987 TOTAL 88849 MEAN 243 MAX 2770 MIN 45 ADJ -0.1 MEAN‡ 243 CFSM‡ 1.42 IN.‡ 19.31
WTR YR 1988 TOTAL 86149 MEAN 235 MAX 4200 MIN 36 ADJ -3.9 MEAN‡ 231 CFSM‡ 1.35 IN.‡ 18.39

† Change in contents, equivalent in cubic feet per second, in Two Lick Creek Reservoir and Yellow Creek Lake. Records of contents in Two Lick Creek Reservoir furnished by Pennsylvania Electric Co.
‡ Adjusted for change in reservoir contents.

03042700 CHERRY RUN NEAR HOMER CITY, PA

LOCATION.--Lat 40°33'15", long 79°11'31", Indiana County, Hydrologic Unit 05010007, on left bank at upstream side of bridge on township road T-568, 0.2 mi west of intersection with State Highway 56, 1.1 mi upstream from Cherry Run Dam, and 1.9 mi northwest of Homer City.

DRAINAGE AREA.--10.5 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1986 to September 1988 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 1,020 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 581 ft^3/s, Feb. 2, 1988, gage height, 5.89 ft; minimum, 0.07 ft^3/s, Aug. 1, 2, 9-16, 1988, gage height, 1.34 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft^3/s and maximum (*).

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 2	0830	*581	*5.89	No other peak greater than base discharge.			

Minimum discharge, 0.07 ft^3/s, Aug. 1, 2, 9-16, gage height, 1.34 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.5	e1.1	38	25	22	e4.5	13	2.8	2.0	.20	.10	.31
2	3.0	e1.0	31	18	330	e4.0	12	2.6	2.8	.21	.08	.22
3	5.2	e.90	24	17	111	4.6	11	2.8	2.0	.19	.09	.19
4	4.1	e.88	23	14	131	e48	e13	2.8	1.8	.17	.10	1.1
5	3.2	e.86	24	11	82	e37	12	3.3	1.4	.18	.12	.80
6	2.7	e.84	21	8.8	e48	32	11	5.7	1.2	.20	.37	.30
7	3.0	e.80	17	e7.0	e34	26	14	5.6	.99	.20	.20	.20
8	3.4	e.80	15	e6.4	e24	20	e16	e4.2	.88	.20	.11	.15
9	3.0	e.96	e16	e5.8	e17	e22	15	e3.5	4.5	.21	.09	.12
10	2.6	1.7	e20	e5.2	e12	e28	14	9.3	1.4	.21	.09	.12
11	2.2	2.0	e17	e4.8	e9.8	e20	12	9.7	.98	.23	.08	.11
12	2.2	1.9	e14	e4.5	e8.0	e17	9.3	e6.6	.82	.24	.07	.16
13	2.0	e2.2	12	e4.2	e7.2	e21	8.4	e6.0	.66	.25	.08	22
14	1.7	e2.6	9.9	e4.0	e6.4	e13	7.5	e5.4	.57	.26	.08	3.0
15	1.5	e2.4	14	e3.8	e5.6	12	6.7	e4.8	.49	.47	.07	1.2
16	1.4	e2.2	20	e3.6	e5.2	12	6.1	e4.4	.43	.26	.08	.66
17	1.3	1.9	18	e3.4	e4.8	11	5.6	e4.0	.40	.22	.12	5.6
18	1.2	3.9	15	e3.5	e4.7	10	5.1	6.3	.33	.24	.78	2.9
19	1.1	4.3	13	e8.0	e4.7	10	4.8	8.2	.25	.29	.29	1.6
20	1.0	3.8	43	e62	12	10	4.4	15	.22	.84	.21	1.2
21	1.0	e3.4	38	27	e8.4	9.6	4.0	28	.19	9.8	.13	1.0
22	1.0	e3.1	26	18	12	9.0	3.7	e18	.16	1.5	.11	.71
23	.93	e2.8	21	14	11	9.0	3.3	e14	.16	.60	.47	.87
24	.88	3.3	16	12	e8.0	9.4	3.1	e10	.12	.47	1.6	.78
25	.88	3.4	16	10	e6.2	9.8	2.8	e8.0	.12	.32	.27	.56
26	e.80	e3.1	20	7.0	e6.6	32	2.6	6.4	.14	.78	.16	.56
27	.99	e2.9	16	5.5	e5.2	32	2.4	5.1	.16	.58	.13	.48
28	1.7	3.4	e13	5.4	e4.7	27	2.1	4.3	.17	.32	.10	.35
29	e1.6	71	e12	5.1	e4.4	22	2.1	3.6	.17	.21	4.1	.28
30	e1.4	65	12	4.8	---	18	2.8	3.1	.18	.15	1.4	.22
31	e1.2	---	14	6.0	---	15	---	2.2	---	.13	.49	---
TOTAL	61.68	198.44	608.9	334.8	945.9	554.9	229.8	215.7	25.69	20.13	12.17	47.75
MEAN	1.99	6.61	19.6	10.8	32.6	17.9	7.66	6.96	.86	.65	.39	1.59
MAX	5.2	71	43	62	330	48	16	28	4.5	9.8	4.1	22
MIN	.80	.80	9.9	3.4	4.4	4.0	2.1	2.2	.12	.13	.07	.11
CFSM	.19	.63	1.87	1.03	3.11	1.70	.73	.66	.08	.06	.04	.15
IN.	.22	.70	2.16	1.19	3.35	1.97	.81	.76	.09	.07	.04	.17

CAL YR 1987 TOTAL 3656.34 MEAN 10.0 MAX 186 MIN .13 CFSM .95 IN. 12.95
WTR YR 1988 TOTAL 3255.86 MEAN 8.90 MAX 330 MIN .07 CFSM .85 IN. 11.54

e Estimated

03042700 CHERRY RUN NEAR HOMER CITY, PA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORDS.--October 1986 to September 1988.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY TOTAL (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)
OCT												
19...	1330	.78	620	6.9	13.0	170	45	13	51	--	56	210
MAY												
31...	1330	2.6	500	7.0	25.0	130	42	11	36	4.1	46	140
JUN												
07...	1430	.97	685	6.5	27.5	180	54	13	59	5.3	66	230
AUG												
17...	1630	.12	2770	6.6	23.5	83	300	66	410	19	200	1800

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, TOTAL (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	RESIDUE AT 105 DEG. C, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)
OCT												
19...	20	0.1	--	404	1.8	<130	<130	<4	<4	<500	<500	0
MAY												
31...	14	<0.1	9.4	312	1.8	1000	400	<4	<4	<500	<500	0
JUN												
07...	18	0.1	8.9	636	0.93	1100	<130	<4	<4	<500	<500	0
AUG												
17...	23	0.3	18	2580	0.04	400	100	--	--	<500	<500	0

DATE	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)
OCT												
19...	0	<50	<50	<20	<20	<10	<10	8200	5500	<4	<4	550
MAY												
31...	1	<50	<50	20	20	<10	<10	8900	3200	<4	<4	510
JUN												
07...	0	<50	<50	<20	<20	<10	<10	11600	5200	<4	<4	790
AUG												
17...	0	<50	<50	<20	<20	<10	<10	100000	87000	<4	<4	2300

DATE	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	STRON-TIUM, TOTAL RECOV-ERABLE (UG/L AS SR)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT											
19...	550	--	--	<25	<25	--	--	360	360	<10	<10
MAY											
31...	450	<1.0	<1.0	60	59	<15	<15	270	270	<10	20
JUN											
07...	770	<1.0	<1.0	40	37	<15	<15	400	400	20	20
AUG											
17...	2200	<1.0	<1.0	<25	<25	<15	<15	3000	3000	10	10

03044000 CONEMAUGH RIVER AT TUNNELTON, PA

LOCATION.--Lat 40°27'16", long 79°23'28", Indiana County, Hydrologic Unit 05010007, on right bank at downstream side of highway bridge at Tunnelton, 0.9 mi downstream from Boatyard Run, 2.0 mi downstream from Conemaugh River Dam, 3.8 mi southeast of Saltsburg, and 5.5 mi upstream from confluence with Loyalhanna Creek.

DRAINAGE AREA.--1,358 mi².

PERIOD OF RECORD.--October 1939 to current year.

GAGE.--Water-stage recorder. Datum of gage is 844.64 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1952, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharge. Records good. Flow regulated since 1971 by Yellow Creek Lake (station 03042260) since 1952 by Conemaugh River Lake 2 mi upstream and by reservoirs above station, the nine most effective of which have a combined capacity of 68,090 acre-ft. Evaporation from operation of Homer City and Conemaugh generating stations, which began during 1969 and 1970 respectively, can amount to as much as 45 ft³/s. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--49 years, 2,375 ft³/s, 23.75 in/yr, adjusted for storage 1952-75.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 59,200 ft³/s, Mar. 7, 1945, gage height, 21.0 ft from graph based on gage readings; minimum, 1 ft³/s, Sept. 10, 1954, gage height, 1.20 ft; minimum daily, 1 ft³/s, Sept. 10, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 14,000 ft³/s, Dec. 1, gage height, 9.01 ft; minimum daily, 266 ft³/s, Aug. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1040	540	9590	2950	1130	1880	2400	2380	1500	430	436	739
2	1540	540	9640	3290	1500	1640	1990	2560	1200	430	464	731
3	1450	540	5140	3270	2100	1420	2010	2200	1010	430	470	728
4	1480	540	4020	1520	6040	1830	2010	1630	1010	425	463	726
5	2050	545	3450	685	7580	3270	2030	1800	1260	420	465	838
6	1480	543	2860	596	9060	6460	2030	2330	1010	420	463	1020
7	1080	540	2640	608	10300	7760	2090	3200	1010	420	486	1310
8	1110	594	2060	623	10100	7580	3430	3550	890	416	463	1230
9	1300	637	2050	622	10600	7350	4490	2300	1050	412	460	871
10	968	614	2380	627	10700	6130	4410	2030	1280	412	385	731
11	975	632	2740	764	10200	6100	4270	3610	1290	406	319	724
12	964	732	2970	1160	6850	6410	3290	3770	1090	405	337	561
13	963	808	2790	1190	3570	6190	2490	2690	963	404	337	407
14	963	808	2450	1180	2810	6130	2280	2240	951	408	341	788
15	778	911	2120	1180	2760	4340	1670	1980	778	407	338	1030
16	775	1110	2530	1180	2720	2420	1490	1970	660	406	344	932
17	613	1400	3170	1150	3060	2250	1510	1640	660	404	344	845
18	610	1540	2810	1130	2540	2570	1520	1530	660	401	404	818
19	618	1410	2260	1010	2340	2550	1520	1730	660	403	474	1020
20	620	1160	2330	1220	3010	2510	1520	2230	660	563	473	1250
21	620	880	4420	2860	4070	2170	1510	4120	660	1530	473	1250
22	625	1070	5510	7100	3510	1960	1490	6050	654	1620	463	1250
23	630	1250	4330	8100	2900	1940	1180	7280	649	1590	353	1250
24	628	1100	3370	8130	2760	1950	989	7610	640	1590	266	1250
25	630	1160	3020	6210	3080	2020	1130	7430	555	1610	420	1250
26	622	1320	3810	3610	2400	2630	1210	7120	494	1540	465	1260
27	622	1320	3930	1160	2090	3840	1210	6080	491	1160	420	1350
28	571	1310	3100	1020	1900	4460	1200	4310	417	788	420	1450
29	533	1820	3150	1100	1900	4390	1070	2450	393	711	437	1440
30	540	5020	2790	968	---	4270	1540	1710	424	599	529	1420
31	540	---	2740	1080	---	3500	---	1500	---	401	675	---
TOTAL	27938	32394	110170	67293	133580	119920	60979	103030	24969	21561	13187	30469
MEAN	901	1080	3554	2171	4606	3868	2033	3324	832	696	425	1016
MAX	2050	5020	9640	8130	10700	7760	4490	7610	1500	1620	675	1450
MIN	533	540	2050	596	1130	1420	989	1500	393	401	266	407

CAL YR 1987 TOTAL 744995 MEAN 2041 MAX 15000 MIN 345
WTR YR 1988 TOTAL 745490 MEAN 2037 MAX 10700 MIN 266

03045000 LOYALHANNA CREEK AT KINGSTON, PA

LOCATION.--Lat 40°17'33", long 79°20'27", Westmoreland County, Hydrologic Unit 05010008, on right bank 60 ft downstream from bridge on State Highway 217, at Kingston, 100 ft downstream from Miller Run, 1.9 mi upstream from Ninemile Run, and 3 mi southeast of Latrobe.

DRAINAGE AREA.--172 mi².

PERIOD OF RECORD.--October 1939 to current year. Monthly discharge only October to December 1939, published in WSP 1305.

REVISED RECORDS.--WSP 1335: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,013.16 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Oct. 1, 1969, at datum 1.00 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by Latrobe Reservoir, capacity, 3,670 acre-ft, and diversion works at Kingston. Figures of daily discharge do not include diversion from reservoir and at Kingston intake to borough of Latrobe. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--49 years, 303 ft³/s, 23.92 in/yr, adjusted for storage and diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,700 ft³/s, Oct. 15, 1954, gage height, 15.8 ft, present datum, from floodmarks, from rating curve extended above 8,700 ft³/s on basis of contracted-opening measurement of peak flow; minimum, 0.1 ft³/s, Sept. 4, 1953; minimum daily, 0.2 ft³/s, Oct. 23, 24, 1953.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1918, 15.8 ft, present datum, Oct. 15, 1954. Flood of Mar. 17 or 18, 1936 reached a stage of about 15.5 ft, present datum, from information by local residents, discharge, 21,000 ft³/s, from rating curve extended above 8,700 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Nov. 29	1630	*5,610	*8.19	Mar. 4	1730	4,480	7.52
Feb. 2	1600	4,790	7.72				

Minimum daily discharge, 9.2 ft³/s, July 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	244	61	967	569	e400	220	267	347	130	18	25	43
2	219	59	676	428	3060	204	244	300	150	19	23	33
3	783	56	503	352	2150	321	219	267	121	19	21	28
4	435	57	596	296	2270	2740	264	246	108	17	18	150
5	328	56	504	e250	1380	2040	226	642	94	16	17	170
6	273	52	409	e220	805	1110	216	974	84	15	42	84
7	253	50	356	e190	551	748	934	695	75	14	31	60
8	242	49	346	e170	456	540	769	504	69	15	23	49
9	188	57	499	e150	363	571	559	420	293	14	18	42
10	164	121	638	e135	e290	1020	446	793	134	13	14	37
11	165	139	514	e120	e250	680	371	533	93	13	13	32
12	158	127	445	e125	e215	539	316	424	78	13	14	29
13	135	147	359	e130	e200	559	269	364	68	14	13	313
14	119	257	296	e110	e180	454	237	354	61	11	13	224
15	112	313	350	e100	e240	389	215	288	55	11	12	109
16	104	280	368	e94	292	340	205	263	52	11	14	74
17	97	253	310	e92	230	306	188	221	79	9.9	13	957
18	94	352	270	e90	238	288	211	576	59	9.2	12	482
19	89	278	252	e120	634	282	211	1190	49	10	18	279
20	86	267	734	e1000	1000	272	174	2210	43	348	22	254
21	93	253	638	662	576	235	163	1910	37	656	17	212
22	84	219	478	447	421	213	152	1030	33	191	14	150
23	75	212	414	360	443	235	147	650	34	89	13	120
24	70	313	334	293	405	323	162	730	35	170	125	125
25	66	297	425	e270	329	312	140	470	32	77	47	153
26	64	274	761	e250	286	789	124	350	27	56	27	163
27	66	255	597	e220	273	611	119	287	25	46	21	120
28	91	232	527	e200	243	475	135	241	22	39	17	99
29	79	2320	502	e190	227	393	248	203	21	33	229	84
30	70	1790	362	e180	---	337	457	174	18	29	153	73
31	65	---	331	e240	---	287	---	150	---	27	62	---
TOTAL	5111	9196	14761	8053	18407	17833	8388	17806	2179	2023.1	1101	4748
MEAN	165	307	476	260	635	575	280	574	72.6	65.3	35.5	158
MAX	783	2320	967	1000	3060	2740	934	2210	293	656	229	957
MIN	64	49	252	90	180	204	119	150	18	9.2	12	28
†	+2.9	+12.6	+10.2	+9.1	+17.1	+8.1	+4.7	+12.4	-3.0	+3.0	+1.9	+4.2
MEAN‡	168	320	486	269	652	583	285	586	69.6	68.3	37.4	162
CFSM‡	.98	1.86	2.83	1.56	3.79	3.39	1.66	3.41	.40	.40	.22	.94
IN.‡	1.13	2.08	3.26	1.80	4.09	3.91	1.85	3.93	.45	.46	.25	1.05

CAL YR 1987 TOTAL 108934 MEAN 298 MAX 3590 MIN 10 ADJ +8.3 MEAN‡ 306 CFSM‡ 1.78 IN.‡ 24.22
WTR YR 1988 TOTAL 109606.1 MEAN 299 MAX 3060 MIN 9.2 ADJ +6.9 MEAN‡ 306 CFSM‡ 1.78 IN.‡ 24.26

† Diversion from and change in contents in Latrobe Reservoir and diversion from Kingston intake, equivalent in cubic feet per second, furnished by Latrobe Municipal Authority.
‡ Adjusted for diversion and change in reservoir contents.

e Estimated

03047000 LOYALHANNA CREEK AT LOYALHANNA DAM, PA

LOCATION.--Lat 40°27'53", long 79°27'05", Westmoreland County, Hydrologic Unit 05010008, on left bank at downstream side of highway bridge, 0.7 mi downstream from Loyalhanna Dam, 1.5 mi south of Saltsburg, and 4.0 mi upstream from confluence with Conemaugh River.

DRAINAGE AREA.--292 mi².

PERIOD OF RECORD.--October 1939 to current year. Prior to October 1970, published as "at Loyalhanna Creek Dam." Monthly discharge only for some periods, published in WSP 1305.

REVISED RECORDS.--WSP 1435: 1941.

GAGE.--Water-stage recorder. Datum of gage is 861.15 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark).

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow completely regulated since 1942 by Loyalhanna Lake 0.7 mi upstream and Latrobe Reservoir, combined capacity, 99,000 acre-ft. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--49 years, 486 ft³/s, 22.60 in/yr, adjusted for storage since June 1942.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,700 ft³/s, June 5, 1941, gage height, 10.30 ft; from rating curve extended above 5,200 ft³/s; no flow on Aug. 9, 1979; minimum gage height, -0.18 ft, Aug. 23, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,140 ft³/s, Feb. 6, gage height, 5.54 ft; minimum daily, 20 ft³/s, Aug. 7, 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	556	170	1770	683	212	321	287	423	194	49	60	98
2	398	169	2170	687	590	321	335	423	142	43	49	98
3	212	169	1810	460	1200	322	414	420	108	44	49	80
4	604	130	1410	381	2160	341	414	354	108	44	49	70
5	717	89	1280	362	2380	828	396	317	361	44	336	94
6	706	79	984	252	2780	1870	354	953	194	44	330	177
7	537	79	685	210	3060	2700	363	1590	192	44	20	224
8	362	79	525	212	2950	2610	405	1180	136	44	20	125
9	321	79	547	212	2820	2480	467	697	288	46	29	64
10	320	95	690	215	1860	1650	470	977	409	e45	43	72
11	252	107	692	294	630	980	409	1270	402	e45	48	72
12	209	173	688	326	328	978	517	905	215	e45	47	72
13	209	216	530	254	329	972	512	471	101	e45	47	74
14	209	215	420	210	328	796	411	500	94	45	47	100
15	209	288	422	210	329	529	410	474	72	45	38	185
16	178	392	427	209	397	430	474	337	72	46	32	231
17	160	425	428	205	439	431	471	339	87	45	32	233
18	162	423	427	208	437	431	357	341	98	45	32	237
19	162	422	424	336	435	434	552	359	98	45	32	569
20	127	363	432	610	717	435	731	634	84	46	32	784
21	107	325	799	1070	1020	434	717	1190	75	50	32	769
22	108	324	1010	1340	1000	431	540	1950	78	216	41	437
23	108	257	821	1110	982	429	425	2420	e76	332	49	158
24	109	212	703	804	801	427	417	2450	e76	260	57	114
25	110	343	694	519	597	410	248	2380	e76	212	130	201
26	110	430	703	414	427	425	142	1870	e76	146	157	221
27	110	302	886	356	428	609	172	1210	e76	102	64	221
28	110	282	997	319	427	892	191	645	72	101	27	220
29	110	337	993	320	362	985	192	255	63	101	32	154
30	144	776	877	250	---	962	330	104	57	100	249	97
31	172	---	687	208	---	620	---	159	---	89	254	---
TOTAL	7908	7750	25931	13246	30425	26483	12123	27597	4180	2608	2464	6251
MEAN	255	258	836	427	1049	854	404	890	139	84.1	79.5	208
MAX	717	776	2170	1340	3060	2700	731	2450	409	332	336	784
MIN	107	79	420	205	212	321	142	104	57	43	20	64
†	-10.2	-123	-131	+14.3	-9.4	-0.8	+20.5	-8.5	-3.7	+28.5	-15.1	-8.4
MEAN‡	245	135	705	441	1040	853	424	882	135	113	64.4	200
CFSM‡	.84	.46	2.41	1.51	3.56	2.92	1.45	3.02	.46	.39	.22	.68
IN.‡	.97	.51	2.78	1.74	3.84	3.37	1.62	3.48	.51	.45	.25	.76

CAL YR 1987 TOTAL 174665 MEAN 479 MAX 2970 MIN 46 ADJ -0.5 MEAN‡ 478 CFSM‡ 1.64 IN.‡ 21.28
WTR YR 1988 TOTAL 166966 MEAN 456 MAX 3060 MIN 20 ADJ -0.4 MEAN‡ 456 CFSM‡ 1.56 IN.‡ 20.28

† Change in contents, equivalent in cubic feet per second, in Latrobe Reservoir and Loyalhanna Lake. Records of contents in Latrobe Reservoir furnished by the Latrobe Municipal Authority.
‡ Adjusted for change in reservoir contents.

e Estimated

03048500 KISKIMINETAS RIVER AT VANDERGRIFT, PA

LOCATION.--Lat 40°36'16", long 79°33'08", Westmoreland County, Hydrologic Unit 05010008, on left bank 0.5 mi upstream from bridge on State Highway Alternate 66 at Vandergrift, and 2.2 mi upstream from Pine Run.

DRAINAGE AREA.--1,825 mi².

PERIOD OF RECORD.--August 1937 to current year. Monthly discharge only for some periods, published in WSP 1305. October 1920 to September 1932 (gage heights and discharge measurements only) in reports of Pennsylvania Department of Forest and Waters.

GAGE.--Water-stage recorder. Datum of gage is 769.40 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Oct. 1, 1920, to Sept. 30, 1930, nonrecording gage, Oct. 1, 1930, to Sept. 30, 1932, water-stage recorder, at site 0.6 mi downstream at different datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated since 1971 by Yellow Creek Lake (station 03042260), since 1952 by Conemaugh River Lake, 23 mi upstream, since 1942 by Loyalhanna Lake, 20 mi upstream, and by other reservoirs above station, the 11 most effective of which have a combined capacity of 105,700 acre-ft. Figures of daily discharge do not include diversion from Beaver Run Reservoir to plants and communities downstream, nor into the Monongahela River basin. Evaporation from operation of Homer City and Conemaugh generating stations, which began during 1969 and 1970, respectively, can amount to as much as 45 ft³/s. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--51 years, 3,099 ft³/s, 23.06 in/yr, adjusted for storage and diversion, 1938-75.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 71,900 ft³/s, Mar. 31, 1940, gage height, 25.70 ft; minimum, 56 ft³/s, Oct. 15, 16, 1952; minimum daily, 60 ft³/s, Oct. 15, 1952.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of March 18, 1936, reached a stage of 41.64 ft, from floodmark at present site, discharge, 185,000 ft³/s, by slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 14,600 ft³/s, Feb. 9, gage height, 11.66 ft; minimum daily, 306 ft³/s, Aug. 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1700	685	10400	4130	1610	2440	3360	2910	1850	446	460	816
2	2270	687	14300	4270	e2200	2350	2560	3290	1780	437	485	803
3	1840	687	8220	4380	e3500	1970	2740	3050	1210	433	483	798
4	2130	683	6070	3030	8910	2570	2820	2450	1220	430	475	812
5	2880	620	5530	910	11100	3900	2750	2370	1460	429	478	798
6	2290	594	4380	e800	11700	8090	2750	3330	1500	425	1120	1060
7	1910	589	3720	e820	14100	11200	3110	4900	1290	429	509	1410
8	1760	593	3320	e820	13900	10900	3920	5400	1240	425	459	1670
9	1700	697	2600	e840	13900	10600	5680	3980	1120	427	435	1080
10	1420	697	3450	e840	13800	9280	5560	2920	1820	421	439	761
11	1400	719	3580	e1200	12000	7500	5300	4900	1850	420	366	747
12	1280	765	4050	e1600	9770	8220	4600	5630	1710	422	310	730
13	1280	1060	3820	e1600	6550	8040	3470	3790	1090	417	349	609
14	1240	1050	3350	e1600	5040	7720	3200	3090	1080	414	338	524
15	1060	1110	3000	e1600	3500	6490	2540	2820	1010	413	333	1230
16	1030	1470	3020	e1600	3470	3070	2260	2560	714	408	319	1180
17	810	1840	3890	e1550	3460	3340	2270	2370	709	409	312	1210
18	812	2180	3910	e1500	3840	3160	2180	2110	727	408	319	1050
19	804	2090	3000	e1400	3410	3330	2290	2330	726	421	449	1220
20	779	1890	3400	e1800	3170	3300	2520	3090	726	444	457	2110
21	708	1270	4770	2990	3550	3070	2500	5120	699	1380	452	2100
22	703	1430	7680	9030	5180	2650	2380	8190	692	1820	445	1990
23	703	1610	6170	9930	5540	2650	2040	9970	683	2100	476	1520
24	703	1570	4780	9930	4250	2650	1640	10800	673	2040	363	1400
25	703	1380	4150	8150	3720	2690	1590	10500	665	1970	306	1420
26	697	1920	4590	5380	4620	3200	1530	9880	543	1910	660	1560
27	717	1870	5770	2200	3040	4560	1530	8500	528	1660	522	1530
28	726	1690	4510	1390	2590	5910	1570	6360	514	1000	420	1740
29	627	2400	4650	1530	2550	6000	1540	3510	400	841	460	1720
30	625	5580	4400	1430	---	5830	1650	2180	433	807	503	1580
31	683	---	3680	1390	---	4960	---	1760	---	566	1000	---
TOTAL	37990	41426	152160	89640	183970	161640	83850	144060	30662	24572	14502	37178
MEAN	1225	1381	4908	2892	6344	5214	2795	4647	1022	793	468	1239
MAX	2880	5580	14300	9930	14100	11200	5680	10800	1850	2100	1120	2110
MIN	625	589	2600	800	1610	1970	1530	1760	400	408	306	524

CAL YR 1987 TOTAL 1029075 MEAN 2819 MAX 19100 MIN 373
WTR YR 1988 TOTAL 1001650 MEAN 2737 MAX 14300 MIN 306

e Estimated

03049000 BUFFALO CREEK NEAR FREEPORT, PA

LOCATION.--Lat 40°42'57", long 79°41'59", Butler County, Hydrologic Unit 05010009, on right bank 0.6 mi upstream from Little Buffalo Creek and 3 mi north of Freeport.

DRAINAGE AREA.--137 mi².

PERIOD OF RECORD.--October 1940 to current year. Monthly discharge only for October 1940, published in WSP 1305.

GAGE.--Water-stage recorder. Elevation of gage is 792 ft, by barometer. Prior to July 19, 1962, nonrecording gage at same site and datum.

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

AVERAGE DISCHARGE.--48 years, 193 ft³/s, 19.13 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,000 ft³/s, Oct. 15, 1954, gage height, 13.60 ft, from flood-marks, from rating curve extended above 4,300 ft³/s on basis of slope-area measurement of peak flow; minimum observed, 1.3 ft³/s, Oct. 16-18, 1960; minimum gage height, 0.69 ft, Sept. 1, 1962.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Jan. 20	--	--	ice jam	Feb. 2	1100	*2,800	*5.68

Minimum discharge, 5.1 ft³/s, Aug. 17, gage height, 0.77 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	85	40	395	233	e130	124	164	65	70	12	28	14
2	73	38	304	222	e1600	209	152	58	83	12	16	11
3	87	38	236	319	1240	218	149	56	106	11	14	9.4
4	70	37	264	273	1450	203	456	53	117	11	16	26
5	61	38	246	180	983	239	321	101	73	10	12	42
6	57	34	202	e140	671	230	286	154	59	9.3	12	20
7	69	33	177	e110	458	233	465	111	51	8.8	28	15
8	70	33	171	e96	424	287	359	94	44	8.6	17	12
9	57	35	242	e88	273	257	300	95	42	7.9	12	11
10	50	42	315	e78	162	220	258	184	36	7.4	9.9	10
11	68	40	291	e72	e130	293	222	155	33	9.9	9.0	9.2
12	74	39	271	e68	e120	349	191	126	31	15	8.0	8.7
13	62	37	216	e86	e115	294	165	122	29	12	7.7	12
14	56	34	171	e76	e110	261	148	133	27	9.5	7.2	13
15	53	35	349	e66	e105	227	135	109	24	9.8	6.2	12
16	50	33	371	e68	e110	200	125	172	25	8.1	5.7	8.9
17	48	33	296	e76	e110	190	114	139	29	6.9	5.6	8.8
18	48	54	243	e100	e115	188	110	142	25	6.6	6.1	9.4
19	46	52	212	e160	e115	184	100	224	21	10	8.6	9.7
20	45	45	550	e450	e180	154	89	281	20	24	11	13
21	45	46	488	e340	305	145	85	228	19	37	11	19
22	43	42	377	e240	261	153	79	189	18	40	8.3	13
23	41	55	312	e170	209	164	76	159	17	26	8.8	9.8
24	39	53	262	e150	188	160	79	382	15	97	44	8.8
25	39	52	301	e130	175	168	70	319	14	35	23	10
26	38	50	291	e120	151	444	62	205	14	21	16	9.4
27	44	51	246	e115	141	350	60	161	14	17	15	8.1
28	83	49	236	e110	129	287	62	132	14	16	12	7.8
29	59	730	253	e100	117	247	78	111	13	14	28	7.7
30	48	668	191	e100	---	216	77	95	13	12	42	7.3
31	44	---	184	e115	---	180	---	82	---	33	20	---
TOTAL	1752	2566	8663	4651	10277	7074	5037	4637	1096	557.8	468.1	376.0
MEAN	56.5	85.5	279	150	354	228	168	150	36.5	18.0	15.1	12.5
MAX	87	730	550	450	1600	444	465	382	117	97	44	42
MIN	38	33	171	66	105	124	60	53	13	6.6	5.6	7.3
CFSM	.41	.62	2.04	1.10	2.59	1.67	1.23	1.09	.27	.13	.11	.09
IN.	.48	.70	2.35	1.26	2.79	1.92	1.37	1.26	.30	.15	.13	.10

CAL YR 1987 TOTAL 62549 MEAN 171 MAX 1730 MIN 15 CFSM 1.25 IN. 16.98
WTR YR 1988 TOTAL 47154.9 MEAN 129 MAX 1600 MIN 5.6 CFSM .94 IN. 12.80

e Estimated

03049500 ALLEGHENY RIVER AT NATRONA, PA

LOCATION.--Lat 40°36'55", long 79°43'07", Allegheny County, Hydrologic Unit 05010009, on right bank 520 ft upstream from dam at lock 4 at Natrona, 5.8 mi downstream from Kiskiminetas River, and at mile 24.3.

DRAINAGE AREA.--11,410 mi², approximately.

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

REVISED RECORDS.--WSP 1435: 1939.

GAGE.--Water-stage recorder and concrete dam control. Datum of gage is 737.11 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Apr. 14, 1940, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by Allegheny Reservoir, Chautauqua and Tionesta Lakes, Union City Reservoir, Woodcock Creek, East Branch Clarion River, Mahoning Creek, Crooked Creek, Yellow Creek, Conemaugh River, and Loyalhanna Lakes and by 15 smaller reservoirs, combined capacity, excluding that of Chautauqua Lake, 2,069,000 acre-ft. Slight diversion since 1952 from Beaver Run Reservoir into the Monongahela River basin. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--50 years, 19,600 ft³/s, 23.33 in/yr, adjusted for storage from 1940 to 1975.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 238,000 ft³/s, Dec. 30, 1942, gage height, 27.46 ft; minimum, 895 ft³/s, Oct. 22, 1963; minimum gage height, 8.82 ft, July 25, 26, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 18, 1936, reached a stage of 32.06 ft, discharge, 365,000 ft³/s, determined by Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 61,700 ft³/s, Feb. 4, gage height, 14.82 ft; minimum daily, 2,100 ft³/s, Aug. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18200	12100	43200	21500	14800	15300	31200	12800	11900	2440	e3500	5920
2	20200	11500	45300	20500	37500	14000	28100	16500	10800	2840	e4400	5370
3	19900	11600	35400	19700	56700	13300	27000	17800	9060	2740	3650	4520
4	19100	11700	33800	16800	55400	15000	36100	16800	8740	2710	3770	4840
5	18600	11500	32700	13700	55700	17000	53400	15800	8960	2830	3390	5790
6	16800	11700	30600	9150	50000	19800	43700	17400	8790	3050	3760	7730
7	15800	11500	27300	7040	46700	23000	41600	19000	8160	3800	3060	7460
8	15900	10400	26900	6090	40200	23300	35500	18600	7380	3390	2620	6520
9	19000	11100	25300	6610	36600	22900	36500	16800	6730	2640	2730	5350
10	21500	12400	30500	6870	33600	25100	36800	16600	6900	2570	2630	4570
11	20000	13900	34900	6540	28800	31800	34100	19000	6190	2620	2310	3860
12	19500	14800	34600	8130	24700	31300	30900	21000	5700	2850	e2400	3690
13	19700	14800	32400	8340	17800	29400	23700	18500	4870	3050	e2600	4170
14	18400	14100	30400	8160	12900	33100	19300	16900	5260	2780	e2500	4380
15	17100	13000	29100	7470	13600	31400	16800	14200	4420	2520	e2300	5440
16	15600	12200	31500	7620	17200	25500	15000	15700	4170	2290	e2600	5030
17	14600	13100	34700	7410	20900	23900	13400	21700	4080	2230	e2400	4800
18	12900	13600	32500	9260	24600	24300	12000	22800	4630	2150	e2600	4240
19	11300	15100	27900	11800	26900	23100	12400	27200	3590	2460	e2400	4330
20	11700	15600	25000	20600	28200	21400	11800	29600	3020	2810	e2450	5830
21	11300	15900	35500	28500	31300	20200	11000	30200	3100	4210	e2300	6230
22	10900	14900	44400	37100	30200	19200	10300	32200	3060	7040	e2100	6610
23	9650	13400	38900	36200	29800	17200	9990	34200	3400	8090	e2800	5950
24	8320	14000	35700	32300	30700	16300	8800	34900	3320	7410	3420	5350
25	8150	14100	33100	28400	29400	18400	10100	34500	3230	6990	3740	5360
26	8560	16400	32000	24700	23700	25600	12900	32000	3060	6300	3860	5720
27	9760	15900	32600	19100	21500	37200	11900	28600	2720	5620	3860	e5600
28	10500	17500	29100	13300	17300	38800	11000	25300	2780	4630	3250	e5400
29	11600	19000	27800	11100	15500	38700	10300	18600	2780	3910	3550	e5200
30	12200	37800	26200	9750	---	36800	9640	14000	2440	3640	4870	e5000
31	13100	---	22800	10500	---	35500	---	12400	---	3210	6160	---
TOTAL	459840	434600	1002100	474240	872200	767800	665230	671600	163240	115820	97980	160260
MEAN	14830	14490	32330	15300	30080	24770	22170	21660	5441	3736	3161	5342
MAX	21500	37800	45300	37100	56700	38800	53400	34900	11900	8090	6160	7730
MIN	8150	10400	22800	6090	12900	13300	8800	12400	2440	2150	2100	3690

CAL YR 1987 TOTAL 7019200 MEAN 19230 MAX 70100 MIN 2800
WTR YR 1988 TOTAL 5884910 MEAN 16080 MAX 56700 MIN 2100

e Estimated

03049625 ALLEGHENY RIVER AT NEW KENSINGTON, PA

LOCATION.--Lat 40°33'52", long 79°46'22", Allegheny County, Hydrologic Unit 05010009, at New Kensington highway bridge, 5.1 mi downstream from dam at lock 4 at Natrona, 5.3 mi downstream from gaging station at Natrona, and 19.0 mi from mouth.

DRAINAGE AREA.--11,500 mi².

PERIOD OF RECORD.--July 1972 to December 1973, October 1974 to current year.

REMARKS.--Composite samples taken as part of the USGS-EPA surveillance network. Records of discharge are given for 03049500 Allegheny River at Natrona, Pa.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (FTU)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)
NOV 19...	0900	15000	220	7.4	7.0	4.9	748	10.0	540	40	95
FEB 19...	0900	27000	270	7.0	2.0	4.1	740	14.2	150	20	90
JUN 09...	0930	6680	300	7.4	21.0	1.7	739	8.2	590	100	100
AUG 23...	0900	2700	280	7.6	25.5	1.8	742	6.8	1600	200	150

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)	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 DIS TOT IT FIELD 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)
NOV 19...	60	27	6.7	12	1.8	--	--	35	60	17	0.2
FEB 19...	59	25	6.6	11	1.7	38	--	31	55	16	0.2
JUN 09...	73	27	7.9	13	1.6	33	--	27	83	14	0.2
AUG 23...	110	42	11	24	2.3	45	--	37	120	23	0.3

DATE	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, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA 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)
NOV 19...	3.5	150	152	.20	0.0	.540	.080	.20	.030	.020	<.010
FEB 19...	5.4	143	144	.19	0.0	.770	.070	.20	.050	<.010	<.010
JUN 09...	3.1	158	167	.21	0.0	--	.060	.40	.010	.010	<.010
AUG 23...	4.2	262	252	.36	0.0	.550	.070	.80	.030	.010	<.010

03049625 ALLEGHENY RIVER AT NEW KENSINGTON, PA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)
NOV 19...	20	<1	43	<.5	<1	<1	4	2	25	<5
FEB 19...	<10	<1	45	<.5	<1	<1	4	<1	340	<5
JUN 09...	50	<1	49	<.5	<1	<1	<3	5	8	<5
AUG 23...	50	1	60	<.5	1	3	<3	3	7	<5

DATE	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM. DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
NOV 19...	6	280	<.1	<10	7	<1	<1	110	<6	18
FEB 19...	8	310	<.1	<10	2	<1	<1	97	<6	16
JUN 09...	12	310	<.1	<10	11	<1	<1	140	<6	15
AUG 23...	15	210	<.1	<10	15	<1	<1	190	<6	11

DATE	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DISSOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DISSOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RADIUM 226, DISSOLVED, RADON METHOD (PCI/L)
JUN 09...	<.4	<.4	2.2	<.4	1.8	<.4	.03

03049800 LITTLE PINE CREEK NEAR ETNA, PA

LOCATION.--Lat 40°31'13", long 79°56'18", Allegheny County, Hydrologic Unit 05010009, on right bank at downstream side of highway bridge on Saxonburg Boulevard, 0.7 mi upstream from mouth, and 1.5 mi northeast of Etna.

DRAINAGE AREA.--5.78 mi^2.

PERIOD OF RECORD.--October 1962 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 775.26 ft above National Geodetic Vertical Datum of 1929.

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

AVERAGE DISCHARGE.--26 years, 6.29 ft^3/s, 14.78 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,190 ft^3/s, May 30, 1986, gage height, 10.28 ft in gage well, 10.41 ft from floodmarks, from rating curve extended above 150 ft^3/s on basis of slope-area measurement of peak flow at site 0.6 mi downstream datum then in use; no flow on many days.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 150 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 2	0615	*78	*4.05				

Minimum daily discharge, 0.05 ft^3/s, Aug. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e2.3	e1.7	e6.4	e6.4	e6.0	2.7	3.8	1.9	1.4	.47	.48	.52
2	e2.0	e1.6	e4.8	e6.0	39	2.8	3.7	1.8	1.6	.47	.40	.47
3	e2.4	e1.6	e5.4	e8.0	17	3.7	3.9	1.7	1.7	.44	.33	.46
4	e2.1	e1.5	e5.0	e7.0	e10	8.1	6.2	1.9	1.4	.36	.26	.92
5	e1.9	e1.6	e4.5	e5.6	e6.6	6.8	4.4	4.8	1.3	.32	.22	.55
6	e1.7	e1.5	e4.0	e4.8	e4.6	6.0	4.5	4.4	1.2	.25	.63	.54
7	e1.9	e1.5	e3.8	e4.3	e4.0	5.6	11	3.5	1.1	.19	.54	.53
8	e2.0	e1.4	e3.3	e3.7	e3.5	5.1	8.0	3.1	1.0	.17	.33	.51
9	e1.8	e1.6	e4.5	e3.3	e3.2	5.3	6.0	3.5	1.8	.15	.23	.47
10	e1.6	e1.8	e6.4	e3.1	e3.1	5.1	5.0	4.8	1.1	.12	.17	.45
11	e1.9	e1.7	e6.0	e2.9	e2.7	4.4	4.4	3.7	.99	.10	e.12	.28
12	e2.2	e1.6	e5.6	e2.7	e2.6	4.6	3.9	3.2	.92	.11	e.10	.21
13	e2.1	e1.6	e4.5	e3.3	e7.0	5.6	3.4	3.4	.85	.08	e.08	.93
14	e1.9	e1.5	e3.5	e3.0	11	4.8	3.2	3.0	.77	.09	e.07	.53
15	e1.8	e1.5	e7.0	e2.8	6.0	4.4	2.9	2.6	.78	.11	e.06	.52
16	e1.7	e1.4	e7.4	e3.0	3.0	4.0	2.8	2.8	.91	e.10	e.05	.47
17	e1.7	e1.4	e6.0	e3.1	2.9	3.8	2.5	2.3	.99	e.08	e.08	.61
18	e1.7	e2.0	e5.0	e4.4	2.9	3.9	2.7	3.7	.78	.72	e.21	.53
19	e1.6	e1.9	e4.3	e8.0	3.4	4.0	2.3	7.9	.71	1.6	.46	.52
20	e1.5	e1.7	e12	e19	4.5	4.0	2.2	11	.68	1.3	.26	.62
21	e1.6	e1.8	e11	e11	3.9	3.8	2.1	6.5	.63	2.2	.15	.53
22	e1.5	e1.7	e9.0	e8.4	5.2	4.0	2.0	4.5	.62	1.1	.10	.47
23	e1.5	e2.0	e7.6	e7.0	4.0	4.1	2.0	3.7	.59	.83	.46	.49
24	e1.4	e1.9	e6.2	e6.0	3.5	4.1	2.0	4.8	.53	.74	.53	.51
25	e1.4	e1.9	e7.6	e5.2	3.9	5.0	1.8	3.2	.53	.63	.39	.52
26	e1.3	e1.9	e7.0	e4.8	4.4	7.8	1.8	2.7	.53	.59	.52	.47
27	e1.6	e1.9	e6.4	e4.5	3.2	6.2	1.8	2.4	.53	2.7	.45	.47
28	e2.5	e1.8	e6.0	e4.3	3.0	5.3	2.2	2.1	.53	.81	.46	.27
29	e2.2	e9.8	e6.4	e4.1	2.9	4.8	2.2	1.9	.52	.67	.61	.08
30	e1.9	e9.0	e5.0	e4.0	---	4.4	2.2	1.7	.47	.60	.57	.05
31	e1.8	---	e4.8	e4.5	---	4.0	---	1.5	---	.57	.53	---
TOTAL	56.5	65.8	186.4	168.2	177.0	148.2	106.9	110.0	27.46	18.67	9.85	14.50
MEAN	1.82	2.19	6.01	5.43	6.10	4.78	3.56	3.55	.92	.60	.32	.48
MAX	2.5	9.8	12	19	39	8.1	11	11	1.8	2.7	.63	.93
MIN	1.3	1.4	3.3	2.7	2.6	2.7	1.8	1.5	.47	.08	.05	.05
CFSM	.32	.38	1.04	.94	1.06	.83	.62	.61	.16	.10	.05	.08
IN.	.36	.42	1.20	1.08	1.14	.95	.69	.71	.18	.12	.06	.09

CAL YR 1987 TOTAL 2937.56 MEAN 8.05 MAX 184 MIN .15 CFSM 1.39 IN. 18.91
WTR YR 1988 TOTAL 1089.48 MEAN 2.98 MAX 39 MIN .05 CFSM .52 IN. 7.01

e Estimated

03070420 STONY FORK TRIBUTARY NEAR GIBBON GLADE, PA.

LOCATION.--Lat 39°45'51", long 79°35'16", Fayette County, Hydrologic Unit 05020004, on left bank 1.5 mi upstream from mouth, 1.7 mi north of Gibbon Glade, and 3.2 mi southwest of Farmington.

DRAINAGE AREA.--0.93 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1977 to current year.

GAGE.--Water-stage recorder and V-notch concrete weir. Elevation of gage is 1,750 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

AVERAGE DISCHARGE.--11 years, 1.66 ft³/s, 24.27 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 126 ft³/s, July 16, 1978, gage height, 3.61 ft; no flow at times during most years.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Jan. 20	0105	*55	*1.82	No other peaks greater than base discharge.			

Minimum daily discharge, no flow, Aug. 26, 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.22	.04	1.8	3.0	2.9	1.2	1.1	2.7	.36	.07	.02	.25
2	.57	.05	1.2	2.3	12	1.3	.87	2.0	.52	.10	.02	.27
3	1.1	.05	1.1	1.8	7.4	2.9	.78	1.7	.35	.09	.03	.03
4	.39	.06	2.5	1.5	9.4	24	1.1	1.8	.32	.06	.14	1.0
5	.28	.04	1.8	1.8	5.1	11	.83	2.3	.29	.04	.05	.43
6	.24	.04	1.4	4.1	3.0	5.1	.90	2.8	.26	.05	.08	.31
7	.26	.04	1.1	1.5	3.7	3.2	4.6	2.3	.24	.11	.05	.34
8	.22	.04	1.3	1.0	1.6	2.3	3.7	1.9	.25	.15	.05	.24
9	.16	.23	2.3	.71	1.3	2.0	2.6	1.9	.84	.09	.02	.17
10	.13	.73	2.2	.50	1.2	1.6	2.0	1.9	.24	.06	.07	.10
11	.16	.42	1.9	.43	1.0	1.3	1.8	2.0	.13	.06	.05	.13
12	.13	.37	1.7	.51	.94	1.2	1.5	1.6	.10	.05	.05	.28
13	.11	.48	1.1	.55	.75	1.3	1.2	1.4	.08	.11	.04	2.6
14	.09	.70	.91	.40	2.0	1.2	.98	1.2	.06	.07	.04	.98
15	.08	.57	2.1	.35	1.2	1.1	.84	1.0	.04	.06	.02	.33
16	.08	.42	1.8	.34	1.2	1.0	.73	.95	.05	.19	.07	.22
17	.07	.38	1.4	.55	.96	.98	.64	.75	.06	.05	.02	1.6
18	.06	.43	1.1	1.9	.96	1.0	2.4	1.8	.21	.02	.07	1.0
19	.07	.31	1.0	3.6	3.2	1.0	2.0	3.3	.47	.05	.34	.53
20	.08	.31	6.8	17	4.7	.99	1.5	2.4	.31	.43	.26	.86
21	.08	.25	3.4	5.3	2.9	.96	1.3	1.8	.17	.64	.03	.52
22	.05	.21	2.5	3.1	2.2	1.1	1.1	1.4	.10	.11	.0	.38
23	.05	.23	1.9	2.3	2.0	1.9	3.0	1.4	.10	.20	.20	.40
24	.04	.24	1.5	1.8	1.7	2.3	4.1	2.0	.09	.20	.13	.81
25	.05	.23	8.8	1.8	1.4	2.0	2.6	1.2	.18	.09	.06	3.5
26	.04	.21	11	1.4	1.6	4.1	2.0	.90	.08	.05	.0	2.0
27	.12	.20	5.1	.98	1.4	2.7	1.5	.71	.06	.05	.0	.96
28	.11	.17	4.0	.85	1.2	2.0	1.7	.59	.05	.05	.98	.60
29	.06	9.6	3.3	.75	1.3	1.7	4.0	.50	.16	.11	1.2	.43
30	.05	3.1	2.2	1.1	---	1.4	3.9	.43	.11	.09	.36	.59
31	.04	---	2.0	1.7	---	1.2	---	.38	---	.06	.43	---
TOTAL	5.19	20.15	82.21	64.92	80.21	87.03	57.27	49.01	6.28	3.56	4.88	21.86
MEAN	.17	.67	2.65	2.09	2.77	2.81	1.91	1.58	.21	.11	.16	.73
MAX	1.1	9.6	11	17	12	24	4.6	3.3	.84	.64	1.2	3.5
MIN	.04	.04	.91	.34	.75	.96	.64	.38	.04	.02	.00	.03
CFSM	.18	.72	2.85	2.25	2.97	3.02	2.05	1.70	.23	.12	.17	.78
IN.	.21	.81	3.29	2.60	3.21	3.48	2.29	1.96	.25	.14	.20	.87

CAL YR 1987 TOTAL 416.05 MEAN 1.14 MAX 13 MIN .00 CFSM 1.23 IN. 16.64
WTR YR 1988 TOTAL 482.57 MEAN 1.32 MAX 24 MIN .00 CFSM 1.42 IN. 19.30

03070420 STONY FORK TRIBUTARY NEAR GIBBON GLADE, PA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 1977 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1977 to current year.
pH: October 1977 to current year.
WATER TEMPERATURES: October 1977 to current year.
SUSPENDED SEDIMENT DISCHARGE: October 1977 to current year.

INSTRUMENTATION.--Water-quality monitor and sediment pumping sampler since October 1977.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 2380 microsiemans Sept. 8, 1988; minimum, 15 microsiemans Nov. 2, 1983.
pH: Maximum, 8.8 Aug. 21, 1987, minimum, 2.7 Sept. 2, 1988.
WATER TEMPERATURES: Maximum, 31°C Aug. 18, 1987, Sept. 13, 1988; minimum, 0.0°C on many days during winter months.
SEDIMENT CONCENTRATIONS: Maximum daily, 1,460 mg/L July 3, 1983; minimum daily, 2 mg/L on several days.
SEDIMENT DISCHARGES: Maximum daily, 110 tons Apr. 12, 1981; minimum daily, 0.0 ton on many days.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 2380 microsiemens Sept. 8; minimum, 54 microsiemens June 17.
pH: Maximum, 8.6 July 2; minimum, 2.7 Sept. 2.
WATER TEMPERATURES: Maximum, 31°C Sept. 13; minimum, 0.3°C on Feb. 21, 22, 25, 26.
SEDIMENT CONCENTRATIONS: Maximum daily, 548 mg/L Mar. 4; minimum daily, 2 mg/L Nov. 7, 8.
SEDIMENT DISCHARGES: Maximum daily, 39 tons Mar. 4; minimum daily, 0.0 ton on many days.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	ACIDITY TOTAL HEATED (MG/L AS CACO3)	CALCIUM TOTAL RECOV-ERABLE (MG/L AS CA)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, TOTAL RECOV-ERABLE (MG/L AS MG)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, TOTAL RECOV-ERABLE (MG/L AS NA)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT												
28...	1300	0.09	210	6.79	7.0	0.0	--	--	--	--	--	--
NOV												
23...	1100	0.20	128	7.00	1.5	0.0	--	--	--	--	--	--
DEC												
29...	1410	3.1	120	6.70	4.5	10	--	12	--	3.1	--	3.0
JAN												
28...	1500	0.98	103	6.88	2.0	22	--	9.0	--	2.3	--	3.7
FEB												
25...	1315	1.2	105	6.75	3.5	26	--	9.0	--	2.3	--	5.8
MAR												
29...	1500	1.4	367	6.92	14.5	30	--	40	--	11	--	2.3
APR												
26...	1300	1.8	63	6.92	13.5	24	--	6.3	--	1.7	--	1.9
MAY												
25...	1426	1.0	261	6.78	15.0	0.0	--	20	--	4.8	--	3.4
JUN												
21...	1305	0.11	1330	7.45	20.0	0.0	--	170	--	44	--	66
JUL												
27...	1130	0.05	1820	7.15	21.0	0.0	--	200	--	54	--	120
AUG												
24...	1345	0.13	1200	6.30	21.0	14	--	110	--	26	--	81
SEP												
08...	1110	0.17	1840	3.27	14.5	118	--	100	--	36	--	24
21...	1300	0.48	150	6.63	15.0	0.0	14	14	2.7	2.7	4.8	4.6

DATE	POTAS-SIUM, TOTAL RECOV-ERABLE (MG/L AS K)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET LAB MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, TOTAL (MG/L AS F)	RESIDUE AT 105 DEG. C, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)
OCT												
28...	--	--	40	64	--	--	162	<2	140	<130	--	--
NOV												
23...	--	--	24	26	--	--	84	6	290	170	--	--
DEC												
29...	--	1.5	16	41	7.0	<0.1	104	4	1000	<130	--	--
JAN												
28...	--	1.5	16	30	8.0	<0.1	4	<2	510	<130	--	--
FEB												
25...	--	1.3	14	22	13	<0.1	72	<2	160	<130	--	--
MAR												
29...	--	2.0	18	160	5.0	<0.1	316	14	510	<130	--	--
APR												
26...	--	1.1	14	15	4.0	<0.1	30	22	1300	150	--	--
MAY												
25...	--	1.4	22	66	4.0	<0.1	96	8	150	150	--	--
JUN												
21...	--	4.3	114	680	6.0	0.2	1190	14	840	210	--	--
JUL												
27...	--	5.7	70	1100	9.0	0.2	1800	8	270	170	--	--
AUG												
24...	--	3.9	22	710	21	0.2	1100	<2	220	160	--	--
SEP												
08...	--	3.0	0	520	6.0	0.2	708	48	2700	4000	--	--
21...	2.3	2.4	26	29	--	--	82	2	210	140	<4	<4

03070420 STONY FORK TRIBUTARY NEAR GIBBON GLADE, PA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	BORON, TOTAL RECOV-ERABLE (UG/L AS B)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)
OCT												
28...	--	--	--	--	--	--	--	870	850	--	--	320
NOV												
23...	--	--	--	--	--	--	--	510	280	--	--	180
DEC												
29...	--	--	--	--	--	--	--	830	190	--	--	180
JAN												
28...	--	--	--	--	--	--	--	960	310	--	--	160
FEB												
25...	--	--	--	--	--	--	--	540	240	--	--	150
MAR												
29...	--	--	--	--	--	--	--	1000	470	--	--	1700
APR												
26...	--	--	--	--	--	--	--	2000	220	--	--	170
MAY												
25...	--	--	--	--	--	--	--	900	150	--	--	480
JUN												
21...	--	--	--	--	--	--	--	1800	410	--	--	3600
JUL												
27...	--	--	--	--	--	--	--	430	59	--	--	6300
AUG												
24...	--	--	--	--	--	--	--	6100	5600	--	--	6200
SEP												
08...	--	--	--	--	--	--	--	33000	33000	--	--	15000
21...	<250	<50	<50	<20	<20	<10	<10	300	100	<50	<50	130

DATE	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	STRON-TIUM, TOTAL RECOV-ERABLE (UG/L AS SR)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)
OCT											
28...	320	--	--	--	--	20	<10	--	--	--	--
NOV											
23...	150	--	--	--	--	30	30	--	--	--	--
DEC											
29...	170	--	--	--	--	10	10	--	--	--	--
JAN											
28...	140	--	--	--	--	30	26	--	--	--	--
FEB											
25...	130	--	--	--	--	30	27	--	--	--	--
MAR											
29...	1300	--	--	--	--	70	65	--	--	--	--
APR											
26...	94	--	--	--	--	20	11	--	--	--	--
MAY											
25...	470	--	--	--	--	20	21	--	--	--	--
JUN											
21...	3600	--	--	--	--	40	27	--	--	--	--
JUL											
27...	6000	--	--	--	--	60	59	--	--	--	--
AUG											
24...	6200	--	--	--	--	360	330	--	--	--	--
SEP											
08...	15000	--	--	--	--	800	800	--	--	--	--
21...	130	<25	<25	50	45	<10	<10	<6	<6	<1.0	<1.0

03070420 STONY FORK TRIBUTARY NEAR GIBBON GLADE, PA--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	385	208	266	196	182	186	102	80	86	195	89	129
2	222	167	184	188	180	184	153	94	122	88	75	80
3	194	138	156	189	175	183	268	102	139	78	71	72
4	138	131	134	208	161	177	207	127	165	81	70	73
5	134	128	132	189	177	182	145	106	122	82	73	79
6	148	131	134	195	176	188	129	107	117	85	80	81
7	162	136	148	209	179	192	124	100	110	83	79	81
8	262	150	175	205	183	191	183	108	127	84	80	82
9	287	159	206	222	178	196	253	106	166	549	82	306
10	246	167	213	211	159	185	114	82	97	590	186	327
11	299	166	205	220	185	200	265	78	115	397	138	283
12	196	158	170	773	183	395	108	100	104	346	111	161
13	282	160	222	448	213	265	107	102	104	319	103	181
14	289	189	244	222	138	176	125	100	108	371	156	223
15	718	190	304	139	129	133	230	105	142	308	70	134
16	241	164	196	137	120	128	189	87	103	---	---	---
17	211	181	195	298	117	147	117	87	102	---	---	---
18	183	159	171	376	147	206	114	103	107	---	---	---
19	927	169	422	157	121	140	161	103	109	---	---	---
20	353	222	280	241	115	152	229	85	115	---	---	---
21	465	188	228	213	133	154	89	79	84	144	69	86
22	475	256	349	139	120	130	131	70	80	132	66	79
23	275	189	214	134	117	127	112	83	98	70	66	68
24	203	186	193	139	127	133	100	92	96	94	68	74
25	201	179	186	153	137	145	181	94	107	365	89	179
26	229	182	190	137	124	129	104	75	83	222	107	146
27	971	182	539	130	123	127	78	66	75	224	96	136
28	233	190	215	125	119	121	206	66	108	315	90	142
29	191	176	183	467	89	123	168	83	109	188	86	119
30	191	172	182	89	81	84	95	79	84	258	109	155
31	193	175	183	---	---	---	192	75	98	175	128	145
MONTH	971	128	220	773	81	169	268	66	109	590	66	139

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	221	125	180	795	341	585	590	149	363	84	62	66
2	245	83	156	704	365	540	524	168	346	63	61	62
3	109	74	82	624	243	418	619	91	270	574	60	108
4	118	79	90	302	79	134	755	85	324	899	163	683
5	81	68	76	220	100	150	837	88	312	897	146	462
6	68	66	67	321	150	231	92	78	82	394	106	233
7	71	64	67	449	72	307	336	117	247	338	95	217
8	71	67	68	448	121	331	331	74	139	357	150	275
9	82	67	72	567	85	340	73	66	68	375	110	262
10	280	72	135	493	237	444	125	64	67	427	97	254
11	276	82	200	689	97	424	672	65	432	387	138	262
12	258	91	192	562	281	436	663	76	342	364	119	259
13	126	95	105	499	271	383	645	74	292	396	179	290
14	169	90	111	541	149	380	692	80	329	407	176	309
15	227	90	138	549	169	406	846	85	353	433	225	326
16	179	120	141	601	151	434	530	287	405	527	128	325
17	135	104	117	616	184	478	562	336	428	516	209	372
18	118	104	112	704	166	489	521	141	284	498	144	326
19	441	112	159	626	213	466	448	74	197	279	101	182
20	135	98	111	643	204	456	463	67	209	350	65	171
21	119	88	95	648	190	502	590	69	232	233	181	206
22	88	78	84	672	188	457	697	71	261	244	209	225
23	211	84	123	523	107	307	444	100	260	546	84	295
24	153	108	125	338	91	220	219	79	137	371	110	249
25	262	102	120	479	79	232	387	60	169	408	106	263
26	840	140	618	322	87	187	461	61	187	601	74	308
27	1000	114	860	321	90	192	409	69	206	508	201	362
28	1000	516	776	451	78	200	515	84	246	610	243	404
29	1000	185	690	460	107	283	282	83	151	681	295	455
30	---	---	---	539	83	285	98	66	78	741	341	508
31	---	---	---	554	139	338	---	---	---	807	383	576
MONTH	1000	64	202	795	72	356	846	60	247	899	60	300

03070420 STONY FORK TRIBUTARY NEAR GIBBON GLADE, PA--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	824	471	629	1460	1370	1410	1830	1790	1810	---	---	---
2	784	293	543	1450	1370	1410	1800	1750	1780	---	---	---
3	954	324	635	1440	1380	1400	1770	1740	1760	---	---	---
4	781	556	684	1420	1360	1390	1830	1730	1770	---	---	---
5	890	616	712	1420	1380	1400	1990	1830	1880	---	---	---
6	985	422	778	1410	1370	1390	1930	1670	1810	---	---	---
7	995	764	885	1390	1360	1370	1990	1810	1920	---	---	---
8	1000	689	906	1370	1340	1360	1970	1920	1950	2380	1740	2180
9	896	244	481	1340	1310	1330	1920	1900	1910	1770	600	1090
10	750	160	542	1310	1290	1300	1920	1870	1900	2000	833	1700
11	154	108	127	1290	1260	1280	1890	1870	1880	1830	582	754
12	134	104	117	1270	1030	1210	1910	1890	1900	778	712	755
13	126	102	118	1330	1220	1290	1910	1870	1900	1950	106	586
14	134	110	121	1350	1280	1320	1870	1840	1850	434	126	176
15	138	114	125	1360	1360	1360	1860	1840	1850	166	136	147
16	140	120	129	1370	1370	1350	1880	1850	1860	176	120	148
17	66	54	61	1330	1310	1320	1880	1870	1870	252	98	142
18	1510	122	695	1330	1320	1320	1880	1850	1870	156	132	143
19	1470	1310	1380	1320	956	1260	495	343	410	162	100	127
20	1610	1090	1440	1130	288	844	354	143	310	370	96	149
21	1600	1310	1490	1480	370	984	437	355	395	174	140	151
22	1540	1390	1480	1680	1300	1460	553	438	511	250	136	147
23	1510	1310	1410	1760	309	1290	---	---	---	208	128	158
24	1470	1390	1430	1910	889	1480	1200	356	623	418	146	179
25	1550	1400	1470	1900	1630	1750	1610	406	1080	252	150	193
26	1490	1430	1460	1840	1770	1810	1240	1010	1140	288	112	162
27	1460	1360	1410	1870	1810	1830	1010	952	976	124	106	112
28	1450	1390	1410	1870	1810	1840	954	941	944	118	106	110
29	1510	697	1180	1870	1780	1830	---	---	---	132	108	114
30	1490	1420	1450	1870	1790	1820	---	---	---	1070	112	454
31	---	---	---	1870	1810	1830	---	---	---	---	---	---
MONTH	1610	54	843	1910	288	1430	1990	143	1480	2380	96	429

YEAR MAXIMUM 2380 MINIMUM 54 MEAN 491

PH (STANDARD UNITS), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	6.88	6.78	6.82	6.85	6.77	6.80	6.81	6.66	6.71	7.01	6.74	6.82
2	6.83	6.61	6.79	6.85	6.80	6.82	6.91	6.80	6.85	6.79	6.74	6.76
3	6.62	6.57	6.60	6.90	6.83	6.86	6.94	6.82	6.86	6.81	6.76	6.78
4	6.66	6.61	6.64	7.04	6.85	6.97	6.86	6.76	6.80	6.86	6.71	6.81
5	6.66	6.62	6.65	7.10	6.94	7.01	6.79	6.76	6.78	6.95	6.74	6.84
6	6.65	6.50	6.63	7.07	7.00	7.02	6.84	6.78	6.80	6.99	6.93	6.97
7	6.79	6.61	6.71	7.06	6.98	7.02	6.85	6.78	6.82	6.93	6.90	6.91
8	6.78	6.70	6.73	7.06	6.97	7.01	6.88	6.76	6.82	6.93	6.90	6.92
9	6.78	6.70	6.74	7.14	6.91	7.06	6.89	6.73	6.82	7.51	6.90	7.27
10	6.75	6.64	6.71	7.13	7.05	7.09	6.80	6.69	6.72	7.39	7.22	7.30
11	6.80	6.63	6.71	7.19	7.15	7.17	7.09	6.69	6.82	7.25	7.03	7.19
12	6.78	6.71	6.75	7.52	6.80	7.13	6.91	6.83	6.89	7.16	7.03	7.10
13	6.79	6.70	6.75	7.33	7.04	7.18	6.95	6.90	6.92	7.42	7.00	7.14
14	6.80	6.16	6.70	7.07	6.91	7.00	6.97	6.91	6.93	7.18	6.97	7.06
15	6.93	6.71	6.78	6.99	6.94	6.96	7.31	6.87	7.02	7.27	6.59	6.91
16	6.78	6.71	6.73	7.03	6.99	7.01	7.00	6.82	6.87	---	---	---
17	6.76	6.66	6.72	7.11	6.99	7.03	6.93	6.86	6.90	---	---	---
18	6.73	6.65	6.68	7.17	7.04	7.10	6.96	6.88	6.92	---	---	---
19	6.99	6.65	6.81	7.09	7.02	7.05	7.00	6.90	6.93	---	---	---
20	6.83	6.67	6.72	7.21	7.01	7.09	7.10	6.68	6.78	---	---	---
21	6.78	6.66	6.70	7.21	7.15	7.18	6.75	6.68	6.72	6.76	6.21	6.45
22	6.81	6.71	6.77	7.14	7.10	7.12	6.83	6.72	6.76	6.85	6.54	6.69
23	6.72	6.66	6.68	7.13	6.90	7.02	6.90	6.78	6.82	6.82	6.54	6.71
24	6.69	6.61	6.66	6.99	6.87	6.95	6.84	6.79	6.81	6.89	6.55	6.71
25	6.71	6.61	6.66	6.97	6.88	6.93	7.37	6.59	6.75	7.36	6.76	6.96
26	6.76	6.66	6.71	6.94	6.89	6.91	6.84	6.50	6.59	7.11	6.69	6.94
27	7.00	6.64	6.86	7.02	6.89	6.94	6.64	6.54	6.59	7.12	6.86	6.98
28	6.80	6.63	6.77	7.01	6.91	6.95	7.02	6.62	6.78	7.46	6.83	7.02
29	6.81	6.77	6.79	7.20	6.52	6.74	6.84	6.69	6.75	7.17	6.85	6.94
30	6.82	6.75	1.78	6.66	6.55	6.61	6.78	6.75	6.76	7.20	6.75	6.99
31	6.80	6.73	6.78	---	---	---	7.00	6.75	6.82	7.14	6.71	6.88
MONTH	7.00	6.16	6.57	7.52	6.52	6.99	7.37	6.50	6.81	7.51	6.21	6.92

03070420 STONY FORK TRIBUTARY NEAR GIBBON GLADE, PA--Continued

PH (STANDARD UNITS), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7.03	6.83	6.95	7.11	6.93	7.02	7.10	6.72	6.89	6.81	6.38	6.51
2	7.17	6.41	6.81	7.11	6.89	7.01	7.12	6.76	6.88	6.85	6.38	6.61
3	6.78	6.34	6.55	7.10	6.80	6.96	7.33	6.76	6.97	6.98	6.41	6.70
4	7.06	6.39	6.59	7.13	6.32	6.63	7.29	6.70	6.96	6.74	6.22	6.51
5	6.70	6.53	6.60	6.62	6.39	6.52	7.15	6.60	6.90	6.81	6.56	6.65
6	6.84	6.61	6.70	6.83	6.62	6.73	7.07	6.70	6.97	6.89	6.63	6.76
7	6.82	6.60	6.70	6.92	6.70	6.81	6.88	6.51	6.75	7.04	6.70	6.88
8	6.79	6.58	6.68	6.84	6.64	6.76	6.75	6.57	6.65	7.15	6.79	6.99
9	6.94	6.59	6.78	6.83	6.71	6.78	6.81	6.56	6.70	7.16	6.80	6.92
10	7.22	6.71	6.92	---	---	---	6.89	6.50	6.73	7.18	6.57	6.85
11	7.28	6.72	7.07	---	---	---	7.13	6.45	6.76	6.99	6.59	6.82
12	7.13	6.71	6.93	6.92	6.64	6.79	6.88	6.48	6.66	6.92	6.51	6.76
13	6.83	6.68	6.74	7.02	6.85	6.91	7.01	6.65	6.84	6.98	6.60	6.80
14	6.95	6.63	6.80	7.00	6.87	6.93	7.27	6.98	7.14	6.97	6.65	6.82
15	6.97	6.65	6.85	7.20	6.75	7.03	7.26	6.97	7.13	7.01	6.64	6.82
16	6.89	6.60	6.74	7.25	7.05	7.17	7.30	7.08	7.18	7.04	6.62	6.84
17	6.93	6.61	6.71	7.22	7.03	7.14	7.24	6.93	7.12	7.24	6.72	7.01
18	6.92	6.54	6.73	7.30	7.03	7.16	7.24	6.82	6.99	7.19	6.74	7.05
19	7.55	6.69	6.87	7.13	6.92	7.06	7.01	6.76	6.87	6.73	6.41	6.57
20	6.76	6.42	6.59	7.13	6.85	7.01	7.13	6.89	6.99	6.60	6.42	6.50
21	6.81	6.49	6.61	7.20	6.94	7.02	7.19	6.88	6.97	6.64	6.41	6.56
22	6.83	6.47	6.66	7.14	6.84	6.98	7.36	6.93	7.09	6.63	6.40	6.53
23	6.89	6.51	6.68	7.15	6.69	6.89	7.49	6.66	7.12	6.83	6.42	6.64
24	6.86	6.64	6.74	6.94	6.64	6.82	6.89	6.72	6.81	6.80	6.55	6.69
25	6.94	6.66	6.79	7.24	6.74	6.91	6.90	6.70	6.81	7.30	6.38	6.66
26	7.02	6.71	6.87	7.20	6.57	6.86	7.00	6.48	6.81	7.08	6.48	6.76
27	7.24	6.75	7.06	7.04	6.85	6.96	6.96	6.52	6.82	7.09	6.56	6.85
28	7.25	7.01	7.14	7.03	6.65	6.90	7.37	6.77	7.06	7.12	6.57	6.84
29	7.16	6.94	7.05	7.01	6.66	6.86	7.12	6.50	6.81	7.13	6.58	6.86
30	---	---	---	7.22	6.72	6.95	6.83	6.41	6.60	7.12	6.57	6.86
31	---	---	---	7.27	6.83	7.06	---	---	---	7.25	6.60	6.92
MONTH	7.55	6.34	6.79	7.30	6.32	6.92	7.49	6.41	6.90	7.30	6.22	6.76
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	7.47	6.81	7.10	8.08	7.62	7.88	7.49	7.05	7.22	3.17	2.85	2.94
2	7.42	6.82	7.07	8.65	7.54	7.88	7.60	7.07	7.30	2.85	2.71	2.79
3	7.54	6.99	7.26	7.98	7.45	7.70	7.63	6.97	7.27	2.80	2.73	2.76
4	7.48	7.03	7.28	7.91	7.40	7.65	7.14	5.65	6.54	5.73	2.80	4.73
5	7.35	6.91	7.15	7.99	7.37	7.58	6.42	5.89	6.11	6.17	5.74	5.98
6	7.51	6.89	7.13	8.02	7.32	7.56	6.36	6.06	6.27	6.44	3.24	5.77
7	7.43	7.04	7.20	7.85	7.28	7.47	6.38	5.70	6.16	3.42	3.06	3.26
8	7.53	7.00	7.26	7.92	7.27	7.49	5.68	5.35	5.44	3.45	3.11	3.25
9	7.11	6.32	6.93	7.92	7.08	7.46	5.74	5.26	5.50	3.77	3.17	3.52
10	7.05	6.63	6.89	7.69	7.05	7.26	6.04	5.67	5.89	3.62	3.31	3.43
11	6.90	6.50	6.71	7.41	7.07	7.20	6.63	5.91	6.26	3.87	3.43	3.66
12	6.86	6.45	6.66	7.12	7.01	7.05	6.89	6.63	6.80	4.13	3.35	3.54
13	6.81	6.42	6.62	7.29	7.01	7.12	7.07	6.75	6.96	6.07	4.19	5.47
14	6.79	6.37	6.59	7.21	7.00	7.08	6.75	6.43	6.59	6.20	6.04	6.12
15	6.73	6.36	6.54	7.05	6.98	7.03	6.52	6.33	6.43	6.39	6.20	6.30
16	6.69	6.38	6.52	7.28	6.89	7.13	6.51	6.14	6.32	6.47	6.37	6.42
17	6.71	6.44	6.56	7.08	6.84	6.93	6.75	6.41	6.60	6.59	6.35	6.47
18	7.13	6.52	6.81	7.06	6.75	6.87	---	---	---	6.47	6.42	6.44
19	7.12	6.75	6.93	7.13	6.63	6.96	---	---	---	6.49	6.40	6.43
20	7.53	7.16	7.32	7.26	6.89	6.98	---	---	---	6.89	5.57	6.57
21	7.51	6.67	7.20	7.16	6.50	6.78	7.11	6.76	6.94	6.64	6.60	6.62
22	7.62	7.36	7.48	6.81	6.46	6.66	7.12	6.94	7.02	6.62	6.52	6.58
23	7.63	7.39	7.50	6.98	6.80	6.88	---	---	---	6.83	6.52	6.66
24	7.75	7.45	7.59	6.95	6.83	6.90	6.81	6.23	6.51	6.92	6.64	6.74
25	8.11	7.47	7.70	7.14	6.94	7.03	6.79	4.60	5.53	7.13	6.60	6.85
26	7.81	7.52	7.65	7.13	6.96	7.03	6.27	5.29	5.79	6.98	6.48	6.68
27	7.84	7.53	7.68	7.26	6.95	7.08	6.67	6.29	6.54	6.68	6.55	6.63
28	7.85	7.52	7.66	7.24	6.98	7.09	6.79	6.36	6.67	7.03	6.51	6.71
29	8.18	7.49	7.79	7.21	6.97	7.06	6.63	6.40	6.56	6.78	6.64	6.71
30	8.16	7.73	7.97	7.28	6.97	7.09	6.79	4.53	6.08	6.95	6.67	6.77
31	---	---	---	7.34	7.02	7.14	4.50	2.97	3.39	---	---	---
MONTH	8.18	6.32	7.16	8.65	6.46	7.19	7.63	2.97	6.32	7.13	2.71	5.43

YEAR MAXIMUM 8.65 MINIMUM 2.71 MEAN 6.73

03070420 STONY FORK TRIBUTARY NEAR GIBBON GLADE, PA--Continued

WATER TEMPERATURE, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	13.5	11.0	12.4	11.4	5.5	8.3	7.0	5.6	6.6	5.0	2.5	4.4
2	13.8	9.1	11.6	12.2	7.9	9.6	5.6	4.6	5.1	3.5	.9	2.1
3	13.1	10.2	11.8	13.1	8.4	10.4	5.8	4.0	4.9	3.6	.8	2.2
4	12.1	9.2	10.4	12.4	7.5	9.9	5.8	4.5	5.3	3.5	.6	2.2
5	13.2	8.1	10.5	11.8	6.8	10.2	4.7	4.1	4.3	1.1	.7	.9
6	12.0	9.5	10.8	7.7	4.3	6.0	5.3	2.4	4.3	1.6	1.1	1.4
7	11.4	9.9	10.9	8.0	4.2	6.3	5.7	1.9	3.7	1.7	.7	1.4
8	10.3	8.2	9.6	10.2	6.7	8.3	7.9	4.7	5.9	1.3	.6	1.1
9	10.6	5.7	8.3	9.5	7.7	8.9	8.2	5.6	6.8	2.3	1.1	1.8
10	13.6	10.5	11.9	8.5	3.7	5.3	9.0	6.2	7.5	2.1	.8	1.5
11	12.7	9.4	11.3	3.8	2.9	3.4	7.2	5.6	6.2	1.7	.7	1.1
12	11.0	8.2	9.4	5.4	2.5	3.6	7.1	5.0	6.1	2.1	.8	1.5
13	10.3	6.4	8.3	7.0	2.6	4.5	4.9	3.9	4.5	3.0	1.3	2.0
14	10.0	4.9	7.5	8.9	4.4	6.0	6.1	.9	4.7	3.5	1.5	2.4
15	10.5	4.8	7.6	8.9	3.8	6.0	7.2	4.6	5.7	6.1	1.8	3.5
16	11.4	5.8	8.5	9.7	3.6	6.5	4.6	2.5	3.4	---	---	---
17	11.3	6.6	9.2	11.2	7.7	9.6	3.9	2.4	3.0	---	---	---
18	11.5	7.1	9.4	10.7	7.1	9.2	4.8	2.0	2.9	---	---	---
19	11.7	6.4	9.0	7.9	4.7	6.6	4.6	2.2	3.7	---	---	---
20	11.2	9.8	10.5	6.5	2.4	4.8	7.3	4.1	6.2	---	---	---
21	10.9	7.1	9.0	2.3	.7	1.4	6.5	4.0	5.5	5.3	4.2	4.9
22	9.4	6.1	7.5	2.3	.6	1.2	5.9	2.9	4.2	4.5	3.3	3.8
23	11.0	7.1	8.7	3.3	.6	1.9	6.3	4.3	5.1	4.1	3.1	3.5
24	10.6	5.6	8.3	7.8	3.3	6.0	6.5	3.2	5.0	5.9	3.1	4.2
25	10.2	6.0	8.7	9.3	5.6	7.2	8.3	6.2	7.5	4.4	2.9	3.6
26	9.0	3.5	6.3	8.2	6.2	7.5	7.8	6.7	7.3	2.9	1.1	1.5
27	7.8	5.7	6.8	7.9	6.0	7.3	7.4	6.1	6.6	2.2	1.2	1.7
28	7.8	4.7	6.3	7.9	5.8	6.6	6.1	5.3	5.7	1.9	1.2	1.6
29	7.2	4.5	5.8	9.1	6.4	7.9	5.8	2.4	4.3	2.9	1.3	1.9
30	10.0	4.0	6.8	8.8	6.9	7.7	4.0	1.2	2.5	4.5	1.8	3.0
31	11.0	6.3	8.4	---	---	---	4.7	1.0	3.2	6.6	2.7	4.2
MONTH	13.8	3.5	9.1	13.1	.6	6.6	9.0	.9	5.1	6.6	.6	2.4
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6.8	4.7	5.9	1.4	.5	.8	14.8	9.6	11.6	13.6	3.4	8.7
2	7.3	5.6	6.5	1.8	.5	1.0	15.9	8.9	11.9	13.6	6.7	9.5
3	7.7	5.7	6.4	6.1	1.0	3.1	14.4	9.5	12.1	12.0	7.0	9.5
4	6.5	4.1	5.4	6.2	5.2	5.8	18.1	9.7	13.1	11.3	7.8	9.7
5	4.2	1.8	3.7	8.0	4.3	5.7	19.0	7.2	12.5	12.2	9.4	10.3
6	2.8	1.2	1.7	9.1	3.9	6.0	15.7	8.3	12.7	12.1	9.4	10.5
7	2.9	1.2	2.0	7.7	5.0	6.3	10.2	8.8	9.4	18.0	7.7	12.0
8	4.0	2.4	3.2	11.5	4.0	7.1	9.5	7.1	8.5	19.6	8.3	13.2
9	4.5	1.4	2.9	8.5	6.0	7.3	10.7	6.5	7.7	15.1	11.5	13.1
10	6.0	3.0	4.0	---	---	---	14.3	4.9	8.6	16.6	11.2	13.3
11	4.7	2.7	3.4	10.9	2.9	5.9	15.0	4.6	9.2	14.4	10.0	11.9
12	3.3	1.4	2.6	11.8	3.8	7.2	9.6	6.4	8.1	19.5	7.9	12.8
13	1.7	1.3	1.5	7.6	3.9	6.1	15.8	5.9	9.8	20.3	9.1	14.2
14	2.3	1.2	1.8	5.6	2.6	3.8	11.6	5.4	8.6	17.3	12.8	14.4
15	3.7	2.1	3.1	7.9	.7	2.6	11.8	5.4	8.2	21.7	11.0	15.6
16	4.5	2.4	3.4	4.3	.6	2.1	7.0	4.6	5.9	21.5	13.5	16.7
17	6.3	1.9	3.5	5.4	1.2	2.8	15.8	4.1	8.9	21.2	13.3	16.5
18	7.9	2.7	4.4	3.6	1.1	2.4	9.1	6.1	8.2	15.3	13.1	14.0
19	4.8	3.4	4.0	6.6	1.9	3.5	12.7	5.6	7.8	15.7	12.2	13.4
20	1.2	.7	1.0	5.5	1.0	2.9	13.5	3.7	7.8	15.3	11.8	13.1
21	.9	.3	.5	7.5	.7	3.1	12.7	6.4	9.0	16.8	11.6	13.9
22	1.4	.3	.8	7.7	.6	3.4	13.9	5.7	8.8	20.4	11.5	15.3
23	1.0	.5	.8	10.5	2.0	5.8	17.6	7.5	10.4	20.2	12.5	16.0
24	.9	.4	.6	13.2	5.2	8.5	9.7	7.3	8.3	18.1	13.9	15.9
25	.8	.3	.5	13.8	5.6	9.2	14.6	6.6	9.5	16.0	10.6	13.5
26	1.1	.3	.7	12.0	7.0	9.0	16.3	5.7	10.1	18.2	8.1	12.6
27	1.0	.6	.8	7.6	4.5	5.9	12.9	6.6	9.5	20.4	9.6	14.4
28	1.5	.5	.8	11.3	3.4	6.7	8.0	6.0	7.1	21.7	11.0	15.8
29	1.6	.4	.9	15.1	4.6	9.4	7.4	6.1	6.8	22.3	11.7	16.5
30	---	---	---	12.8	6.5	8.9	9.9	6.8	7.8	22.9	13.1	17.6
31	---	---	---	15.6	6.8	10.4	---	---	---	24.7	14.6	19.0
MONTH	7.9	.3	2.6	15.6	.5	5.4	19.0	3.7	9.3	24.7	3.4	13.6

03070420 STONY FORK TRIBUTARY NEAR GIBBON GLADE, PA--Continued

WATER TEMPERATURE, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	24.3	14.7	18.8	17.7	12.7	15.5	28.6	21.1	24.5	21.6	16.9	19.4
2	19.0	14.4	16.8	20.8	11.7	16.3	27.0	21.0	24.3	22.4	17.6	19.7
3	15.2	12.4	13.9	24.3	13.8	18.6	29.0	21.5	25.8	22.5	17.9	20.2
4	16.2	10.8	13.0	24.5	15.8	20.0	26.6	20.2	24.6	20.9	18.1	18.9
5	21.2	9.4	14.7	25.9	16.4	20.8	28.9	21.8	24.8	18.1	15.8	17.1
6	24.3	14.0	18.4	25.9	16.9	21.1	24.3	22.3	23.5	18.1	13.3	15.5
7	25.8	16.9	20.5	26.4	18.0	22.0	25.6	21.5	23.4	19.2	14.2	16.5
8	24.8	16.3	20.0	26.7	19.8	23.0	28.2	19.2	22.7	19.5	13.8	16.4
9	19.2	13.6	16.4	27.3	20.3	23.6	29.3	18.9	23.7	18.1	12.2	15.2
10	18.4	10.6	14.1	25.0	18.2	21.8	26.3	19.1	23.4	18.5	15.1	16.6
11	19.7	8.6	13.9	25.1	20.6	22.7	26.2	20.5	23.3	19.3	13.2	15.8
12	21.0	10.5	15.7	23.0	21.0	22.1	25.8	20.4	23.3	20.1	15.7	17.9
13	23.1	12.0	17.4	26.1	19.7	22.5	25.4	21.2	23.4	30.8	17.6	19.3
14	24.2	13.3	18.6	26.4	22.4	24.1	26.5	21.7	23.9	18.6	15.2	16.8
15	23.9	14.7	19.4	23.5	21.4	22.6	27.9	21.8	24.6	17.3	12.9	15.0
16	23.5	15.5	19.5	27.5	21.9	24.5	27.7	20.8	24.3	16.3	11.9	14.3
17	22.1	18.0	19.6	27.5	22.9	25.0	27.8	20.6	24.0	17.1	15.4	16.3
18	25.3	13.1	18.7	27.8	22.0	24.5	26.8	23.6	25.0	18.1	16.5	17.2
19	24.0	18.8	21.3	24.3	22.7	23.3	22.5	20.8	21.5	18.5	16.3	17.4
20	25.3	18.0	21.6	23.2	21.0	22.2	---	---	---	20.3	16.6	18.0
21	28.2	20.4	23.6	22.7	20.4	21.6	21.8	17.3	19.7	16.9	15.4	16.0
22	28.6	20.9	23.9	25.0	20.3	22.3	22.4	16.3	19.4	18.5	14.9	16.4
23	25.5	20.2	22.9	22.0	19.6	20.7	20.3	18.4	19.3	17.9	15.4	16.5
24	26.7	16.8	21.1	23.6	19.2	21.2	21.3	18.4	19.8	16.7	15.0	15.6
25	25.5	18.3	22.1	24.5	19.1	21.7	22.4	16.9	20.0	29.9	14.7	20.8
26	27.3	19.5	23.1	22.5	19.0	20.7	22.3	18.9	20.4	28.7	14.4	20.1
27	23.6	15.5	19.3	24.1	18.9	21.4	25.3	17.9	21.4	17.5	12.6	14.8
28	23.7	14.4	18.8	25.3	19.4	22.1	24.5	19.6	21.7	17.4	12.9	14.9
29	21.9	17.7	19.7	26.2	19.6	22.9	19.9	18.4	19.3	17.2	14.1	15.4
30	20.9	14.2	17.4	26.4	20.8	23.5	22.0	16.6	19.1	18.9	12.8	15.6
31	---	---	---	25.4	22.1	23.6	22.4	18.0	19.9	---	---	---
MONTH	28.6	8.6	18.8	27.8	11.7	21.9	29.3	16.3	22.5	30.8	11.9	17.0

YEAR MAXIMUM 30.8 MINIMUM .3 MEAN 11.3

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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	.22	12	.01	.04	7	.00	1.8	30	.15
2	.57	14	.08	.05	7	.00	1.2	37	.12
3	1.1	14	.07	.05	6	.00	1.1	30	.09
4	.39	12	.01	.06	5	.00	2.5	24	.16
5	.28	12	.01	.04	3	.00	1.8	17	.08
6	.24	10	.01	.04	3	.00	1.4	14	.05
7	.26	11	.01	.04	2	.00	1.1	13	.04
8	.22	15	.01	.04	2	.00	1.3	11	.04
9	.16	13	.01	.23	34	.02	2.3	11	.07
10	.13	10	.00	.73	25	.05	2.2	10	.06
11	.16	9	.00	.42	12	.01	1.9	10	.05
12	.13	9	.00	.37	7	.01	1.7	10	.05
13	.11	9	.00	.48	20	.03	1.1	9	.03
14	.09	8	.00	.70	21	.04	.91	10	.02
15	.08	6	.00	.57	10	.02	2.1	17	.10
16	.08	6	.00	.42	8	.01	1.8	15	.07
17	.07	6	.00	.38	8	.01	1.4	14	.05
18	.06	6	.00	.43	9	.01	1.1	12	.04
19	.07	6	.00	.31	9	.01	1.0	10	.03
20	.08	6	.00	.31	9	.01	6.8	107	2.8
21	.08	7	.00	.25	9	.01	3.4	20	.18
22	.05	8	.00	.21	8	.00	2.5	15	.10
23	.05	8	.00	.23	6	.00	1.9	12	.06
24	.04	8	.00	.24	7	.00	1.5	17	.07
25	.05	8	.00	.23	8	.00	8.8	104	3.1
26	.04	7	.00	.21	9	.01	11	80	3.0
27	.12	5	.00	.20	9	.00	5.1	18	.25
28	.11	6	.00	.17	6	.00	4.0	43	.46
29	.06	9	.00	9.6	335	16	3.3	42	.37
30	.05	8	.00	3.1	33	.28	2.2	28	.17
31	.04	7	.00	---	---	---	2.0	23	.12
TOTAL	5.19	---	0.22	20.15	---	16.53	82.21	---	11.98

03070420 STONY FORK TRIBUTARY NEAR GIBBON GLADE, PA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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)
		JANUARY			FEBRUARY			MARCH	
1	3.0	20	.16	2.9	33	.26	1.2	25	.08
2	2.3	20	.12	12	351	12	1.3	25	.09
3	1.8	20	.10	7.4	50	1.0	2.9	139	1.7
4	1.5	20	.08	9.4	119	3.6	24	548	39
5	1.8	24	.12	5.1	40	.55	11	110	3.3
6	4.1	26	.29	3.0	36	.29	5.1	73	1.0
7	1.5	28	.11	3.7	25	.25	3.2	57	.49
8	1.0	36	.10	1.6	16	.07	2.3	50	.31
9	.71	47	.09	1.3	14	.05	2.0	40	.22
10	.50	34	.05	1.2	15	.05	1.6	34	.15
11	.43	25	.03	1.0	16	.04	1.3	28	.10
12	.51	16	.02	.94	16	.04	1.2	26	.08
13	.55	15	.02	.75	18	.04	1.3	23	.08
14	.40	15	.02	2.0	10	.05	1.2	22	.07
15	.35	14	.01	1.2	10	.03	1.1	22	.07
16	.34	14	.01	1.2	10	.03	1.0	23	.06
17	.55	15	.02	.96	10	.03	.98	25	.07
18	1.9	48	.25	.96	28	.07	1.0	24	.06
19	3.6	319	11	3.2	146	2.3	1.0	24	.06
20	17	309	22	4.7	40	.51	.99	24	.06
21	5.3	60	.86	2.9	28	.22	.96	24	.06
22	3.1	47	.39	2.2	25	.15	1.1	25	.07
23	2.3	37	.23	2.0	18	.10	1.9	26	.13
24	1.8	28	.14	1.7	13	.06	2.3	28	.17
25	1.8	22	.11	1.4	9	.03	2.0	32	.17
26	1.4	18	.07	1.6	10	.04	4.1	35	.39
27	.98	16	.04	1.4	20	.08	2.7	33	.24
28	.85	13	.03	1.2	25	.08	2.0	30	.16
29	.75	12	.02	1.3	31	.11	1.7	29	.13
30	1.1	12	.04	---	---	---	1.4	27	.10
31	1.7	15	.07	---	---	---	1.2	27	.09
TOTAL	64.92	---	36.60	80.21	---	22.13	87.03	---	48.76
		APRIL			MAY			JUNE	
1	1.1	28	.08	2.7	25	.18	.36	20	.02
2	.87	25	.06	2.0	25	.14	.52	20	.03
3	.78	26	.05	1.7	25	.11	.35	20	.02
4	1.1	32	.10	1.8	34	.17	.32	20	.02
5	.83	36	.08	2.3	71	.44	.29	20	.02
6	.90	21	.05	2.8	70	.53	.26	20	.27
7	4.6	40	.50	2.3	46	.29	.24	20	.01
8	3.7	32	.32	1.9	32	.16	.25	20	.01
9	2.6	28	.20	1.9	27	.14	.84	57	.13
10	2.0	25	.14	1.9	24	.12	.24	28	.02
11	1.8	22	.11	2.0	24	.13	.13	22	.01
12	1.5	19	.08	1.6	37	.16	.10	21	.01
13	1.2	18	.06	1.4	28	.11	.08	18	.00
14	.98	18	.05	1.2	22	.07	.06	19	.00
15	.84	17	.04	1.0	21	.06	.04	19	.00
16	.73	17	.03	.95	22	.06	.05	19	.00
17	.64	18	.03	.75	27	.05	.06	19	.00
18	2.4	55	.36	1.8	80	.39	.21	19	.01
19	2.0	20	.11	3.3	200	1.8	.47	19	.02
20	1.5	14	.06	2.4	64	.41	.31	19	.02
21	1.3	12	.04	1.8	35	.17	.17	19	.01
22	1.1	11	.03	1.4	33	.12	.10	20	.01
23	3.0	10	.08	1.4	34	.13	.10	58	.02
24	4.1	70	.77	2.0	32	.17	.09	62	.02
25	2.6	33	.23	1.2	21	.07	.18	63	.03
26	2.0	25	.14	.90	23	.06	.08	29	.01
27	1.5	26	.11	.71	37	.07	.06	23	.00
28	1.7	51	.23	.59	32	.05	.05	20	.00
29	4.0	88	.95	.50	17	.02	.16	18	.01
30	3.9	65	.68	.43	18	.02	.11	15	.00
31	---	---	---	.38	19	.02	---	---	---
TOTAL	57.27	---	5.77	49.01	---	6.42	6.28	---	0.73

03070420 STONY FORK TRIBUTARY NEAR GIBBON GLADE, PA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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)
		JULY			AUGUST			SEPTEMBER	
1	.07	13	.00	.02	28	.00	.25	150	.10
2	.10	14	.00	.02	28	.00	.27	120	.09
3	.09	15	.00	.03	28	.00	.03	15	.00
4	.06	16	.00	.14	30	.01	1.0	44	.19
5	.04	17	.00	.05	33	.00	.43	22	.03
6	.05	18	.00	.08	36	.01	.31	16	.01
7	.11	20	.01	.05	32	.00	.34	12	.01
8	.15	14	.01	.05	28	.00	.24	29	.02
9	.09	12	.00	.02	26	.00	.17	13	.01
10	.06	13	.00	.07	23	.00	.10	24	.01
11	.06	14	.00	.05	26	.00	.13	18	.01
12	.05	15	.00	.05	25	.00	.28	50	.04
13	.11	16	.00	.04	22	.00	2.6	103	1.1
14	.07	17	.00	.04	25	.00	.98	35	.09
15	.06	18	.00	.02	25	.00	.33	26	.02
16	.19	15	.01	.07	25	.00	.22	21	.01
17	.05	15	.00	.02	27	.00	1.6	81	.44
18	.02	14	.00	.07	28	.01	1.0	38	.10
19	.05	14	.00	.34	26	.02	.53	28	.04
20	.43	96	.16	.26	23	.02	.86	66	.34
21	.64	59	.21	.03	26	.00	.52	9	.01
22	.11	30	.01	.00	30	.00	.38	4	.00
23	.20	66	.08	.20	27	.01	.40	17	.03
24	.20	34	.02	.13	29	.01	.81	26	.13
25	.09	28	.01	.06	31	.01	3.5	53	.88
26	.05	26	.00	.00	30	.00	2.0	24	.13
27	.05	22	.00	.00	30	.00	.96	18	.05
28	.05	21	.00	.98	101	2.6	.60	16	.03
29	.11	19	.01	1.2	41	.19	.43	13	.02
30	.09	18	.00	.36	13	.01	.59	11	.02
31	.06	18	.00	.43	58	.07	---	---	---
TOTAL	3.56	---	0.53	4.88	---	2.97	21.86	---	3.96

TOTAL DISCHARGE FOR YEAR 482.57 TOTAL LOAD FOR YEAR 156.60

03072000 DUNKARD CREEK AT SHANNOPIN, PA

LOCATION.--Lat 39°45'33", long 79°58'15", Greene County, Hydrologic Unit 05020005, on left bank at Shannopin, 1,300 ft upstream from highway bridge at mine buildings, 1.2 mi north of Dunkard, 3.5 mi upstream from mouth, and 4 mi southwest of Greensboro.

DRAINAGE AREA.--229 mi^2.

PERIOD OF RECORD.--October 1940 to current year. Prior to December 1940 monthly discharge only, published in WSP 1305.

REVISED RECORDS.--WSP 1505: 1955.

GAGE.--Water-stage recorder. Datum of gage is 806.25 ft above National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Records good except for estimated daily discharges, which are fair. Some regulation at low flow by mine pumpage above station. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--48 years, 274 ft^3/s, 16.25 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,600 ft^3/s, Aug. 18, 1980, gage height, 14.27 ft; minimum, 0.4 ft^3/s, Aug. 28, 1944, gage height, 0.75 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft^3/s and maximum (*).

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 3	0300	4,050	8.48	Mar. 4	2200	*7,820	*10.45

Minimum discharge, 3.8 ft^3/s, Aug. 16, 17, 18, gage height, 0.98 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	9.3	140	228	e86	168	199	122	79	13	10	18
2	15	9.4	98	302	e850	150	181	112	71	12	8.9	15
3	31	8.8	77	199	2770	146	162	107	67	10	8.1	12
4	24	14	87	e120	1550	3240	415	105	57	8.6	7.7	12
5	18	19	206	e94	e700	4150	708	109	48	9.1	7.9	12
6	14	15	149	e76	e320	1430	442	406	43	8.4	7.3	10
7	17	12	102	e68	e260	784	409	493	40	7.6	5.8	11
8	16	8.8	84	e62	e220	507	422	324	39	6.6	6.2	13
9	12	8.3	73	e58	e190	388	363	246	43	9.5	9.6	12
10	9.3	16	60	e54	e170	353	309	279	43	10	8.2	9.7
11	8.6	36	55	e52	e150	298	259	302	42	8.2	8.3	8.3
12	9.6	61	47	e48	e135	251	218	236	35	7.1	8.6	9.0
13	8.4	50	40	e49	e120	284	184	190	26	7.4	8.5	12
14	13	44	35	e50	e100	324	158	159	24	7.4	7.6	15
15	16	50	39	e40	e120	300	130	138	26	11	6.7	18
16	16	61	48	e34	e150	264	116	120	24	8.7	5.6	17
17	14	57	51	e30	e150	235	108	112	20	6.9	4.1	18
18	9.7	57	51	e45	e145	212	140	105	17	5.9	4.5	16
19	9.7	89	48	e90	e140	232	393	707	16	8.8	8.7	13
20	8.7	68	87	e1080	e280	239	319	1440	15	14	11	13
21	9.0	49	312	1210	501	245	253	1220	13	23	18	12
22	11	39	196	499	346	257	209	577	15	39	17	10
23	9.9	29	141	322	323	265	183	363	15	49	16	11
24	10	24	111	241	366	261	185	908	13	34	19	25
25	7.2	30	102	204	337	251	157	597	14	26	27	38
26	6.8	26	609	189	275	441	141	352	13	19	28	32
27	5.7	21	599	140	253	524	127	243	11	18	18	26
28	19	20	316	110	220	390	121	177	11	19	14	25
29	19	37	401	e96	187	322	133	137	12	17	29	19
30	12	178	314	e90	---	275	142	108	14	16	33	20
31	9.3	---	209	e84	---	233	---	90	---	15	29	---
TOTAL	406.9	1146.6	4887	5964	11414	17419	7286	10584	906	455.2	401.3	482.0
MEAN	13.1	38.2	158	192	394	562	243	341	30.2	14.7	12.9	16.1
MAX	31	178	609	1210	2770	4150	708	1440	79	49	33	38
MIN	5.7	8.3	35	30	86	146	108	90	11	5.9	4.1	8.3
CFSM	.06	.17	.69	.84	1.72	2.45	1.06	1.49	.13	.06	.06	.07
IN.	.07	.19	.79	.97	1.85	2.83	1.18	1.72	.15	.07	.07	.08

CAL YR 1987 TOTAL 58922.8 MEAN 161 MAX 3240 MIN 4.7 CFSM .70 IN. 9.57
WTR YR 1988 TOTAL 61352.0 MEAN 168 MAX 4150 MIN 4.1 CFSM .73 IN. 9.97

e Estimated

03072500 MONONGAHELA RIVER AT GREENSBORO, PA

LOCATION.--Lat 39°47'15", long 79°55'26", Greene County, Hydrologic Unit 05020005, on left bank on land guide wall, 950 ft upstream from dam at lock 7 at Greensboro, 0.4 mi upstream from Georges Creek, 2.0 mi downstream from Dunkard Creek, 4.3 mi downstream from Cheat River, and at mile 85.2.

DRAINAGE AREA.--4,407 mi².

PERIOD OF RECORD.--October 1938 to current year. Prior to January 1939 monthly discharge only, published in WSP 1305.

REVISED RECORDS.--WSP 1113: 1939 (M), 1941 (M). WSP 1435: 1939. WSP 1907: 1936 (M), 1955 (M).

GAGE.--Water-stage recorder and concrete dam control. Datum of gage is 767.55 ft above National Geodetic Vertical Datum, adjustment of 1912.

REMARKS.--No estimated daily discharge. Records good above 5,000 ft³/s and fair below except those below 1,000 ft³/s, which are poor. Flow regulated since 1938 by Tygart Lake 66 mi upstream and since 1926 by Lake Lynn 8 mi upstream combined capacity, 357,300 acre-ft. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--50 years, 8,198 ft³/s, 25.26 in/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 220,000 ft³/s, Nov. 5, 1985, gage height, 39.39 ft. from outside flood marks; minimum daily, 177 ft³/s, Sept. 11, 1988; minimum gage height, 10.23 ft, Apr. 29, 1941.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 1888 reached a stage of about 36 ft, from high-water profile by Corps of Engineers. Flood of Mar. 18, 1936, reached a stage of 28.4 ft, discharge, 130,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 55,500 ft³/s, Jan. 20, gage height, 18.24 ft, minimum daily, 177 ft³/s, Sept. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2740	443	11700	14300	7410	5310	6730	7390	2320	931	451	684
2	4330	1680	10600	17700	13100	4500	6980	6060	3320	569	559	943
3	3030	1320	9520	11900	28800	4240	5710	6590	2360	576	564	650
4	2460	1400	9070	11600	26700	29000	5330	4130	2150	481	1330	1500
5	3040	1190	9370	7710	31700	41400	9520	6480	1700	900	577	1460
6	3300	636	6140	5640	27500	26300	6710	17100	2470	410	803	2800
7	2740	298	10600	3580	16400	25300	7410	25500	2190	495	591	1230
8	2420	656	7850	4100	18000	17500	15300	23800	2020	579	372	1710
9	3200	665	7090	1330	11200	11600	16400	17000	2450	494	867	1660
10	2410	1830	9980	1150	9100	7060	18900	9970	2140	480	777	558
11	1870	4070	11800	2420	6930	7200	11000	6710	1500	972	408	177
12	2740	5510	7220	2850	5170	5210	11300	8570	1190	763	1270	730
13	2220	6040	4860	3760	5030	10100	6460	5980	1650	504	632	3570
14	2440	3250	8640	3270	2900	12000	7830	5100	1220	629	293	6460
15	2240	3710	6370	2160	4140	8290	4250	3350	1060	387	395	2640
16	2300	4090	5840	1520	6020	9400	2690	4350	1160	458	504	2500
17	1550	4880	5800	1330	5830	8040	2360	3290	1990	335	365	1840
18	1200	4880	4810	3530	5460	7480	5500	5190	517	412	431	2020
19	905	4020	2130	6060	6020	6040	8380	12100	376	410	568	3560
20	1400	4130	6560	36600	9550	4480	5420	15200	766	997	783	2260
21	1770	2410	11600	33000	9150	6890	7730	15900	747	1950	776	1070
22	1340	1670	12100	26300	11100	8740	4590	13600	637	1780	667	2120
23	1170	3660	10300	17900	10200	7930	5520	10600	341	2130	1460	1330
24	784	2360	7550	15000	10300	6640	4080	10200	609	856	964	1830
25	478	3080	8010	11400	9310	15300	4850	7300	455	1580	689	6300
26	498	1170	23500	7370	7290	18700	7930	9360	592	1480	2080	6720
27	1320	2460	26000	4750	5210	17400	3700	9870	597	564	1070	6990
28	1390	1990	25100	5080	3270	12000	1910	5450	475	721	359	3640
29	1100	5520	23800	4710	5420	7150	2550	3880	823	1030	1240	3300
30	1270	14200	19900	2880	---	9540	3950	4100	478	573	1950	2800
31	368	---	15600	3800	---	8570	---	3740	---	786	594	---
TOTAL	60023	93218	339410	274700	318210	369310	210990	287860	40303	25232	24389	75052
MEAN	1936	3107	10950	8861	10970	11910	7033	9286	1343	814	787	2502
MAX	4330	14200	26000	36600	31700	41400	18900	25500	3320	2130	2080	6990
MIN	368	298	2130	1150	2900	4240	1910	3290	341	335	293	177
†	-353	+309	-434	+26.0	+1.8	+225	+641	+534	-87.0	-213	-270	+113
MEAN‡	1583	3416	10520	8887	10970	12160	7674	9820	1256	601	517	2615
CFSM‡	.36	.78	2.39	2.02	2.49	2.76	1.74	2.23	.28	.14	.12	.59
IN.‡	.42	.87	2.76	2.33	2.68	3.18	1.94	2.57	.31	.16	.14	.66

CAL YR 1987 TOTAL 2145906 MEAN 5879 MAX 36500 MIN 251 ADJ -2.8 MEAN‡ 5876 CFSM‡ 1.33 IN.‡ 18.10
WTR YR 1988 TOTAL 2118697 MEAN 5789 MAX 41400 MIN 177 ADJ +41.4 MEAN‡ 5830 CFSM‡ 1.32 IN.‡ 18.02

† Change in contents, equivalent in cubic feet per second, in Tygart Lake and Lake Lynn. Records of contents in Lake Lynn furnished by Allegheny Power Service Corp.
‡ Adjusted for change in reservoir contents.

03073000 SOUTH FORK TENMILE CREEK AT JEFFERSON, PA

LOCATION.--Lat 39°55'23", long 80°04'22", Greene County, Hydrologic Unit 05020005, on right bank at downstream side of bridge on State Highway 188, 1 mi southwest of Jefferson, and 3.1 mi downstream from Ruff Creek.

DRAINAGE AREA.--180 mi².

PERIOD OF RECORD.--October 1931 to current year. Monthly discharge only for October 1931, published in WSP 1305.

REVISED RECORDS.--WSP 1305: 1949. WSP 1435: 1932-34, 1935 (M).

GAGE.--Water-stage recorder and masonry control. Datum of gage is 852.54 ft above National Geodetic Vertical Datum, adjustment of 1907. Prior to Oct. 21, 1938, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Slight diversion into basin during winter months from Monongahela River for Waynesburg water supply. Some regulation from reservoirs and pumpage above station. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--57 years, 200 ft³/s, 15.09 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,200 ft³/s, Nov. 27, 1985, gage height, 18.63 ft, from rating curve extended above 7,600 ft³/s on basis of slope-area measurement at gage height 18.45 ft, from floodmark in gage house; minimum observed, 0.05 ft³/s, Sept. 3, 1938, gage height, 0.36 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 2	1800	*7,180	*12.34	Mar. 4	1900	6,000	11.02

Minimum discharge, 0.57 ft³/s, Aug. 18, gage height, 0.57 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	e9.2	170	408	e80	95	106	60	17	2.7	5.5	3.8
2	24	e7.8	115	334	3800	84	105	53	17	2.9	4.9	3.1
3	e31	e9.0	90	244	2050	107	92	50	18	3.2	4.3	2.6
4	22	e11	182	e190	1480	3280	343	50	19	2.6	3.4	3.1
5	19	14	215	e140	788	1690	337	60	17	2.5	2.9	7.5
6	15	e12	144	e110	441	643	237	73	15	2.4	2.7	6.0
7	15	e10	100	e84	299	419	246	62	12	2.4	2.9	4.1
8	16	e8.8	80	e70	236	288	230	50	10	2.5	2.9	3.2
9	e13	16	72	e58	192	239	186	46	38	2.7	2.7	2.9
10	e10	40	71	e50	162	270	158	65	41	2.2	2.3	2.6
11	e12	54	62	e44	e135	204	133	62	18	2.0	2.3	2.5
12	16	47	50	e38	e115	175	112	49	13	1.8	2.2	2.1
13	e13	42	50	e35	e100	227	98	39	11	2.0	2.0	2.7
14	e11	60	40	e31	e86	211	86	44	9.1	2.5	1.8	4.4
15	12	67	57	e29	e100	183	77	41	8.0	2.3	1.6	4.3
16	11	49	79	e26	115	157	69	35	7.6	2.1	1.1	3.3
17	11	38	77	e25	96	138	63	29	8.6	1.7	.89	3.4
18	9.7	73	73	e41	95	129	86	33	6.5	1.7	.77	5.8
19	11	93	67	e100	102	145	127	190	5.5	4.2	6.8	4.9
20	12	68	373	e1100	258	140	86	247	5.1	7.2	9.8	3.8
21	14	59	412	611	230	135	76	278	4.4	43	7.1	3.1
22	14	44	264	339	169	136	68	159	4.0	47	4.0	3.4
23	13	32	205	238	194	142	67	103	3.7	17	3.3	3.4
24	14	e26	162	177	238	135	84	147	3.4	21	8.6	5.8
25	e9.0	e20	184	162	196	125	67	94	3.2	13	7.0	6.9
26	e7.4	e37	503	136	160	304	59	68	3.2	9.1	4.2	6.8
27	e6.6	e30	485	117	159	273	56	54	2.7	7.6	2.9	5.5
28	19	e23	e98	e98	127	200	56	42	2.6	6.5	2.3	4.4
29	18	254	e84	e84	109	166	79	34	2.7	7.2	3.1	4.0
30	e16	340	e76	e76	---	140	74	26	2.6	7.2	9.8	3.9
31	e12	---	e66	e66	---	114	---	21	---	5.6	5.9	---
TOTAL	478.7	1593.8	4706	5261	12312	10694	3663	2364	328.9	237.8	121.96	123.3
MEAN	15.4	53.1	152	170	425	345	122	76.3	11.0	7.67	3.93	4.11
MAX	52	340	503	1100	3800	3280	343	278	41	47	9.8	7.5
MIN	6.6	7.8	40	25	80	84	56	21	2.6	1.7	.77	2.1
CFSM	.09	.30	.84	.94	2.36	1.92	.68	.42	.06	.04	.02	.02
IN.	.10	.33	.97	1.09	2.54	2.21	.76	.49	.07	.05	.03	.03

CAL YR 1987 TOTAL 47623.71 MEAN 130 MAX 2830 MIN .75 CFSM .72 IN. 9.84
WTR YR 1988 TOTAL 41884.46 MEAN 114 MAX 3800 MIN .77 CFSM .64 IN. 8.66

e Estimated

03074500 REDSTONE CREEK AT WALTERSBURG, PA

LOCATION.--Lat 39°58'48", long 79°45'52", Fayette County, Hydrologic Unit 05020005, on right bank, 15 ft upstream from highway bridge at Waltersburg, 400 ft upstream from Bolden Run, and 0.9 mi upstream from Allen Run.

DRAINAGE AREA.--73.7 mi².

PERIOD OF RECORD.--October 1942 to current year. Monthly discharge only for October 1942, published in WSP 1305.

REVISED RECORDS.--WSP 1435: 1943-45 (M), 1946, 1947 (M), 1948 (P), 1949-50 (M), 1951 (P), 1952 (M).

GAGE.--Water-stage recorder. Datum of gage is 883.28 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 15, 1973, nonrecording gage 15 ft downstream at same datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Some regulation at low flow by mine pumpage into stream above station. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--46 years, 101 ft³/s, 18.61 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,660 ft³/s, June 23, 1972, gage height, 14.83 ft; minimum observed, 4.2 ft³/s, Aug. 2, 1962.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 2	1715	2,050	6.04	Mar. 4	1615	*2,360	*6.56

Minimum daily discharge, 11 ft³/s, July 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e150	e20	158	e230	e100	88	107	86	60	e22	e36	79
2	e110	e19	144	e190	1090	86	100	84	69	e21	e33	72
3	e160	e21	134	e160	586	115	95	82	74	e18	e30	69
4	e110	e21	235	e110	633	1350	155	82	59	e16	e27	109
5	e84	e19	194	e90	366	648	115	121	52	e17	e45	94
6	e66	e19	132	e70	239	341	120	133	48	e15	91	79
7	e52	e18	132	e60	179	248	224	115	44	e14	76	68
8	e52	e16	124	e52	152	195	259	101	42	e12	62	61
9	e44	e19	127	e48	130	184	205	99	95	e18	e50	56
10	e40	e31	127	e43	119	202	169	123	52	e18	e43	54
11	e34	e48	123	e40	e105	165	147	98	45	e15	e48	53
12	e32	e42	116	e38	e96	154	129	87	42	e12	54	52
13	e28	e40	104	e36	e86	199	116	81	39	e12	54	113
14	e26	e60	96	e34	e80	160	106	83	37	e13	e45	92
15	e25	e140	114	e32	e90	145	99	73	36	e20	e38	64
16	e23	e130	104	e31	105	132	93	69	39	e17	e33	56
17	e22	e120	97	e30	93	123	87	64	43	e13	e29	107
18	e21	132	90	e28	90	126	128	164	35	e11	55	93
19	e21	114	88	e700	111	126	104	373	e30	50	87	75
20	e20	110	207	311	186	122	90	399	e25	108	40	86
21	e21	103	140	211	159	118	85	230	e22	205	35	76
22	e20	92	131	149	131	110	77	170	e20	102	34	67
23	e19	90	128	127	158	108	80	138	e19	134	58	70
24	e18	89	116	117	145	113	77	227	e21	112	101	75
25	e17	88	138	119	124	114	71	132	e24	82	63	122
26	e16	88	345	109	112	257	69	111	e22	72	98	90
27	e19	84	235	97	108	198	64	98	e19	73	88	73
28	e21	80	220	90	98	160	70	87	e17	71	86	66
29	e23	263	210	e78	92	139	111	78	e19	65	179	59
30	e22	202	141	e68	---	125	98	72	e23	63	127	56
31	e21	---	137	e68	---	112	---	65	---	e54	92	---
TOTAL	1337	2318	4587	3566	5763	6463	3450	3925	1172	1475	1937	2286
MEAN	43.1	77.3	148	115	199	208	115	127	39.1	47.6	62.5	76.2
MAX	160	263	345	700	1090	1350	259	399	95	205	179	122
MIN	16	16	88	28	80	86	64	64	17	11	27	52
CFSM	.59	1.05	2.01	1.56	2.70	2.83	1.56	1.72	.53	.65	.85	1.03
IN.	.67	1.17	2.32	1.80	2.91	3.26	1.74	1.98	.59	.74	.98	1.15

CAL YR 1987 TOTAL 38887 MEAN 107 MAX 1770 MIN 13 CFSM 1.45 IN. 19.63
WTR YR 1988 TOTAL 38279 MEAN 105 MAX 1350 MIN 11 CFSM 1.42 IN. 19.32

e Estimated

03075070 MONONGAHELA RIVER AT ELIZABETH, PA

LOCATION.--Lat 40°15'44", long 79°54'05", Allegheny County, Hydrologic Unit 05020005, on right bank 30 ft landward from upstream end of guide wall, 1,050 ft upstream from dam at lock 3 at Elizabeth, 0.4 mi downstream from Lobbs Creek, and at mile 24.0.

DRAINAGE AREA.--5,340 mi².

PERIOD OF RECORD.--October 1933 to current year. Published as "at Charleroi" (station 03075000) October 1933 to September 1976. Monthly discharge prior to 1940, adjusted for reservoir contents, published in WSP 1305. Records for March 1886 to March 1905 (high-water periods, only), published in WSP 169, are unreliable and should not be used (peak discharge of July 11, 1888, as published in WSP 783, is still considered reliable).

REVISED RECORDS.--WSP 758: Drainage area. WSP 783: 1888 (M). WSP 1435: 1934, 1936. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder and concrete dam. Datum of gage is 725.50 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). From Oct. 1, 1967, to Sept. 30, 1976, at site 17.5 mi upstream at datum 8.10 ft higher. Prior to Oct. 1, 1967, water-stage recorder at site 17.9 mi upstream at datum 9.83 ft higher. Oct. 1, 1965, to Sept. 30, 1967, auxiliary staff gage and Apr. 14, 1966, to Sept. 30, 1967, auxiliary water-stage recorder at present site.

REMARKS.--No estimated daily discharge. Records good except those below 1,000 ft³/s, which are fair. Flow regulated by locks above station, since 1938 by Tygart Lake, and since 1926 by Lake Lynn, combined capacity, 357,000 acre-ft. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--55 years, 9,095 ft³/s, 23.13 in/yr, adjusted for storage 1940-75.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 178,000 ft³/s, Nov. 6, 1985, gage height, 23.60 ft; minimum not determined.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 59,300 ft³/s, Mar. 5, gage height, 9.60 ft; minimum daily, 526 ft³/s, Nov. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2580	580	12900	14700	7610	6240	8080	7720	3010	651	854	742
2	4160	1160	10400	17300	19100	5100	7250	6370	3480	862	852	754
3	4240	1470	9080	14800	38900	5360	6600	7060	3210	676	737	1390
4	3080	1620	10300	11100	31100	24200	6370	5770	2720	661	1040	1280
5	3470	1440	10200	8760	35800	52400	10300	6060	2300	711	1180	1620
6	2890	1240	6250	5400	30300	32600	8520	13200	2820	671	905	3060
7	3500	662	10000	4790	19200	27600	8660	26700	2650	677	940	1300
8	2860	526	8740	5330	19200	20800	14500	22800	2110	627	750	2050
9	2730	812	7250	2530	13100	14300	18400	20300	3320	577	759	1800
10	3040	1600	8190	1810	10700	9570	18700	10400	2730	655	1240	1000
11	2610	3550	12100	3640	8110	8420	13000	8410	2230	592	790	932
12	2620	4810	8050	3480	5900	7040	12100	8410	1310	958	696	1140
13	3080	6470	5820	4400	6130	9690	8070	7420	2000	726	667	6580
14	2330	4640	7420	3500	4370	13500	8780	5690	1590	662	677	3400
15	2080	3600	6940	3530	3920	10200	5050	4290	1700	698	660	2570
16	2590	4290	6120	1940	5680	9310	4770	5160	1000	671	642	2710
17	2480	4850	6120	1750	6580	10000	2700	3780	2410	630	738	2340
18	1360	4710	5120	2400	5990	8840	4340	4260	1430	591	741	2370
19	1060	4940	3450	6190	6340	7810	9830	12100	812	724	773	3550
20	1450	4110	5160	28400	9150	5580	6000	16800	768	1560	720	2390
21	1760	3900	10800	39300	11000	6810	8630	17800	988	3750	741	1350
22	1740	1960	12400	27300	10300	8830	5270	14600	746	2160	856	2250
23	1380	3180	11800	19500	11900	9050	6120	12100	644	2500	1760	1650
24	1110	2950	8430	16600	11100	7190	5160	11900	579	2040	1180	3080
25	646	2930	6100	12200	10400	14400	5530	9110	600	1580	757	7780
26	527	2430	20900	8980	7970	18000	7260	9000	563	1640	1600	7140
27	1180	1680	26500	5790	6780	19600	5850	11400	572	1330	1960	5350
28	1700	2670	26000	5850	4850	14000	2520	5980	565	863	983	3570
29	1250	4050	24200	4770	4600	9550	3440	5560	595	935	1250	3150
30	1730	14500	21100	4640	---	9300	3180	4250	674	1020	2550	2690
31	891	---	16300	3060	---	9700	---	4660	---	1030	998	---
TOTAL	68124	97330	344140	293740	366080	414990	234980	309060	50126	33428	30996	80988
MEAN	2198	3244	11100	9475	12620	13390	7833	9970	1671	1078	1000	2700
MAX	4240	14500	26500	39300	38900	52400	18700	26700	3480	3750	2550	7780
MIN	527	526	3450	1750	3920	5100	2520	3780	563	577	642	742

CAL YR 1987 TOTAL 2372712 MEAN 6501 MAX 41500 MIN 504
WTR YR 1988 TOTAL 2323982 MEAN 6350 MAX 52400 MIN 526

03076500 YOUGHIOGHENY RIVER AT FRIENDSVILLE, MD

LOCATION.--Lat 39°39'13", long 79°24'31", Garrett County, Hydrologic Unit 05020006, on left bank 0.7 mi upstream from bridge on State Highway 42 at Friendsville, and 1.5 mi upstream from Bear Creek.

DRAINAGE AREA.--295 mi^2.

PERIOD OF RECORD.--August 1898 to December 1904 and October 1940 to current year. Annual maximum, water years 1905, 1923-31, 1940, published in WSP 1675. October, November 1940 monthly discharge only, published in WSP 1305. September 1922 to September 1926 (gage heights only) in reports of Pennsylvania Department of Forests and Waters.

REVISED RECORDS.--WSP 1385: Drainage area at former site, 1898-1905, 1941(M), 1942, 1944-45, 1948-49, 1951(M).

GAGE.--Water-stage recorder. Datum of gage is 1,487.33 ft above National Geodetic Vertical Datum of 1929. Aug. 17, 1898, to Dec. 31, 1904, and Sept. 1, 1922, to Sept. 30, 1926, nonrecording gages at bridge 0.7 mi downstream at datum 16.24 ft and 16.29 ft lower, respectively.

REMARKS.--Records good. Low and medium flow regulated since July 1925 by Deep Creek Reservoir, 12 mi upstream from station (see station 03076000). U.S. Army Corps of Engineers satellite telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--54 years (water years 1899-1904, 1941-88), 643 ft^3/s, 29.60 in/yr, adjusted for storage since October 1940.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,600 ft^3/s, Mar. 29, 1924, gage height, 14.2 ft, from flood-marks, site and datum then in use or 10.2 ft, present site and datum, from rating curve extended above 5,800 ft^3/s on basis of slope-area measurement of peak flow; minimum daily discharge, 8.2 ft^3/s, Sept. 11, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,930 ft^3/s, Jan. 20, gage height, 5.20 ft; minimum discharge, 29 ft^3/s, Aug. 18, gage height, 1.87 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	479	78	1110	1380	840	332	423	1150	338	93	75	127
2	350	122	822	1210	1270	324	388	949	320	61	51	128
3	383	73	707	862	1550	388	333	702	369	50	71	46
4	314	72	652	939	2370	1580	356	587	262	94	52	81
5	259	71	574	758	2230	2480	379	1050	227	91	88	276
6	324	60	491	611	1230	1410	336	3040	243	55	65	239
7	312	67	531	513	1000	997	665	2630	236	44	54	234
8	353	64	424	437	949	836	1240	1490	206	81	83	158
9	417	70	513	255	709	718	1070	1410	332	51	53	170
10	277	140	1310	218	645	714	820	1610	490	39	33	145
11	298	463	1140	e200	609	621	654	1430	237	69	88	54
12	297	284	775	188	598	463	551	970	185	74	118	168
13	195	236	601	289	314	577	485	716	202	61	49	231
14	133	315	579	322	e290	648	418	482	185	81	44	366
15	122	395	668	335	273	610	416	390	170	112	133	273
16	209	401	745	182	383	593	381	459	157	56	56	220
17	107	419	668	146	346	597	308	432	191	49	31	364
18	100	420	612	396	324	562	386	569	118	42	143	381
19	195	364	433	677	345	382	542	2220	102	40	144	366
20	155	317	1050	2740	736	360	400	2490	131	64	136	295
21	94	311	1360	2200	804	450	352	1910	88	87	165	264
22	142	259	970	1370	588	368	361	1550	194	147	161	297
23	143	255	797	849	605	431	312	1120	182	83	184	308
24	89	281	575	642	581	948	404	1140	124	71	323	241
25	84	448	1140	756	490	912	392	1070	75	75	214	429
26	132	320	2130	619	435	870	306	944	63	58	175	530
27	89	368	1660	590	413	813	288	770	97	52	74	411
28	132	269	1480	547	375	654	289	528	68	47	56	346
29	137	1170	1250	472	351	554	630	446	55	115	139	313
30	126	2060	986	332	---	492	1420	454	54	50	153	283
31	129	---	848	368	---	436	---	428	---	48	127	---
TOTAL	6576	10172	27601	21403	21653	22120	15305	35136	5701	2140	3338	7744
MEAN	212	339	890	690	747	714	510	1133	190	69.0	108	·258
MAX	479	2060	2130	2740	2370	2480	1420	3040	490	147	323	530
MIN	84	60	424	146	273	324	288	390	54	39	31	46
(†)	-91.3	+33.6	+120	-16.3	+59.0	+87.7	+85.7	+60.0	-31.9	-35.8	-47.1	-84.2
MEAN≠	121	373	1010	674	806	802	596	1193	158	33.2	60.9	174
CFSM≠	0.41	1.26	3.42	2.28	2.73	2.72	2.02	4.04	0.54	0.11	0.21	0.59
IN≠	0.47	1.41	3.94	2.63	2.94	3.14	2.25	4.66	0.60	0.13	0.24	0.66

CAL YR 1987 TOTAL 179815 MEAN 493 MAX 2770 MIN 35 MEAN≠ 486 CFSM≠ 1.65 IN≠ 22.33
WTR YR 1988 TOTAL 178889 MEAN 489 MAX 3040 MIN 31 MEAN≠ 501 CFSM≠ 1.70 IN≠ 23.09

e Estimated
† Change in contents, equivalent in cubic feet per second, in Deep Creek Reservoir, provided by Pennsylvania Electric Co.
≠ Adjusted for change in contents.

03077500 YOUGHIOGHENY RIVER AT YOUGHIOGHENY RIVER DAM, PA

LOCATION.--Lat 39°48'19", long 79°21'52", Somerset County, Hydrologic Unit 05020006, on right bank 800 ft upstream from bridge on State Highway 281, 0.2 mi downstream from Youghiogheny River Dam, 0.2 mi south of Confluence, 0.7 mi upstream from Casselman River, and at mile 73.2.

DRAINAGE AREA.--436 mi^2.

PERIOD OF RECORD.--September 1904 to September 1913 (gage heights only), October 1939 to current year. Monthly discharge only for October 1939 to April 1940, published in WSP 1305. Figures of daily discharge prior to January 1911, published in WSP 169, 205, 243, 263, and 283 are unreliable and should not be used. September 1904 to September 1922 (gage heights only) in reports of Water Supply Commission of Pennsylvania or Pennsylvania Department of Forests and Waters. Published as "at Confluence" 1904-22.

REVISED RECORDS.--WSP 893: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,310.17 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark).

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated since 1925 by Deep Creek Reservoir and since 1943 by Youghiogheny River Lake 0.2 mi upstream. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--49 years (1939-88), 875 ft^3/s, 27.26 in/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,700 ft^3/s, Mar. 5, 1948, gage height, 11.28 ft; maximum gage height, 19.08 ft, Oct. 15, 1954 (backwater from Casselman River); practically no flow at times during May and June 1950 when reservoir gates were closed.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,510 ft^3/s, May 25, gage height, 6.37 ft; maximum gage height, 6.85 ft, Mar. 4 (backwater from Casselman River); minimum daily discharge, 179 ft^3/s, Apr. 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	600	717	770	e2160	515	419	399	1550	476	529	448	429
2	604	713	905	e1990	e531	419	346	1530	477	526	448	490
3	603	709	905	1670	e542	423	308	1530	480	535	448	524
4	599	709	905	1210	618	e430	309	1520	474	529	448	528
5	498	663	898	944	862	e840	308	e1380	469	524	447	524
6	439	605	892	674	1080	e1630	314	e1880	469	524	445	528
7	440	599	892	416	1070	2130	e320	e2090	469	523	440	535
8	440	599	892	360	1070	1910	e320	e2090	469	515	438	535
9	440	599	760	360	1070	1350	e320	2070	469	506	438	535
10	440	599	621	359	982	755	317	2140	469	502	438	546
11	439	599	621	360	742	475	323	2470	476	496	438	547
12	430	599	613	353	544	479	327	2400	480	491	438	547
13	524	599	610	350	544	484	321	1640	484	491	438	553
14	1090	599	786	350	544	502	327	1020	455	482	438	551
15	856	599	916	350	544	340	331	766	502	485	438	559
16	944	599	918	350	544	279	327	497	503	492	438	562
17	949	599	918	354	443	404	327	343	507	491	435	570
18	944	599	918	300	400	e420	328	363	496	486	430	559
19	944	599	926	e266	396	e420	324	458	491	481	431	563
20	944	599	e957	e967	397	e420	322	e651	491	480	438	571
21	937	589	e957	1650	396	e420	317	e934	508	476	437	569
22	855	577	957	1480	400	408	317	1810	532	469	438	559
23	804	577	1170	1360	493	412	319	2570	535	469	402	633
24	804	577	1300	1150	799	418	277	3030	535	423	428	697
25	804	577	1300	1010	957	421	179	3270	535	369	428	689
26	778	570	e1320	887	871	428	198	3470	535	418	428	686
27	654	572	e1490	756	816	440	260	2180	535	449	428	686
28	756	566	1990	606	662	411	222	1060	535	449	428	690
29	727	e588	2230	511	498	403	263	915	535	448	430	695
30	721	e599	2190	511	---	399	979	786	535	448	428	690
31	720	---	2170	511	---	399	---	589	---	448	428	---
TOTAL	21727	18294	33697	24575	19330	19088	9849	49002	14926	14954	13503	17350
MEAN	701	610	1087	793	667	616	328	1581	498	482	436	578
MAX	1090	717	2230	2160	1080	2130	979	3470	535	535	448	697
MIN	430	566	610	266	396	279	179	343	455	369	402	429
†	-555	-87.4	+309	+277	+568	+595	+543	-21.1	-321	-442	-358	-257
MEAN ‡	146	523	1396	1070	1235	1211	871	1560	177	40.0	78.0	321
CFSM ‡	.33	1.20	3.20	2.45	2.83	2.78	2.00	3.58	.41	.09	.18	.74
IN.‡	.38	1.34	3.69	2.82	3.05	3.20	2.23	4.13	.46	.10	.21	.83

CAL YR 1987 TOTAL 260702 MEAN 714 MAX 2570 MIN 101 ADJ -48.3 MEAN‡ 667 CFSM‡ 1.53 IN.‡ 20.69
WTR YR 1988 TOTAL 256295 MEAN 700 MAX 3470 MIN 179 ADJ +18.5 MEAN‡ 718 CFSM‡ 1.65 IN.‡ 22.44

† Change in contents, equivalent in cubic feet per second, in Deep Creek Reservoir and Youghiogheny River Lake. Records for Deep Creek Reservoir furnished by Pennsylvania Electric Co.
‡ Adjusted for change in reservoir contents.

e Estimated

03078000 CASSELMAN RIVER AT GRANTSVILLE, MD

LOCATION.--Lat 39°42'08", long 79°08'12", Garrett County, Hydrologic Unit 05020006, on left bank at downstream side of highway bridge, 0.3 mi upstream from Slaubaugh Run, 0.7 mi downstream from U.S. Highway 40, and 1.0 mi northeast of Grantsville.

DRAINAGE AREA.--62.5 mi^2.

PERIOD OF RECORD.--July 1947 to current year.

REVISED RECORDS.--WSP 1143: 1948.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 2,088.97 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily dischareges, which are fair. U. S. Army Corps of Engineers satellite telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--41 years, 118 ft^3/s, 25.64 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,400 ft^3/s, Oct. 15, 1954, gage height, 10.70 ft, from rating curve extended above 1,600 ft^3/s on basis of contracted-opening measurement at gage height 8.13 ft; no flow Aug. 31, 1962, result of regulation from unknown source.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 20	0030	(a)	*4.55	May 5	1715	*1,310	4.10
Jan. 20	0745	1,230	4.01				

(a) Backwater from ice

Minimum discharge, 2.2 ft^3/s, Aug. 14, gage height, 0.69 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	70	16	191	317	219	79	96	190	71	7.0	4.0	13
2	49	15	146	207	281	76	91	150	89	6.6	3.9	11
3	81	15	118	162	263	106	82	137	91	6.5	3.3	9.5
4	56	15	120	146	454	540	88	131	86	5.6	2.7	35
5	42	14	106	102	281	382	100	615	63	5.1	2.6	77
6	36	14	93	e90	194	209	89	908	49	4.8	3.8	48
7	37	13	87	e80	172	183	425	493	42	4.6	3.8	31
8	42	12	88	e74	163	161	325	315	38	4.5	3.4	21
9	42	14	166	e70	154	157	196	256	117	4.7	3.2	17
10	36	32	286	e66	125	161	155	243	92	4.6	2.8	15
11	33	45	176	e62	113	136	138	201	51	10	2.6	13
12	30	37	142	e59	102	119	127	168	41	9.0	2.5	12
13	28	38	114	e58	75	141	121	141	35	9.5	2.4	46
14	25	77	95	e56	117	131	113	125	30	8.8	2.4	97
15	24	103	228	e54	91	114	103	114	26	7.3	2.7	36
16	22	97	215	e52	e78	101	96	105	23	5.3	2.8	23
17	20	115	146	e52	e74	93	93	113	22	4.7	2.8	303
18	19	93	120	e120	e72	87	86	323	22	4.3	3.2	256
19	19	66	104	201	e70	83	85	581	19	5.7	14	116
20	19	59	387	806	194	77	78	539	18	19	247	78
21	19	52	307	336	175	73	73	431	16	25	90	57
22	19	64	192	212	143	68	67	284	14	17	26	46
23	18	74	161	170	147	95	61	218	13	11	19	43
24	18	71	141	144	141	168	75	365	13	8.6	325	80
25	16	69	293	136	119	143	81	290	12	7.4	87	342
26	16	55	467	113	105	158	72	215	10	6.1	40	252
27	17	48	288	105	100	144	66	169	8.9	5.3	26	134
28	19	45	220	100	88	129	62	139	8.5	4.9	18	94
29	19	431	185	101	83	120	126	115	8.0	4.5	23	72
30	17	357	151	111	---	109	306	96	7.3	4.3	25	60
31	16	---	156	131	---	102	---	82	---	4.1	17	---
TOTAL	924	2156	5689	4493	4393	4445	3676	8252	1135.7	235.8	1011.9	2437.5
MEAN	29.8	71.9	184	145	151	143	123	266	37.9	7.61	32.6	81.2
MAX	81	431	467	806	454	540	425	908	117	25	325	342
MIN	16	12	87	52	70	68	61	82	7.3	4.1	2.4	9.5
CFSM	.48	1.15	2.94	2.32	2.42	2.29	1.96	4.26	.61	.12	.52	1.30
IN.	.55	1.28	3.39	2.67	2.61	2.65	2.19	4.91	.68	.14	.60	1.45

CAL YR 1987 TOTAL 33422.2 MEAN 91.6 MAX 721 MIN 3.5 CFSM 1.47 IN. 19.89
WTR YR 1988 TOTAL 38848.9 MEAN 106 MAX 908 MIN 2.4 CFSM 1.70 IN. 23.12

e Estimated

03079000 CASSELMAN RIVER AT MARKLETON, PA

LOCATION.--Lat 39°51'35", long 79°13'40", Somerset County, Hydrologic Unit 05020006, on right bank at downstream side of highway bridge at Markleton, 2 mi southwest of Casselman, and 7 mi downstream from Coxes Creek.

DRAINAGE AREA.--382 mi².

PERIOD OF RECORD.--August to September 1913 (gage heights and discharge measurement only), October 1920 to current year. Monthly discharge only for some periods, published in WSP 1305. October 1913 to September 1920 (gage heights and discharge measurements only) in reports of Water Supply Commission of Pennsylvania.

REVISED RECORDS.--WSP 743: Drainage area. WSP 1305: 1923-31. WSP 1435: 1932-34, 1935 (M), 1936-38. WSP 1625: 1924 (M).

GAGE.--Water-stage recorder. Datum of gage is 1,655.29 ft above National Geodetic Vertical Datum, adjustment of 1907. Prior to Nov. 19, 1940, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Slight diversion above station to city of Frostburg, MD, in the Potomac River basin. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--68 years (1920-88), 660 ft³/s, 23.46 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,000 ft³/s, estimated, Oct. 15, 1954, gage height, 14.06 ft, on basis of summation of peak flows at nearby stations; minimum, 10 ft³/s, Sept. 9, 1957; minimum gage height, 0.81 ft, Sept. 30, Oct. 1, 1985.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Jan. 20	0800	*7,680	*6.80				

Minimum discharge, 16 ft³/s, Aug. 14, gage height, 1.01 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	376	104	1410	1770	e580	471	513	1010	382	81	26	70
2	298	103	991	1220	e2300	444	479	744	410	80	24	53
3	498	100	728	832	2580	651	445	607	401	79	23	44
4	380	100	673	770	2760	4160	520	541	393	76	23	188
5	273	98	641	438	2300	3740	524	917	321	74	22	259
6	231	94	563	336	1370	1990	450	2850	268	71	68	202
7	227	90	421	e290	1090	1460	2850	2100	240	68	47	140
8	238	88	413	e270	e800	1140	2830	1360	221	65	29	101
9	234	96	733	e250	e620	1010	1800	1050	425	63	26	79
10	210	154	1370	e240	e500	980	1310	1130	435	62	24	65
11	193	219	1020	e230	e420	797	1040	881	277	65	23	54
12	185	209	816	e220	e380	683	850	712	226	66	22	47
13	174	207	639	e210	e350	721	716	597	201	61	22	98
14	158	306	540	e200	e320	671	613	531	182	44	30	144
15	146	500	813	e190	e500	585	555	490	166	40	26	156
16	141	437	1070	e190	547	535	511	455	155	34	29	97
17	134	402	762	e200	451	517	474	422	149	30	27	236
18	129	409	637	e240	476	490	465	877	143	26	22	816
19	125	325	559	e400	509	485	475	2420	134	26	36	346
20	123	275	2040	e3900	1150	473	400	3040	126	84	62	220
21	129	264	2250	2220	1200	435	357	3180	120	196	351	175
22	124	218	1250	1240	736	405	324	1950	114	151	143	143
23	117	229	1050	989	874	528	316	1340	108	93	91	127
24	113	372	853	801	826	949	523	2750	103	94	342	136
25	110	403	1250	e660	657	859	441	1610	99	64	284	581
26	109	332	2240	e580	575	966	353	1180	94	49	149	801
27	106	289	1680	e460	561	989	322	913	89	43	99	410
28	122	260	1110	e400	507	806	319	729	87	38	74	266
29	123	2570	1100	e360	487	685	543	603	86	41	167	207
30	117	2920	776	e480	---	614	1460	514	83	36	155	172
31	111	---	659	e480	---	552	---	443	---	31	101	---
TOTAL	5754	12173	31057	21066	26426	29791	22778	37946	6238	2031	2567	6433
MEAN	186	406	1002	680	911	961	759	1224	208	65.5	82.8	214
MAX	498	2920	2250	3900	2760	4160	2850	3180	435	196	351	816
MIN	106	88	413	190	320	405	316	422	83	26	22	44
CFSM	.49	1.06	2.62	1.78	2.39	2.52	1.99	3.20	.54	.17	.22	.56
IN.	.56	1.19	3.02	2.05	2.57	2.90	2.22	3.70	.61	.20	.25	.63

CAL YR 1987 TOTAL 202163 MEAN 554 MAX 3860 MIN 43 CFSM 1.45 IN. 19.69
WTR YR 1988 TOTAL 204260 MEAN 558 MAX 4160 MIN 22 CFSM 1.46 IN. 19.89

e Estimated

03080000 LAUREL HILL CREEK AT URSINA, PA

LOCATION.--Lat 39°49'13", long 79°19'18", Somerset County, Hydrologic Unit 05020006, on right bank 500 ft downstream from bridge on State Highway 281 at Ursina, and 2.7 mi upstream from mouth.

DRAINAGE AREA.--121 mi^2.

PERIOD OF RECORD.--August to September 1913 (gage heights and discharge measurement only). October 1918 to current year. Monthly discharge only for some periods, published in WSP 1305. October 1913 to September 1918 (gage heights and discharge measurements only) in reports of Water Supply Commission of Pennsylvania.

REVISED RECORDS.--WSP 743: Drainage area. WSP 893: 1919-21, 1932-34. WSP 1305: 1922-31. WSP 1435: 1919-20. WSP 1625: 1932 (M).

GAGE.--Water-stage recorder and masonry control. Datum of gage is 1,335.26 ft above National Geodetic Vertical Datum of 1929, unadjusted. Prior to July 18, 1939, nonrecording gage at bridge 0.5 mi downstream at datum 6.20 ft lower.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--70 years (1918-88), 265 ft^3/s, 29.74 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,900 ft^3/s, Oct. 15, 1954, gage height, 10.63 ft, from rating curve extended above 6,100 ft^3/s on basis of slope-area measurement of peak flow; minimum, 2.2 ft^3/s, Sept. 26, 1932.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 4	1730	*3,040	*4.52	No other peak greater than base discharge.			

Minimum daily discharge, 3.1 ft^3/s, July 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	292	46	916	596	e330	175	200	658	87	e7.6	8.6	26
2	245	45	600	528	e1330	164	180	462	97	e8.0	8.3	18
3	508	46	422	433	1530	304	165	338	86	e9.0	8.0	15
4	383	44	368	308	1210	2050	225	278	70	e8.0	6.4	136
5	281	44	319	216	900	1770	207	1020	61	e6.4	6.2	151
6	227	43	268	159	606	898	178	1260	52	5.6	8.1	85
7	202	38	234	128	e380	634	792	825	47	4.5	20	56
8	202	37	222	e110	e290	483	784	564	40	3.9	19	42
9	174	41	344	e96	e240	436	540	422	114	3.5	13	32
10	144	91	903	e86	e200	524	403	465	94	3.1	9.7	27
11	128	123	699	e80	e170	417	319	351	51	3.4	7.2	23
12	121	103	521	e76	e150	366	260	276	40	4.8	5.9	20
13	108	104	387	e74	e135	335	221	236	35	4.0	5.3	74
14	96	169	291	e70	e120	301	189	210	30	4.5	4.5	115
15	90	253	422	e66	e135	280	167	185	25	4.9	4.4	65
16	84	234	535	e64	155	244	153	165	24	5.7	4.9	45
17	74	210	378	e62	185	227	137	146	28	5.3	4.9	124
18	70	225	295	e58	134	179	161	229	28	4.6	6.1	221
19	67	198	251	e130	179	166	184	613	26	4.2	8.4	116
20	64	178	786	e1450	460	165	137	1300	23	22	15	86
21	67	179	976	1050	471	151	124	1360	22	87	12	75
22	64	189	608	594	355	153	114	820	19	79	8.6	60
23	57	184	445	415	344	176	119	537	16	36	18	54
24	54	201	344	316	315	389	157	622	14	56	55	56
25	52	258	560	284	260	424	124	416	13	47	37	272
26	48	222	861	233	248	549	107	301	12	27	19	328
27	49	198	661	182	217	481	100	241	e11	18	13	171
28	56	176	517	e145	189	368	106	196	e10	15	10	122
29	60	1760	427	e130	178	297	341	163	e8.6	12	60	92
30	53	1860	322	e115	---	257	1000	128	e7.6	10	95	77
31	49	---	299	e170	---	222	---	105	---	9.6	42	---
TOTAL	4169	7499	15181	8424	11416	13585	7894	14892	1191.2	519.6	543.5	2784
MEAN	134	250	490	272	394	438	263	480	39.7	16.8	17.5	92.8
MAX	508	1860	976	1450	1530	2050	1000	1360	114	87	95	328
MIN	48	37	222	58	120	151	100	105	7.6	3.1	4.4	15
CFSM	1.11	2.07	4.05	2.25	3.25	3.62	2.17	3.97	.33	.14	.14	.77
IN.	1.28	2.31	4.67	2.59	3.51	4.18	2.43	4.58	.37	.16	.17	.86

CAL YR 1987 TOTAL 81432.9 MEAN 223 MAX 1860 MIN 4.0 CFSM 1.84 IN. 25.04
WTR YR 1988 TOTAL 88098.3 MEAN 241 MAX 2050 MIN 3.1 CFSM 1.99 IN. 27.08

e Estimated

03081000 YOUGHIOGHENY RIVER BELOW CONFLUENCE, PA

LOCATION.--Lat 39°49'39", long 79°22'22", Fayette County, Hydrologic Unit 05020006, on left bank 1.0 mi downstream from Casselman River, 1.5 mi northwest of Confluence, and at mile 72.0.

DRAINAGE AREA.--1,029 mi².

PERIOD OF RECORD.--June 1940 to current year. Monthly discharge only for June 1940, published in WSP 1305.

GAGE.--Water-stage recorder. Datum of gage is 1,302.77 ft above National Geodetic Vertical Datum of 1929, unadjusted.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated since 1925 by Deep Creek Reservoir and since 1943 by Youghiogheny River Lake 1.7 mi upstream. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--48 years, 1,999 ft³/s, 26.38 in/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 69,500 ft³/s, Oct. 15, 1954, gage height, 19.92 ft, from rating curve extended above 25,000 ft³/s on basis of slope-area measurement of peak flow; minimum, 40 ft³/s, Oct. 14, 1943, gage height, 0.31 ft; minimum daily, 121 ft³/s, Sept. 27, 1943.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 17, or 18, 1936, reached a stage of 21.6 ft, from floodmarks, discharge, 85,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 13,400 ft³/s, Mar. 4, gage height, 8.96 ft; minimum daily, 475 ft³/s, Aug. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1230	871	e5000	4950	2530	1130	1400	3920	1110	580	506	567
2	1130	860	e3600	4420	4940	1090	1220	3360	1130	576	501	586
3	1540	855	e2600	3340	6160	1330	1050	3020	1140	567	496	794
4	1370	848	2280	2680	5590	7680	1170	2820	1120	565	494	954
5	1050	799	2170	1890	5140	9250	1210	4160	1040	562	495	810
6	861	716	1990	1300	3800	5710	1070	7210	915	559	511	709
7	819	701	1850	1010	2990	5050	4180	6160	873	555	561	651
8	833	692	1800	991	2820	4250	5150	4860	848	549	522	624
9	812	694	1980	1020	2430	3330	3420	4270	1100	541	502	608
10	757	775	3280	935	2230	2670	2490	4400	1170	537	493	595
11	716	916	2620	837	1790	1990	2020	4410	927	536	485	592
12	698	899	2190	844	1450	1780	1710	4110	836	543	478	726
13	761	882	1890	906	1230	1790	1480	3100	797	539	477	759
14	1370	996	1840	835	1100	1720	1320	2100	709	552	475	706
15	1090	1300	2340	746	1320	1430	1210	1750	711	547	481	676
16	1170	1290	3000	733	1390	1220	1130	1320	697	553	480	672
17	1160	1200	2410	746	1130	1310	1080	1090	690	548	483	773
18	1140	1210	2150	953	1100	1230	1080	1380	684	539	513	1630
19	1130	1140	1990	1450	1160	1210	1140	3830	666	537	636	1080
20	1120	1050	3960	9040	2030	1190	1010	5880	651	574	724	866
21	1120	1040	5080	5450	2400	1150	935	7200	643	760	575	786
22	1040	948	3420	4280	1680	1090	890	5580	634	776	632	745
23	968	933	3070	3420	1920	1170	883	5330	626	651	884	745
24	953	1090	2880	2900	2220	1960	1220	7590	617	584	885	737
25	944	1230	3570	2510	2190	2050	995	6400	609	513	642	855
26	906	1140	5310	1990	1950	2220	857	5950	603	509	563	1130
27	822	1070	4690	1610	1820	2300	859	4250	595	540	524	2080
28	927	1020	4490	1340	1550	2000	804	2410	590	530	569	1380
29	922	e3000	4440	1180	1260	1770	1260	2080	587	522	729	1110
30	898	e7000	3930	1240	---	1620	3820	1710	584	520	591	992
31	883	---	3610	1410	---	1490	---	1370	---	513	537	---
TOTAL	31140	37165	95430	66956	69320	75180	48063	123020	23902	17477	17444	25938
MEAN	1005	1239	3078	2160	2390	2425	1602	3968	797	564	563	865
MAX	1540	7000	5310	9040	6160	9250	5150	7590	1170	776	885	2080
MIN	698	692	1800	733	1100	1090	804	1090	584	509	475	567
†	-555	-87.4	+309	+277	+568	+595	+543	-21.1	-321	-442	-358	-257
MEAN ‡	450	1152	3387	2437	2958	3020	2145	3947	476	122	205	608
CFSM ‡	.44	1.12	3.29	2.37	2.88	2.94	2.08	3.84	.46	.12	.20	.59
IN.‡	.51	1.25	3.79	2.73	3.11	3.39	2.32	4.43	.51	.14	.23	.66

CAL YR 1987 TOTAL 599522 MEAN 1643 MAX 7170 MIN 560 ADJ -48.3 MEAN‡ 1595 CFSM‡ 1.55 IN.‡ 21.03
WTR YR 1988 TOTAL 631035 MEAN 1724 MAX 9250 MIN 475 ADJ +18.5 MEAN‡ 1742 CFSM‡ 1.69 IN.‡ 23.07

† Change in contents, equivalent in cubic feet per second, in Deep Creek Reservoir and Youghiogheny River Lake. Records of contents in Deep Creek Reservoir furnished by Pennsylvania Electric Co.
‡ Adjusted for change in reservoir contents.

e Estimated

03081600 BIG MEADOW RUN AT OHIOPYLE, PA

LOCATION.--Lat 39°51'51", long 79°29'43", Fayette County, Hydrologic Unit 05020006, on left bank 250 ft upstream from mouth, at Ohiopyle.

DRAINAGE AREA.--41.5 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February to November 1988 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 1,170 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period February to November, 780 ft³/s, Mar. 4, 1988, gage height 5.82 ft; minimum, 0.52 ft³/s, Aug. 17, 1988, gage height 0.51 ft.

DISCHARGE, CUBIC FEET PER SECOND, YEAR FEBRUARY 1988 TO NOVEMBER 1988
MEAN VALUES

DAY	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
1			---	71	71	192	39	2.2	1.7	5.0	11	27
2			220	74	67	154	40	2.1	1.6	3.4	9.5	27
3			229	121	65	127	34	2.1	1.4	2.5	13	28
4			216	542	91	110	28	2.0	1.2	36	10	27
5			155	376	84	152	22	2.0	1.1	38	8.2	92
6			121	234	77	204	e17	1.8	4.4	20	8.1	164
7			116	172	199	167	e15	1.6	3.5	10	7.8	117
8			114	138	197	139	e13	1.6	2.3	5.9	6.7	91
9			98	124	159	123	49	1.5	1.6	4.1	6.2	77
10			87	124	131	133	32	1.4	1.3	3.2	6.0	70
11			78	106	111	113	e22	3.1	1.1	2.9	9.4	67
12			75	94	97	99	e16	3.2	.97	2.6	10	57
13			59	116	86	90	e12	2.2	.91	23	7.3	104
14			60	103	78	85	e9.0	1.9	.70	54	6.1	117
15			72	93	70	78	7.3	1.8	.71	19	5.8	92
16			81	88	61	71	6.4	1.5	.76	9.5	5.7	---
17			68	84	54	62	6.0	1.5	.59	40	5.7	---
18			71	82	86	95	5.8	1.3	.62	59	9.5	---
19			106	82	98	240	5.0	1.6	4.3	30	19	---
20			205	81	85	220	4.5	6.4	13	30	13	---
21			167	76	80	171	4.2	15	6.5	31	12	---
22			131	76	73	139	3.8	11	3.2	17	73	---
23			124	113	74	113	3.6	13	5.3	19	158	---
24			111	180	135	165	3.3	13	18	28	157	---
25			96	149	104	125	3.1	5.4	9.6	79	118	---
26			87	215	93	102	2.9	3.5	4.5	74	83	---
27			82	172	85	90	2.8	2.7	2.9	44	64	---
28			74	128	86	77	2.6	2.3	2.5	26	54	---
29			71	102	207	64	2.5	2.1	49	17	46	---
30			---	86	263	55	2.3	1.8	30	13	37	---
31			---	76	---	47	---	1.6	9.7	---	30	---
TOTAL			---	4278	3167	3802	414.1	114.2	184.96	746.1	1010.0	---
MEAN			---	138	106	123	13.8	3.68	5.97	24.9	32.6	---
MAX			---	542	263	240	49	15	49	79	158	---
MIN			---	71	54	47	2.3	1.3	.59	2.5	5.7	---
CFSM			---	3.84	2.94	3.42	.38	.10	.17	.69	.91	---
IN.			---	4.43	3.28	3.94	.43	.12	.19	.77	1.05	---

e Estimated

03081600 BIG MEADOW RUN AT OHIOPYLE, PA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January to October 1988 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January to October 1988.
pH: January to September 1988.
WATER TEMPERATURE: January to October 1988.

INSTRUMENTATION.--Water-quality monitor January to October 1988. Digital recorder set for 60-minute recording interval.

REMARKS.--Interruptions in the record were due to malfunctions of the equipment.

SPECIFIC CONDUCTANCE, MICROSIEMENS PER CENTIMETER AT 25°C, WATER YEAR JANUARY 1988 TO OCTOBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1										---	---	---
2										---	---	---
3										---	---	---
4										---	---	---
5										---	---	---
6										---	---	---
7										---	---	---
8										---	---	---
9										---	---	---
10										---	---	---
11										---	---	---
12										---	---	---
13										---	---	---
14										144	129	136
15										183	130	159
16										177	155	164
17										176	162	166
18										182	121	150
19										168	131	140
20										116	73	86
21										103	94	99
22										107	103	105
23										108	106	107
24										108	106	107
25										108	107	108
26										108	105	107
27										111	107	109
28										117	112	115
29										115	107	112
30										110	108	109
31										110	109	109

03081600 BIG MEADOW RUN AT OHIOPYLE, PA--Continued

SPECIFIC CONDUCTANCE, MICROSIEMENS PER CENTIMETER AT 25°C, WATER YEAR JANUARY 1988 TO OCTOBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	110	108	109	127	125	126	134	125	127	86	83	84
2	113	104	110	152	126	137	132	129	131	90	86	87
3	104	102	102	147	134	140	137	133	134	97	89	92
4	104	101	102	146	86	105	167	118	133	102	98	99
5	102	100	101	105	87	91	149	122	125	131	90	102
6	102	101	101	99	91	94	148	128	132	95	92	93
7	104	101	102	102	98	100	153	98	117	98	93	95
8	103	101	102	107	102	104	99	97	98	101	98	99
9	103	101	102	124	106	115	98	94	96	112	102	104
10	106	102	104	129	125	127	102	95	99	120	102	107
11	108	107	107	133	128	131	113	101	104	116	99	104
12	109	108	108	142	133	134	113	103	105	119	101	104
13	112	106	110	155	122	129	113	106	108	109	95	103
14	113	107	109	130	124	127	122	113	114	114	102	107
15	116	110	113	130	123	127	123	115	117	115	109	112
16	118	116	117	138	124	133	122	118	120	124	112	116
17	122	119	120	144	136	140	124	121	123	145	115	120
18	122	121	122	146	140	143	140	107	122	147	111	124
19	126	121	122	155	143	150	107	105	106	111	102	109
20	124	120	122	154	148	151	109	105	107	109	105	107
21	120	116	118	162	149	155	111	98	104	112	107	109
22	117	114	115	181	150	157	116	99	103	118	112	114
23	116	113	115	167	126	151	162	97	122	129	118	123
24	115	114	115	125	110	116	106	95	102	138	119	123
25	116	115	116	121	109	112	105	101	103	122	119	120
26	119	115	117	132	109	114	106	103	105	124	119	121
27	121	119	120	112	109	110	107	104	106	129	122	125
28	123	121	122	120	109	112	127	106	111	134	128	130
29	126	123	124	127	111	115	122	91	103	142	134	137
30	---	---	---	132	118	120	93	83	86	152	142	146
31	---	---	---	134	122	124	---	---	---	161	142	151
MONTH	126	100	112	181	86	125	167	83	112	161	83	112

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	152	138	142	436	422	428	472	462	468	320	290	306
2	185	125	148	452	432	446	672	468	542	338	313	324
3	187	126	139	460	446	455	503	424	466	366	330	344
4	151	128	131	462	440	454	---	---	---	478	207	304
5	---	---	---	463	446	457	---	---	---	228	214	223
6	---	---	---	475	432	464	---	---	---	216	204	210
7	---	---	---	465	423	441	---	---	---	232	205	213
8	---	---	---	473	425	450	---	---	---	261	232	247
9	---	---	---	484	439	460	---	---	---	295	256	274
10	---	---	---	514	410	468	---	---	---	337	291	305
11	---	---	---	761	487	522	---	---	---	340	312	324
12	---	---	---	850	334	461	---	---	---	394	330	343
13	---	---	---	479	363	425	---	---	---	504	174	358
14	---	---	---	485	435	466	---	---	---	183	173	178
15	306	220	244	505	481	494	---	---	---	219	180	196
16	267	233	250	519	468	500	688	679	684	228	203	217
17	281	250	265	470	454	462	709	686	701	342	151	215
18	278	256	266	505	450	468	704	684	691	176	166	173
19	289	269	277	528	415	496	818	456	664	190	176	181
20	301	273	285	592	276	507	511	363	397	332	168	205
21	338	282	301	390	207	260	425	383	407	236	171	198
22	326	299	314	280	209	251	470	426	444	215	205	209
23	341	306	320	504	238	310	584	422	469	349	211	236
24	339	329	335	249	203	224	539	354	403	254	217	228
25	335	269	292	306	253	287	380	371	374	226	174	195
26	303	274	290	364	291	307	394	370	381	174	169	171
27	320	290	303	398	291	319	377	355	361	187	169	173
28	396	323	356	316	299	303	403	360	369	187	170	177
29	544	401	449	388	318	337	573	268	331	201	187	195
30	435	417	425	429	392	409	288	278	281	216	203	212
31	---	---	---	465	431	453	299	279	288	---	---	---
MONTH	544	125	277	850	203	412	818	268	459	504	151	238

03081600 BIG MEADOW RUN AT OHIOPYLE, PA--Continued

SPECIFIC CONDUCTANCE, MICROSIEMENS PER CENTIMETER AT 25 C, WATER YEAR JANUARY 1988 TO OCTOBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	232	216	226	140	137	138						
2	251	228	242	145	138	143						
3	311	221	242	150	142	145						
4	240	227	234	162	150	154						
5	251	239	246	---	---	---						
6	255	245	250	---	---	---						
7	255	223	239	---	---	---						
8	238	232	235	---	---	---						
9	265	234	246	---	---	---						
10	274	258	266	---	---	---						
11	376	212	288	---	---	---						
12	227	212	220	---	---	---						
13	252	219	226	---	---	---						
14	251	239	243	---	---	---						
15	270	253	262	---	---	---						
16	275	267	271	---	---	---						
17	283	265	271	---	---	---						
18	382	219	286	---	---	---						
19	207	170	182	---	---	---						
20	208	199	206	---	---	---						
21	282	206	215	---	---	---						
22	272	140	202	---	---	---						
23	139	122	129	---	---	---						
24	138	119	125	---	---	---						
25	121	119	119	---	---	---						
26	126	121	123	---	---	---						
27	128	124	126	---	---	---						
28	131	127	128	---	---	---						
29	133	128	130	---	---	---						
30	136	133	134	---	---	---						
31	138	136	137	---	---	---						
MONTH	382	119	208	162	137	145						

PH (STANDARD UNITS), WATER YEAR JANUARY 1988 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1										---	---	---
2										---	---	---
3										---	---	---
4										---	---	---
5										---	---	---
6										---	---	---
7										---	---	---
8										---	---	---
9										---	---	---
10										---	---	---
11										---	---	---
12										---	---	---
13										---	---	---
14										7.11	7.03	7.08
15										7.09	7.00	7.05
16										7.11	7.03	7.07
17										7.08	7.01	7.04
18										7.21	7.02	7.10
19										7.20	6.90	7.10
20										6.89	6.66	6.76
21										6.85	6.78	6.81
22										6.85	6.78	6.82
23										6.87	6.80	6.84
24										6.88	6.82	6.86
25										6.90	6.84	6.86
26										6.92	6.79	6.86
27										6.90	6.76	6.85
28										6.90	6.81	6.86
29										6.90	6.80	6.87
30										6.94	6.85	6.90
31										7.00	6.87	6.93
MONTH										7.21	6.66	6.93

03081600 BIG MEADOW RUN AT OHIOPYLE, PA--Continued

PH (STANDARD UNITS), WATER YEAR JANUARY 1988 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6.99	6.93	6.95	6.88	6.84	6.87	6.69	6.64	6.66	7.09	7.04	7.08
2	7.08	6.75	6.91	7.10	6.85	6.95	6.72	6.64	6.68	7.07	7.04	7.05
3	6.78	6.73	6.76	7.14	6.95	7.02	6.72	6.68	6.70	7.12	6.99	7.05
4	6.82	6.66	6.73	7.04	6.26	6.61	6.81	6.65	6.70	7.02	6.93	6.98
5	6.68	6.60	6.64	6.26	6.17	6.21	6.66	6.62	6.64	6.94	6.77	6.89
6	6.69	6.61	6.65	6.23	6.08	6.16	7.03	6.64	6.73	6.83	6.73	6.79
7	6.70	6.56	6.63	6.32	6.18	6.23	7.02	6.93	6.98	6.77	6.69	6.73
8	6.68	6.54	6.61	6.37	6.12	6.29	6.96	6.91	6.93	6.71	6.64	6.68
9	6.75	6.61	6.69	6.56	6.30	6.43	6.96	6.90	6.93	6.84	6.60	6.65
10	6.87	6.69	6.76	6.63	6.56	6.60	7.02	6.92	6.97	6.65	6.47	6.57
11	6.90	6.85	6.88	6.62	6.46	6.57	7.04	6.96	7.00	6.67	6.41	6.54
12	6.90	6.84	6.87	6.67	6.51	6.60	7.05	7.00	7.03	6.76	6.66	6.71
13	6.90	6.64	6.79	6.67	6.58	6.62	7.12	7.06	7.08	6.80	6.69	6.76
14	6.85	6.64	6.77	6.62	6.49	6.57	7.15	7.09	7.12	6.75	6.71	6.73
15	6.85	6.77	6.82	6.63	6.45	6.55	7.15	7.10	7.12	6.75	6.61	6.69
16	6.92	6.81	6.89	6.62	6.53	6.58	7.15	7.04	7.11	6.78	6.60	6.65
17	6.93	6.87	6.90	6.65	6.54	6.60	7.10	7.07	7.08	6.65	6.57	6.61
18	6.95	6.91	6.93	6.65	6.56	6.61	7.14	7.01	7.10	6.73	6.58	6.64
19	7.03	6.94	6.97	6.66	6.57	6.62	7.14	7.06	7.10	6.70	6.60	6.65
20	6.99	6.83	6.90	6.69	6.55	6.63	7.09	7.01	7.05	6.66	6.59	6.61
21	6.83	6.71	6.77	6.69	6.51	6.62	7.18	7.03	7.09	6.60	6.50	6.56
22	6.80	6.70	6.74	6.71	6.57	6.66	7.24	7.15	7.19	6.51	6.42	6.48
23	6.82	6.72	6.77	6.81	6.64	6.74	7.68	7.25	7.38	6.58	6.43	6.47
24	6.77	6.70	6.74	6.76	6.59	6.67	7.39	7.22	7.33	6.75	6.49	6.66
25	6.79	6.69	6.75	6.79	6.57	6.63	7.22	7.18	7.20	6.76	6.70	6.73
26	6.81	6.74	6.78	6.77	6.64	6.68	7.22	7.17	7.20	6.78	6.73	6.75
27	6.84	6.79	6.82	6.65	6.56	6.61	7.22	7.18	7.20	6.75	6.69	6.73
28	6.84	6.78	6.81	6.64	6.49	6.58	7.22	7.15	7.19	6.77	6.71	6.73
29	6.85	6.81	6.83	6.66	6.56	6.61	7.24	7.15	7.20	6.81	6.72	6.77
30	---	---	---	6.67	6.64	6.65	7.16	7.09	7.12	6.91	6.82	6.88
31	---	---	---	6.67	6.64	6.66	---	---	---	6.92	6.78	6.89
MONTH	7.08	6.54	6.80	7.14	6.08	6.59	7.68	6.62	7.03	7.12	6.41	6.73

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	6.88	6.76	6.81	6.87	6.76	6.81	6.35	6.12	6.24	7.22	7.09	7.14
2	6.87	6.66	6.79	6.77	6.52	6.66	6.37	6.17	6.25	7.19	6.96	7.09
3	7.01	6.88	6.93	6.56	6.45	6.52	6.41	6.22	6.30	6.99	6.89	6.95
4	6.99	6.91	6.95	6.56	6.48	6.52	6.23	6.03	6.16	7.13	6.68	6.95
5	7.04	6.79	6.90	6.60	6.45	6.54	---	---	---	7.22	6.91	7.01
6	7.19	6.86	6.99	6.67	6.54	6.60	---	---	---	7.05	6.77	6.95
7	7.21	7.11	7.16	6.75	6.55	6.67	---	---	---	7.00	6.81	6.93
8	7.57	7.20	7.35	6.58	6.38	6.50	---	---	---	7.06	6.83	6.93
9	7.66	7.00	7.17	6.43	6.27	6.36	---	---	---	7.09	7.00	7.05
10	7.12	6.89	7.03	6.28	6.10	6.22	---	---	---	7.19	7.08	7.15
11	7.04	6.98	7.01	6.58	5.84	6.15	---	---	---	7.19	7.03	7.12
12	7.05	6.97	7.01	6.10	5.48	5.85	---	---	---	7.02	6.62	6.84
13	7.09	7.02	7.05	6.28	5.92	6.04	---	---	---	6.85	6.49	6.68
14	7.11	6.95	7.03	6.39	6.31	6.35	---	---	---	---	---	---
15	7.14	7.03	7.08	6.55	6.41	6.49	---	---	---	---	---	---
16	7.15	7.01	7.08	6.71	6.50	6.63	---	---	---	---	---	---
17	7.15	7.01	7.10	6.52	6.34	6.46	---	---	---	---	---	---
18	7.31	7.16	7.22	6.40	6.25	6.34	---	---	---	---	---	---
19	7.30	7.00	7.17	6.76	6.28	6.39	---	---	---	---	---	---
20	7.09	6.90	7.01	6.81	5.78	6.37	---	---	---	---	---	---
21	7.11	6.94	7.03	7.49	6.61	7.25	---	---	---	---	---	---
22	7.19	6.99	7.07	7.50	7.28	7.41	---	---	---	---	---	---
23	7.20	6.99	7.10	7.44	6.99	7.27	---	---	---	---	---	---
24	7.23	7.03	7.12	7.38	6.98	7.22	7.41	5.50	6.73	---	---	---
25	7.15	6.93	7.06	7.16	6.98	7.09	7.43	7.16	7.36	---	---	---
26	7.11	6.87	7.00	7.09	7.01	7.04	7.29	7.16	7.24	---	---	---
27	7.06	6.90	7.00	7.01	6.74	6.87	7.16	7.02	7.11	---	---	---
28	7.00	6.87	6.93	6.74	6.56	6.68	7.24	6.94	6.99	---	---	---
29	7.03	6.90	6.96	6.68	6.56	6.61	7.35	6.76	7.11	---	---	---
30	6.92	6.86	6.89	6.69	6.49	6.62	7.29	7.18	7.23	---	---	---
31	---	---	---	6.52	6.24	6.41	7.26	7.10	7.21	---	---	---
MONTH	7.66	6.66	7.03	7.50	5.48	6.61	7.43	5.50	6.83	7.22	6.49	6.98

03081600 BIG MEADOW RUN AT OHIOPYLE, PA--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1										---	---	---
2										---	---	---
3										---	---	---
4										---	---	---
5										---	---	---
6										---	---	---
7										---	---	---
8										---	---	---
9										---	---	---
10										---	---	---
11										---	---	---
12										---	---	---
13										---	---	---
14										1.0	1.0	1.0
15										1.0	1.0	1.0
16										1.0	1.0	1.0
17										1.0	1.0	1.0
18										1.0	1.0	1.0
19										1.0	1.0	1.0
20										5.0	1.0	3.5
21										4.5	3.5	4.5
22										3.5	2.5	3.0
23										3.0	2.5	2.5
24										4.5	2.5	3.5
25										4.0	2.5	3.5
26										2.5	1.0	1.0
27										1.0	1.0	1.0
28										1.0	1.0	1.0
29										1.0	1.0	1.0
30										1.0	1.0	1.0
31										3.5	1.0	1.5
MONTH										5.0	1.0	2.0

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

03081600 BIG MEADOW RUN AT OHIOPYLE, PA--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	21.5	15.5	18.5	15.5	12.0	14.0	25.5	19.0	22.0	19.5	15.0	17.5
2	18.5	15.5	17.0	17.5	12.0	15.0	25.5	19.0	22.0	20.0	16.0	18.0
3	15.0	12.5	13.5	19.0	14.0	16.5	24.0	21.0	22.5	20.5	17.0	18.5
4	---	---	---	20.5	15.5	18.0	---	---	---	19.5	18.5	19.5
5	---	---	---	22.0	17.5	19.5	---	---	---	18.5	16.0	17.5
6	22.5	12.0	16.5	22.5	18.5	20.5	---	---	---	16.0	13.5	15.0
7	23.5	15.5	18.5	23.5	18.0	21.0	---	---	---	16.5	12.0	14.5
8	22.5	13.5	18.0	24.0	18.5	21.5	---	---	---	16.5	12.5	14.5
9	19.5	13.5	17.5	23.5	19.0	21.5	---	---	---	16.5	13.5	15.0
10	16.0	13.0	15.0	23.0	18.0	21.0	---	---	---	18.0	14.5	16.0
11	---	---	---	26.5	19.5	22.5	---	---	---	18.5	15.0	16.5
12	---	---	---	24.5	23.0	24.0	---	---	---	19.0	15.0	17.0
13	---	---	---	25.0	21.5	23.5	---	---	---	20.0	18.5	19.0
14	23.5	19.0	21.5	25.5	22.0	24.0	---	---	---	18.0	11.0	14.5
15	24.5	19.5	22.0	25.5	22.5	24.0	---	---	---	12.5	9.5	11.0
16	24.0	20.5	22.0	26.0	20.0	23.0	24.5	22.5	24.0	12.5	9.0	10.5
17	23.0	20.5	22.0	25.0	22.0	23.5	25.0	22.5	24.0	12.5	11.5	12.0
18	22.5	17.0	20.0	24.5	20.0	23.0	25.0	24.0	24.5	14.0	12.0	13.0
19	23.0	17.5	20.5	25.0	22.0	23.5	24.5	23.5	24.0	15.5	13.0	14.5
20	24.0	19.5	21.5	25.0	23.5	24.5	23.0	22.0	22.5	16.5	14.0	15.0
21	24.5	21.0	23.0	24.5	23.0	24.0	22.5	19.5	21.5	14.0	12.5	13.0
22	26.0	21.5	23.5	26.0	22.0	24.0	22.0	18.0	20.0	15.0	12.0	13.5
23	24.0	21.0	23.0	24.0	21.5	22.5	20.5	18.0	20.0	15.0	13.5	14.0
24	23.0	17.5	20.5	24.5	20.5	22.0	22.0	19.0	20.5	14.0	12.0	13.0
25	24.5	19.0	21.5	25.0	20.5	22.5	21.5	18.0	19.5	12.0	11.5	12.0
26	23.5	20.0	22.5	23.5	21.5	22.5	20.5	19.0	19.5	14.0	12.0	12.5
27	20.5	16.5	18.5	24.0	20.5	22.0	22.5	17.5	20.0	14.0	10.5	12.5
28	20.0	15.5	18.0	25.0	16.0	22.5	22.5	19.5	21.0	14.5	10.5	12.5
29	19.5	17.5	18.5	25.5	21.0	23.5	21.5	19.0	20.5	14.5	12.5	13.5
30	17.0	14.0	16.0	24.5	20.5	23.0	21.0	17.5	19.0	15.0	12.0	13.5
31	---	---	---	23.5	20.5	22.0	19.5	15.5	18.0	---	---	---
MONTH	26.0	12.0	19.6	26.5	12.0	22.0	25.5	15.5	22.5	20.5	9.0	14.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	16.0	13.0	14.5	6.5	3.5	5.0						
2	15.0	14.0	14.5	5.5	5.0	5.5						
3	14.5	13.5	14.0	6.5	4.5	5.5						
4	13.5	11.5	12.5	9.5	6.0	7.5						
5	11.5	9.5	11.0	---	---	---						
6	10.0	8.0	9.5	---	---	---						
7	10.0	8.5	9.0	---	---	---						
8	9.0	7.5	8.5	---	---	---						
9	9.5	7.5	8.5	---	---	---						
10	10.5	8.0	9.5	---	---	---						
11	10.0	9.0	9.5	---	---	---						
12	9.0	7.0	8.0	---	---	---						
13	6.5	5.0	6.0	---	---	---						
14	6.5	3.5	5.0	---	---	---						
15	8.5	5.0	7.0	---	---	---						
16	10.5	7.5	9.0	---	---	---						
17	12.0	9.5	11.0	---	---	---						
18	12.5	11.0	12.0	---	---	---						
19	11.0	9.0	10.0	---	---	---						
20	9.0	7.5	8.5	---	---	---						
21	8.5	7.5	8.0	---	---	---						
22	8.0	7.5	7.5	---	---	---						
23	9.5	8.0	9.0	---	---	---						
24	9.5	8.0	9.0	---	---	---						
25	8.0	7.0	8.0	---	---	---						
26	7.5	5.5	7.0	---	---	---						
27	6.5	4.0	5.5	---	---	---						
28	7.5	5.5	6.5	---	---	---						
29	6.5	4.0	5.5	---	---	---						
30	6.0	4.0	5.0	---	---	---						
31	5.0	2.0	4.0	---	---	---						
MONTH	16.0	2.0	9.0	9.5	3.5	6.0						

03082190 POPLAR RUN NEAR NORMALVILLE, PA

LOCATION.--Lat 40°01'09", long 79°25'39", Fayette County, Hydrologic Unit 05020006, on right bank about 0.2 mi upstream from bridge on State Highway 711 and 381, 0.9 mi upstream from mouth, 2.0 mi northeast of Normalville, and 6.9 mi southwest of Donegal.

DRAINAGE AREA.--8.83 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1985 to current year. Records for September 1961 to September 1978 at site 0.2 mi downstream published under station number 03082200 are not equivalent because of difference in drainage areas.

GAGE.--Water-stage recorder. Elevation of gage is 1,420 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 785 ft³/s, Nov. 26, 1985, gage height, 6.35 ft; minimum, 0.10 ft³/s, June 27, 1986, gage height, 2.63 ft.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 2	1000	*407	*4.99	Mar. 4	1430	304	4.63

Minimum discharge, 0.14 ft³/s, Aug. 12-15, gage height, 2.48 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	3.9	33	45	e30	12	12	26	7.1	.90	1.3	1.7
2	33	3.5	25	28	193	13	10	19	8.0	.75	.85	1.3
3	58	3.4	21	23	91	41	10	15	6.0	.81	.80	1.1
4	31	3.5	29	19	110	175	19	13	5.2	.89	.73	13
5	20	3.9	26	e15	61	80	14	61	4.8	.89	.67	7.4
6	15	3.7	22	e12	38	47	16	51	4.3	.82	.48	4.5
7	16	3.5	19	e9.0	30	32	63	34	3.5	.71	.60	3.0
8	15	3.3	22	e7.6	22	24	40	24	3.3	.69	.50	2.3
9	12	5.6	62	e6.8	18	26	27	21	12	.54	.35	1.9
10	9.7	11	51	e6.0	15	33	22	27	4.5	.64	.28	1.7
11	11	9.6	34	e5.4	e13	23	17	19	3.6	.78	.29	1.6
12	10	10	26	e4.9	e12	20	15	16	3.0	.60	.23	1.9
13	8.9	14	20	e4.5	e11	25	13	13	2.9	.56	.16	17
14	8.3	23	16	e4.3	e15	20	11	12	2.4	.61	.16	5.0
15	7.9	25	24	e4.0	e12	17	9.4	11	2.3	8.0	1.8	3.1
16	7.7	18	21	e3.8	15	15	9.2	9.9	4.4	.95	.94	2.2
17	7.5	14	17	e4.5	13	14	9.2	7.9	3.5	.75	.39	12
18	7.5	16	15	e6.0	16	13	14	36	2.1	.96	.33	8.0
19	5.3	11	14	e9.0	30	12	12	66	2.2	.88	.75	5.2
20	5.9	11	82	e80	60	12	9.8	76	1.9	9.9	.59	9.4
21	7.9	9.3	45	40	38	11	8.9	55	1.7	42	.42	5.7
22	7.3	8.0	32	25	27	11	8.0	32	1.4	7.5	.43	4.2
23	7.4	8.9	24	20	24	25	9.8	26	1.5	6.2	6.3	3.6
24	6.8	17	20	16	20	31	8.9	59	1.5	5.3	10	4.5
25	8.2	14	34	e14	16	22	7.7	26	1.2	2.8	2.0	28
26	8.3	12	56	e11	14	53	7.1	20	1.2	2.1	1.3	13
27	11	9.8	37	e10	14	32	7.0	17	1.3	1.8	1.1	7.7
28	15	8.6	32	e9.4	12	23	10	14	.92	1.5	1.1	5.6
29	7.7	82	28	e9.0	11	19	39	11	.84	1.2	18	4.1
30	4.1	49	21	e13	---	15	44	9.4	.89	.97	5.1	3.5
31	3.7	---	21	e19	---	13	---	7.5	---	.91	2.5	---
TOTAL	397.1	415.5	929	484.2	981	909	503.0	834.7	99.45	103.91	60.45	183.2
MEAN	12.8	13.8	30.0	15.6	33.8	29.3	16.8	26.9	3.31	3.35	1.95	6.11
MAX	58	82	82	80	193	175	63	76	12	42	18	28
MIN	3.7	3.3	14	3.8	11	11	7.0	7.5	.84	.54	.16	1.1
CFSM	1.45	1.57	3.39	1.77	3.83	3.32	1.90	3.05	.38	.38	.22	.69
IN.	1.67	1.75	3.91	2.04	4.13	3.83	2.12	3.52	.42	.44	.25	.77

CAL YR 1987 TOTAL 5747.02 MEAN 15.7 MAX 132 MIN .45 CFSM 1.78 IN. 24.21
WTR YR 1988 TOTAL 5900.51 MEAN 16.1 MAX 193 MIN .16 CFSM 1.83 IN. 24.86

e Estimated

03082190 POPLAR RUN NEAR NORMALVILLE, PA.--Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1985 to current year.
pH: October 1985 to current year.
WATER TEMPERATURE: October 1985 to current year.
SUSPENDED-SEDIMENT DISCHARGE: October 1985 to current year.

INSTRUMENTATION.--Water-quality monitor and sediment pumping sampler since October 1985.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,580 microsiemens June 27, 1987; minimum, 61 microsiemens Nov. 26, 1985.
pH: Maximum, 7.5 Apr. 29, 1986 and May 3, 1986; minimum, 4.1 on Aug. 24, 1988.
WATER TEMPERATURES: Maximum, 25.1°C Aug. 14, 1986; minimum, 0.0°C on many days during winter months.
SEDIMENT CONCENTRATIONS: Maximum daily, 997 mg/L Aug. 23, 1988; minimum daily, 1 mg/L on several days.
SEDIMENT DISCHARGES: Maximum daily, 440 tons Nov. 26, 1986; minimum daily, 0.0 ton on several days.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,580 microsiemens June 27; minimum, 66 microsiemens Apr. 8.
pH: Maximum, 7.3 Jan. 26; minimum, 4.1 on Aug. 24.
WATER TEMPERATURES: Maximum, 25.1°C Aug. 14; minimum, 0.0°C on many days during winter months.
SEDIMENT CONCENTRATIONS: Maximum daily, 997 mg/L Aug. 23; minimum daily, 1 mg/L on Nov. 26, 27.
SEDIMENT DISCHARGES: Maximum daily, 267 tons Feb. 2; minimum daily, 0.0 ton on several days.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	ACIDITY TOTAL HEATED (MG/L AS CACO3)	CALCIUM TOTAL RECOV-ERABLE (MG/L AS CA)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, TOTAL RECOV-ERABLE (MG/L AS MG)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, TOTAL RECOV-ERABLE (MG/L AS NA)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT												
29...	1200	4.1	700	4.91	6.0	70	--	--	--	--	--	--
NOV												
23...	1430	10	360	6.65	2.5	14	--	--	--	--	--	--
DEC												
29...	1645	25	210	6.55	2.0	18	--	21	--	8.3	--	2.2
JAN												
29...	1225	14	406	6.14	0.0	32	--	30	--	14	--	4.7
FEB												
25...	1615	15	260	6.51	1.5	30	--	22	--	8.9	--	4.0
MAR												
29...	1830	17	226	5.89	11.5	26	--	19	--	7.7	--	1.8
APR												
26...	1825	6.8	330	6.03	14.0	30	--	33	--	13	--	3.2
MAY												
25...	1900	29	268	6.85	11.0	0.0	--	28	--	12	--	4.7
JUN												
21...	1435	1.7	710	5.30	21.0	14	--	76	--	34	--	4.1
JUL												
27...	1530	1.6	950	6.45	20.0	12	--	91	--	54	--	9.3
AUG												
24...	1000	7.3	462	5.01	18.5	30	--	53	--	23	--	3.2
SEP												
22...	1320	4.0	460	6.88	15.0	10	51	51	20	20	3.2	3.2

DATE	POTAS-SIUM, TOTAL RECOV-ERABLE (MG/L AS K)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET LAB MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, TOTAL (MG/L AS F)	RESIDUE AT 105 DEG. C, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)
OCT												
29...	--	--	6	360	--	--	568	<2	6900	6400	--	--
NOV												
23...	--	--	10	150	--	--	242	10	1500	310	--	--
DEC												
29...	--	1.4	10	89	4.0	<0.1	178	<2	740	<130	--	--
JAN												
29...	--	1.7	8	190	4.0	0.2	302	<2	1500	<130	--	--
FEB												
25...	--	1.9	10	110	5.0	0.1	106	<2	700	<130	--	--
MAR												
29...	--	1.4	8	93	3.0	<0.1	202	<2	950	<130	--	--
APR												
26...	--	3.5	8	140	3.0	0.1	218	10	860	<130	--	--
MAY												
25...	--	1.4	14	110	3.0	<0.1	154	20	580	160	--	--
JUN												
21...	--	2.3	8	320	3.0	0.2	600	<2	1100	520	--	--
JUL												
27...	--	2.9	8	510	4.0	0.2	876	8	1400	400	--	--
AUG												
24...	--	2.6	8	230	5.0	0.3	390	26	3600	1500	--	--
SEP												
22...	2.0	2.0	14	200	--	--	326	4	630	280	<4	<4

03082190 POPLAR RUN NEAR NORMALVILLE, PA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	BORON, TOTAL RECOV-ERABLE (UG/L AS B)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)
OCT 29...	--	--	--	--	--	--	--	410	270	--	--	7600
NOV 23...	--	--	--	--	--	--	--	1200	500	--	--	2300
DEC 29...	--	--	--	--	--	--	--	570	310	--	--	1100
JAN 29...	--	--	--	--	--	--	--	960	550	--	--	2800
FEB 25...	--	--	--	--	--	--	--	590	340	--	--	1300
MAR 29...	--	--	--	--	--	--	--	600	340	--	--	1100
APR 26...	--	--	--	--	--	--	--	650	340	--	--	2000
MAY 25...	--	--	--	--	--	--	--	580	240	--	--	1500
JUN 21...	--	--	--	--	--	--	--	320	120	--	--	4500
JUL 27...	--	--	--	--	--	--	--	1100	700	--	--	11000
AUG 24...	--	--	--	--	--	--	--	2600	500	--	--	5400
SEP 22...	<250	<50	<50	50	40	<10	<10	450	270	<50	<50	3100

DATE	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	STRON-TIUM, TOTAL RECOV-ERABLE (UG/L AS SR)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)
OCT 29...	7300	--	--	--	--	370	370	--	--	--	--
NOV 23...	2200	--	--	--	--	140	110	--	--	--	--
DEC 29...	1100	--	--	--	--	70	77	--	--	--	--
JAN 29...	2800	--	--	--	--	150	140	--	--	--	--
FEB 25...	1300	--	--	--	--	80	82	--	--	--	--
MAR 29...	1000	--	--	--	--	110	100	--	--	--	--
APR 26...	2000	--	--	--	--	110	110	--	--	--	--
MAY 25...	1500	--	--	--	--	70	64	--	--	--	--
JUN 21...	5700	--	--	--	--	260	250	--	--	--	--
JUL 27...	10000	--	--	--	--	450	430	--	--	--	--
AUG 24...	4900	--	--	--	--	250	240	--	--	--	--
SEP 22...	3100	79	79	140	140	90	86	<6	<6	<1.0	<1.0

03082190 POPLAR RUN NEAR NORMALVILLE, PA--Continued

SPECIFIC CONDUCTANCE, MICROSIEMENS PER CENTIMETER AT 25, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	436	236	286	710	424	459	212	180	190	300	210	227
2	362	134	284	1110	514	786	362	196	227	262	228	244
3	214	132	167	794	472	632	326	200	236	282	262	274
4	526	214	282	590	464	506	338	202	236	514	234	283
5	396	220	278	666	518	612	344	214	228	480	272	362
6	284	238	246	676	574	631	302	200	242	650	202	397
7	452	222	310	668	648	657	440	220	252	516	200	360
8	502	236	307	752	666	693	444	214	287	554	210	354
9	466	242	330	852	608	723	292	130	208	400	202	335
10	310	246	273	600	354	482	296	148	167	1230	388	519
11	474	268	314	754	306	460	226	176	192	---	---	---
12	700	274	467	616	298	414	248	186	216	---	---	---
13	612	304	409	636	256	403	620	208	314	---	---	---
14	654	304	445	278	222	251	640	202	283	---	---	---
15	494	320	390	556	220	287	634	204	316	---	---	---
16	758	332	501	352	212	262	414	220	284	---	---	---
17	358	348	351	360	232	286	378	230	280	---	---	---
18	832	362	402	384	200	255	628	214	343	---	---	---
19	1020	404	685	396	274	316	742	234	377	---	---	---
20	572	386	484	334	232	263	368	140	199	---	---	---
21	796	378	538	342	274	301	340	166	204	253	170	188
22	574	422	472	670	306	347	356	192	223	254	225	238
23	1150	464	738	696	300	406	346	214	239	415	255	287
24	464	426	441	404	200	266	282	218	238	522	292	341
25	606	464	576	294	204	254	338	210	234	408	239	283
26	1130	580	799	636	202	301	234	180	191	398	307	339
27	832	430	614	436	220	270	400	198	227	369	309	342
28	886	400	623	298	206	256	388	196	225	495	271	364
29	754	392	608	344	128	225	420	204	250	474	270	380
30	808	424	648	236	152	166	542	228	301	360	269	301
31	488	420	435	---	---	---	522	232	321	654	275	334
MONTH	1150	132	442	1110	128	406	742	130	249	1230	170	322
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	298	187	240	513	260	337	407	254	317	546	210	270
2	217	97	143	539	234	346	315	254	279	462	232	284
3	261	127	159	462	171	250	920	283	483	390	244	277
4	255	121	165	240	96	129	484	224	313	386	247	296
5	248	168	182	297	129	182	464	247	306	442	143	258
6	265	187	235	242	204	224	---	---	---	194	164	174
7	481	261	320	416	214	249	302	154	193	226	174	197
8	517	236	302	458	243	307	244	66	186	526	227	272
9	546	255	340	456	239	317	247	187	207	527	216	299
10	606	275	364	---	---	---	613	250	299	333	211	231
11	673	289	394	293	228	258	538	252	316	655	233	259
12	645	296	391	601	230	329	581	270	352	442	252	296
13	446	303	374	429	290	312	614	281	381	468	256	311
14	816	447	522	493	238	304	609	260	393	378	250	284
15	744	268	454	525	248	336	584	269	366	---	---	---
16	624	269	364	577	263	342	468	261	333	---	---	---
17	631	278	419	588	275	375	949	446	540	---	---	---
18	510	344	369	579	262	368	751	242	412	---	---	---
19	447	174	284	365	262	306	392	248	294	---	---	---
20	356	168	203	871	364	446	645	260	319	---	---	---
21	241	199	209	426	289	371	721	272	388	---	---	---
22	391	195	241	632	342	385	566	305	410	---	---	---
23	358	247	270	666	206	371	773	366	448	---	---	---
24	482	233	297	462	207	254	411	347	368	---	---	---
25	408	248	313	327	216	261	401	321	363	---	---	---
26	456	252	311	393	189	227	489	307	376	533	242	293
27	888	257	429	262	231	242	637	343	436	519	274	320
28	442	404	424	476	214	249	723	268	485	407	294	330
29	445	263	336	469	229	291	617	169	254	453	407	428
30	---	---	---	415	244	289	210	169	188	838	454	536
31	---	---	---	403	243	303	---	---	---	905	368	542
MONTH	888	97	312	871	96	299	949	66	345	905	143	308

03082190 POPLAR RUN NEAR NORMALVILLE, PA--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	1080	944	1010	1360	679	982	862	776	802
2	---	---	---	1110	928	1040	1250	844	991	884	758	819
3	851	376	572	928	835	864	891	842	867	811	696	755
4	516	394	430	1010	850	913	894	819	868	760	342	500
5	618	521	588	1340	1010	1190	962	816	898	713	386	481
6	1250	537	832	1340	1160	1240	997	775	930	607	495	554
7	919	513	682	1310	1150	1250	997	760	858	854	535	673
8	1320	511	737	1290	1160	1210	1350	952	1080	642	567	598
9	938	320	439	1360	1210	1320	1350	1100	1210	789	616	703
10	726	409	545	1200	999	1100	1210	1110	1170	811	637	719
11	493	424	456	1540	944	1200	1180	1110	1140	897	810	839
12	720	493	585	1560	1140	1370	1240	1160	1210	1010	479	938
13	1200	599	861	1230	1140	1190	1160	1130	1140	534	272	357
14	994	583	810	1170	956	1150	1130	1020	1070	676	376	583
15	1000	600	810	---	---	---	1210	595	939	778	539	658
16	964	460	703	---	---	---	976	592	852	772	593	628
17	763	459	664	---	---	---	926	840	872	682	395	508
18	577	532	542	---	---	---	997	897	972	495	400	447
19	628	542	557	---	---	---	1220	956	1070	544	468	511
20	1270	633	986	---	---	---	1150	822	925	650	354	470
21	889	675	788	---	---	---	1010	956	983	562	395	433
22	866	753	811	---	---	---	1180	954	1020	503	426	461
23	856	734	792	---	---	---	1190	329	959	562	458	496
24	1360	856	1050	---	---	---	938	347	472	542	460	503
25	1370	807	1060	---	---	---	924	518	766	558	239	356
26	1010	804	944	---	---	---	864	752	778	330	290	310
27	1580	955	1290	---	---	---	848	769	797	373	316	352
28	1360	947	1080	893	656	778	785	698	767	522	360	398
29	1030	875	954	936	710	812	794	276	491	516	397	476
30	1020	879	921	920	706	790	696	580	625	658	437	537
31	---	---	---	706	680	692	812	650	714	---	---	---
MONTH	1580	320	767	1560	656	1060	1360	276	917	1010	239	562

YEAR MAXIMUM 1580 MINIMUM 66 MEAN 489

PH (STANDARD UNITS), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	6.49	5.39	6.04	5.89	4.90	5.74	6.61	5.94	6.29	5.73	5.43	5.63
2	6.55	5.87	6.13	4.98	4.67	4.78	6.74	6.10	6.56	5.70	5.60	5.61
3	6.51	5.92	6.37	5.12	4.79	4.92	6.70	6.59	6.64	5.69	5.59	5.64
4	5.91	4.93	5.51	5.31	5.02	5.21	6.71	6.43	6.61	6.43	5.20	5.84
5	6.36	5.02	5.60	5.45	5.28	5.35	6.62	6.01	6.48	6.23	5.22	5.52
6	6.64	6.32	6.49	5.82	5.45	5.70	6.43	6.15	6.37	6.30	5.16	5.61
7	6.55	5.12	5.79	6.00	5.75	5.91	6.61	6.04	6.33	6.19	5.26	5.54
8	6.54	4.96	5.75	6.00	5.73	5.89	6.46	5.19	5.98	6.26	5.26	5.58
9	6.54	5.13	5.73	5.72	5.19	5.45	6.33	5.85	6.04	6.26	5.32	5.55
10	6.74	6.39	6.52	5.66	5.40	5.54	6.48	5.67	6.17	5.40	4.69	5.25
11	6.63	5.29	6.32	5.76	5.32	5.46	6.64	6.10	6.37	---	---	---
12	6.17	4.79	5.26	6.41	5.13	5.63	6.67	6.01	6.44	---	---	---
13	6.35	4.96	5.49	6.43	5.27	5.76	6.19	5.01	5.78	---	---	---
14	6.14	4.93	5.46	6.41	5.74	6.13	6.67	6.01	6.43	---	---	---
15	6.25	5.16	5.65	5.75	5.09	5.53	---	---	---	---	---	---
16	6.21	4.86	5.25	6.26	5.33	5.77	---	---	---	---	---	---
17	6.30	5.97	6.22	6.34	5.59	6.04	---	---	---	---	---	---
18	6.26	5.04	6.13	6.47	6.11	6.27	---	---	---	---	---	---
19	5.90	4.91	5.31	6.51	5.73	6.27	---	---	---	---	---	---
20	6.05	5.78	5.92	6.60	6.36	6.50	---	---	---	---	---	---
21	6.07	5.57	5.87	6.72	6.54	6.63	---	---	---	6.48	6.17	6.37
22	6.23	5.53	6.07	6.68	6.46	6.58	7.18	6.49	6.75	6.74	6.44	6.64
23	5.52	4.84	5.07	6.87	6.27	6.71	6.82	5.44	6.51	6.68	5.33	5.95
24	6.04	5.34	5.85	6.54	5.82	6.35	6.68	5.84	6.30	6.92	5.16	5.68
25	6.02	5.03	5.27	6.57	6.05	6.39	6.75	5.22	6.13	6.92	5.56	6.11
26	5.05	4.81	4.92	6.60	5.04	5.99	5.94	5.45	5.75	7.33	6.77	7.11
27	5.31	4.88	5.05	6.39	5.27	6.00	6.41	5.14	5.71	6.87	6.35	6.52
28	5.28	4.82	4.97	6.55	5.85	6.35	6.67	5.26	6.36	6.57	5.73	6.18
29	5.30	4.88	5.02	6.54	5.57	6.04	6.54	5.23	5.88	6.55	5.61	6.09
30	5.38	4.82	5.00	6.42	5.92	6.18	6.54	5.09	5.71	6.64	5.87	6.33
31	5.76	5.06	5.45	---	---	---	6.38	5.09	5.60	6.51	5.06	5.81
MONTH	6.74	4.79	5.66	6.87	4.67	5.90	7.18	5.01	6.22	7.33	4.69	5.93

03082190 POPLAR RUN NEAR NORMALVILLE, PA--Continued

PH (STANDARD UNITS), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6.48	5.51	5.95	6.29	5.12	5.62	6.24	5.11	5.53	6.27	4.90	5.92
2	6.30	5.46	5.88	6.14	5.07	5.47	6.36	6.00	6.22	6.63	4.94	5.81
3	6.38	5.32	5.90	5.94	5.04	5.41	6.23	4.62	5.21	6.66	5.50	6.02
4	6.32	5.28	6.04	6.13	5.19	5.93	5.77	4.90	5.35	6.68	5.28	6.01
5	6.50	5.82	6.16	5.71	5.05	5.51	6.03	4.90	5.40	6.56	5.10	5.94
6	6.50	5.74	6.01	5.68	5.51	5.60	5.88	4.89	5.23	6.54	5.82	6.27
7	5.82	5.04	5.53	6.29	5.09	5.75	6.31	5.29	5.11	6.65	6.54	6.58
8	6.23	5.06	5.59	6.44	5.05	5.64	6.48	5.28	6.03	6.65	5.43	6.27
9	6.11	5.01	5.47	6.16	5.00	5.51	6.52	6.40	6.48	6.33	4.95	5.57
10	6.17	4.98	5.46	---	---	---	6.37	4.84	5.57	6.51	5.99	6.23
11	6.03	4.92	5.36	6.17	5.26	5.65	6.33	4.86	5.60	6.75	5.89	6.37
12	6.04	4.92	5.36	6.22	4.86	5.50	6.24	4.94	5.51	6.76	5.11	6.06
13	6.34	5.15	5.75	5.19	4.99	5.15	6.10	4.86	5.36	6.66	5.05	5.92
14	5.16	4.79	5.07	5.97	4.99	5.45	5.89	4.89	5.27	6.77	5.17	6.47
15	5.61	4.78	5.14	5.94	5.00	5.41	6.41	4.91	5.53	---	---	---
16	5.76	4.98	5.29	6.08	4.99	5.52	6.62	5.12	6.10	---	---	---
17	6.03	4.97	5.32	5.90	4.94	5.34	5.21	4.49	4.97	---	---	---
18	5.28	5.02	5.23	5.98	4.97	5.39	5.81	4.62	5.14	---	---	---
19	6.11	5.07	5.56	6.09	5.23	5.83	6.10	5.05	5.46	---	---	---
20	6.05	5.05	5.66	5.24	4.68	5.10	6.13	5.24	5.59	---	---	---
21	6.08	5.21	5.58	6.04	5.14	5.53	6.12	5.17	5.50	---	---	---
22	6.50	5.71	6.27	6.10	5.48	5.84	6.05	5.18	5.58	---	---	---
23	6.25	5.75	6.08	6.20	5.62	5.96	6.24	5.24	5.81	---	---	---
24	6.74	5.80	6.45	6.28	5.60	5.71	5.42	5.05	5.23	---	---	---
25	6.77	5.66	6.59	6.47	6.23	6.35	6.09	5.32	5.67	---	---	---
26	6.36	5.68	6.22	6.40	5.24	6.07	6.02	5.66	5.85	7.08	5.17	6.77
27	6.63	5.18	6.15	5.38	5.29	5.34	6.14	5.11	5.69	7.02	5.15	6.60
28	5.21	5.05	5.13	6.09	5.26	5.55	6.14	4.94	5.31	7.04	6.26	6.87
29	6.25	5.10	5.62	6.05	5.04	5.50	6.64	4.95	6.02	6.24	5.39	5.64
30	---	---	---	6.26	5.19	5.64	6.64	6.28	6.46	5.42	4.70	5.12
31	---	---	---	6.24	5.16	5.58	---	---	---	6.04	4.74	5.17
MONTH	6.77	4.78	5.72	6.47	4.68	5.59	6.64	4.49	5.59	7.08	4.70	6.08
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	6.76	4.80	5.29	5.22	5.08	5.16	6.73	4.72	5.81	5.23	4.92	5.09
2	6.74	4.96	5.86	5.18	5.01	5.06	5.17	4.75	4.96	5.53	4.91	5.25
3	6.62	4.86	5.50	5.66	5.18	5.43	5.30	5.17	5.22	6.41	5.49	6.05
4	6.92	5.91	6.75	5.65	5.07	5.45	5.34	5.27	5.31	6.60	4.94	6.05
5	5.73	4.97	5.18	5.06	4.73	4.85	5.54	5.34	5.42	5.68	4.91	5.30
6	5.33	4.65	4.84	4.81	4.75	4.78	6.00	5.40	5.54	5.66	5.13	5.26
7	5.75	4.75	5.06	4.84	4.71	4.77	6.16	5.65	6.04	6.45	4.68	5.79
8	5.67	4.74	5.03	4.85	4.71	4.79	5.63	4.93	5.32	6.80	6.47	6.73
9	5.93	4.89	5.39	4.78	4.65	4.71	4.98	4.88	4.93	6.82	5.17	6.33
10	6.31	4.97	5.32	4.92	4.78	4.84	4.98	4.78	4.86	6.16	4.94	5.46
11	6.76	6.34	6.59	4.99	4.62	4.77	4.93	4.81	4.88	5.04	4.78	4.91
12	6.76	5.48	6.20	4.75	4.61	4.65	4.89	4.76	4.81	5.12	4.76	4.83
13	6.46	4.70	5.07	4.79	4.70	4.75	4.89	4.82	4.85	7.22	5.33	6.90
14	5.33	4.76	4.93	4.79	4.73	4.76	5.00	4.87	4.92	6.86	5.07	5.64
15	5.33	4.71	4.94	---	---	---	5.15	4.66	5.00	6.44	5.20	5.82
16	5.87	4.73	5.07	---	---	---	5.41	4.71	5.03	6.71	5.33	6.18
17	6.35	4.87	5.31	---	---	---	4.95	4.75	4.85	6.81	6.38	6.65
18	6.25	5.15	5.77	---	---	---	4.94	4.80	4.86	6.53	5.48	5.97
19	6.61	6.25	6.48	---	---	---	4.93	4.65	4.81	5.80	5.18	5.37
20	6.61	4.72	5.28	---	---	---	4.95	4.67	4.84	7.15	5.83	6.54
21	5.29	4.91	5.10	---	---	---	4.90	4.80	4.83	6.93	6.64	6.84
22	5.62	5.13	5.43	---	---	---	4.96	4.77	4.88	6.98	6.78	6.90
23	6.05	5.56	5.85	---	---	---	6.79	4.68	5.16	6.92	6.82	6.87
24	6.16	5.76	5.91	---	---	---	6.33	4.09	5.46	6.95	5.83	6.71
25	6.11	5.78	5.93	---	---	---	6.57	4.87	5.56	6.57	5.57	6.27
26	6.17	5.37	5.76	---	---	---	6.91	4.94	6.08	6.69	6.25	6.40
27	5.41	4.81	5.04	---	---	---	6.92	6.78	6.85	6.83	6.70	6.76
28	5.32	5.07	5.24	6.60	5.50	6.17	6.98	6.84	6.92	6.99	6.71	6.88
29	5.45	5.21	5.32	6.53	5.20	6.01	6.96	5.12	6.33	6.94	6.80	6.85
30	5.55	5.24	5.43	6.15	5.20	5.62	5.14	4.85	5.02	6.94	6.81	6.87
31	---	---	---	6.61	6.16	6.47	5.27	5.06	5.19	---	---	---
MONTH	6.92	4.65	5.50	6.61	4.61	5.17	6.98	4.09	5.31	7.22	4.68	6.12

YEAR MAXIMUM 7.33 MINIMUM 4.09 MEAN 5.73

03082190 POPLAR RUN NEAR NORMALVILLE, PA--Continued

WATER TEMPERATURE, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	13.1	10.8	11.9	10.3	6.3	8.4	6.3	5.0	5.9	4.0	1.3	3.2
2	12.8	9.6	11.3	11.4	8.8	10.0	5.1	3.7	4.2	1.3	.0	.4
3	12.7	9.9	11.3	12.2	9.2	10.6	4.5	3.3	3.8	1.0	.0	.2
4	10.3	8.9	9.6	11.8	8.5	10.3	4.1	2.8	3.6	1.6	.0	.9
5	11.4	7.9	9.6	11.1	7.5	10.0	2.8	.7	2.5	.0	.0	.0
6	11.3	9.4	10.4	7.4	4.7	5.9	3.7	2.1	3.0	.1	.0	.0
7	11.0	9.4	10.3	6.9	4.6	5.7	3.5	.0	2.1	.0	.0	.0
8	9.3	7.9	8.8	8.7	6.0	7.3	5.5	3.2	4.2	.0	.0	.0
9	9.5	6.3	7.9	8.9	7.8	8.5	7.2	4.3	5.6	.0	.0	.0
10	12.1	9.5	10.7	8.3	2.4	4.5	7.2	5.4	6.5	.0	.0	.0
11	11.6	9.2	10.4	2.6	1.7	2.2	6.5	4.9	5.6	---	---	---
12	9.2	7.8	8.6	3.7	1.9	2.6	6.3	5.0	5.8	---	---	---
13	8.6	6.2	7.4	4.8	1.7	3.2	5.0	3.7	4.2	---	---	---
14	8.5	5.0	6.8	6.9	3.8	5.2	4.7	3.4	4.0	---	---	---
15	9.0	5.3	7.2	7.7	4.4	6.0	6.0	4.0	4.9	---	---	---
16	10.2	6.3	8.2	8.6	5.0	6.9	4.0	.7	2.3	---	---	---
17	10.5	7.4	9.1	10.8	8.2	9.7	1.9	.3	1.3	---	---	---
18	10.5	8.0	9.3	10.2	7.4	9.1	1.9	.2	1.3	---	---	---
19	10.5	6.9	8.7	7.4	5.8	6.8	3.1	.5	2.1	---	---	---
20	10.6	9.8	10.2	6.7	2.8	5.1	6.6	3.1	5.0	---	---	---
21	10.5	6.7	8.8	2.8	.6	1.5	5.9	3.2	4.6	2.7	2.5	2.7
22	7.6	5.8	6.6	1.9	.2	.9	3.9	1.8	3.0	2.5	2.2	2.3
23	9.7	7.0	8.2	3.7	.2	1.8	4.7	3.3	3.9	2.3	2.2	2.2
24	9.7	6.1	8.0	7.5	3.7	5.9	5.7	2.6	4.1	2.7	2.2	2.4
25	9.6	6.6	8.4	8.5	5.7	7.5	7.9	5.7	7.1	2.6	2.3	2.4
26	8.0	4.0	6.2	8.2	5.6	7.8	7.0	4.6	5.7	2.3	2.0	2.0
27	7.3	6.1	6.8	7.9	6.5	7.4	4.9	3.7	4.3	2.0	2.0	2.0
28	7.5	5.8	6.6	7.5	5.1	6.6	4.2	3.5	3.8	2.0	2.0	2.0
29	6.4	4.6	5.6	8.6	5.5	7.5	3.8	.6	2.5	2.0	2.0	2.0
30	8.0	3.8	5.8	8.4	5.9	7.1	1.5	.0	.6	2.0	2.0	2.0
31	9.4	6.0	7.7	---	---	---	3.3	.0	.8	2.9	2.0	2.4
MONTH	13.1	3.8	8.6	12.2	.2	6.4	7.9	.0	3.8	4.0	.0	1.4
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	3.3	2.8	3.0	2.8	2.1	2.4	12.7	9.9	11.3	11.4	5.4	8.5
2	3.3	2.9	3.1	3.1	2.0	2.5	13.9	10.0	12.0	12.6	7.2	9.6
3	3.2	2.8	3.0	14.0	2.8	7.4	13.8	10.4	12.1	11.3	7.7	9.6
4	3.1	2.5	2.8	14.1	13.4	13.8	15.4	11.2	12.9	11.2	8.0	9.8
5	2.5	2.0	2.3	15.7	12.0	13.7	15.9	9.0	12.3	10.2	9.6	9.9
6	2.0	2.0	2.0	17.0	12.1	14.4	13.3	9.9	12.0	12.1	9.3	10.5
7	2.0	2.0	2.0	15.0	2.9	9.9	10.1	9.0	9.6	16.2	8.2	11.9
8	2.1	2.0	2.0	3.7	2.6	3.1	9.5	3.9	8.5	17.4	8.8	13.0
9	2.3	2.0	2.1	3.4	3.1	3.3	9.0	6.6	7.5	14.0	12.4	13.3
10	2.5	2.2	2.3	3.2	2.8	2.9	12.4	5.6	8.6	17.0	11.4	13.7
11	2.4	2.2	2.3	3.4	2.4	2.8	12.8	5.4	9.0	14.0	10.8	12.3
12	2.3	2.0	2.2	3.6	2.5	3.1	9.7	7.2	8.3	16.9	8.1	12.4
13	2.0	2.0	2.0	3.4	2.6	3.1	12.9	6.0	9.2	18.6	10.3	14.2
14	2.0	2.0	2.0	2.6	2.2	2.4	10.0	6.4	8.5	16.5	13.3	14.7
15	2.0	2.0	2.0	2.5	2.0	2.2	9.2	6.1	7.7	---	---	---
16	2.3	2.0	2.1	2.5	2.0	2.2	5.9	4.0	5.0	---	---	---
17	3.4	2.0	2.6	2.8	2.1	2.4	12.2	3.5	7.6	---	---	---
18	3.0	2.4	2.8	2.5	2.2	2.3	9.1	5.9	8.3	---	---	---
19	2.6	2.4	2.5	2.8	2.3	2.5	10.3	4.9	6.9	---	---	---
20	2.8	2.5	2.7	2.8	2.2	2.5	10.7	3.5	7.1	---	---	---
21	2.5	2.0	2.2	2.9	2.0	2.3	10.8	6.7	8.4	---	---	---
22	2.8	2.0	2.3	2.9	2.0	2.3	11.9	5.3	8.3	---	---	---
23	2.7	2.4	2.5	3.8	2.3	2.9	14.8	7.8	10.8	---	---	---
24	2.5	2.1	2.3	4.2	2.9	3.5	11.9	7.4	9.0	---	---	---
25	2.3	2.0	2.1	4.4	3.2	3.8	13.4	6.3	9.4	---	---	---
26	2.4	2.0	2.1	4.2	3.4	3.8	14.7	5.9	10.2	12.9	7.8	10.4
27	2.4	2.2	2.3	3.6	2.9	3.1	11.9	7.5	9.7	15.0	9.2	12.2
28	2.7	2.1	2.3	3.8	2.7	3.2	8.6	6.1	7.2	16.1	10.6	13.4
29	2.8	2.1	2.4	4.5	2.9	3.7	6.7	5.6	6.2	16.9	11.5	14.3
30	---	---	---	3.8	1.7	2.8	8.7	6.3	7.4	18.0	12.9	15.5
31	---	---	---	13.1	1.4	7.3	---	---	---	19.0	14.4	16.6
MONTH	3.4	2.0	2.4	17.0	1.4	4.4	15.9	3.5	9.0	19.0	5.4	12.3

03082190 POPLAR RUN NEAR NORMALVILLE, PA--Continued

WATER TEMPERATURE, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	13.9	10.6	12.5	23.2	19.7	21.4	16.8	12.9	15.1
2	---	---	---	16.1	11.0	13.7	23.6	20.0	21.9	17.2	13.7	15.7
3	13.1	11.2	12.3	17.9	12.4	15.3	24.1	21.3	22.7	17.9	14.6	16.5
4	12.6	10.1	11.3	18.9	13.7	16.7	23.7	20.7	22.2	18.2	17.1	17.6
5	15.1	9.0	12.2	20.7	15.9	18.3	24.6	20.6	22.6	17.0	14.2	15.7
6	18.3	13.3	15.7	21.2	16.4	18.8	22.6	21.4	21.9	14.1	12.3	13.2
7	20.1	15.8	17.8	22.1	17.3	19.7	23.0	20.3	21.6	15.0	11.2	12.7
8	19.3	15.5	17.4	22.3	17.8	20.2	22.6	18.6	20.7	14.6	10.7	12.8
9	16.8	12.4	14.2	22.5	19.1	20.8	22.4	18.1	20.5	14.8	11.4	13.3
10	13.0	9.9	11.7	21.8	18.1	20.1	23.0	19.2	21.2	16.0	12.7	14.4
11	14.4	9.2	11.9	22.3	19.0	20.7	23.4	19.8	21.7	15.8	12.7	14.5
12	16.4	10.9	13.7	22.0	19.8	20.8	23.8	20.5	22.3	17.1	13.1	15.0
13	18.1	12.7	15.5	21.8	18.2	20.1	24.5	21.3	22.8	18.2	16.6	17.5
14	19.2	14.0	16.7	22.7	19.7	21.1	25.1	21.6	23.3	16.5	13.9	15.2
15	19.7	15.1	17.5	---	---	---	24.7	21.2	22.5	15.2	12.6	13.9
16	19.4	15.7	17.4	---	---	---	23.0	19.9	21.4	15.1	11.7	13.5
17	19.3	16.3	17.5	---	---	---	23.9	19.8	21.9	15.8	14.2	15.1
18	18.5	13.4	16.1	---	---	---	23.3	21.5	22.3	17.1	15.5	16.1
19	19.0	13.9	16.6	---	---	---	21.5	20.7	21.1	18.1	16.3	17.1
20	20.0	15.3	17.8	---	---	---	21.0	19.6	20.4	18.7	16.5	17.6
21	21.8	17.3	19.6	---	---	---	19.6	17.0	18.5	16.4	14.9	15.4
22	22.1	18.3	20.3	---	---	---	18.8	15.1	17.1	16.8	14.3	15.4
23	21.2	18.1	20.0	---	---	---	18.6	17.1	17.8	17.3	15.3	16.3
24	19.9	15.1	17.6	---	---	---	21.0	17.7	18.9	16.1	13.6	14.7
25	21.4	16.3	19.0	---	---	---	18.9	16.3	17.6	14.2	13.1	13.7
26	20.3	16.2	18.9	---	---	---	18.8	17.0	17.8	15.4	13.5	14.3
27	17.4	13.8	15.8	---	---	---	19.6	15.5	17.7	15.1	11.7	13.4
28	17.0	12.9	15.3	21.2	17.6	19.4	20.3	17.5	19.1	15.5	12.3	13.9
29	17.9	14.7	16.3	22.4	18.3	20.4	19.9	17.5	18.6	15.7	13.7	14.6
30	15.3	12.1	13.9	22.7	19.1	21.0	18.3	16.0	17.2	15.9	12.5	14.2
31	---	---	---	22.4	20.2	21.2	17.2	14.1	15.7	---	---	---
MONTH	22.1	9.0	16.1	22.7	10.6	18.9	25.1	14.1	20.4	18.7	10.7	14.9

YEAR MAXIMUM 25.1 MINIMUM .0 MEAN 9.7

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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	20	15	.81	3.9	8	.08	33	11	.98
2	33	32	9.8	3.5	8	.08	25	9	.61
3	58	32	5.7	3.4	8	.07	21	9	.51
4	31	20	1.7	3.5	8	.08	29	10	.78
5	20	17	.92	3.9	8	.08	26	9	.63
6	15	15	.61	3.7	8	.08	22	8	.48
7	16	15	.65	3.5	8	.08	19	7	.36
8	15	14	.57	3.3	7	.06	22	6	.36
9	12	14	.45	5.6	6	.09	62	30	5.0
10	9.7	14	.37	11	14	.42	51	11	1.5
11	11	13	.39	9.6	13	.34	34	9	.83
12	10	12	.32	10	12	.32	26	8	.56
13	8.9	11	.26	14	15	.57	20	13	.70
14	8.3	10	.22	23	26	2.4	16	13	.56
15	7.9	8	.17	25	12	.81	24	17	1.1
16	7.7	7	.15	18	9	.44	21	15	.85
17	7.5	7	.14	14	7	.26	17	13	.60
18	7.5	8	.16	16	8	.35	15	11	.45
19	5.3	6	.09	11	9	.27	14	9	.34
20	5.9	5	.08	11	8	.24	82	30	6.6
21	7.9	5	.11	9.3	6	.15	45	10	1.2
22	7.3	5	.10	8.0	5	.11	32	10	.86
23	7.4	5	.10	8.9	10	.24	24	16	1.0
24	6.8	5	.09	17	7	.32	20	16	.86
25	8.2	4	.09	14	4	.15	34	23	2.1
26	8.3	4	.09	12	1	.03	56	15	2.3
27	11	4	.12	9.8	1	.03	37	10	1.0
28	15	4	.16	8.6	5	.12	32	8	.69
29	7.7	4	.08	82	199	71	28	5	.38
30	4.1	4	.04	49	20	2.6	21	7	.40
31	3.7	4	.04	---	---	---	21	13	.74
TOTAL	397.1	---	24.58	415.5	---	81.87	929	---	35.33

03082190 POPLAR RUN NEAR NORMALVILLE, PA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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)
		JANUARY			FEBRUARY			MARCH	
1	45	25	3.2	30	25	2.0	12	8	.26
2	28	12	.91	193	366	267	13	9	.32
3	23	12	.75	91	21	5.2	41	29	3.6
4	19	12	.62	110	79	29	175	305	186
5	15	12	.49	61	20	3.3	80	30	6.5
6	12	12	.39	38	19	1.9	47	21	2.7
7	9.0	12	.29	30	16	1.3	32	15	1.3
8	7.6	12	.25	22	13	.77	24	7	.45
9	6.8	12	.22	18	10	.49	26	14	.98
10	6.0	11	.18	15	10	.41	33	20	1.8
11	5.4	11	.16	13	10	.35	23	15	.93
12	4.9	11	.15	12	13	.42	20	8	.43
13	4.5	11	.13	11	17	.50	25	7	.47
14	4.3	11	.13	15	15	.61	20	6	.32
15	4.0	10	.11	12	12	.39	17	6	.28
16	3.8	10	.10	15	7	.28	15	6	.24
17	4.5	10	.12	13	8	.28	14	6	.23
18	6.0	9	.15	16	9	.39	13	6	.21
19	9.0	24	13	30	23	1.9	12	5	.16
20	80	23	5.0	60	23	3.7	12	5	.16
21	40	20	2.2	38	21	2.2	11	5	.15
22	25	19	1.3	27	21	1.5	11	20	.59
23	20	18	.97	24	19	1.2	25	13	.88
24	16	16	.69	20	19	1.0	31	25	2.1
25	14	14	.53	16	18	.78	22	14	.83
26	11	12	.36	14	13	.49	53	98	21
27	10	10	.27	14	11	.42	32	18	1.6
28	9.4	8	.20	12	8	.26	23	13	.81
29	9.0	8	.19	11	8	.24	19	12	.62
30	13	9	.32	---	---	---	15	11	.45
31	19	10	.51	---	---	---	13	11	.39
TOTAL	484.2	---	33.89	981	---	328.28	909	---	236.76

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	12	12	.39	26	10	.70	7.1	14	.27
2	10	11	.30	19	9	.46	8.0	14	.30
3	10	13	.35	15	9	.36	6.0	14	.23
4	19	20	1.0	13	8	.28	5.2	15	.21
5	14	11	.42	61	56	15	4.8	16	.21
6	16	39	4.1	51	30	4.2	4.3	13	.15
7	63	93	16	34	15	1.4	3.5	13	.12
8	40	20	2.2	24	13	.84	3.3	13	.12
9	27	14	1.0	21	12	.68	12	---	---
10	22	12	.71	27	13	.95	4.5	12	.15
11	17	10	.46	19	11	.56	3.6	12	.12
12	15	10	.41	16	16	.69	3.0	10	.08
13	13	9	.32	13	16	.56	2.9	12	.09
14	11	8	.24	12	17	.55	2.4	14	.09
15	9.4	8	.20	11	18	.53	2.3	15	.09
16	9.2	8	.20	9.9	18	.48	4.4	12	.14
17	9.2	7	.17	7.9	18	.38	3.5	9	.09
18	14	15	.57	36	133	20	2.1	7	.04
19	12	13	.42	66	285	81	2.2	8	.05
20	9.8	8	.21	76	107	34	1.9	10	.05
21	8.9	8	.19	55	25	3.7	1.7	7	.03
22	8.0	6	.13	32	22	1.9	1.4	9	.03
23	9.8	10	.26	26	16	3.4	1.5	9	.04
24	8.9	9	.22	59	40	9.1	1.5	8	.03
25	7.7	8	.17	26	23	1.6	1.2	8	.03
26	7.1	8	.15	20	18	.97	1.2	10	.03
27	7.0	12	.23	17	18	.83	1.3	15	.05
28	10	19	.76	14	19	.72	.92	13	.03
29	39	122	17	11	18	.53	.84	12	.03
30	44	51	7.9	9.4	17	.43	.89	13	.03
31	---	---	---	7.5	17	.34	---	---	---
TOTAL	503.0	---	56.68	834.7	---	187.14	99.45	---	2.93

03082190 POPLAR RUN NEAR NORMALVILLE, PA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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)
		JULY			AUGUST			SEPTEMBER	
1	.90	18	.04	1.3	17	.06	1.7	18	.08
2	.75	13	.03	.85	15	.03	1.3	16	.06
3	.81	8	.02	.80	14	.03	1.1	13	.04
4	.89	12	.03	.73	13	.03	13	115	6.1
5	.89	15	.04	.67	12	.02	7.4	24	.48
6	.82	16	.04	.48	12	.02	4.5	19	.23
7	.71	18	.03	.60	11	.02	3.0	17	.14
8	.69	12	.02	.50	10	.01	2.3	15	.09
9	.54	10	.01	.35	10	.01	1.9	15	.08
10	.64	13	.02	.28	9	.01	1.7	15	.07
11	.78	16	.03	.29	9	.01	1.6	14	.06
12	.60	11	.02	.23	8	.00	1.9	14	.07
13	.56	6	.01	.16	7	.00	17	719	65
14	.61	15	.02	.16	6	.00	5.0	26	.35
15	8.0	29	.63	1.8	150	2.0	3.1	16	.13
16	.95	16	.04	.94	70	.18	2.2	10	.06
17	.75	7	.01	.39	20	.02	12	124	5.8
18	.96	7	.02	.33	12	.01	8.0	23	.50
19	.88	7	.02	.75	45	.09	5.2	16	.22
20	9.9	350	19	.59	16	.03	9.4	31	.79
21	42	636	117	.42	13	.01	5.7	23	.35
22	7.5	18	.36	.43	11	.01	4.2	17	.19
23	6.2	23	.39	6.3	997	42	3.6	13	.13
24	5.3	18	.26	10	158	15	4.5	10	.12
25	2.8	16	.12	2.0	28	.15	28	278	48
26	2.1	14	.08	1.3	18	.06	13	25	.88
27	1.8	13	.06	1.1	14	.04	7.7	17	.35
28	1.5	11	.04	1.1	12	.04	5.6	14	.21
29	1.2	9	.03	18	398	44	4.1	10	.11
30	.97	8	.02	5.1	26	.36	3.5	8	.08
31	.91	6	.01	2.5	19	.13	---	---	---
TOTAL	103.91	---	138.45	60.45	---	104.38	183.2	---	130.77

TOTAL DISCHARGE FOR YEAR 5900.51 TOTAL LOAD FOR YEAR 1361.06

03082500 YOUGHIOGHENY RIVER AT CONNELLSVILLE, PA

LOCATION.--Lat 40°01'03", long 79°35'38", Fayette County, Hydrologic Unit 05020006, on left bank at downstream side of Crawford Avenue bridge at Connellsville, 1.2 mi upstream from Mounts Creek, and at mile 44.0.

DRAINAGE AREA.--1,326 mi^2.

PERIOD OF RECORD.--July 1908 to current year. Monthly discharge only for periods, published in WSP 1305.

REVISED RECORDS.--WSP 743: Drainage area. WSP 1305: 1912 (M), 1914 (M), 1916-17 (M), 1918, 1922-25, WSP 1435: 1919-20. WSP 1725: 1916, 1932 (monthly, yearly summaries).

GAGE.--Water-stage recorder. Datum of gage is 860.13 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 15, 1928, nonrecording gage, and Aug. 15, 1928, to July 7, 1958, water-stage recorder at same site and datum. July 8, 1958, to Sept. 8, 1959, nonrecording gage at site 0.4 mi downstream at different datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated since 1925 by Deep Creek Reservoir, since 1943 by Youghiogheny River Lake 29.4 mi upstream, and by several smaller reservoirs above station. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--80 years, 2,577 ft^3/s, 26.39 in/yr, adjusted for storage since August 1925.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 103,000 ft^3/s, Oct. 16, 1954, gage height, 21.96 ft, from rating curve extended above 55,000 ft^3/s; minimum, 11 ft^3/s, Sept. 23, 26, 27, 1908, Oct. 18, 1910, gage height, 0.11 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 20,900 ft^3/s, Mar. 4, gage height, 10.43 ft; minimum daily, 463 ft^3/s, Aug. 13, 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1760	979	5620	5820	3200	1700	1990	5620	1480	602	525	626
2	1770	960	4420	6070	8070	1620	1840	4730	1450	600	513	567
3	e2600	949	3620	4760	11000	1960	1610	4190	1450	590	507	629
4	e2200	939	3740	4060	8710	10600	1820	3850	1340	580	497	797
5	e1600	929	3580	2840	8100	15300	1960	5150	1250	572	499	1300
6	e1250	786	3130	2080	5860	8510	1720	9450	1120	567	550	1090
7	e1200	763	2780	1380	4580	e6400	4770	8160	1020	560	628	920
8	e1200	751	2600	1510	4220	e5000	7320	6370	966	553	561	792
9	1200	779	3060	1640	3610	e4000	5330	5540	1250	544	515	719
10	1110	984	4630	1440	3280	e3500	4030	5640	1570	536	498	681
11	1040	1210	4390	1110	2790	e2700	3210	5470	1190	542	482	649
12	994	1190	3530	1230	2170	e2600	2650	5180	1000	559	473	635
13	941	1150	2960	1420	1910	e2600	2280	4340	917	551	463	824
14	1390	1410	2550	1170	1470	e2600	2000	2890	858	551	463	1030
15	1310	1930	2960	1000	1960	2450	1810	2570	772	600	479	919
16	1430	1950	4120	e920	2110	1960	1670	1970	844	585	500	819
17	1390	1760	3540	e920	1800	2020	1540	1620	878	560	480	914
18	1360	1770	3040	e1200	1630	1920	1580	1930	794	551	481	1930
19	1340	1650	2750	e1800	1880	1860	1780	5370	760	563	530	1620
20	1330	1490	4520	11300	4060	1810	1530	8130	732	691	563	1180
21	1330	1460	7260	8200	4480	1720	1380	9860	709	1170	632	1050
22	1280	1320	5190	6000	3090	1570	1290	7100	692	1050	823	927
23	1110	1230	4370	4890	2970	1690	1230	6530	682	851	644	855
24	1090	1370	4100	4090	3250	2880	1700	8780	665	881	854	1050
25	1070	1670	4590	3730	3230	3200	1600	7520	649	655	1030	1480
26	1040	1600	7250	3070	2840	3980	1290	6830	632	545	778	2840
27	1000	1480	6830	2300	2580	4010	1210	5690	626	594	630	1990
28	961	1380	5990	2050	2370	3340	1210	3300	619	577	574	1490
29	1050	5190	6040	1680	1940	2780	1960	2860	613	556	818	1260
30	1010	10800	5290	1720	---	2450	4980	2270	607	548	991	1130
31	997	---	4750	2020	---	2180	---	1980	---	534	775	---
TOTAL	40353	51829	133200	93420	109160	110910	70290	160890	28135	19418	18756	32713
MEAN	1302	1728	4297	3014	3764	3578	2343	5190	938	626	605	1090
MAX	2600	10800	7260	11300	11000	15300	7320	9860	1570	1170	1030	2840
MIN	941	751	2550	920	1470	1570	1210	1620	607	534	463	567
†	-555	-87.4	+309	+277	+568	+595	+543	-21.1	-321	-442	-358	-257
MEAN‡	747	1641	4606	3291	4332	4173	2886	5169	617	184	247	833
CFSM‡	.56	1.24	3.47	2.48	3.27	3.15	2.18	3.90	.46	.14	.19	.63
IN.‡	.64	1.38	4.00	2.86	3.53	3.63	2.43	4.50	.51	.16	.22	.70

CAL YR 1987 TOTAL 811759 MEAN 2224 MAX 11000 MIN 612 ADJ -48.3 MEAN‡ 2176 CFSM‡ 1.64 IN.‡ 22.25
WTR YR 1988 TOTAL 869074 MEAN 2375 MAX 15300 MIN 463 ADJ +18.5 MEAN‡ 2394 CFSM‡ 1.80 IN.‡ 24.55

† Change in contents, equivalent in cubic feet per second, in Deep Creek Reservoir and Youghiogheny River Lake. Records of contents in Deep Creek Reservoir furnished by Pennsylvania Electric Co.
‡ Adjusted for change in reservoir contents.

e Estimated

03083500 YOUGHIOGHENY RIVER AT SUTERSVILLE, PA

LOCATION.--Lat 40°14'24", long 79°48'24", Allegheny County, Hydrologic Unit 05020006, on left bank 500 ft upstream from highway bridge at Sutersville, 2.1 mi downstream from Sewickley Creek, and at mile 15.2.

DRAINAGE AREA.--1,715 mi².

PERIOD OF RECORD.--October 1920 to current year. Monthly discharge only for some periods, published in WSP 1305.

REVISED RECORD.--WSP 743: Drainage area. WSP 1305: 1924, 1926 (M), 1931 (M). WSP 1435: 1935-36.

GAGE.--Water-stage recorder. Datum of gage is 733.36 ft above National Geodetic Vertical Datum of 1929. Prior to June 1, 1939, nonrecording gage at site 500 ft downstream at same datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated since 1925 by Deep Creek Reservoir, since 1943 by Youghiogheny River Lake 58 mi upstream, and by several smaller reservoirs above station. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--68 years, 3,039 ft³/s, 24.07 in/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 108,000 ft³/s, Oct. 16, 1954, gage height, 32.5 ft, from floodmark; minimum observed, 57 ft³/s, Sept. 29, 30, 1922.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 26,000 ft³/s, Mar. 5, gage height, 14.01 ft; minimum daily, 592 ft³/s, Aug. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2170	1160	7020	5680	2920	2190	2520	5830	1940	718	684	830
2	2110	1130	5090	6880	10700	2040	2390	4850	1750	726	665	714
3	3190	1110	4160	5280	16100	2190	2140	4240	1800	719	649	688
4	3240	1110	4720	4490	12400	10200	2390	3900	1700	701	637	819
5	2510	1090	4440	3580	11000	21500	2580	4170	1580	694	650	1230
6	1960	1020	3820	2580	7400	11000	2350	9630	1430	684	740	1390
7	1670	921	3400	e1800	5740	7920	4210	9400	1300	673	766	1120
8	1590	908	3140	e2100	4850	6800	8560	7080	1210	665	750	957
9	1510	924	3260	e2000	4200	5520	6470	5910	1840	652	679	854
10	1390	1090	4480	e1800	3790	5390	4830	5930	1970	645	641	795
11	1300	1450	4870	e1400	3400	4200	3900	5790	1650	643	623	759
12	1260	1490	3920	e1700	2900	3570	3320	5520	1320	654	608	723
13	1180	1470	3400	e1800	2550	3590	2910	4790	1170	648	601	1030
14	1190	1610	2920	e1500	1980	3480	2580	3550	1090	649	592	1230
15	1830	2040	3090	e1300	2310	3200	2340	3050	975	783	624	1160
16	1560	2320	4090	e1200	2650	2730	2170	2510	1010	728	712	990
17	1620	2130	3930	e1200	2470	2560	2010	2130	1120	678	639	1280
18	1580	2300	3390	e1600	2140	2540	1980	2070	1020	661	593	1620
19	1540	2200	3110	e1800	2180	2510	2270	4970	933	686	628	2180
20	1530	1940	4640	e9700	3830	2420	2060	10100	896	1600	662	1490
21	1530	1850	8360	10700	4900	2340	1830	11500	866	2950	672	1310
22	1500	1710	6120	6740	3760	2150	1690	8410	853	1900	825	1130
23	1370	1540	4820	5430	3340	2110	1600	7140	833	1280	818	1020
24	1290	1550	4460	4440	3660	2790	1740	8480	823	1270	1020	1060
25	1250	1840	4370	4080	3620	3520	2060	8410	803	1010	1080	1300
26	1230	1950	7510	3520	3310	4260	1700	7250	787	851	1090	2560
27	1230	1810	8020	2880	3020	4620	1510	6420	764	751	806	2450
28	1200	1680	6550	2520	2870	3950	1500	3990	753	765	694	1770
29	1280	3090	6880	2230	2450	3370	1720	3250	744	728	1030	1460
30	1230	13500	5890	2150	---	3020	3730	2740	729	699	1390	1280
31	1180	---	5170	2280	---	2730	---	2410	---	691	1100	---
TOTAL	50220	59933	149040	106360	136440	140410	83060	175420	35659	27502	23668	37199
MEAN	1620	1998	4808	3431	4705	4529	2769	5659	1189	887	763	1240
MAX	3240	13500	8360	10700	16100	21500	8560	11500	1970	2950	1390	2560
MIN	1180	908	2920	1200	1980	2040	1500	2070	729	643	592	688
†	-555	-87.4	+309	+277	+568	+595	+543	-21.1	-321	-442	-358	-257
MEAN‡	1065	1911	5117	3708	5273	5124	3312	5638	868	445	405	983
CFSM‡	.62	1.11	2.98	2.16	3.07	2.99	1.93	3.29	.51	.26	.24	.57
IN.‡	.71	1.24	3.44	2.49	3.31	3.45	2.15	3.79	.57	.30	.28	.64

CAL YR 1987 TOTAL 1011886 MEAN 2772 MAX 14000 MIN 733 ADJ -48.3 MEAN‡ 2724 CFSM‡ 1.59 IN.‡ 21.54
WTR YR 1988 TOTAL 1024911 MEAN 2800 MAX 21500 MIN 592 ADJ +18.5 MEAN‡ 2818 CFSM‡ 1.64 IN.‡ 22.37

† Change in contents, equivalent in cubic feet per second, in Deep Creek Reservoir and Youghiogheny River Lake. Records of contents in Deep Creek Reservoir furnished by Pennsylvania Electric Co.
‡ Adjusted for change in contents.

e Estimated

03084000 ABERS CREEK NEAR MURRYSVILLE, PA

LOCATION.--Lat 40°27'01", long 79°42'50", Allegheny County, Hydrologic Unit 05020005, on right bank at downstream side of highway bridge, 30 ft upstream from small tributary, 2 mi northwest of Murrysville, and 5 mi northwest of Export.

DRAINAGE AREA.--4.39 mi^2.

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

GAGE.--Water-stage recorder and log control. Datum of gage is 936.73 ft above National Geodetic Vertical Datum of 1929 (Pennsylvania Department of Transportation bench mark). Prior to Oct. 1, 1950, water-stage recorder at site 800 ft upstream at differnt datum. Oct. 1, 1950 to Apr. 26, 1984, water-stage recorder at present site and datum. Apr. 27, 1984 to Sept. 30, 1985, nonrecording gage at site 800 ft upstream at same datum.

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

AVERAGE DISCHARGE.--40 years, 5.33 ft^3/s, 16.49 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,600 ft^3/s, July 5, 1950, gage height, 7.72 ft, from flood-marks, from rating curve extended above 910 ft^3/s on basis of contracted-opening measurement of peak flow; maximum gage height, 11.65 ft, Mar. 29, 1985; no flow at times during some years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft^3/s and maximum (*).

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 2	1300	*103	a*4.58				

(a) Ice jam.

Minimum discharge, 0.23 ft^3/s Aug. 25, 26, gage height, 1.92 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	e1.6	7.2	5.7	e10	1.9	3.4	1.1	1.3	.32	.28	.36
2	3.5	e1.5	7.2	14	e58	1.9	3.0	.99	2.5	.34	.28	.35
3	3.2	e1.4	8.5	18	27	7.2	5.5	.88	1.3	.31	.31	.32
4	2.3	e1.4	12	5.2	e16	26	7.1	1.4	.99	.30	.34	6.3
5	2.1	e1.8	8.5	e3.5	e10	13	3.5	17	.83	.29	2.4	.66
6	3.2	e2.4	6.6	e2.7	e5.6	9.5	7.7	5.3	.74	.30	1.4	.53
7	6.6	e3.4	5.6	e2.2	e3.4	7.0	16	3.1	.70	.29	.40	.39
8	3.3	4.6	5.1	e2.0	e3.0	5.3	8.9	2.4	.68	.29	.31	.36
9	2.7	7.8	6.3	e1.8	e2.5	6.4	6.1	7.1	8.1	.30	.32	.36
10	2.3	7.6	4.9	e1.7	e2.3	5.2	4.9	9.0	.87	.30	.31	.35
11	3.1	5.4	4.4	e1.5	e2.2	3.9	4.0	4.6	.71	.30	.31	.35
12	2.2	e4.5	4.5	e1.4	e2.0	5.8	3.5	3.1	.68	.35	.43	.54
13	2.1	e3.8	3.1	e1.3	e3.6	8.1	2.8	3.9	.59	.33	.33	9.1
14	1.9	e3.3	2.6	e1.2	e9.0	5.0	2.5	2.5	.58	.32	.31	.61
15	1.8	e2.9	5.4	e1.8	5.1	4.2	2.3	2.2	.57	.31	2.0	.38
16	1.8	e4.0	4.9	e2.3	4.1	3.5	2.3	2.9	.58	.31	.35	.34
17	1.9	6.6	4.9	e1.2	e3.0	3.2	2.1	1.9	.57	.31	.31	3.7
18	2.1	4.4	4.0	e3.0	e2.7	4.1	3.6	11	.50	1.5	.30	.51
19	2.1	2.2	4.1	e7.0	e3.0	3.7	1.9	22	.48	4.7	2.5	.42
20	2.8	3.7	13	e18	e3.3	4.6	1.7	17	.46	4.3	.37	.92
21	2.6	2.6	7.7	7.4	6.7	3.7	1.5	8.4	.42	8.7	.32	.38
22	2.4	2.3	6.1	4.9	19	6.1	1.4	5.2	.42	.69	.31	.41
23	2.4	3.8	5.2	4.0	5.9	3.1	2.2	5.4	.42	.59	4.5	1.0
24	2.4	2.5	4.4	3.3	3.5	3.0	1.9	8.3	.36	.48	.58	.39
25	3.2	2.4	5.0	3.0	3.8	9.6	1.1	3.5	.36	.41	.27	.76
26	3.3	2.8	5.6	e3.0	13	14	.97	2.8	.35	1.1	.30	.37
27	7.9	2.9	5.2	e2.8	2.6	7.7	.96	2.4	.35	2.2	.31	.36
28	3.0	2.5	7.0	e2.6	2.2	5.4	3.7	2.2	.34	.55	.28	.35
29	2.1	27	7.2	e2.9	2.1	4.4	3.1	1.9	.35	.41	2.8	.33
30	1.8	10	5.0	e2.0	---	3.8	1.6	1.6	.32	.64	.54	.33
31	e1.7	---	8.4	e1.8	---	3.3	---	1.3	---	.31	.40	---
TOTAL	86.5	133.1	189.6	133.2	234.6	193.6	111.23	162.37	27.42	31.85	24.17	31.53
MEAN	2.79	4.44	6.12	4.30	8.09	6.25	3.71	5.24	.91	1.03	.78	1.05
MAX	7.9	27	13	18	58	26	16	22	8.1	8.7	4.5	9.1
MIN	1.7	1.4	2.6	1.2	2.0	1.9	.96	.88	.32	.29	.27	.32
CFSM	.64	1.01	1.39	.98	1.84	1.42	.84	1.19	.21	.23	.18	.24
IN.	.73	1.13	1.61	1.13	1.99	1.64	.94	1.38	.23	.27	.20	.27

CAL YR 1987 TOTAL 1904.04 MEAN 5.22 MAX 52 MIN .26 CFSM 1.19 IN. 16.13
WTR YR 1988 TOTAL 1359.17 MEAN 3.71 MAX 58 MIN .27 CFSM .85 IN. 11.52

e Estimated

03085000 MONONGAHELA RIVER AT BRADDOCK, PA
(National stream quality accounting network)

LOCATION.--Lat 40°23'28", long 79°51'30", Allegheny County, Hydrologic Unit 05020005, near right bank on river guide wall 300 ft upstream from dam at lock 2 at Braddock, 1,700 ft downstream from Turtle Creek, and 11.2 mi upstream from confluence with Allegheny River. Water-quality sampling site at Rankin bridge, 1.7 mi downstream.

DRAINAGE AREA.--7,337 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1938 to current year. Monthly discharge only for some periods, published in WSP 1305.

GAGE.--Water-stage recorder and fixed-crest concrete dam control with streamward lock chamber usable as floodway during high flow since 1951. Datum of gage is 707.16 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 13, 1951, at site 700 ft upstream at same datum.

REMARKS.--No estimated daily discharge. Records good. Flow regulated by locks and hydroelectric plants, since 1938 by Tygart Lake, since 1926 by Lake Lynn, since 1925 by Deep Creek Reservoir, and since 1943 by Youghiogheny River Lake, combined capacity, 704,300 acre-ft. Figures of daily discharge include slight diversion from Beaver Run Reservoir in the Kiskiminetas River basin to the borough of Jeannette in the Monongahela River basin. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--50 years, 12,430 ft^3/s, 23.01 in/yr, adjusted for storage and diversion 1938-75.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 201,000 ft^3/s, June 5, 1941, gage height, 31.20 ft; maximum gage height, 31.39 ft, June 24, 1972 (backwater from Allegheny River); minimum discharge, 559 ft^3/s, Sept. 20, 22, 23, 1946; minimum daily, 703 ft^3/s, Sept. 3, 4, 22, 1946; minimum gage height, 12.01 ft, Oct. 7-13, 1943.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 18, 1936, reached a stage of 38.8 ft from floodmarks, discharge, 210,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 80,000 ft^3/s, Mar. 5, gage height, 20.89 ft; minimum, 1,240 ft^3/s, June 29, gage height, 12.02 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3760	2060	20800	19600	9760	8740	10400	13100	5540	1630	1810	1990
2	5350	2160	15800	23200	29500	7520	9850	11200	4840	1800	1870	1820
3	6600	2950	14000	20600	54500	7710	9290	11300	5160	1680	1720	1980
4	6090	2720	15300	15400	43300	24900	8940	10400	4450	1650	1730	2480
5	5480	2700	14900	13100	46100	72100	12800	9620	4140	1610	2230	2720
6	4430	2520	11100	7780	37100	45000	11300	20100	3960	1640	2020	3700
7	4840	1970	12900	6870	25300	34300	12300	33500	4030	1590	2030	3810
8	3800	1820	12700	7030	23200	27500	21400	28700	3320	1590	1840	2600
9	3800	1990	10500	4730	17900	20700	25000	25800	5360	1530	1710	2930
10	4590	2430	12000	3820	15100	16100	22800	16800	4690	1580	2080	2750
11	4080	4650	17500	4930	12300	13500	17500	14600	4170	1550	1790	1900
12	3820	6150	12700	4950	9570	11200	15500	13800	2910	1760	1680	2070
13	4320	7730	9570	6210	8960	12600	11700	12500	3010	1690	1640	2940
14	3660	6760	9990	5700	6640	16800	11200	9720	2890	1660	1610	8440
15	3930	5390	10400	5170	6230	14000	7970	7820	2870	1830	1660	4070
16	4110	6560	10100	3530	8280	12200	7210	7550	2070	1740	1720	4030
17	4230	6680	10300	3210	9350	13000	5000	6040	3170	1640	1710	3940
18	3020	7110	9170	3620	8560	11500	6100	6060	3020	1560	1640	3700
19	2830	7420	7170	8180	8780	10800	11600	15400	1990	1920	1740	5020
20	2890	6180	8730	32200	11800	8650	8740	26100	1930	3040	1720	5290
21	3270	6120	18500	50700	16100	9030	10100	28200	2010	8010	1680	3460
22	3410	3870	19000	33100	14400	10800	7560	23300	1840	4770	1820	2850
23	2950	4400	17000	25000	15600	11200	7560	18900	1750	3970	2380	3360
24	2680	4640	13400	21300	14500	10600	7180	19500	1720	3750	2950	2970
25	2160	4560	10500	16200	14500	16200	7640	18300	1680	2700	2160	5060
26	2070	4760	25000	13100	12000	20900	8160	16000	1600	2950	2320	9660
27	2410	3320	33100	9410	10200	23800	8580	17500	1590	2590	3250	9910
28	3100	4390	31200	8210	8380	18300	4400	11100	1610	1980	2270	7110
29	2730	6340	29800	7350	6790	13900	4930	8810	1580	1890	2230	5060
30	2980	24800	27000	7430	---	12400	6020	7060	1630	1940	3640	4740
31	2470	---	21300	4940	---	12700	---	7000	---	2050	3170	---
TOTAL	115860	155150	491430	396570	504700	548650	318730	475780	90530	71290	63820	122360
MEAN	3737	5172	15850	12790	17400	17700	10620	15350	3018	2300	2059	4079
MAX	6600	24800	33100	50700	54500	72100	25000	33500	5540	8010	3640	9910
MIN	2070	1820	7170	3210	6230	7520	4400	6040	1580	1530	1610	1820

CAL YR 1987 TOTAL 3347840 MEAN 9172 MAX 51500 MIN 1290
WTR YR 1988 TOTAL 3354870 MEAN 9166 MAX 72100 MIN 1530

03085000 MONONGAHELA RIVER AT BRADDOCK, PA--Continued

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (FTU)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)
NOV											
17...	0900	5520	460	7.6	10.0	3.1	742	11.2	1300	250	140
FEB											
17...	1100	8290	315	7.2	4.0	3.4	745	12.6	250	K71	100
JUN											
08...	1000	3370	360	7.3	23.0	1.8	735	7.2	K570	K48	110
AUG											
24...	1000	2570	520	7.8	24.5	5.4	738	5.9	7000	440	180

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)	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 DIS TOT IT FIELD 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)
NOV											
17...	110	40	10	33	2.5	--	--	34	130	21	.20
FEB											
17...	76	29	7.5	17	1.7	34	--	28	86	15	.20
JUN											
08...	85	31	8.4	19	1.7	36	--	29	110	14	.20
AUG											
24...	150	50	14	47	2.7	53	--	43	170	29	.20

DATE	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, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA 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)
NOV											
17...	4.1	277	265	.38	0.0	.82	.140	.20	.180	.020	.010
FEB											
17...	5.7	179	184	.24	0.0	1.00	.190	.60	.040	.010	<.010
JUN											
08...	3.7	204	209	2.28	0.0	1.00	.070	.70	.030	.020	<.010
AUG											
24...	3.5	375	346	.51	0.0	1.30	.610	1.60	.070	.060	.040

DATE	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)
NOV										
17...	10	<1	41	<0.5	<1	<1	<3	2	12	<5
FEB										
17...	<10	<1	37	<0.5	<1	1	4	<1	6	<5
JUN										
08...	40	2	38	<0.5	<1	<1	<3	2	9	<5
AUG										
24...	40	1	46	<0.5	<1	<1	<3	3	9	<5

DATE	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
NOV										
17...	9	120	<0.1	<10	4	<1	<1	260	<6	14
FEB										
17...	11	240	<0.1	<10	7	<1	<1	170	<6	15
JUN										
08...	13	5	<0.1	<10	2	<1	<1	180	<6	8
AUG										
24...	14	100	<0.1	<10	2	1	<1	350	<6	13

03085500 CHARTIERS CREEK AT CARNEGIE, PA

LOCATION.--Lat 40°24'02", long 80°05'48", Allegheny County, Hydrologic Unit 05030101, on left bank 100 ft downstream from Hammond Street bridge, 0.3 mi downstream from Robinson Run, 0.8 mi upstream from Campbells Run, and 8.9 mi upstream from mouth.

DRAINAGE AREA.--257 mi².

PERIOD OF RECORD.--October 1919 to September 1933, October 1940 to current year. Published as "at Crafton" October 1971 to September 1975. Monthly discharge only for some periods, published in WSP 1305. June 1915 to September 1919 (gage heights and discharge measurements only) in reports of Water Supply Commission of Pennsylvania.

GAGE.--Water-stage recorder and concrete weir control. Datum of gage is 755.45 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 15, 1931, nonrecording gage at site 0.5 mi downstream at different datum. Jan. 8, 1932, to Sept. 30, 1933, nonrecording gage at site 1.0 mi downstream at different datum. Nov. 20, 1940, to Aug. 18, 1967, water-stage recorder at site 400 ft upstream at datum 1.00 ft higher. Oct. 1, 1971, to Sept. 30, 1975, nonrecording gage at site 4.6 mi downstream, at datum 725.99 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except for estimated daily discharges, which are fair. Some regulations at low flow by mine drainage, reservoirs, and industrial usage above station. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--62 years (1919-33, 1940-88), 291 ft³/s, 15.38 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,500 ft³/s, Aug. 6, 1956, gage height, 16.37 ft, site and datum then in use; minimum observed, 16 ft³/s, Aug. 9, 1926, and at times in September 1932.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 2, 1912 reached a discharge of 20,000 ft³/s, from Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 2	1730	*7,600	*9.04	No other peak greater than base discharge.			

Minimum discharge, 45 ft³/s, Oct. 28, Nov. 11, 18, gage height, 1.00 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	112	70	167	243	e330	170	244	163	121	72	79	62
2	94	69	142	199	e5200	164	239	163	135	68	76	60
3	92	68	129	186	2410	221	243	146	135	69	77	60
4	85	72	215	180	2040	1240	526	156	125	68	71	169
5	75	72	192	116	1050	992	380	192	115	66	70	109
6	74	66	148	138	649	627	320	197	109	67	118	72
7	88	63	118	117	545	546	507	160	105	65	119	61
8	86	63	106	e96	447	463	417	149	103	64	75	61
9	75	74	128	e84	373	437	346	176	408	64	68	62
10	72	91	134	e76	334	418	311	370	157	63	66	61
11	81	93	117	e68	e280	351	285	223	116	64	63	60
12	82	88	112	e64	e230	339	270	175	106	64	64	60
13	78	82	96	e60	e200	493	256	163	97	62	63	281
14	73	76	94	e56	e170	394	241	203	93	65	60	114
15	72	73	127	e52	e190	356	223	154	88	69	115	76
16	70	69	124	e50	e200	324	222	201	91	56	154	66
17	72	74	110	e49	e160	311	210	148	105	56	76	90
18	71	97	107	e70	e160	313	221	237	90	72	66	76
19	71	82	99.8	e120	e150	334	223	390	86	179	137	66
20	71	76	522	e1150	e300	328	191	254	85	601	105	72
21	73	81	341	483	263	308	181	217	84	912	74	72
22	71	72	217	301	218	280	177	177	81	217	63	63
23	70	70	184	235	270	273	179	170	82	121	95	71
24	70	72	158	203	258	262	186	426	79	98	125	71
25	72	73	161	186	221	280	167	222	78	85	80	78
26	71	79	322	163	202	509	161	177	75	80	66	74
27	84	77	266	139	206	379	158	157	75	279	62	67
28	95	73	246	e125	188	318	165	145	74	243	63	62
29	76	480	347	e115	178	293	198	137	72	112	102	60
30	72	292	234	e110	---	274	188	129	72	89	90	57
31	69	---	208	e105	---	248	---	123	---	84	68	---
TOTAL	2417	2887	5671.8	5339	17422	12245	7635	6100	3242	4274	2610	2413
MEAN	78.0	96.2	183	172	601	395	254	197	108	138	84.2	80.4
MAX	112	480	522	1150	5200	1240	526	426	408	912	154	281
MIN	69	63	94	49	150	164	158	123	72	56	60	57
CFSM	.30	.37	.71	.67	2.34	1.54	.99	.77	.42	.54	.33	.31
IN.	.35	.42	.82	.77	2.52	1.77	1.11	.88	.47	.62	.38	.35

CAL YR 1987 TOTAL 88317.8 MEAN 242 MAX 2520 MIN 62 CFSM .94 IN. 12.78
WTR YR 1988 TOTAL 72255.8 MEAN 197 MAX 5200 MIN 49 CFSM .77 IN. 10.46

e Estimated

03086000 OHIO RIVER AT SEWICKLEY, PA

LOCATION.--Lat 40°32'57", long 80°12'21", Allegheny County, Hydrologic Unit 05030101, near left bank 50 ft upstream from Dashields Dam, 1.0 mi downstream from Narrows Run, 1.0 mi northwest of Sewickley, and 13.3 mi downstream from confluence of Allegheny and Monongahela Rivers.

DRAINAGE AREA.--19,500 mi², approximately.

PERIOD OF RECORD.--October 1933 to current year.

REVISED RECORDS.--WSP 1305: 1938-40 (adjusted monthly runoff). WSP 1435: 1934.

GAGE.--Water-stage recorder and fixed-crest concrete dam control. Datum of gage is 690.41 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 22, 1933 nonrecording gage, Nov. 22, 1933 to May 4, 1981 water-stage recorder at site 1.5 mi upstream, at same datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Some regulation by locks, and by many reservoirs above station. Combined capacity of reservoirs and lakes, excluding that of Chautauqua Lake, but including Lake Lynn, Deep Creek Reservoir, and 15 smaller reservoirs, 2,773,000 acre-ft. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--55 years, 33,920 ft³/s, 22.93 in/yr, adjusted for storage May 1938 to September 1975.

EXTREMES FOR PERIOD OF RECORD.--Maxmium discharge, 574,000 ft³/s, Mar. 18, 1936, gage height, 34.75 ft, from flood-mark in gage house; minimum, 1,800 ft³/s, Sept. 4, 1957, gage height, 2.60 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 130,000 ft³/s, Feb. 3, gage height, 8.90 ft; minimum daily, 3,530 ft³/s, July 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e22300	14500	67600	43500	26700	26000	44500	26000	18100	3820	4770	7180
2	e25800	13200	65600	47100	75000	23300	41000	29000	17900	4320	5320	6910
3	e26800	14200	53500	43800	123000	22800	39800	31000	17700	4960	5560	6540
4	e25400	13800	51900	34700	108000	40900	44900	29800	15500	4740	4980	7810
5	e24300	13700	51400	30400	112000	94700	71100	26800	15200	4640	5580	7140
6	e21500	13700	46100	19000	94300	69600	57700	39600	14300	4400	5600	10800
7	e20900	12700	42300	15600	78600	60900	59600	55300	12900	4170	6040	13600
8	e20000	11700	43000	13100	67300	54500	59400	50500	11400	4830	4850	8430
9	e23000	11600	38500	11700	58800	47800	64900	46300	14500	4690	3620	8950
10	e26300	14400	43900	10800	53600	44500	62500	35700	12600	4570	4000	6920
11	e24300	18300	55900	11000	45800	48600	55200	35600	11200	4410	4470	5730
12	e23600	21500	50600	13300	38300	46900	49500	36400	8920	3790	3940	4950
13	e24300	23400	45400	14800	30300	45200	39400	34400	7190	4100	4000	6630
14	e22300	22500	43800	15200	21300	52000	32700	29200	8660	4290	3880	14600
15	21600	18700	42000	13600	20500	50600	27300	23100	7970	5300	3760	9330
16	20400	19600	43900	11200	27400	41300	23700	23600	5710	5000	3860	7960
17	18800	19200	48400	9960	32900	40400	18600	28700	7720	3530	3810	8590
18	15600	21800	45800	12500	34800	38000	19100	31300	7720	3740	3850	8080
19	14200	23200	39400	20900	38800	37500	25400	44800	6140	4890	3940	8000
20	13000	23300	35800	53200	42600	33500	22200	59800	4830	5580	4670	11300
21	14400	23100	53400	85400	50700	31000	22000	60900	4830	16600	4300	9710
22	14100	19200	67700	73100	48000	32900	18800	59500	4840	12300	3920	7950
23	13000	17600	60300	64700	48800	31300	17900	55400	4710	12400	4330	9190
24	10000	19400	53100	58300	48000	29600	17100	57500	4820	12300	7560	7420
25	9110	18500	47600	48300	47900	36200	17000	56900	4860	10100	5430	8700
26	9530	21900	57800	41400	39200	48700	21300	50300	4700	9580	5190	16100
27	11600	20000	70200	32000	34900	63800	22900	49100	4620	8550	7390	14500
28	13100	22700	65000	23600	28100	60100	15900	40200	4320	7780	6180	14100
29	13700	26100	61000	20500	23600	56100	15700	30100	3700	5790	4840	10000
30	14500	61400	57300	19200	---	52300	15700	22300	3920	5070	7330	10100
31	15200	---	47900	15000	---	51700	---	20800	---	5090	10400	---
TOTAL	572640	594900	1596100	926860	1499200	1412700	1042800	1219900	271480	195330	157370	277220
MEAN	18470	19830	51490	29900	51700	45570	34760	39350	9049	6301	5076	9241
MAX	26800	61400	70200	85400	123000	94700	71100	60900	18100	16600	10400	16100
MIN	9110	11600	35800	9960	20500	22800	15700	20800	3700	3530	3620	4950

CAL YR 1987 TOTAL 11057640 MEAN 30290 MAX 120000 MIN 4190
WTR YR 1988 TOTAL 9766500 MEAN 26680 MAX 123000 MIN 3530

e Estimated

03101500 SHENANGO RIVER AT PYMATUNING DAM, PA

LOCATION.--Lat 41°29'53", long 80°27'37", Crawford County, Hydrologic Unit 05030102, on left bank 500 ft downstream from Sugar Run, 900 ft downstream from Pymatuning Dam, 1.5 mi northwest of Jamestown, and at mile 84.9.

DRAINAGE AREA.--167 mi^2.

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

REVISED RECORDS.--WSP 823: 1934-36. WSP 1083: 1936 (M), 1937, 1940 (M), 1941-45. WSP 1335: 1940.

GAGE.--Water-stage recorder and concrete dam control. Datum of gage is 970.00 ft above National Geodetic Vertical Datum, adjustment of 1907.

REMARKS.--No estimated daily discharge. Records good. Flow regulated since 1933 by Pymatuning Reservoir (station 03100500). Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--54 years, 207 ft^3/s, 16.83 in/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,540 ft^3/s, Sept. 4, 1937, gage height, 9.2 ft; minimum, 0.1 ft^3/s, June 30 to July 3, 1934.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 910 ft^3/s, Dec.20, gage height, 6.93 ft; minimum daily, 12 ft^3/s, Aug. 31, Sept. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	134	330	698	670	242	234	27	87	50	108	17	12
2	131	334	698	663	303	234	27	48	71	109	16	13
3	133	330	687	660	234	234	48	24	129	116	15	13
4	130	208	691	659	223	234	126	23	141	116	15	39
5	129	128	689	504	223	234	42	24	76	116	15	22
6	129	131	684	255	219	234	33	27	77	117	15	16
7	182	131	681	253	218	234	137	22	76	117	14	14
8	153	130	687	258	218	227	183	20	77	117	14	13
9	139	134	717	253	215	227	177	20	77	116	26	13
10	136	134	696	261	215	229	173	24	88	116	60	13
11	144	133	679	256	215	220	173	24	97	117	90	13
12	139	132	680	262	215	219	173	23	98	117	89	40
13	136	130	676	228	215	225	172	22	99	117	90	76
14	134	130	673	211	215	221	114	22	99	117	88	75
15	133	130	724	211	224	219	84	22	99	116	87	75
16	257	130	705	211	235	219	86	67	99	116	87	75
17	329	130	686	211	234	219	86	31	99	117	87	75
18	329	132	682	221	234	219	85	25	98	116	87	75
19	329	131	678	217	234	219	84	27	98	117	87	75
20	289	130	796	248	234	219	83	26	98	117	87	75
21	334	130	708	229	234	188	83	23	97	69	87	74
22	337	130	684	218	234	121	83	22	97	18	100	73
23	337	270	678	215	234	68	83	21	96	23	112	73
24	334	626	676	215	234	33	85	20	96	23	113	73
25	334	696	675	215	234	35	83	17	97	19	113	73
26	331	698	672	213	234	56	82	17	97	14	113	73
27	335	684	669	213	234	40	82	16	96	13	112	74
28	340	679	669	211	234	34	82	16	105	15	88	75
29	334	724	669	211	234	31	84	16	110	15	43	75
30	332	719	667	212	---	29	96	16	110	16	14	75
31	330	---	666	219	---	27	---	16	---	23	12	---
TOTAL	7293	8654	21340	9083	6671	5182	2956	808	2847	2563	1993	1560
MEAN	235	288	688	293	230	167	98.5	26.1	94.9	82.7	64.3	52.0
MAX	340	724	796	670	303	234	183	87	141	117	113	76
MIN	129	128	666	211	215	27	27	16	50	13	12	12

CAL YR 1987 TOTAL 79856.6 MEAN 219 MAX 796 MIN 7.8
WTR YR 1988 TOTAL 70950 MEAN 194 MAX 796 MIN 12

03102500 LITTLE SHENANGO RIVER AT GREENVILLE, PA

LOCATION.--Lat 41°25'19", long 80°22'35", Mercer County, Hydrologic Unit 05030102, on left bank 1,700 ft downstream from Williamson Crossing bridge, 1 mi northeast of Greenville, and 2.0 mi upstream from mouth.

DRAINAGE AREA.--104 mi².

PERIOD OF RECORD.--October 1913 to current year. Monthly discharge only for some periods, published in WSP 1305.

REVISED RECORDS.--WSP 743: Drainage area. WSP 1305: 1914, 1922-23, 1926-29. WSP 1335: 1923 (m).

GAGE.--Water-stage recorder. Datum of gage is 953.46 ft above National Geodetic Vertical Datum, adjustment of 1912. Prior to Nov. 4, 1915, nonrecording gage; Nov. 4, 1915, to Sept. 30, 1918, water-stage recorder; Nov. 7, 1919, to Aug. 31, 1923, and Nov. 19, 1925, to June 20, 1934, nonrecording gage at site 1 mi downstream at datum 8.96 ft lower.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--75 years, 142 ft³/s, 18.54 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,540 ft³/s, Jan. 22, 1959, gage height, 14.30 ft, from rating curve extended above 3,200 ft³/s on basis of slope-area measurement at gage height 12.26 ft; minimum, 2.9 ft³/s, July 31, 1934, gage height, 0.58 ft.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Apr. 4	2100	*1,040	*5.03				

Minimum daily discharge, 10 ft³/s, July 7, 8, 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	445	99	393	150	e250	119	99	111	32	e12	102	29
2	225	107	307	129	e540	115	97	87	44	e12	46	23
3	201	101	236	e110	736	120	128	75	39	e11	45	20
4	146	95	230	e96	330	116	839	67	35	e11	35	188
5	112	90	226	e76	264	99	633	70	33	e11	31	157
6	94	82	215	e92	180	106	280	99	30	e11	33	70
7	228	77	186	e115	e150	126	276	88	28	e10	43	41
8	467	69	190	e90	e130	130	244	70	26	e10	31	31
9	265	82	325	e70	e125	155	186	63	25	e10	25	26
10	189	95	428	e60	e115	236	146	84	24	12	23	23
11	193	79	270	e47	e105	171	121	89	23	15	34	21
12	202	70	236	e52	e98	134	106	75	23	16	28	21
13	157	69	219	e60	e94	177	94	64	22	15	22	48
14	126	59	171	e72	e92	183	86	59	21	13	20	41
15	110	58	288	e68	e120	144	85	55	26	13	20	30
16	98	56	446	e66	e220	124	100	415	21	12	18	25
17	89	58	278	e62	242	113	99	275	24	12	17	23
18	72	100	224	e80	e200	110	91	146	22	13	19	58
19	66	101	202	e110	e170	115	86	157	20	18	18	88
20	62	74	435	e300	e480	124	75	143	e19	23	17	54
21	59	73	802	342	381	106	76	116	e18	170	16	51
22	77	71	372	192	268	94	74	98	e17	126	15	44
23	106	74	254	134	387	111	70	80	e16	47	15	36
24	87	132	222	116	389	151	81	72	e16	91	20	30
25	92	131	206	e100	235	147	75	61	e15	68	22	27
26	96	198	194	e86	181	328	65	53	e15	53	20	24
27	102	158	152	e76	157	320	60	47	e14	38	18	23
28	232	134	138	e70	123	225	57	42	e14	29	20	22
29	178	378	135	e84	121	169	67	38	e13	24	102	21
30	132	775	115	e64	---	133	134	35	e12	22	84	20
31	110	---	114	e120	---	110	---	33	---	117	41	---
TOTAL	4818	3745	8209	3289	6883	4611	4630	2967	687	1045	1000	1315
MEAN	155	125	265	106	237	149	154	95.7	22.9	33.7	32.3	43.8
MAX	467	775	802	342	736	328	839	415	44	170	102	188
MIN	59	56	114	47	92	94	57	33	12	10	15	20
CFSM	1.49	1.20	2.55	1.02	2.28	1.43	1.48	.92	.22	.32	.31	.42
IN.	1.72	1.34	2.94	1.18	2.46	1.65	1.66	1.06	.25	.37	.36	.47

CAL YR 1987 TOTAL 51294 MEAN 141 MAX 985 MIN 13 CFSM 1.35 IN. 18.35
WTR YR 1988 TOTAL 43199 MEAN 118 MAX 839 MIN 10 CFSM 1.13 IN. 15.45

e Estimated

03102850 SHENANGO RIVER NEAR TRANSFER, PA

LOCATION.--Lat 41°21'13", long 80°23'53", Mercer County, Hydrologic Unit 05030102, on left bank at downstream side of covered wooden bridge, 200 ft downstream from highway bridge, 0.6 mi downstream from Big Run, 2.5 mi northeast of Transfer, and at mile 71.8.

DRAINAGE AREA.--337 mi^2.

PERIOD OF RECORD.--October 1965 to current year.

REVISED RECORDS.--WDR PA-71-1: 1966, 1967.

GAGE.--Water-stage recorder. Datum of gage is 913.94 ft above National Geodetic Vertical Datum of 1929 (Pennsylvania Department of Transportation bench mark).

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated since 1933 by Pymatuning Reservoir (station 03100500) 13 mi upstream and by mills above station. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--23 years, 476 ft^3/s, 19.18 in/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,390 ft^3/s, Nov. 5, 1985, gage height, 10.47 ft; minimum, 33 ft^3/s, July 20, 21, 22, 1968, gage height, 1.71 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,690 ft^3/s, Dec. 20, gage height, 6.07 ft; minimum daily, 43 ft^3/s, July 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	773	525	1310	e820	746	429	150	346	65	e120	184	e78
2	504	542	1170	e820	1890	421	143	217	174	e120	95	e68
3	461	528	1050	e800	1270	435	341	97	146	e115	93	61
4	378	459	1050	801	753	422	1810	81	313	e110	e76	596
5	316	258	1040	e580	631	388	936	104	128	e105	e62	319
6	283	234	1010	e490	e520	406	492	187	123	e105	e84	132
7	806	228	972	e430	e440	459	588	133	120	e100	93	97
8	932	216	988	e390	e400	465	581	87	117	e96	93	e74
9	567	247	1360	e360	e370	537	469	77	112	e96	77	e64
10	442	268	1380	e340	e330	650	386	136	111	e150	70	e58
11	489	228	1090	e320	e320	509	353	129	134	193	146	e54
12	475	216	1040	339	e300	460	354	103	133	177	e120	49
13	395	210	996	330	e290	567	378	85	132	e165	e100	202
14	344	204	916	295	e300	531	363	79	129	e150	e92	167
15	317	191	1320	e270	e480	468	255	76	137	e140	e86	128
16	366	185	1490	e240	725	437	311	975	136	e125	e84	e100
17	527	191	1120	e220	627	415	309	561	141	e120	e82	e88
18	510	268	1030	e250	e540	416	283	316	136	e130	121	210
19	497	261	990	e300	e490	429	259	340	129	e160	116	264
20	442	222	1940	e800	e1150	445	219	316	124	209	110	297
21	482	216	2100	778	864	404	237	242	124	574	105	e190
22	521	210	1240	510	628	270	245	189	124	245	107	e170
23	558	376	1070	445	1120	275	291	147	123	108	152	e140
24	526	814	1010	411	876	262	341	138	119	177	158	e120
25	538	964	982	401	606	261	298	109	115	121	155	e100
26	532	1060	960	365	517	640	251	92	112	e90	154	e90
27	566	964	902	329	488	564	229	82	112	e70	144	e86
28	728	884	870	324	421	386	221	72	115	e60	222	e82
29	635	1640	860	315	427	283	281	58	129	e50	346	e78
30	576	1980	827	330	---	218	489	56	128	e43	164	e72
31	539	---	823	470	---	170	---	55	---	309	96	---
TOTAL	16025	14789	34906	13873	18519	13022	11863	5685	3941	4533	3787	4234
MEAN	517	493	1126	448	639	420	395	183	131	146	122	141
MAX	932	1980	2100	820	1890	650	1810	975	313	574	346	596
MIN	283	185	823	220	290	170	143	55	65	43	62	49

CAL YR 1987 TOTAL 164232 MEAN 450 MAX 2120 MIN 49
WTR YR 1988 TOTAL 145177 MEAN 397 MAX 2100 MIN 43

e Estimated

03103500 SHENANGO RIVER AT SHARPSVILLE, PA

LOCATION.--Lat 41°15'58", long 80°28'22", Mercer County, Hydrologic Unit 05030102, on left bank 800 ft upstream from double highway bridge at Sharpsville, 0.7 mi downstream from Shenango River Dam, 1.8 mi upstream from McCullough Run, and at mile 55.1.

DRAINAGE AREA.--584 mi².

PERIOD OF RECORD.--March 1938 to current year. Monthly discharge only for some periods, published in WSP 1305.

REVISED RECORDS.--WSP 2107: 1970 Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 861.57 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharge. Records good. Flow regulated by Pymatuning Reservoir (station 03100500) since 1933 and by Shenango River Lake 0.7 mi upstream, since 1967. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--50 years, 758 ft³/s, 17.62 in/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,700 ft³/s, Jan. 22, 1959, gage height, 15.97 ft; minimum daily, 43 ft³/s, Sept. 3, 1941.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 26, 1913, reached a stage of 19.3 ft, from Pymatuning survey profile map (discharge not determined).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,190 ft³/s, Dec. 3, gage height, 5.05 ft; minimum daily, 105 ft ³/s, Jan. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1540	925	1800	774	664	379	168	388	226	247	211	225
2	1530	923	1850	789	696	1120	168	443	260	246	211	225
3	1520	922	2000	795	926	1400	171	441	260	244	211	223
4	1320	915	2160	1010	1500	1430	178	439	260	243	211	223
5	905	908	2130	1140	1890	1410	184	438	260	243	208	227
6	555	904	2100	1120	2030	1390	188	437	260	243	208	230
7	733	768	2070	1090	1970	1370	190	438	259	243	208	230
8	1480	302	2030	883	1920	1350	787	436	260	222	208	233
9	1480	147	2010	494	1860	1340	1400	433	243	208	208	234
10	1480	326	2010	331	1410	1330	1390	351	255	214	206	234
11	1470	524	2000	337	848	1320	1010	245	255	216	204	234
12	1450	524	1980	332	353	1300	562	216	254	215	204	229
13	1300	522	1960	331	133	1290	272	194	251	215	204	214
14	1060	517	1920	336	135	1280	193	194	251	215	205	219
15	1000	517	1900	331	135	1260	194	192	251	215	205	229
16	771	514	1910	328	138	957	193	451	230	215	205	231
17	771	590	1910	341	293	771	193	1000	239	214	204	233
18	1020	779	1900	335	700	632	257	1110	251	215	204	231
19	334	860	1590	618	899	542	293	933	251	215	215	225
20	190	849	1440	800	1100	545	295	826	251	215	223	222
21	787	836	1550	1040	1300	685	293	826	251	214	223	221
22	786	825	1810	1410	1310	767	293	589	251	211	224	223
23	680	677	1940	1490	1320	758	293	432	251	213	223	226
24	679	584	1920	1050	1080	621	292	429	251	211	222	234
25	685	733	1910	578	930	360	293	308	248	211	223	234
26	928	835	1890	161	1190	228	293	205	247	210	223	234
27	940	1060	1860	105	1340	236	294	190	247	207	223	234
28	940	1200	1810	226	1330	193	294	190	247	211	223	234
29	938	1230	1780	548	817	164	292	187	247	211	223	234
30	931	1530	1210	661	---	167	292	187	247	212	223	191
31	931	---	767	661	---	168	---	187	---	211	223	---
TOTAL	31134	22746	57117	20445	30217	26763	11215	13335	7514	6825	6616	6816
MEAN	1004	758	1842	660	1042	863	374	430	250	220	213	227
MAX	1540	1530	2160	1490	2030	1430	1400	1110	260	247	224	234
MIN	190	147	767	105	133	164	168	187	226	207	204	191

CAL YR 1987 TOTAL 288917 MEAN 792 MAX 2980 MIN 120
WTR YR 1988 TOTAL 240743 MEAN 658 MAX 2160 MIN 105

03105500 BEAVER RIVER AT WAMPUM, PA

LOCATION.--Lat 40°53'19", long 80°20'14", Lawrence County, Hydrologic Unit 05030104, on right bank at downstream side of bridge on State Highway 288 at Wampum, 2.9 mi upstream from Connoquenessing Creek, and at mile 15.4.

DRAINAGE AREA.--2,235 mi^2.

PERIOD OF RECORD.--July 1914 to September 1918, August 1932 to current year. Monthly discharge only for some periods, published in WSP 1305. Published as "at Newport" 1914-18.

REVISED RECORDS.--WSP 728: Drainage area. WSP 1385: 1933-40, 1946, 1951-52. WSP 1725: 1960 (adjusted runoff). WDR PA-85-3: 1984 (M).

GAGE.--Water-stage recorder. Datum of gage is 736.24 ft above National Geodetic Vertical Datum of 1929 (Penn Central Railroad bench mark). Prior to Sept. 20, 1914, nonrecording gage at site 500 ft downstream at datum 0.76 ft lower. Oct. 1, 1914, to Sept. 30, 1918, nonrecording gage at site 1 mi upstream at datum 0.84 ft higher. Aug. 26, 1932, to Nov. 16, 1938, nonrecording gage at present site and datum. Since 1932, auxiliary gage 10 mi downstream at Beaver Falls (station 03107500) which is used during periods of backwater from Connoquenessing Creek.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated since 1942 by Berlin Lake, since 1916 by Milton Reservoir, since 1966 by Michael J. Kirwan Reservoir, since 1943 by Mosquito Creek Lake, since 1929 by Meander Creek Reservoir, since 1933 by Pymatuning Reservoir, and since 1967 by Shenango River Lake 40 mi upstream. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--60 years (1914-18, 1932-88), 2,485 ft^3/s, 15.10 in/yr, adjusted for storage from 1932-75.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,100 ft^3/s, May 28, 1946, from slope-rating curve extended above 28,000 ft^3/s on basis of contracted-opening measurement at gage height 21.44 ft; maximum gage height, 24.86 ft, Jan. 22, 1959 (backwater from Connoquenessing Creek); minimum discharge observed, 74 ft^3/s, July 30, 1933, gage height, 1.70 ft; minimum daily, 97 ft^3/s, July 22, Aug. 23, 1933.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1912, 29.9 ft, Mar. 26, 1913, from floodmark, discharge, about 87,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,200 ft^3/s, Feb. 2, gage height, 9.10 ft; minimum daily, 564 ft^3/s, Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3510	2280	4620	2730	2250	2120	1130	1170	754	721	824	754
2	3230	2130	4140	2360	8330	2210	1100	1190	867	721	762	727
3	3070	1950	3790	2040	8040	2930	1360	1120	907	724	750	709
4	2820	1810	4160	1980	8690	3090	8800	1070	868	723	719	1610
5	2500	1750	4310	2030	6050	2930	6430	1110	832	724	712	1920
6	2040	1710	4120	1860	4620	2910	3830	2050	812	729	771	1400
7	2290	1700	3860	1820	4010	2980	2820	1660	794	732	788	913
8	3580	e1400	3710	1840	3890	2810	2590	1380	779	734	690	709
9	3640	e1100	4320	1560	3570	2810	3120	1220	756	719	680	702
10	3180	e940	4640	1160	3390	3160	2920	1380	730	691	663	720
11	3180	e1050	4110	1070	2640	3050	2660	1200	733	701	675	696
12	3460	e1150	3720	1060	2210	2880	1990	e999	744	750	790	691
13	3290	e1200	3480	1080	1640	2960	1460	902	771	687	718	835
14	3000	1190	3270	1060	1360	2980	1160	936	776	653	713	761
15	2390	1140	3960	1000	1780	2620	1060	844	748	633	702	722
16	2110	1110	5240	988	2650	2400	1050	2010	772	600	692	687
17	1880	1150	4550	1010	2530	1960	1050	3160	860	576	693	641
18	1860	1420	3810	1370	2700	2000	1050	2710	768	571	713	683
19	1990	1630	3540	1870	3220	1850	1080	2930	738	1010	758	787
20	1580	e1600	5250	3970	4400	1990	1050	4160	718	874	768	782
21	1230	e1500	6600	4350	4990	1990	1050	3440	718	2080	734	850
22	1590	e1450	5780	3740	3730	e2030	1020	2510	719	1700	715	732
23	1820	e1400	4680	3260	3520	2040	1020	1690	718	1130	772	667
24	1770	e1300	4050	2890	3990	2060	1170	1560	711	1890	1100	687
25	1770	1380	3880	2210	3170	1830	1080	1350	710	1010	842	646
26	1810	1840	3760	1660	2720	3290	1030	1080	752	927	927	618
27	2020	1950	3520	1200	2980	3330	965	920	727	841	811	598
28	2650	2160	3330	1020	2910	2660	942	866	716	771	805	602
29	2910	4910	3470	1110	2890	1930	1000	825	720	721	1300	595
30	2760	5460	3330	1510	---	1520	1180	788	721	714	1220	564
31	2480	---	2310	1790	---	1240	---	766	---	959	916	---
TOTAL	77410	52760	127310	58598	108870	76560	58167	48996	22939	27016	24723	24008
MEAN	2497	1759	4107	1890	3754	2470	1939	1581	765	871	798	800
MAX	3640	5460	6600	4350	8690	3330	8800	4160	907	2080	1300	1920
MIN	1230	940	2310	988	1360	1240	942	766	710	571	663	564

CAL YR 1987 TOTAL 866877 MEAN 2375 MAX 13600 MIN 740
WTR YR 1988 TOTAL 707357 MEAN 1933 MAX 8800 MIN 564

e Estimated

03106000 CONNOQUENESSING CREEK NEAR ZELIENOPLE, PA

LOCATION.--Lat 40°49'01", long 80°14'33", Beaver County, Hydrologic Unit 05030105, on right bank at downstream side of highway bridge at Hazen, 0.3 mi upstream from Brush Creek, 4 mi southeast of Ellwood City, and 6.0 mi west of Zelienople.

DRAINAGE AREA.--356 mi².

PERIOD OF RECORD.--October 1919 to current year. Monthly discharge only for some periods, published in WSP 1305. June 1915 to September 1919 (gage heights and discharge measurements only) in reports of Water Supply Commission of Pennsylvania. Published as "at Hazen" 1915-16, 1929-63, and as "near Hazen" 1917-28.

REVISED RECORDS.--WSP 743: Drainage area. WSP 893: 1937-38, 1939 (M). WSP 1305: 1922-26, 1928. WSP 1335: 1920-21, 1924 (M). WSP 1385: 1952.

GAGE.--Water-stage recorder. Datum of gage is 852.31 ft above National Geodetic Vertical Datum, adjustment of 1912. Prior to June 23, 1941, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--Records good except for estimated daily discharges, which are fair. Some regulation by mills above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--69 years, 464 ft³/s, 17.70 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,000 ft³/s, June 29, 1924, gage height, 16.66 ft; minimum observed, 6.0 ft³/s, July 21-23, 1936; minimum gage height, 0.76 ft, Aug. 8, Sept. 16, 17, 1966.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 2	1830	*6,330	*9.49	No other peak greater than base discharge.			

Minimum discharge, 22 ft³/s, July 16, gage height, 1.06 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	220	107	872	528	520	285	461	177	161	35	95	48
2	170	102	748	430	4320	260	419	151	163	34	56	38
3	180	100	581	349	3630	283	405	140	173	33	54	34
4	171	101	621	403	3580	405	1490	133	206	31	47	49
5	145	101	646	e330	2380	400	1120	148	159	30	44	106
6	137	101	533	e270	1350	379	910	294	130	29	39	69
7	148	96	455	e220	e1100	531	1050	222	116	28	55	50
8	207	92	420	e200	e840	543	946	183	103	28	55	42
9	207	93	499	e200	e700	605	763	169	88	28	39	37
10	169	90	627	e190	e550	726	645	313	82	27	33	35
11	149	95	583	e180	460	595	555	281	79	27	29	34
12	181	89	551	e180	436	530	479	222	73	39	28	31
13	155	87	474	e170	366	829	405	202	67	38	26	36
14	141	85	380	e170	307	750	354	246	64	30	27	57
15	131	82	612	e160	413	682	321	204	60	25	33	55
16	127	78	842	e160	507	629	290	342	57	24	31	42
17	124	77	662	e160	399	504	266	341	64	26	30	34
18	120	128	544	e240	440	436	248	246	70	24	28	35
19	117	143	473	e350	440	442	237	480	56	32	30	41
20	115	112	950	e1130	685	441	210	862	50	59	30	39
21	111	106	1040	971	631	395	199	768	48	139	33	37
22	109	99	841	657	487	364	187	524	46	158	28	41
23	108	95	730	513	586	397	174	395	43	75	26	41
24	106	104	628	451	586	452	190	952	41	102	60	38
25	102	115	618	417	440	434	172	1050	39	96	79	39
26	99	119	638	353	392	1010	154	605	37	59	50	38
27	104	132	549	e270	366	1030	141	432	38	48	41	34
28	161	125	497	e220	325	859	147	328	38	43	40	31
29	151	987	611	e250	305	732	190	265	37	39	51	30
30	125	1300	489	289	---	635	205	221	36	40	148	27
31	114	---	436	351	---	528	---	189	---	90	74	---
TOTAL	4404	5141	19150	10762	27541	17091	13333	11085	2424	1516	1439	1268
MEAN	142	171	618	347	950	551	444	358	80.8	48.9	46.4	42.3
MAX	220	1300	1040	1130	4320	1030	1490	1050	206	158	148	106
MIN	99	77	380	160	305	260	141	133	36	24	26	27
CFSM	.40	.48	1.74	.98	2.67	1.55	1.25	1.00	.23	.14	.13	.12
IN.	.46	.54	2.00	1.12	2.88	1.79	1.39	1.16	.25	.16	.15	.13

CAL YR 1987 TOTAL 155529 MEAN 426 MAX 3950 MIN 40 CFSM 1.20 IN. 16.25
WTR YR 1988 TOTAL 115154 MEAN 315 MAX 4320 MIN 24 CFSM .88 IN. 12.03

e Estimated

03106300 MUDDY CREEK NEAR PORTERSVILLE, PA

LOCATION.--Lat 40°57'47", long 80°07'31", Butler County, Hydrologic Unit 05030105, on left bank 1,000 ft downstream from Lake Arthur Dam, 0.2 mi north of U. S. Highway 422, and 3 mi north of Portersville.

DRAINAGE AREA.--51.2 mi^2.

PERIOD OF RECORD.--March 1963 to current year.

REVISED RECORDS.--WDR PA-79-3: 1978.

GAGE.--Water-stage recorder. Datum of gage is 1,160.91 ft above National Geodetic Vertical Datum of 1929 (Pennsylvania Department of Enviromental Resources bench mark). Prior to Apr. 8, 1963 nonrecording gage at site 2,000 ft downstream at different datum. Apr. 8 to May 1, 1963, nonrecording gage and May 2, 1963 to Sept. 30, 1980, water-stage recorder at site 1,000 ft downstream at datum 5.71 ft lower.

REMARKS.--No estimated daily discharge. Records good. Some regulation from October 1966 to May 1969 and completely regulated thereafter by Lake Arthur (station 03106280) 1,000 ft upstream. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--25 years, 73.6 ft^3/s, 19.52 in/yr, adjusted for storage since May 1969.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,640 ft^3/s, Mar. 10, 1964, gage height, 8.18 ft, from rating curve extended above 820 ft^3/s on basis of slope-area measurement of peak flow; minimum, 0.4 ft^3/s, Sept. 17, 1966; minimum gage height, 1.09 ft, Sept. 26, 1972.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 248 ft^3/s, Feb. 16, gage height, 4.22 ft; minimum daily, 2.9 ft^3/s, June 24, 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	26	14	50	49	58	9.2	24	46	3.3	4.7	3.6
2	31	56	14	49	113	58	8.8	23	47	3.5	4.7	3.6
3	29	100	63	49	152	58	9.8	22	42	3.9	4.5	3.4
4	26	96	94	49	175	58	15	23	37	4.1	4.3	3.4
5	25	93	93	49	189	58	27	26	31	4.1	4.1	3.4
6	23	92	92	48	189	58	40	28	28	4.2	4.1	3.4
7	25	92	122	48	187	58	52	27	25	4.3	4.1	3.4
8	25	92	156	48	176	50	58	27	23	4.3	4.1	3.4
9	26	92	203	47	170	44	62	28	18	4.4	4.1	3.4
10	24	92	228	47	161	44	64	32	14	4.5	4.1	3.4
11	28	92	228	46	155	44	65	31	11	4.7	4.1	3.4
12	28	91	228	46	150	44	65	31	9.8	4.6	4.1	3.2
13	27	91	227	47	147	44	61	29	8.9	4.6	4.1	3.4
14	26	90	227	47	145	43	57	28	8.1	4.5	4.1	3.2
15	24	90	227	47	146	43	53	27	7.3	4.3	4.1	3.1
16	23	89	228	47	209	42	51	36	6.8	4.3	3.8	3.1
17	24	89	228	47	245	40	48	36	6.3	4.5	3.6	3.2
18	26	89	227	48	244	40	46	39	5.4	4.5	3.8	3.2
19	25	90	227	48	244	40	43	50	5.0	4.7	3.8	3.2
20	24	61	227	49	244	40	40	61	4.3	4.5	3.8	3.4
21	21	15	155	48	244	38	38	79	3.8	5.1	3.8	3.4
22	23	15	37	48	243	38	37	80	3.4	4.5	3.8	3.4
23	21	15	37	48	243	38	37	78	3.0	4.3	3.8	3.4
24	20	15	37	48	242	24	33	97	2.9	4.5	3.8	3.4
25	20	15	37	48	126	14	33	92	2.9	4.5	3.8	3.4
26	21	15	37	48	58	12	31	88	3.1	4.5	3.8	3.4
27	24	14	37	48	58	11	29	82	3.2	4.7	3.8	3.4
28	27	14	37	48	58	10	28	75	3.0	4.7	4.1	3.6
29	27	18	42	48	58	9.5	24	68	3.1	4.7	4.1	3.6
30	27	15	50	48	---	9.2	24	61	3.1	4.7	4.1	3.6
31	26	---	50	48	---	9.2	---	53	---	4.7	3.8	---
TOTAL	778	1854	3909	1484	4820	1176.9	1188.8	1481	415.4	136.7	124.8	101.4
MEAN	25.1	61.8	126	47.9	166	38.0	39.6	47.8	13.8	4.41	4.03	3.38
MAX	32	100	228	50	245	58	65	97	47	5.1	4.7	3.6
MIN	20	14	14	46	49	9.2	8.8	22	2.9	3.3	3.6	3.1

CAL YR 1987 TOTAL 21943.3 MEAN 60.1 MAX 261 MIN 1.3
WTR YR 1988 TOTAL 17470.0 MEAN 47.7 MAX 245 MIN 2.9

03106500 SLIPPERY ROCK CREEK AT WURTEMBURG, PA

LOCATION.--Lat 40°53'02", long 80°14'02", Lawrence County, Hydrologic Unit 05030105, on left bank at downstream side of highway bridge at Camp Allegheny, 2 mi north of Wurtemburg, and 2.8 mi upstream from mouth.

DRAINAGE AREA.--398 mi².

PERIOD OF RECORD.--October 1911 to current year. Monthly discharge only for some periods, published in WSP 1305.

REVISED RECORDS.--WSP 743: Drainage area. WSP 1305: 1914-18, 1920-22, 1923-24 (M), 1925-28, 1930. WSP 1385: 1932, 1935, 1936 (M), 1937-39. WSP 1625: 1955.

GAGE.--Water-stage recorder. Datum of gage is 832.06 ft above National Geodetic Vertical Datum of 1929. Jan. 1, 1912, to Sept. 30, 1922, nonrecording gage at site 1.5 mi downstream at datum 13.77 ft lower and Oct. 1, 1922, to Sept. 30, 1940, nonrecording gage at site 2 mi downstream at datum 18.92 ft lower.

REMARKS.--Records good except for estimated daily discharges, which are fair. Some regulation since May 1969 by Lake Arthur (station 03106280) 13 mi upstream. Several observations of water temperature were made during the year. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--77 years, 570 ft³/s, 19.45 in/yr, adjusted for storage since May 1969.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,000 ft³/s, Jan. 25, 1937, gage height, 12.05 ft, from flood-mark, site and datum then in use, from rating curve extended above 14,000 ft³/s; minimum observed, 16 ft³/s, Sept. 13, 1932.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 2	1430	*3,200	*4.85				

Minimum discharge, 43 ft³/s, July 18, gage height, 0.32 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	616	220	1410	571	691	e330	470	366	244	63	111	90
2	415	209	1040	407	2480	e300	478	298	269	61	127	75
3	397	284	852	369	2330	e400	527	273	275	59	118	69
4	361	275	855	369	2550	525	2140	263	246	58	96	98
5	268	268	839	254	1990	454	1860	286	235	56	83	179
6	229	259	731	e220	1250	454	1100	501	205	55	99	153
7	281	247	660	e190	969	532	1110	478	189	54	113	110
8	544	243	686	e170	877	502	1100	364	177	52	104	88
9	398	250	965	e150	743	525	863	318	162	51	83	78
10	292	274	1280	e140	682	719	718	520	150	51	72	71
11	325	270	1050	e190	616	581	629	550	141	50	69	68
12	430	253	915	e230	596	472	566	423	134	52	65	66
13	325	247	871	e150	511	625	516	365	129	51	63	94
14	261	241	755	e190	472	634	476	386	126	50	61	110
15	227	235	851	e230	648	518	448	367	120	48	59	96
16	211	231	1110	e290	927	461	437	830	116	46	56	79
17	197	233	916	e240	e740	434	424	1100	135	44	55	73
18	192	330	683	e220	e760	413	400	674	138	45	54	76
19	193	399	746	e350	e780	431	389	957	114	87	59	93
20	188	323	1160	e430	e1100	465	349	1160	103	158	65	96
21	180	219	1540	e600	1050	423	340	1010	96	273	62	89
22	173	208	875	830	789	422	324	772	90	313	56	80
23	175	203	711	640	950	485	307	599	83	168	60	76
24	172	252	681	537	1020	520	374	620	78	141	103	85
25	172	312	656	e430	716	491	374	546	75	156	114	82
26	176	467	645	e350	491	1140	311	459	73	111	96	79
27	191	559	544	e280	e410	1320	281	403	71	93	100	74
28	396	400	457	e350	e380	952	275	357	70	88	90	68
29	415	1380	472	482	e350	726	297	319	66	82	111	68
30	301	2140	360	340	---	603	374	291	64	81	156	64
31	255	---	367	426	---	515	---	264	---	83	130	---
TOTAL	8956	11431	25683	10625	27868	17372	18257	16119	4174	2780	2690	2627
MEAN	289	381	828	343	961	560	609	520	139	89.7	86.8	87.6
MAX	616	2140	1540	830	2550	1320	2140	1160	275	313	156	179
MIN	172	203	360	140	350	300	275	263	64	44	54	64
MEAN‡	284	362	800	353	923	609	582	528	109	83.2	81.9	80.9
CFSM‡	.71	.91	2.01	.89	2.32	1.53	1.46	1.33	.27	.21	.21	.20
IN.‡	.82	1.02	2.32	1.03	2.50	1.76	1.63	1.53	.30	.24	.24	.22

CAL YR 1987 TOTAL 201698 MEAN 553 MAX 3510 MIN 83 MEAN‡ 551 CFSM‡ 1.38 IN.‡ 18.80
WTR YR 1988 TOTAL 148582 MEAN 406 MAX 2550 MIN 44 MEAN‡ 403 CFSM‡ 1.01 IN.‡ 13.61

‡ Adjusted for change in reservoir contents.

e Estimated

03107500 BEAVER RIVER AT BEAVER FALLS, PA
(National stream quality accounting network)

LOCATION.--Lat 40°45'48", long 80°18'55", Beaver County, Hydrologic Unit 05030104, on left bank at Beaver Falls, 200 ft upstream from pumping plant of Beaver Falls Municipal Authority, 7.0 mi downstream from Connoquenessing Creek, and at mile 5.5. Water-quality sampling site 0.25 mi upstream.

DRAINAGE AREA.--3,106 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1935 to current year (fragmentary records only prior to October 1956). Gage-height records collected at same site since 1908 are contained in reports of U.S. Weather Bureau.

REVISED RECORDS.--WSP 1725: 1960 (adjusted runoff).

GAGE.--Water-stage recorder and concrete dam control. Datum of gage is 727.48 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Dec. 3, 1941, nonrecording gage at site 200 ft downstream at same datum.

REMARKS.--Records good above 2,000 ft³/s and fair below except those below 1,200 ft³/s which are poor. Pumpage from gage pool, averaging 3.4 ft³/s in 1935 and 6.0 ft³/s at present, for local water supply returns to river 2 mi downstream; information furnished by Beaver Falls Municipal Authority. Flow regulated since 1942 by Berlin Lake, since 1916 by Milton Reservoir, since 1966 by Michael J. Kirwan Reservoir, since 1943 by Mosquito Creek Lake, since 1929 by Meander Creek Reservoir, since 1933 by Pymatuning Reservoir, since 1967 by Shenango River Lake, all over 50 mi upstream, and since 1969 by Lake Arthur 29 mi upstream. Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--32 years, (1956-88), 3,725 ft³/s, 16.29 in/yr, adjusted for storage 1957-75.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 69,900 ft³/s, Jan. 22, 1959, gage height, 14.42 ft; minimum not determined.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 27, 1913, reached a stage of 17.4 ft, discharge, 103,000 ft³/s, from rating curve extended above 60,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 19,600 ft³/s, Feb. 2, gage height, 8.36 ft; minimum daily, 648 ft³/s, July 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4070	2340	6620	3970	3500	3280	2410	1940	e1210	e831	e1060	e908
2	3610	2170	5600	3500	13900	3150	2340	1820	e1350	e827	e963	e853
3	3390	2060	4970	2930	15500	3970	2420	1720	e1410	e827	e940	e823
4	3180	1960	5280	2980	15400	4290	11700	1640	e1390	e822	e878	e1770
5	2740	1910	5460	2660	11700	4160	10100	1670	e1280	e820	e854	e2240
6	2220	1840	5110	2480	7850	4060	6330	2730	e1190	e823	e922	e1640
7	2420	1820	4800	2470	6060	4350	5170	2510	e1140	e823	e974	e1090
8	3830	1640	4660	2500	5970	4230	5000	2060	e1090	e823	e867	e853
9	3850	1290	5360	2260	5120	4240	4870	1830	e1030	e807	e815	e829
10	3360	1170	6150	1890	4910	4820	4590	2150	e989	e778	e779	e838
11	3310	1290	5430	1710	4150	4600	4180	2170	e979	e787	e783	e809
12	3680	1480	4960	1700	3690	4250	3430	1740	e975	e854	e892	e798
13	3430	1440	4700	1780	3000	4630	2780	1500	e989	e789	e816	e977
14	3080	1440	4380	1740	2460	4740	2360	1550	e987	e743	e810	e947
15	2600	1390	5110	1620	3100	4220	2160	1430	e948	e714	e805	e891
16	2290	1330	6960	1570	4300	3860	2090	2590	e964	e678	e789	e822
17	2000	1360	5910	1600	4150	3340	2040	4400	e1080	e655	e788	e759
18	1950	1710	5020	2030	4220	3220	2000	3560	e999	e648	e804	e806
19	2080	2080	4700	3110	4670	3090	1990	3990	e926	e1140	e857	e935
20	1750	2000	7010	5950	5950	3220	1910	6120	e887	e1110	e873	e930
21	1330	1900	9160	6910	6720	3200	1860	5110	e878	e2540	e840	e988
22	1620	1840	7490	5450	5170	3140	1810	3950	e870	e2220	e808	e867
23	1890	1770	6070	4590	5050	3240	1750	2850	e858	e1400	e867	e798
24	1840	1640	5250	4130	5620	3370	1940	3210	e844	e2170	e1280	e823
25	1830	1740	5050	3430	4700	3110	1900	3400	e837	e1290	e1060	e780
26	1850	2280	5000	2780	3950	5290	1740	2370	e874	e1120	e1090	e748
27	2070	2510	4700	2100	4130	6010	1580	1900	e849	e998	e966	e717
28	2810	2570	4440	1780	4010	4890	1540	1650	e837	e916	e948	e711
29	3180	6980	4650	1880	3950	3840	1660	1460	e835	e855	e1480	e703
30	2920	8620	4440	2350	---	3190	1900	1320	e833	e848	e1570	e664
31	2580	---	3400	2770	---	2670	---	1210	---	e1160	e1140	---
TOTAL	82760	65570	167840	88620	172900	121670	97550	77550	30328	31816	29318	28317
MEAN	2670	2186	5414	2859	5962	3925	3252	2502	1011	1026	946	944
MAX	4070	8620	9160	6910	15500	6010	11700	6120	1410	2540	1570	2240
MIN	1330	1170	3400	1570	2460	2670	1540	1210	833	648	779	664

CAL YR 1987 TOTAL 1234521 MEAN 3382 MAX 18300 MIN 789
WTR YR 1988 TOTAL 994239 MEAN 2716 MAX 15500 MIN 648

e Estimated

03107500 BEAVER RIVER AT BEAVER FALLS, PA--Continued

WATER-QUALITY RECORDS

PERIODS OF RECORD.--Water years 1966, 1973, November 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (FTU)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)
NOV											
18...	0900	1650	450	7.6	10.0	3.8	745	9.8	200	270	160
FEB											
18...	0900	4250	500	7.6	2.5	3.8	749	13.0	9100	800	160
JUN											
07...	0915	1020	530	7.8	21.0	2.7	738	7.0	K13	K98	180
AUG											
25...	0930	726	475	8.1	23.0	3.5	736	7.2	230	100	180

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)	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 DIS TOT IT FIELD 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)
NOV											
18...	73	47	11	23	4.5	--	--	90	71	33	.30
FEB											
18...	91	46	11	30	4.0	84	--	69	85	80	.20
JUN											
07...	91	51	12	30	4.3	105	--	86	93	46	.30
AUG											
25...	91	50	13	34	4.8	104	--	86	77	50	.30

DATE	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, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA 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)
NOV											
18...	2.5	269	254	.37	0.0	1.60	.360	.90	.180	.100	.080
FEB											
18...	6.3	284	312	.39	0.0	1.40	.300	.90	.150	.070	.060
JUN											
07...	3.1	303	292	.41	0.0	--	.050	.90	.180	.130	--
AUG											
25...	3.5	305	294	.41	0.0	1.80	.180	.90	.200	.160	.130

DATE	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)
NOV										
18...	<10	1	31	<0.5	<1	1	<3	2	39	<5
FEB										
18...	<10	<1	34	<0.5	<1	2	<3	<1	26	<5
JUN										
07...	20	2	37	<0.5	<1	<1	<3	3	14	<5
AUG										
25...	40	2	31	<0.5	2	2	<3	2	22	<5

DATE	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
NOV										
18...	5	110	<0.1	<10	3	<1	<1	150	<6	51
FEB										
18...	9	180	<0.1	<10	3	<1	<1	150	<6	37
JUN										
07...	12	45	<0.1	20	7	<1	1	170	<6	16
AUG										
25...	6	79	<0.1	20	3	<1	<1	160	<6	27

LAKES AND RESERVOIRS IN BEAVER RIVER BASIN

03100500 PYMATUNING RESERVOIR.--Lat 41°29'54", long 80°27'47", Crawford County, Hydrologic Unit 05030102, in gatehouse at Pymatuning Dam on Shenango River, 1.8 mi northwest of Jamestown, Pa., and at mile 85.1. DRAINAGE AREA, 158 mi². PERIOD OF RECORD, October 1932 to current year. Contents prior to October 1938 published in WSP 1305. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum, adjustment of 1907. Prior to Nov. 20, 1934, nonrecording gage at same site and datum.

REMARKS.-- Reservoir is formed in two parts. The main dam is earthfill with stone facing, provided with regulating gates (outlet gate sill elevation at 975.3 ft), and a spillway with crest elevation at 1,008.0 ft. An auxiliary dam 15 mi upstream from the main dam with spillway elevation at 1,010 ft has a fixed crest weir section in the earthfill causeway. Storage began Jan. 23, 1934, when all regulating gates were closed. Capacity, 188,040 acre-ft between elevations, 975.3 ft and 1,008.0 ft was reached in March 1936. Dead storage 10,150 acre-ft (93 acre-ft behind main dam below elevation 975.3 ft and 10,060 acre-ft behind upstream dam below elevation 1,010 ft). Upstream pool was filled (all dead storage accumulated) on March 5, 1934. Figures given herein represent usable contents. Reservoir is used for flood control, and for recreation. Dam built by Pennsylvania Department of Forests and Waters and now maintained by Pennsylvania Department of Environmental Resources.

EXTREMES FOR PERIOD OF RECORD: Maximum contents, 210,680 acre-ft, June 26, 1972, elevation, 1,009.53 ft; minimum (after first filling), 110,570 acre-ft, Dec. 4, 1953, elevation, 1,002.17 ft.

EXTREMES FOR CURRENT YEAR: Maximum contents, 187,170 acre-ft, Oct. 11, elevation, 1,007.94 ft; minimum, 151,620 acre-ft, Jan. 17, elevation, 1005.39 ft.

03106280 LAKE ARTHUR.--Lat 40°57'45", long 80°07'17", Butler County, Hydrologic Unit 05030105, in gatehouse at left end of spillway of Lake Arthur Dam on Muddy Creek, at Moraine State Park, 3 mi northeast of Portersville, Pa. DRAINAGE AREA, 50.8 mi². PERIOD OF RECORD, May 1969 to current year. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Pennsylvania Department of Environmental Resources bench mark). Prior to Aug. 23, 1969, nonrecording gage at same site and datum.

REMARKS.--Lake is formed by an earthfill dam with concrete spillway. Storage began May 15, 1969. Usable capacity, 37,000 acre-ft between elevations 1,160 ft, sill of 6 ft outlet gate and 1,189.8 ft (spillway crest). No dead storage. Figures given herein represent usable contents. Lake is used for recreation. Dam built by Pennsylvania Department of Forests and Waters and now maintained by Pennsylvania Department of Environmental Resources.

EXTREMES FOR PERIOD OF RECORD: Maximum contents, 44,060 acre-ft, June 26, 1972, elevation, 1,191.96 ft; minimum (after first filling), 21,320 acre-ft, Nov. 30, 1975, elevation, 1,183.88 ft.

EXTREMES FOR CURRENT YEAR: Maximum contents, 39,500 acre-ft, May 24, elevation, 1,190.59 ft; minimum, 34,100 acre-ft, Mar. 2, elevation, 1,188.82 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (equivalent in cfs)	Elevation (feet)	Contents (acre-feet)	Change in contents (equivalent in cfs)
	03100500 Pymatuning Reservoir			03106280 Lake Arthur		
Sept. 30	1,007.66	183,100	-	1,190.24	38,400	-
Oct. 31	1,007.52	181,130	- 32.0	1,190.15	38,100	- 4.88
Nov. 30	1,007.11	175,290	- 98.1	1,189.79	37,000	- 18.5
Dec. 31	1,006.09	161,100	- 231	1,189.23	35,300	- 27.6
CAL YR 1987	-	-	- 36.7	-	-	- 1.65
Jan. 31	1,005.53	153,500	- 124	1,189.42	35,900	+ 9.76
Feb. 29	1,006.34	164,540	+ 192	1,188.68	33,700	- 38.2
Mar. 31	1,006.80	170,930	+ 97.6	1,189.70	36,700	+ 48.8
Apr. 30	1,007.40	179,410	+ 142	1,190.21	38,300	- 26.9
May 31	1,007.73	184,140	+ 76.9	1,190.36	38,800	+ 8.13
June 30	1,006.94	172,890	- 189	1,189.81	37,000	- 30.2
July 31	1,006.61	168,280	- 75.0	1,189.65	36,600	- 6.51
Aug. 31	1,006.26	163,440	- 78.7	1,189.57	36,300	- 4.88
Sept. 30	1,006.39	165,230	+ 30.1	1,189.43	35,900	- 6.72
WTR YR 1988	-	-	- 24.6	-	-	- 3.44

03108000 RACCOON CREEK AT MOFFATTS MILL, PA

LOCATION.--Lat 40°37'40", long 80°20'16", Beaver County, Hydrologic Unit 05030101, on left bank at downstream side of highway bridge at Moffatts Mill, 1.4 mi downstream from Gums Run, 4 mi south of Vanport, and 4.2 mi upstream from mouth.

DRAINAGE AREA.--178 mi^2.

PERIOD OF RECORD.--September 1941 to current year. May 1915 to July 1932 (gage heights and discharge measurements only) in reports of Water Supply Commission of Pennsylvania or Pennsylvania Department of Forests and Waters.

REVISED RECORDS.--WSP 1385: 1941-43.

GAGE.--Water-stage recorder. Datum of gage is 719.16 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). May 27, 1915 to July 31, 1932, and Sept. 2 to Dec. 3, 1941, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Normally no regulation from Raccoon Creek Lake. Diversion out of the basin from Cherry Valley and Service Creek Reservoirs upstream increased from an average of 4.0 ft^3/s at the close of 1957 to 6.8 ft^3/s for the present year; diversion began with 2.0 ft^3/s for September 1957. Published records do not include diversion. Records of diversion furnished by Western Pennsylvania Water Company and Ambridge Water Authority. Several observations of water temperature were made during the year. Satellite telemeter at station.

AVERAGE DISCHARGE.--47 years, 191 ft^3/s, 14.57 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,590 ft^3/s, Jan. 27, 1952, gage height, 9.71 ft; minimum, 4.5 ft^3/s, Aug. 24, 25, 1965; minimum gage height, 1.28 ft, Aug. 26, 1962.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 15, 1922, reached a stage of 9.80 ft, discharge, 10,000 ft^3/s. Flood of Mar. 5, 1920, also reached a stage of 9.80 ft, backwater from ice.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,800 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 3	0100	*2,650	*5.35	No other peak greater than base discharge.			

Minimum discharge, 7.1 ft^3/s, July 17, 18, gage height, 1.32 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	32	137	145	115	108	203	85	42	10	16	14
2	49	30	105	113	1670	101	188	76	42	10	17	11
3	48	30	87	115	1460	117	193	75	43	10	16	9.4
4	47	29	98	137	1250	193	571	76	40	10	20	44
5	38	31	114	100	804	226	454	85	37	10	13	63
6	35	31	93	89	456	242	373	98	34	10	19	27
7	38	30	77	e84	e270	334	393	92	31	10	17	20
8	40	29	72	e78	e200	330	374	81	28	9.7	14	15
9	37	32	71	e76	e180	333	308	78	50	9.2	12	13
10	33	37	81	e72	e160	335	265	116	58	8.3	9.4	11
11	35	41	73	e70	e140	273	233	106	36	8.8	9.0	11
12	37	40	72	e68	e130	247	205	81	31	8.4	8.4	10
13	36	39	62	e66	e115	369	181	73	27	7.9	9.8	20
14	33	36	48	e64	e110	328	165	75	24	8.2	11	50
15	30	35	69	e62	e145	289	152	60	22	13	9.9	24
16	30	33	101	e60	172	252	144	62	22	8.3	12	17
17	29	33	82	e70	140	229	132	59	27	7.6	17	16
18	29	49	78	e88	139	217	126	51	26	7.7	11	16
19	29	55	77	e82	139	223	128	88	20	39	11	17
20	29	39	216	e310	200	217	109	77	18	39	13	16
21	32	37	249	320	172	193	101	117	17	105	13	20
22	32	35	142	210	150	176	94	73	16	58	11	18
23	29	33	153	163	181	181	91	60	15	28	10	15
24	30	35	125	139	173	177	99	248	14	21	15	13
25	30	36	118	127	143	172	86	215	13	18	19	13
26	29	37	143	105	129	369	81	129	12	16	15	12
27	30	35	152	98	141	440	76	96	12	15	11	11
28	37	36	145	95	119	362	78	78	11	28	9.2	11
29	42	241	148	112	118	311	95	65	11	20	19	11
30	36	287	137	100	---	269	98	56	11	15	42	10
31	33	---	133	102	---	223	---	49	---	22	22	---
TOTAL	1106	1523	3458	3520	9321	7836	5796	2780	790	591.1	451.7	558.4
MEAN	35.7	50.8	112	114	321	253	193	89.7	26.3	19.1	14.6	18.6
MAX	64	287	249	320	1670	440	571	248	58	105	42	63
MIN	29	29	48	60	110	101	76	49	11	7.6	8.4	9.4
CFSM	.20	.29	.63	.64	1.81	1.42	1.09	.50	.15	.11	.08	.10
IN.	.23	.32	.72	.74	1.95	1.64	1.21	.58	.17	.12	.09	.12

CAL YR 1987 TOTAL 55771 MEAN 153 MAX 1900 MIN 12 CFSM .86 IN. 11.66
WTR YR 1988 TOTAL 37731.2 MEAN 103 MAX 1670 MIN 7.6 CFSM .58 IN. 7.89

e Estimated

04213040 RACCOON CREEK NEAR WEST SPRINGFIELD, PA

LOCATION.--Lat 41°56'42", long 80°26'51", Erie County, Hydrologic Unit 04120101, on right bank on upstream side of highway bridge on Sanford Road, 1.4 mi east of West Springfield, 4.4 mi upstream from mouth, and 7 mi southwest of Girard.

DRAINAGE AREA.--2.53 mi².

PERIOD OF RECORD.--Annual maximum, water years 1962-68. October 1968 to current year.

REVISED RECORD.--WDR PA-74-1: 1973.

GAGE.--Water-stage recorder, crest-stage gage, and concrete control installed Aug. 2, 1973. Elevation of gage is 715 ft above National Geodetic Vertical Datum of 1929, from topographic map. May 9, 1961, to Oct. 2, 1968, crest-stage gage at same site and datum.

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

AVERAGE DISCHARGE.--20 years, 3.51 ft³/s, 18.84 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 408 ft³/s, Dec. 28, 1968, gage height, 6.06 ft, from rating curve extended above 76 ft³/s on basis of computation of flow through culvert at gage height 5.39 ft; no flow on many days.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 20	1400	*45	2.72	Feb. 23	--	ice jam	*2.79

Minimum daily discharge, 0.02 ft³/s, Sept. 11, 12, 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	3.4	3.8	e1.7	e11	2.9	2.1	2.9	.62	e.12	.27	e.03
2	.91	3.3	4.4	e1.5	7.7	3.6	2.2	2.1	2.4	e.15	.26	e.15
3	5.4	2.9	3.7	e1.3	3.6	4.4	8.9	1.8	1.3	e.18	e.05	.25
4	1.7	2.6	5.8	e1.2	3.1	3.0	19	1.5	.92	e.21	e.08	.36
5	1.0	2.1	4.7	e1.0	2.8	2.3	5.1	1.7	.64	.26	e.10	.94
6	1.1	1.9	3.8	e1.3	e2.4	2.3	3.8	1.8	.47	.26	e.13	.33
7	15	1.7	3.3	e1.6	e2.1	2.6	6.9	1.5	.39	.26	e.16	e.20
8	17	1.7	6.0	e2.0	e1.9	2.8	4.5	1.3	.36	.26	e.13	e.09
9	5.6	3.6	10	e1.9	e1.7	4.3	3.1	1.6	e.31	.26	e.10	e.05
10	3.0	2.5	5.1	e1.8	e1.6	3.5	2.5	2.5	e.28	.26	e.09	e.03
11	3.9	2.0	3.1	e1.6	e1.5	2.6	2.2	1.7	e.24	e.21	e.08	e.02
12	2.6	1.9	4.0	e1.8	e1.4	2.8	2.0	1.3	e.23	e.18	e.07	e.02
13	1.9	1.7	3.4	e2.1	e1.3	3.7	1.8	1.2	e.21	e.15	e.10	e.03
14	1.5	1.7	2.7	e1.9	e1.2	3.3	e1.6	1.1	e.20	e.12	e.13	e.03
15	1.3	1.6	8.8	e1.7	e7.0	3.2	e1.4	1.4	e.18	e.09	e.15	e.03
16	1.1	1.4	5.2	e1.5	6.2	3.1	e1.5	15	e.28	e.11	e.09	e.02
17	1.0	1.5	3.7	e1.3	3.6	3.0	1.7	4.0	e.25	e.14	e.14	e.04
18	1.0	2.0	3.3	e3.0	e2.8	3.0	1.7	2.5	e.21	e.17	e.22	e.04
19	.93	1.9	3.1	e7.0	e2.5	3.4	1.5	2.6	e.18	e.21	e.17	e.04
20	.87	1.9	27	e16	e3.2	3.5	1.5	2.6	e.16	.26	e.12	e.04
21	7.7	1.9	9.1	7.5	e4.5	2.8	2.7	2.0	e.14	.33	e.08	e.04
22	18	1.7	4.1	3.4	e6.0	2.4	1.9	1.6	e.30	.26	e.06	.03
23	8.6	2.1	3.5	2.5	e21	7.0	5.1	1.3	e.52	.31	e.04	.29
24	4.6	2.9	3.0	2.5	5.6	8.0	3.7	12	e.26	.26	e.06	.07
25	7.2	3.2	3.8	2.4	3.9	11	2.4	4.7	e.19	e.18	e.09	.03
26	3.5	4.9	3.1	2.0	3.2	12	1.9	2.4	e.15	e.14	e.15	.03
27	5.2	2.8	2.5	1.9	2.8	5.9	1.7	1.7	e.13	e.10	.24	.03
28	13	2.3	2.3	e1.5	2.8	4.0	1.7	1.3	e.12	e.08	.35	.03
29	25	5.1	2.3	e1.4	2.8	3.0	3.7	1.0	e.11	.26	.63	.03
30	7.7	5.6	2.1	e1.2	---	2.5	6.2	.81	e.10	.73	.28	.03
31	4.3	---	e1.9	e4.0	---	2.2	---	.62	---	.77	e.12	---
TOTAL	173.01	75.8	152.6	83.5	121.2	124.1	106.0	81.53	11.85	7.28	4.74	3.35
MEAN	5.58	2.53	4.92	2.69	4.18	4.00	3.53	2.63	.39	.23	.15	.11
MAX	25	5.6	27	16	21	12	19	15	2.4	.77	.63	.94
MIN	.87	1.4	1.9	1.0	1.2	2.2	1.4	.62	.10	.08	.04	.02
CFSM	2.21	1.00	1.95	1.06	1.65	1.58	1.40	1.04	.16	.09	.06	.04
IN.	2.54	1.11	2.24	1.23	1.78	1.82	1.56	1.20	.17	.11	.07	.05

CAL YR 1987 TOTAL 882.01 MEAN 2.42 MAX 32 MIN .11 CFSM .96 IN. 12.97
WTR YR 1988 TOTAL 944.96 MEAN 2.58 MAX 27 MIN .02 CFSM 1.02 IN. 13.89

e Estimated

04213075 BRANDY RUN NEAR GIRARD, PA

LOCATION.--Lat 41°59'31", long 80°17'29", Erie County, Hydrologic Unit 04120101, on left bank 100 ft upstream from highway bridge on Tannery Road, 0.5 mi upstream from mouth, and 1.8 mi southeast of Girard.

DRAINAGE AREA.--4.45 mi^2.

PERIOD OF RECORD.--May 14, 1986 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 800 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,220 ft^3/s, Aug. 2, 1987, gage height, 2.77 ft; minimum daily discharge 0.19 ft^3/s, July 11, 1986.

EXTREMES FOR CURRENT YEAR.--Maximum discharge greater than base discharge of 200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 20	2215	202	1.78	May 24	0030	*659	*2.16
Apr. 3	1900	230	1.82				

Minimum daily discharge, 0.34 ft^3/s, Aug. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.2	8.0	7.1	e3.3	e12	13	6.1	15	2.1	.46	1.6	1.4
2	3.4	8.8	9.2	e3.0	e25	19	5.4	8.0	2.6	.61	2.1	.92
3	3.8	7.8	7.9	e2.7	8.5	12	64	6.7	1.8	.74	1.6	.95
4	4.5	7.2	9.8	e2.5	6.1	5.5	118	5.0	e1.6	.74	e1.3	2.0
5	3.4	5.9	9.3	e2.3	e5.2	5.1	20	4.5	e1.4	.87	e1.1	5.7
6	2.9	5.4	7.6	e6.2	e4.7	4.4	15	5.4	e1.3	.92	1.6	3.0
7	2.8	4.7	7.0	e6.0	e4.1	4.3	19	4.8	e1.2	.92	1.6	2.1
8	51	4.8	13	e5.2	e3.7	4.6	16	3.7	e1.1	.92	1.2	1.4
9	19	13	22	e4.7	e3.4	8.3	12	4.3	e1.0	.92	.92	1.1
10	10	7.4	11	e4.1	e3.1	7.1	10	6.9	e.96	.92	e.80	.64
11	11	5.4	7.7	e3.7	e2.9	4.2	9.1	3.0	e.90	.69	e.74	.59
12	7.9	4.7	11	e3.8	e2.9	4.5	5.4	2.3	e.86	.66	e.70	.59
13	5.9	4.7	9.8	e3.8	e2.8	7.2	4.8	2.1	e.82	.74	.92	1.3
14	4.8	4.7	8.0	e3.5	e2.6	4.7	4.8	1.8	.81	.74	1.2	1.6
15	4.3	4.4	24	e3.3	e17	6.0	3.9	1.8	.74	.73	1.5	1.4
16	4.1	4.4	20	e3.1	e14	5.5	5.1	12	1.0	.59	.76	1.0
17	3.7	4.5	11	e2.9	e10	6.0	5.9	5.3	.92	.59	.82	1.3
18	3.7	6.3	9.9	e5.2	e9.0	5.7	4.4	4.0	.77	.69	2.3	1.4
19	3.6	5.7	9.1	e10	e6.6	6.3	3.9	7.0	.74	1.6	.60	1.4
20	3.4	5.1	51	e17	e16	7.5	3.7	27	e.68	1.1	.59	1.4
21	17	4.3	54	e8.9	e11	5.5	8.0	12	e.66	2.1	.36	1.4
22	38	3.7	14	e4.8	e18	10	4.4	9.8	e.60	1.1	.34	1.2
23	25	3.8	12	e4.0	e40	48	16	7.8	2.1	1.5	.38	2.7
24	12	4.7	9.1	e4.8	15	35	13	70	.77	1.8	1.5	1.8
25	20	6.1	8.9	e4.1	10	34	10	11	e.64	.92	7.2	1.6
26	8.5	11	9.7	e3.3	11	33	8.3	6.2	e.56	.92	2.2	1.2
27	12	5.7	6.8	e3.2	11	20	7.3	4.7	e.50	.92	1.6	1.1
28	14	4.3	6.0	e2.9	15	11	8.6	3.9	.47	.71	4.9	1.1
29	44	11	5.1	e2.8	15	8.5	36	2.6	.46	.59	6.4	1.1
30	17	11	e4.4	e2.7	---	7.5	64	2.1	.46	1.2	3.1	1.1
31	9.6	---	e3.9	e6.0	---	6.0	---	e1.8	---	3.6	1.8	---
TOTAL	375.5	188.5	399.3	143.8	305.6	359.4	512.1	262.5	30.52	31.51	53.73	45.49
MEAN	12.1	6.28	12.9	4.64	10.5	11.6	17.1	8.47	1.02	1.02	1.73	1.52
MAX	51	13	54	17	40	48	118	70	2.6	3.6	7.2	5.7
MIN	2.8	3.7	3.9	2.3	2.6	4.2	3.7	1.8	.46	.46	.34	.59
CFSM	2.75	1.43	2.93	1.05	2.39	2.63	3.88	1.92	.23	.23	.39	.34
IN.	3.17	1.59	3.38	1.22	2.58	3.04	4.33	2.22	.26	.27	.45	.38

CAL YR 1987 TOTAL 3026.79 MEAN 8.29 MAX 405 MIN .65 CFSM 1.88 IN. 25.59
WTR YR 1988 TOTAL 2707.95 MEAN 7.40 MAX 118 MIN .34 CFSM 1.68 IN. 22.89

e Estimated

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 usuable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at partial-record stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage stations. Discharge measurements made at miscellaneous sites for both low flow and high flow are given in a third table.

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 1988

Station No.	Station name	Location	Drainage area (mi^2)	Period of record	Measurements Date	Measurements Discharge (ft^3/s)
		Clarion River basin				
03029170	Little Toby Creek at Portland Mills, Pa.	Lat 41°21'53", long 78°49'22", Elk County, at railroad bridge 0.1 mi above State Highway 949 and 0.8 mi south of Portland Mills.	126	1972-88	4-12-88 9-12-88	266 25.9
03030600	Piney Creek at Piney, Pa.	Lat 41°10'12", long 79°28'20", Clarion County, at bridge on State Highway 854 at Piney, 0.1 mile above mouth, and 4 miles northwest of Reidsburg.	72.2	1933 1970-88	4-13-88 9-08-88	73.8 16.9
		Kiskiminetas River basin				
03045300	McCune Run at Keystone State Park, Pa.	Lat 40°22'26", long 79°22'25", Westmoreland County, at culvert in Keystone State Park, 200 ft above head of Keystone Lake, and 3 miles southeast of New Alexandria.	1.73	1970-88	4-13-88 9-08-88	5.09 .14
		Pine Creek basin				
03049810	Pine Creek at Etna, Pa.	Lat 40°29'42", long 79°56'26", Allegheny County, at highway bridge on ramp leading to 62nd Street Bridge at Etna and 0.8 mile above mouth.	66.8	1950-52 1970-88	4-13-88 9-08-88	78.6 12.8
		Monongahela River basin				
03083100	Jacobs Creek at Jacobs Creek, Pa.	Lat 40°07'23", long 79°44'14", Westmoreland County, 0.3 mile above highway bridge at Jacobs Creek, and 0.4 mile above mouth.	94.9	1950 1965-67 1970-88	4-12-88 9-08-88	123 15.2

Crest-stage partial-record stations

The following table contains annual maximum discharges for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained but is not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Annual maximum discharge at crest-stage partial-record stations

Station No.	Station name	Location	Drainage area (mi^2)	Period of record	Date	Gage height (feet)	Discharge (ft^3/s)
		Brokenstraw Creek basin					
03015390	Hare Creek near Corry, Pa.	Lat 41°56'29", long 79°38'41", Erie County, at concrete dam of Corry Water Co., 1.1 miles above Bear Creek, and 1.5 miles north of Corry.	12.3	1964-88	--	<5.52	<700
		Monongahela River basin					
03072880	Browns Creek near Nineveh, Pa.	Lat 39°56'27", long 80°17'21", Greene County, at highway bridge just below Patterson Run 1.8 miles southeast of Nineveh. Datum of gage is 975.60 ft National Geodetic Vertical Datum of 1929.	17.5	1963-88	3-04-88	>10.05	[a]1,100
		Streams tributary to Lake Erie					
04213200	Mill Creek at Erie, Pa.	Lat 42°05'54", long 80°04'35", Erie County, at bridge on West 38th Street, 100 ft west of State Highway 505, at Erie.	9.16	1964-88	2-23-88	10.50	470

[a] about

Discharge measurements made at miscellaneous sites during water year 1988

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements Date	Measurements Discharge (ft^3/s)
		Ohio River basin				
Allegheny River	Ohio River	Lat 41°54'05", long 78°23'05", McKean County, at single-span steel highway bridge on U.S. Highway 6 at Larabee, 1.0 mi below mouth of Potato Creek and 3.5 mi south of Eldred.	530	1920-39† 1981	4-13-88 8-23-88	771 41.4
		Allegheny River basin				
Browns Run	Allegheny River	Lat 41°49'21", long 79°06'33", Warren County, at site 300 ft below Morrison Run and 0.5 mi southeast of Warren borough.	24.1	1970-79 1981	4-13-88	26.1
		Conewango Creek basin				
Jackson Run	Conewango Creek	Lat 41°54'10", long 79°14'18", Warren County, on right bank at downstream side of highway bridge on Creamery Road, 0.6 mi upstream from Mud Run and 5 mi northwest of North Warren.	12.8	1963-79† 1981	4-12-88	15.3
		Allegheny River basin				
West Hickory	Allegheny River	Lat 41°32'32", long 79°26'20", Forest County, at highway bridge 1.5 mi above mouth and 1.6 mi northwest of West Hickory.	18.0	1970-79 1981	4-12-88 9-22-88	31.4 6.54
Tionesta Creek	Alleghney River	Lat 41°36'07", long 79°03'01", Forest County, in Allegheny National Forest, on left bank at downstream side of highway bridge at Lynch, 500 ft upstream from Bluejay Creek and 7 mi south of Sheffield.	233	1939-79† 1981	4-13-88 6-10-88 8-10-88 9-13-88	414 113 39.5 122
Bluejay Creek	Tionesta Creek	Lat 41°34'35", long 79°02'56", Forest County, at highway bridge on SR 1003, 1.7 mi south of intersection of State Highway 666, and SR 1003, at Lynch.	---	1979-81	4-13-88	25.8
		French Creek basin				
West Branch French Creek	French Creek	Lat 42°06'08", long 79°49'20", Erie County, at bridge on State Highway 89, 2.4 mi southeast of Hornby and 10 mi above mouth.	43.7	1970-79 1981	4-13-88 8-23-88	52.7 2.75
Cussewago Creek	French Creek	Lat 41°49'52", long 80°14'28", Crawford County, at highway bridge at Crossingville and 0.3 mi above West Branch.	12.6	1970-79 1981	4-13-88 8-23-88	7.67 0.0
Sugar Creek	French Creek	Lat 41°25'43", long 79°52'48", Venango County, on left bank at downstream side of highway bridge, 0.8 mi north of Sugarcreek, 0.9 mi upstream from mouth and 3 mi northwest of Franklin.	166	1934-79† 1981	4-12-88 9-22-88	267 95.6
		Clarion River basin				
Elk Creek	Clarion River	Lat 41°25'31", long 78°43'38", Elk County, at bridge on State Highway 120 at Ridgway and 0.6 mi above mouth.	61.2	1970-79 1981	4-12-88 9-12-88	104 16.7
		Allegheny River basin				
Clarion River	Allegheny River	Lat 41°25'15", long 78°44'10", Elk County, at bridge on State Highway 948 in Ridgway, 50 ft downstream from Elk Creek.	303	1940-53† 1954-87	11-04-87 1-06-88 2-01-88 3-30-88 6-01-88 7-25-88 9-12-88	275 235 521 737 328 203 181

† Operated as a continuous record station.

Discharge measurements made at miscellaneous sites during water year 1988--Continued

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements Date	Measurements Discharge (ft^3/s)
		Allegheny River basin				
Clarion River	Allegheny River	Lat 41°07'47", long 78°33'18", Clarion County, at bridge on State Highway 58 at Callensburg and 0.3 mi above Licking Creek.	1,163	1970-72† 1979-87	10-09-87	2,400
					10-15-87	212
					12-09-87	401
					1-22-88	603
					3-04-88	343
					4-18-88	4,310
					6-21-88	106
					9-02-88	110
					9-14-88	121
		Sandy Lick Creek basin				
Laborde Branch	Sandy Lick Creek	Lat 41°06'18", long 78°42'51", Clearfield County, at highway bridge, 0.6 mi downstream from Lutherburg Branch and 2 mi east of Maple Street Hospital in DuBois.	15.0	1971-79 1981	4-12-88	22.6
					9-08-88	3.39
Big Run	Little Sandy Creek	Lat 40°59'30", long 79°05'26", Jefferson County, on right bank at downstream side of highway bridge, 0.5 mi downstream from McCracken Run and 1.3 mi southeast of Sprankle Mills.	7.4	1963-81†	4-12-88	8.63
					9-08-88	4.39
		Allegheny River basin				
Bull Creek	Allegheny River	Lat 40°36'54", long 79°45'36", Allegheny County, at bridge on dirt road, 0.3 mi above Little Bull Creek and 0.9 mi north of Tarentum.	36.8	1970-79 1981	4-13-88	35.9
					9-23-88	1.88
		Tenmile Creek basin				
Daniels Run	Tenmile Creek	Lat 40°01'37", long 80°05'26", Washington County, at Penn Central Railroad Bridge, 0.2 mi above mouth and 0.5 mi northeast of Marianna.	17.3	1948-51 1970-79 1981	4-12-88	15.2
					9-09-88	.88
		Monongahela River basin				
Tenmile Creek	Monongahela River	Lat 39°59'51", long 80°02'31", Greene County near center, on upstream side of single-span steel-truss bridge, 1.5 mi north of Clarksville and 2.3 mi upstream from South Fork Tenmile Creek.	133	1968-79† 1981	4-12-88	130
					9-09-88	10.4
		Redstone Creek basin				
Lick Run	Redstone Creek	Lat 39°52'04", long 79°41'40", Fayette County, on left bank of southeast edge of Hopwood, along road leading to Lick Hollow picnic area in Forbes State Forest, 0.4 mi upstream from road leading south from Hopwood to Fairchance and 1.5 mi upstream from Bennington Spring Run.	3.8	1966-78† 1981	4-12-88	7.43
					9-09-88	.36
		Monongahela River basin				
Peters Creek	Monongahela River	Lat 40°17'31", long 79°54'56", Allegheny County, at bridge on State Highway 51 at Large and 3 mi above mouth.	42.6	1966-67 1970-79 1981	4-13-88	47.7
					9-08-88	9.47
		Casselman River basin				
Laurel Hill Creek	Casselman River	Lat 40°00'32", long 78°14'04", Somerset County, at bridge at head of Laurel Lake, 2.3 mi southwest of Bakersville and 3.3 mi below Kooser Run.	38.2	1970-79	4-13-88	66.9
					9-08-88	21.5
		Ohio River basin				
Montour Run	Ohio River	Lat 40°28'00", long 80°09'23", Allegheny County, at highway bridge, 1.1 mi below Trout Run and 2.8 mi south of Coraopolis.	29.4	1944,1946 1948-49 1951-53 1955,1981	4-12-88	30.6
					8-22-88	2.47

† Operated as a continuous record station.

Discharge measurements made at miscellaneous sites during water year 1988--Continued

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements Date	Measurements Discharge (ft^3/s)
		Neshannock Creek basin				
Otter Creek	Neshannock Creek	Lat 41°13'34", long 80°13'28", Mercer County, at bridge on SR 2014, 400 ft upstream from Cool Spring Creek and 0.8 mi east of Mercer.	48.7	1946 1981	4-14-88 8-23-88	36.4 2.71
		Little Neshannock Creek basin				
Harthegig Run	Little Neshannock Creek	Lat 41°11'10", long 80°19'38", Mercer County, on right bank at upstream end of wingall of culvert on SR 3013, overpass of U.S. Interstate Highway 80, 1.3 mi upstream from mouth, 2 mi southeast of Greenfield and 6 mi southwest of Mercer.	2.3	1968-81†	4-14-88 8-23-88	.96 .08
		Connoquenessing Creek basin				
Slippery Rock Creek	Connoquenessing Creek	Lat 41°03'05", long 79°58'50", Butler County, about 150 ft below Keisters Falls, about 500 ft below Bessimer Railroad Bridge, 0.5 mi upstream from Long Run and about 0.2 mi downstream from Keisters.	13.2	1946 1981	4-12-88 9-21-88	199 20.4
		Little Beaver Creek basin				
North Fork Little Beaver Creek	Little Beaver Creek	Lat 40°48'22", long 80°25'22", Beaver County, at bridge on State Highway 551 at Darlington and 12 mi below Honey Creek.	88.7	1949-51 1970-79 1981	4-14-88 8-22-88	73.9 7.13
		Lake Erie basin				
Elk Creek	Lake Erie	Lat 42°00'20", long 80°21'15", Erie County, at single-span steel-truss bridge on Elk Park Road, 0.8 mi southwest of North Girard and 15 mi southwest of Erie.	96.7	1951 1981	4-13-88 8-24-88	73.1 4.93
Mill Creek	Lake Erie	Lat 42°05'54", long 80°04'35", Erie County, at bridge on West 38th Street, 100 ft west of State Highway 505 at Erie.	9.16	1944-57 1964-80*	4-14-88 8-24-88	9.66 2.44

† Operated as a continuous record station.

* Also a crest-stage partial-record station.

ANALYSIS OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

STONY FORK STUDY

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	ACIDITY TOTAL HEATED (MG/L AS CACO3)	CALCIUM TOTAL RECOV-ERABLE (MG/L AS CA)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, TOTAL RECOV-ERABLE (MG/L AS MG)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, TOTAL RECOV-ERABLE (MG/L AS NA)	SODIUM, DIS-SOLVED (MG/L AS NA)
03070415 STONY FORK NEAR FARMINGTON, PA (SITE 4) (LAT 39 46 51N LONG 079 34 31W)												
DEC 29...	1225	10	85	5.28	3.0	24	--	6.2	--	2.6	--	1.2
MAR 29...	1310	6.7	110	4.95	10.0	36	--	7.3	--	2.8	--	0.99
JUN 21...	1050	0.27	200	4.96	18.5	22	--	21	--	8.5	--	1.4
SEP 21...	1135	2.1	190	5.04	14.5	34	15	15	5.3	5.3	1.5	1.4
03070418 STONY FORK TRIB ABOVE SURFACE MINE NEAR GIBBON GLADE, PA (SITE 7) (LAT 39 45 32N LONG 079 35 28W)												
DEC 29...	1300	0.84	105	6.67	3.0	10	--	7.0	--	2.2	--	7.2
JAN 28...	1220	0.26	110	6.90	0.5	18	--	6.9	--	2.0	--	7.2
FEB 25...	1040	0.38	120	6.75	2.0	22	--	8.2	--	2.5	--	18
MAR 29...	1405	0.51	100	6.85	13.0	22	--	5.6	--	1.8	--	4.8
MAY 25...	1410	0.35	90	7.04	13.0	0.0	--	7.1	--	2.1	--	3.9
JUN 21...	1120	0.01	160	7.15	16.0	0.0	--	16	--	3.3	--	11
JUL 27...	0955	<0.10	260	7.68	19.0	0.0	--	21	--	4.0	--	16
AUG 24...	1325	0.02	325	7.58	22.0	0.0	--	29	--	6.2	--	28
SEP 08...	1145	<0.10	220	7.11	14.0	0.0	--	18	--	4.0	--	13
21...	1200	0.10	150	7.16	15.0	0.0	14	13	3.2	3.1	7.3	7.3
03070430 STONY FORK AT BETHEL CHAPEL, PA (SITE 3) (LAT 39 46 54N LONG 079 35 00W)												
DEC 29...	1125	19	85	6.22	3.0	14	--	8.0	--	2.6	--	2.1
MAR 29...	1220	9.2	145	6.07	8.0	14	--	11	--	3.7	--	1.7
JUN 21...	1015	0.73	550	6.94	20.0	0.0	--	89	--	23	--	17
SEP 21...	1105	4.1	170	6.60	14.0	12	16	15	4.5	4.2	3.1	2.9
03070435 STONY FORK TRIB #4 (N OF DELTA SITE) NEAR BETHEL CHAPEL, PA (SITE 2) (LAT 39 46 48N LONG 079 35 38W)												
MAR 29...	1130	0.77	70	6.90	10.0	8.0	--	7.9	--	1.7	--	0.80
JUN 21...	0955	<0.01	295	6.57	16.0	0.0	--	37	--	8.8	--	4.7
SEP 21...	1005	0.48	110	7.00	18.0	0.0	13	13	2.8	2.7	1.4	1.3
03070440 HAGER MINE DISCHARGE BAUER ESTATE NEAR BETHEL CHAPEL, PA (SITE 6) (LAT 39 46 38N LONG 079 35 25W)												
JUN 21...	1150	0.04	2100	2.76	30.5	624	--	140	--	91	--	1.2
03070455 STONY FORK NEAR ELLIOTTSVILLE, PA (SITE 1) (LAT 39 46 08N LONG 079 36 34W)												
OCT 28...	1015	1.2	350	5.80	4.5	30	--	--	--	--	--	--
DEC 29...	1040	29	120	5.60	3.5	20	--	10	--	4.0	--	2.3
JAN 28...	1125	11	180	5.05	0.0	38	--	15	--	6.3	--	1.6
FEB 25...	1000	13	180	5.50	0.0	40	--	15	--	5.7	--	2.6
MAR 29...	1045	13	160	5.05	7.0	20	--	12	--	4.6	--	1.6
APR 26...	1155	14	140	6.10	8.5	30	--	13	--	4.3	--	1.6
MAY 25...	1345	11	160	6.53	14.5	8.0	--	14	--	4.8	--	1.8
JUN 21...	0915	0.76	360	5.12	19.0	14	--	50	--	19	--	7.3
JUL 27...	0935	0.50	440	5.08	18.5	10	--	48	--	17	--	10
AUG 24...	1300	2.0	440	4.54	19.0	36	--	44	--	18	--	6.1
SEP 21...	0940	6.5	190	6.50	15.5	8.0	18	18	5.6	5.6	3.5	3.5

STONY FORK STUDY

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	POTASSIUM, TOTAL RECOVERABLE (MG/L AS K)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT WH TOT FET LAB MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, TOTAL (MG/L AS F)	RESIDUE AT 105 DEG. C, DISSOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)
03070415 STONY FORK NEAR FARMINGTON, PA (SITE 4) (LAT 39 46 51N LONG 079 34 31W)												
DEC 29...	--	1.1	6	31	3.0	<0.1	54	<2	1000	760	--	--
MAR 29...	--	1.5	6	36	2.0	<0.1	120	18	1400	1100	--	--
JUN 21...	--	1.5	6	74	2.0	0.1	190	<2	2700	1800	--	--
SEP 21...	3.3	3.3	8	64	--	--	118	8	2100	1500	<4	<4
03070418 STONY FORK TRIB ABOVE SURFACE MINE NEAR GIBBON GLADE, PA (SITE 7) (LAT 39 45 32N LONG 079 35 28W)												
DEC 29...	--	0.97	14	19	15	<0.1	106	<2	160	<130	--	--
JAN 28...	--	1.0	14	19	16	<0.1	82	<2	<130	<130	--	--
FEB 25...	--	0.94	14	16	26	<0.1	54	<2	210	<130	--	--
MAR 29...	--	1.0	14	<10	13	<0.1	90	<2	150	190	--	--
MAY 25...	--	0.93	18	23	8.0	<0.1	18	26	290	170	--	--
JUN 21...	--	1.2	44	85	23	<0.1	148	94	1600	<130	--	--
JUL 27...	--	1.9	72	30	30	0.2	152	4	490	240	--	--
AUG 24...	--	2.3	70	62	35	0.3	264	<2	540	150	--	--
SEP 08...	--	4.0	36	19	23	0.1	88	<2	150	620	--	--
21...	1.8	1.8	32	19	--	--	88	<2	250	<130	<4	<4
03070430 STONY FORK AT BETHEL CHAPEL, PA (SITE 3) (LAT 39 46 54N LONG 079 35 00W)												
DEC 29...	--	1.5	10	28	5.0	<0.1	74	2	940	230	--	--
MAR 29...	--	1.4	8	49	4.0	<0.1	3360	20	810	170	--	--
JUN 21...	--	2.7	38	310	4.0	0.1	554	6	1600	170	--	--
SEP 21...	3.0	2.8	14	50	--	--	102	<2	280	150	<4	<4
03070435 STONY FORK TRIB #4 (N OF DELTA SITE) NEAR BETHEL CHAPEL, PA (SITE 2) (LAT 39 46 48N LONG 079 35 38W)												
MAR 29...	--	0.97	16	17	2.0	<0.1	140	14	750	170	--	--
JUN 21...	--	1.5	70	93	7.0	<0.1	218	52	1400	<130	--	--
SEP 21...	1.7	1.7	28	21	--	--	50	8	240	240	<4	<4
03070440 HAGER MINE DISCHARGE BAUER ESTATE NEAR BETHEL CHAPEL, PA (SITE 6) (LAT 39 46 38N LONG 079 35 25W)												
JUN 21...	--	2.1	-	1000	4.0	0.5	2370	54	58000	56000	--	--
03070455 STONY FORK NEAR ELLIOTTSVILLE, PA (SITE 1) (LAT 39 46 08N LONG 079 36 34W)												
OCT 28...	--	--	8	160	--	--	276	6	<130	<130	--	--
DEC 29...	--	1.3	6	51	5.0	<0.1	114	2	860	320	--	--
JAN 28...	--	1.6	6	83	4.0	<0.1	136	<2	1700	1300	--	--
FEB 25...	--	1.2	6	62	6.0	0.1	744	2	1300	550	--	--
MAR 29...	--	1.4	6	55	4.0	<0.1	180	<2	1100	500	--	--
APR 26...	--	1.2	8	59	3.0	<0.1	88	14	1100	280	--	--
MAY 25...	--	1.4	8	63	3.0	<0.1	78	10	660	150	--	--
JUN 21...	--	2.0	8	200	4.0	0.2	378	<2	850	740	--	--
JUL 27...	--	3.0	8	220	8.0	0.2	410	2	270	240	--	--
AUG 24...	--	2.5	6	230	8.0	0.3	392	<2	2500	2300	--	--
SEP 21...	2.3	2.3	10	75	--	--	134	<2	180	<130	<4	<4

STONY FORK STUDY

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	BORON, TOTAL RECOV-ERABLE (UG/L AS B)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)
03070415 STONY FORK NEAR FARMINGTON, PA (SITE 4) (LAT 39 46 51N LONG 079 34 31W)												
DEC 29...	--	--	-	--	--	--	--	340	240	--	--	570
MAR 29...	--	--	-	--	--	--	--	390	390	--	--	730
JUN 21...	--	--	-	--	--	--	--	960	850	--	--	2800
SEP 21...	<250	<50	<5	60	60	18	18	740	390	<50	<50	1700
03070418 STONY FORK TRIB ABOVE SURFACE MINE NEAR GIBBON GLADE, PA (SITE 7) (LAT 39 45 32N LONG 079 35 28W)												
DEC 29...	--	--	-	--	--	--	--	250	110	--	--	52
JAN 28...	--	--	-	--	--	--	--	170	170	--	--	47
FEB 25...	--	--	-	--	--	--	--	450	130	--	--	62
MAR 29...	--	--	-	--	--	--	--	290	92	--	--	46
MAY 25...	--	--	-	--	--	--	--	390	170	--	--	84
JUN 21...	--	--	-	--	--	--	--	1900	51	--	--	120
JUL 27...	--	--	-	--	--	--	--	790	120	--	--	140
AUG 24...	--	--	-	--	--	--	--	900	120	--	--	180
SEP 08...	--	--	-	--	--	--	--	510	250	--	--	250
21...	<250	<50	<5	<20	<20	13	13	710	300	<50	<50	200
03070430 STONY FORK AT BETHEL CHAPEL, PA (SITE 3) (LAT 39 46 54N LONG 079 35 00W)												
DEC 29...	--	--	-	--	--	--	--	490	230	--	--	360
MAR 29...	--	--	-	--	--	--	--	370	190	--	--	570
JUN 21...	--	--	-	--	--	--	--	3100	310	--	--	1900
SEP 21...	<250	<50	<5	30	30	10	10	280	200	<50	<50	940
03070435 STONY FORK TRIB #4 (N OF DELTA SITE) NEAR BETHEL CHAPEL, PA (SITE 2) (LAT 39 46 48N LONG 079 35 38W)												
MAR 1988 29...	--	--	-	--	--	--	--	920	160	--	--	100
JUN 21...	--	--	-	--	--	--	--	7400	4200	--	--	2300
SEP 21...	<250	<50	<5	<20	<20	<10	<10	1300	470	<50	<50	160
03070440 HAGER MINE DISCHARGE BAUER ESTATE NEAR BETHEL CHAPEL, PA (SITE 6) (LAT 39 46 38N LONG 079 35 25W)												
JUN 21...	--	--	-	--	--	--	--	47000	43000	--	--	48000
03070455 STONY FORK NEAR ELLIOTTSVILLE, PA (SITE 1) (LAT 39 46 08N LONG 079 36 34W)												
OCT 28...	--	--	-	--	--	--	--	100	35	--	--	4100
DEC 29...	--	--	-	--	--	--	--	880	410	--	--	1000
JAN 28...	--	--	-	--	--	--	--	1900	830	--	--	2300
FEB 25...	--	--	-	--	--	--	--	1400	570	--	--	1600
MAR 29...	--	--	-	--	--	--	--	1200	430	--	--	1600
APR 26...	--	--	-	--	--	--	--	1400	410	--	--	1100
MAY 25...	--	--	-	--	--	--	--	870	160	--	--	1400
JUN 21...	--	--	-	--	--	--	--	80	37	--	--	5000
JUL 27...	--	--	-	--	--	--	--	90	86	--	--	5400
AUG 24...	--	--	-	--	--	--	--	560	420	--	--	7100
SEP 21...	<250	<50	<5	40	40	44	<10	310	260	<50	<50	1700

STONY FORK STUDY

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	MANGANESE, DISSOLVED (UG/L AS MN)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, DISSOLVED (UG/L AS NI)	STRONTIUM, TOTAL RECOVERABLE (UG/L AS SR)	STRONTIUM, DISSOLVED (UG/L AS SR)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)
03070415	STONY FORK NEAR FARMINGTON, PA (SITE 4) (LAT 39 46 51N LONG 079 34 31W)										
DEC 29...	560	--	--	--	--	60	56	--	--	--	--
MAR 29...	730	--	--	--	--	80	99	--	--	--	--
JUN 21...	2800	--	--	--	--	140	<10	--	--	--	--
SEP 21...	1700	42	42	50	47	240	110	<6	<6	<1.0	<1.0
03070418	STONY FORK TRIB ABOVE SURFACE MINE NEAR GIBBON GLADE, PA (SITE 7) (LAT 39 45 32N LONG 079 35 28W)										
DEC 29...	52	--	--	--	--	30	28	--	--	--	--
JAN 28...	46	--	--	--	--	20	17	--	--	--	--
FEB 25...	62	--	--	--	--	40	29	--	--	--	--
MAR 29...	44	--	--	--	--	50	47	--	--	--	--
MAY 25...	84	--	--	--	--	10	13	--	--	--	--
JUN 21...	63	--	--	--	--	40	36	--	--	--	--
JUL 27...	140	--	--	--	--	30	25	--	--	--	--
AUG 24...	180	--	--	--	--	40	36	--	--	--	--
SEP 08...	260	--	--	--	--	60	57	--	--	--	--
21...	180	<25	<25	50	45	20	19	<6	<6	<1.0	<1.0
03070430	STONY FORK AT BETHEL CHAPEL, PA (SITE 3) (LAT 39 46 54N LONG 079 35 00W)										
DEC 29...	360	--	--	--	--	30	24	--	--	--	--
MAR 29...	550	--	--	--	--	70	72	--	--	--	--
JUN 21...	1800	--	--	--	--	70	46	--	--	--	--
SEP 21...	880	41	41	50	50	60	64	<6	<6	<1.0	<1.0
03070435	STONY FORK TRIB #4 (N OF DELTA SITE) NEAR BETHEL CHAPEL, PA (SITE 2) (LAT 39 46 48N LONG 079 35 38)										
MAR 29...	91	--	--	--	--	30	33	--	--	--	--
JUN 21...	2200	--	--	--	--	<10	27	--	--	--	--
SEP 21...	130	<25	<25	50	46	<10	<10	<6	<6	<1.0	<1.0
03070440	HAGER MINE DISCHARGE BAUER ESTATE NEAR BETHEL CHAPEL, PA (SITE 6) (LAT 39 46 38N LONG 079 35 25W)										
JUN 21...	49000	--	--	--	--	3500	3500	--	--	--	--
03070455	STONY FORK NEAR ELLIOTTSVILLE, PA (SITE 1) (LAT 39 46 08N LONG 079 36 34W)										
OCT 28...	4000	--	--	--	--	100	100	--	--	--	--
DEC 29...	1000	--	--	--	--	60	60	--	--	--	--
JAN 28...	2200	--	--	--	--	140	130	--	--	--	--
FEB 25...	1700	--	--	--	--	120	110	--	--	--	--
MAR 29...	1300	--	--	--	--	110	110	--	--	--	--
APR 26...	1100	--	--	--	--	70	66	--	--	--	--
MAY 25...	1200	--	--	--	--	60	59	--	--	--	--
JUN 21...	4900	--	--	--	--	180	110	--	--	--	--
JUL 27...	5100	--	--	--	--	140	140	--	--	--	--
AUG 24...	6800	--	--	--	--	280	280	--	--	--	--
SEP 21...	1700	45	36	60	59	70	68	<6	<6	<1.0	<1.0

ANALYSIS OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

POPLAR RUN BASIN

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	ACIDITY TOTAL HEATED (MG/L AS CACO3)	CALCIUM TOTAL RECOV-ERABLE (MG/L AS CA)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, TOTAL RECOV-ERABLE (MG/L AS MG)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, TOTAL RECOV-ERABLE (MG/L AS NA)	SODIUM, DIS-SOLVED (MG/L AS NA)
03082165			POPLAR RUN AT CLINTON, PA (SITE 5) (LAT 40 02 38N LONG 079 27 44W)									
DEC 30...	1120	5.9	150	4.70	0.5	24	--	11	--	4.8	--	1.6
MAR 30...	0850	3.7	170	4.60	8.0	34	--	17	--	8.5	--	1.7
JUN 21...	1115	0.12	420	4.05	18.5	32	--	33	--	16	--	1.9
SEP 22...	1110	0.76	300	4.20	14.0	26	24	24	9.6	9.5	4.9	7.9
03082170			UNNAMED TRIB TO POPLAR RUN NR CLINTON, PA (SITE 4) (LAT 40 02 02N LONG 079 27 35W)									
DEC 30...	1040	1.5	60	6.21	1.5	16	--	4.8	--	1.7	--	0.72
MAR 29...	1745	1.5	60	6.10	11.0	18	--	6.5	--	2.2	--	0.58
JUN 21...	1035	0.14	75	7.02	17.0	2.0	--	8.3	--	1.8	--	1.2
SEP 22...	1030	0.26	95	7.10	14.0	10	12	10	2.7	2.5	1.2	1.1
03082175			POPLAR RUN ABOVE NEWMYER RN NR CLINTON, PA (SITE 3) (LAT 40 02 13N LONG 079 26 31W)									
DEC 29...	1625	8.8	180	5.75	2.0	22	--	16	--	5.9	--	2.2
JAN 29...	1140	6.1	260	5.60	0.5	32	--	25	--	8.5	--	1.0
FEB 26...	1135	6.4	200	5.40	2.0	42	--	21	--	7.5	--	1.8
MAR 29...	1645	7.2	195	5.55	11.5	24	--	17	--	5.3	--	1.4
APR 26...	1630	3.0	245	5.35	14.0	34	--	23	--	8.2	--	1.7
MAY 25...	1625	12	175	6.08	11.0	10	--	16	--	5.2	--	1.3
JUN 21...	1220	0.77	440	5.72	19.0	18	--	56	--	17	--	1.8
JUL 27...	1330	0.70	390	5.36	18.5	10	--	43	--	14	--	3.5
AUG 24...	0950	3.0	260	6.04	18.0	22	--	26	--	7.7	--	2.7
SEP 22...	1145	1.5	300	6.60	14.5	14	34	31	10	9.6	3.2	2.9
03082177			NEWMYER RUN AT CLINTON, PA (SITE 6) (LAT 40 03 08N LONG 079 27 34W)									
DEC 30...	1140	0.0	280	3.87	0.5	50	--	18	--	12	--	1.1
MAR 30...	1000	2.0	280	3.89	8.0	52	--	11	--	9.0	--	1.1
JUN 21...	0940	0.14	625	3.77	18.0	94	--	35	--	30	--	1.9
SEP 22...	0950	0.27	380	4.33	13.5	64	26	23	18	16	2.9	2.7
03082180			NEWMYER RUN ABOVE POPLAR RN NR CLINTON, PA (SITE 2) (LAT 40 02 13N LONG 079 26 29W)									
DEC 29...	1620	7.7	235	6.05	2.0	18	--	24	--	11	--	1.9
JAN 29...	1145	0.0	400	5.00	0.5	42	--	30	--	14	--	7.0
FEB 26...	1205	6.2	290	5.30	2.0	40	--	30	--	13	--	4.5
MAR 29...	1715	6.6	300	5.43	11.5	32	--	23	--	10	--	1.7
APR 26...	1710	2.5	450	5.05	14.0	38	--	38	--	20	--	3.5
MAY 25...	1700	12	420	6.83	11.0	0.0	--	38	--	19	--	8.6
JUN 21...	1255	0.64	1350	4.70	20.0	44	--	140	--	73	--	28
JUL 27...	1330	0.60	910	4.58	18.5	46	--	83	--	52	--	6.8
AUG 24...	0920	3.4	390	5.10	18.0	28	--	52	--	24	--	3.4
SEP 22...	1220	1.4	715	5.52	14.5	26	90	85	45	42	3.7	3.4

POPLAR RUN BASIN

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	POTASSIUM, TOTAL RECOVERABLE (MG/L AS K)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT WH TOT FET LAB MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, TOTAL (MG/L AS F)	RESIDUE AT 105 DEG. C, DISSOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)
	03082165		POPLAR RUN AT CLINTON, PA (SITE 5) (LAT 40 02 38N LONG 079 27 44W)									
DEC 30...	--	0.98	6	64	4.0	<0.1	126	<2	1100	920	--	--
MAR 30...	--	1.2	4	62	4.0	0.1	270	20	1000	1100	--	--
JUN 21...	--	1.6	2	130	3.0	0.1	312	<2	2500	2300	--	--
SEP 22...	2.0	2.0	4	110	--	--	190	6	940	930	<4	<4
	03082170		UNNAMED TRIB TO POPLAR RUN NR CLINTON, PA (SITE 4) (LAT 40 02 02N LONG 079 27 35W)									
DEC 30...	--	0.92	8	22	2.0	<0.1	36	<2	170	150	--	--
MAR 29...	--	0.99	8	18	2.0	<0.1	2	60	490	150	--	--
JUN 21...	--	0.95	16	27	2.0	<0.1	70	2	510	150	--	--
SEP 22...	1.3	1.3	16	25	--	--	54	2	350	240	<4	<4
	03082175		POPLAR RUN ABOVE NEWMYER RN NR CLINTON, PA (SITE 3) (LAT 40 02 13N LONG 079 26 31W)									
DEC 29...	--	1.9	8	78	4.0	<0.1	112	<2	870	250	--	--
JAN 29...	--	1.5	8	99	3.0	<0.1	210	<2	460	200	--	--
FEB 26...	--	1.4	8	83	4.0	0.1	136	<2	660	260	--	--
MAR 29...	--	1.4	8	71	3.0	<0.1	128	20	610	200	--	--
APR 26...	--	1.3	8	93	3.0	<0.1	158	14	560	280	--	--
MAY 25...	--	1.1	8	70	3.0	<0.1	96	22	790	<130	--	--
JUN 21...	--	1.9	8	190	3.0	0.2	372	<2	430	260	--	--
JUL 27...	--	2.6	8	190	5.0	0.2	268	<2	610	250	--	--
AUG 24...	--	2.6	8	110	6.0	0.2	286	8	1700	150	--	--
SEP 22...	2.1	2.0	10	120	--	--	216	<2	390	<130	<4	<4
	03082177		NEWMYER RUN AT CLINTON, PA (SITE 6) (LAT 40 03 08N LONG 079 27 34W)									
DEC 30...	--	0.91	0	110	3.0	0.2	222	<2	3900	3900	--	--
MAR 30...	--	1.1	0	97	2.0	0.2	190	20	4300	3500	--	--
JUN 21...	--	1.8	-	230	3.0	0.2	518	<2	11000	11000	--	--
SEP 22...	2.0	2.0	0	180	--	--	288	<2	6600	6000	<4	<4
	03082180		NEWMYER RUN ABOVE POPLAR RN NR CLINTON, PA (SITE 2) (LAT 40 02 13N LONG 079 26 29W)									
DEC 29...	--	1.3	8	110	3.0	<0.1	32	<2	1500	150	--	--
JAN 29...	--	1.5	8	200	3.0	0.3	446	<2	3600	1800	--	--
FEB 26...	--	1.4	8	130	6.0	0.2	182	<2	2400	880	--	--
MAR 29...	--	1.6	8	120	3.0	0.1	216	14	1700	1800	--	--
APR 26...	--	1.4	8	190	2.0	0.2	318	14	2200	1100	--	--
MAY 25...	--	1.6	18	170	2.0	0.2	258	26	1300	<130	--	--
JUN 21...	--	3.2	8	710	3.0	0.3	1270	14	6900	4500	--	--
JUL 27...	--	3.3	6	500	4.0	0.3	858	<2	5300	4500	--	--
AUG 24...	--	2.8	8	270	4.0	0.3	518	16	2800	780	--	--
SEP 22...	2.6	2.6	10	390	--	--	636	24	4600	750	<4	<4

POPLAR RUN BASIN

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	BORON, TOTAL RECOV-ERABLE (UG/L AS B)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)
03082165 POPLAR RUN AT CLINTON, PA (SITE 5) (LAT 40 02 38N LONG 079 27 44W)												
DEC 30...	--	--	-	--	--	--	--	640	600	--	--	1100
MAR 30...	--	--	-	--	--	--	--	1600	460	--	--	1400
JUN 21...	--	--	-	--	--	--	--	2500	410	--	--	4900
SEP 22...	<250	<50	<50	<20	<20	15	15	560	380	<50	<50	2700
03082170 UNNAMED TRIB TO POPLAR RUN NR CLINTON, PA (SITE 4) (LAT 40 02 02N LONG 079 27 35W)												
DEC 30...	--	--	-	--	--	--	--	90	78	--	--	120
MAR 29...	--	--	-	--	--	--	--	1900	53	--	--	160
JUN 21...	--	--	-	--	--	--	--	530	60	--	--	66
SEP 22...	<250	<50	<50	<20	<20	<10	<10	280	160	<50	<50	210
03082175 POPLAR RUN ABOVE NEWMYER RN NR CLINTON, PA (SITE 3) (LAT 40 02 13N LONG 079 26 31W)												
DEC 29...	--	--	-	--	--	--	--	330	240	--	--	760
JAN 29...	--	--	-	--	--	--	--	360	290	--	--	910
FEB 26...	--	--	-	--	--	--	--	560	290	--	--	1100
MAR 29...	--	--	-	--	--	--	--	420	190	--	--	640
APR 26...	--	--	-	--	--	--	--	550	210	--	--	1000
MAY 25...	--	--	-	--	--	--	--	900	250	--	--	700
JUN 21...	--	--	-	--	--	--	--	240	180	--	--	1200
JUL 27...	--	--	-	--	--	--	--	580	200	--	--	1900
AUG 24...	--	--	-	--	--	--	--	2100	100	--	--	2800
SEP 22...	<250	<50	<50	50	50	19	19	300	150	<50	<50	1600
03082177 NEWMYER RUN AT CLINTON, PA (SITE 6) (LAT 40 03 08N LONG 079 27 34W)												
DEC 30...	--	--	-	--	--	--	--	2200	2200	--	--	3900
MAR 30...	--	--	-	--	--	--	--	2300	1200	--	--	3900
JUN 21...	--	--	-	--	--	--	--	1800	2200	--	--	13000
SEP 22...	<250	<50	<50	130	120	20	20	1300	940	<50	<50	9000
03082180 NEWMYER RUN ABOVE POPLAR RN NR CLINTON, PA (SITE 2) (LAT 40 02 13N LONG 079 26 29W)												
DEC 29...	--	--	-	--	--	--	--	690	370	--	--	1900
JAN 29...	--	--	-	--	--	--	--	1500	670	--	--	3700
FEB 26...	--	--	-	--	--	--	--	1200	400	--	--	2900
MAR 29...	--	--	-	--	--	--	--	600	390	--	--	1800
APR 26...	--	--	-	--	--	--	--	860	740	--	--	3800
MAY 25...	--	--	-	--	--	--	--	860	210	--	--	3100
JUN 21...	--	--	-	--	--	--	--	1600	1200	--	--	18000
JUL 27...	--	--	-	--	--	--	--	2200	1800	--	--	12000
AUG 24...	--	--	-	--	--	--	--	1100	590	--	--	5900
SEP 22...	<250	<50	<50	150	150	21	21	2100	970	<50	<50	8800

POPLAR RUN BASIN

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	MANGANESE, DISSOLVED (UG/L AS MN)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, DISSOLVED (UG/L AS NI)	STRONTIUM, TOTAL RECOVERABLE (UG/L AS SR)	STRONTIUM, DISSOLVED (UG/L AS SR)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)
03082165	POPLAR RUN AT CLINTON, PA (SITE 5) (LAT 40 02 38N LONG 079 27 44W)										
DEC 30...	1100	--	--	--	--	120	120	--	--	--	--
MAR 30...	1200	--	--	--	--	310	150	--	--	--	--
JUN 21...	4900	--	--	--	--	370	370	--	--	--	--
SEP 22...	2700	<25	<25	170	170	170	170	<6	<6	<1.0	<1.0
03082170	UNNAMED TRIB TO POPLAR RUN NR CLINTON, PA (SITE 4) (LAT 40 02 02N LONG 079 27 35W)										
DEC 30...	120	--	--	--	--	40	30	--	--	--	--
MAR 29...	130	--	--	--	--	50	49	--	--	--	--
JUN 21...	51	--	--	--	--	20	15	--	--	--	--
SEP 22...	190	<25	<25	30	32	20	24	<6	<6	<1.0	<1.0
03082175	POPLAR RUN ABOVE NEWMYER RN NR CLINTON, PA (SITE 3) (LAT 40 02 13N LONG 079 26 31W)										
DEC 29...	760	--	--	--	--	90	86	--	--	--	--
JAN 29...	1000	--	--	--	--	80	100	--	--	--	--
FEB 26...	1000	--	--	--	--	120	120	--	--	--	--
MAR 29...	650	--	--	--	--	110	120	--	--	--	--
APR 26...	1000	--	--	--	--	100	100	--	--	--	--
MAY 25...	700	--	--	--	--	80	82	--	--	--	--
JUN 21...	1400	--	--	--	--	110	110	--	--	--	--
JUL 27...	1800	--	--	--	--	140	130	--	--	--	--
AUG 24...	2500	--	--	--	--	150	110	--	--	--	--
SEP 22...	1400	120	120	130	120	100	100	<6	<6	<1.0	<1.0
03082177	NEWMYER RUN AT CLINTON, PA (SITE 6) (LAT 40 03 08N LONG 079 27 34W)										
DEC 30...	5000	--	--	--	--	210	210	--	--	--	--
MAR 30...	3600	--	--	--	--	370	230	--	--	--	--
JUN 21...	15000	--	--	--	--	620	620	--	--	--	--
SEP 22...	8100	120	120	50	46	350	340	<6	<6	<1.0	<1.0
03082180	NEWMYER RUN ABOVE POPLAR RN NR CLINTON, PA (SITE 2) (LAT 40 02 13N LONG 079 26 29W)										
DEC 29...	1900	--	--	--	--	90	94	--	--	--	--
JAN 29...	4600	--	--	--	--	190	190	--	--	--	--
FEB 26...	2900	--	--	--	--	140	150	--	--	--	--
MAR 29...	1800	--	--	--	--	130	140	--	--	--	--
APR 26...	3800	--	--	--	--	170	160	--	--	--	--
MAY 25...	2700	--	--	--	--	100	81	--	--	--	--
JUN 21...	19000	--	--	--	--	580	570	--	--	--	--
JUL 27...	12000	--	--	--	--	490	490	--	--	--	--
AUG 24...	5500	--	--	--	--	260	260	--	--	--	--
SEP 22...	8200	230	230	180	170	2200	360	<6	<6	<1.0	<1.0

ANALYSIS OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

INDIANA COUNTY STUDY

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY TOTAL (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)
WEST BRANCH SUSQUEHANNA RIVER BASIN												
01540649	CUSH CUSHION CREEK AT CHERRY TREE, PA.						SITE 5 (LAT 40 43 25N LONG 078 48 58W)					
OCT 19...	1215	2.0	335	7.1	8.0	110	28	10	5.4	--	34	--
MAY 31...	1230	3.6	285	6.9	18.5	120	28	11	5.3	1.3	34	82
AUG 17...	1100	0	--	--	--	--	--	--	--	--	--	--
01540660	SHRYOCK RUN NEAR ARCADIA, PA.						SITE 4 (LAT 40 46 12N LONG 078 49 43W)					
OCT 19...	1120	.18	110	6.9	7.5	31	8.4	2.5	--	--	28	--
MAY 31...	1130	.28	72	6.9	13.5	26	7.0	2.2	2.1	0.5	18	12
AUG 17...	1040	.03	205	7.5	17.5	93	28	5.6	3.0	0.8	90	53
01540670	ROCK RUN NEAR GLEN CAMPBELL, PA.						SITE 3 (LAT 40 48 01N LONG 078 48 28W)					
OCT 19...	1040	.66	80	7.1	6.0	20	4.9	2.0	1.7	--	14	--
MAY 31...	1045	1.1	58	7.4	14.0	20	5.1	1.9	1.4	0.7	12	12
AUG 17...	1010	.02	100	7.7	20.0	38	9.7	3.2	2.3	1.3	42	40
01540705	CUSH CREEK AT GLEN CAMPBELL, PA.						SITE 2 (LAT 40 48 51N LONG 078 49 28W)					
OCT 19...	1000	7.7	375	7.1	6.5	120	29	11	16	--	46	--
MAY 31...	1010	12	360	7.2	14.5	140	34	12	14	1.7	46	110
AUG 17...	0950	2.1	520	7.3	18.5	180	46	16	34	2.3	88	240
ALLEGHENY RIVER BASIN												
03033350	TRIBUTARY TO CANOE CR AT ROSSITER, PA.						SITE 1 (LAT 40 53 05N LONG 078 55 04W)					
OCT 19...	0900	.34	205	6.7	6.0	75	17	5.7	5.2	1.5	32	52
MAY 31...	0910	.63	205	6.7	15.0	75	21	7.7	5.2	1.1	26	50
AUG 17...	0910	.03	315	6.9	20.0	110	33	10	6.1	1.8	68	200
03034300	LITTLE MAHONING CR NR ROCHESTER MILLS, PA.						SITE 6 (LAT 40 47 48N LONG 078 55 41W)					
OCT 19...	1510	6.3	230	6.6	9.0	67	17	6.1	4.5	--	28	--
MAY 31...	1630	5.9	205	7.1	21.5	85	23	6.8	4.1	1.4	28	48
AUG 17...	1230	1.1	480	7.4	22.5	220	59	17	5.1	2.4	56	150
03034400	MUDLICK RUN NEAR GEORGEVILLE, PA.						SITE 7 (LAT 40 51 15N LONG 079 04 24W)					
OCT 19...	1630	1.7	175	7.1	11.5	44	11	3.9	6.8	--	34	--
MAY 31...	1740	2.9	128	7.2	24.0	39	10	3.3	5.7	1.3	24	19
AUG 17...	1320	.04	350	7.6	29.0	63	21	5.8	30	11	110	42
03034500	LITTLE MAHONING CREEK AT MCCORMICK, PA.						SITE 8 (LAT 40 50 10N LONG 079 06 37W)					
OCT 19...	1700	48	285	7.1	10.0	83	20	7.8	--	--	34	--
MAY 31...	1800	37	255	7.3	24.5	100	25	9.2	7.0	1.4	26	65
AUG 17...	1340	4.6	440	7.8	26.0	170	42	15	19	2.8	48	99

INDIANA COUNTY STUDY

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, TOTAL (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	RESIDUE AT 105 DEG. C, DISSOLVED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)
WEST BRANCH SUSQUEHANNA RIVER BASIN												
01540649 CUSH CUSHION CREEK AT CHERRY TREE, PA. SITE 5 (LAT 40 43 25N LONG 078 48 58W)												
OCT 19...	6.0	<0.1	--	228	0.34	<130	<130	<4	<4	<500	<500	0
MAY 31...	7.0	<0.1	6.3	192	0.65	200	<130	<4	<4	<500	<500	0
AUG 17...	--	--	--	--	--	--	--	--	--	--	--	--
01540660 SHRYOCK RUN NEAR ARCADIA, PA. SITE 4 (LAT 40 46 12N LONG 078 49 43W)												
OCT 19...	6.0	<0.1	--	96	0.04	<130	<130	<4	<4	<500	<500	0
MAY 31...	5.0	<0.1	7.3	88	0.20	200	<130	<4	<4	<500	<500	0
AUG 17...	4.0	<0.1	13	340	0.10	<130	<130	<4	<4	<500	<500	0
01540670 ROCK RUN NEAR GLEN CAMPBELL, PA. SITE 3 (LAT 40 48 01N LONG 078 48 28W)												
OCT 19...	4.0	<0.1	--	68	0.04	<130	<130	<4	<4	<500	<500	0
MAY 31...	3.0	<0.1	6.2	76	0.24	200	<130	<4	<4	<500	<500	0
AUG 17...	2.0	<0.1	5.9	212	0.28	600	200	<4	<4	<500	<500	0
01540705 CUSH CREEK AT GLEN CAMPBELL, PA. SITE 2 (LAT 40 48 51N LONG 078 49 28W)												
OCT 19...	10	0.1	--	258	0.14	<130	<130	<4	<4	<500	<500	0
MAY 31...	6.0	0.1	7.5	324	0.28	200	<130	<4	<4	<500	<500	0
AUG 17...	7.0	0.2	5.8	376	0.18	200	<130	<4	<4	<500	<500	0
ALLEGHENY RIVER BASIN												
03033350 TRIBUTARY TO CANOE CR AT ROSSITER, PA. SITE 1 (LAT 40 53 05N LONG 078 55 04W)												
OCT 19...	11	<0.1	7.4	--	0.10	<130	<130	<4	<4	<500	<500	0
MAY 31...	9.0	<0.1	7.4	116	0.36	400	200	<4	<4	<500	<500	0
AUG 17...	11	<0.1	4.6	252	0.24	200	<130	<4	<4	<500	<500	0
03034300 LITTLE MAHONING CR NR ROCHESTER MILLS, PA. SITE 6 (LAT 40 47 48N LONG 078 55 41W)												
OCT 19...	14	<0.1	--	162	0.18	<130	200	<4	<4	<500	<500	0
MAY 31...	10	<0.1	<4.3	272	0.36	200	<130	<4	<4	<500	<500	0
AUG 17...	12	0.1	<4.3	412	0.80	300	200	<4	--	<500	<500	0
03034400 MUDLICK RUN NEAR GEORGEVILLE, PA. SITE 7 (LAT 40 51 15N LONG 079 04 24W)												
OCT 19...	14	<0.1	--	100	1.4	<130	<130	<4	<4	<500	<500	0
MAY 31...	9.0	<0.1	6.4	120	1.2	200	<130	<4	<4	<500	<500	0
AUG 17...	31	0.2	<4.3	180	0.2	500	<130	<4	--	<500	<500	0
03034500 LITTLE MAHONING CREEK AT MCCORMICK, PA. SITE 8 (LAT 40 50 10N LONG 079 06 37W)												
OCT 19...	18	<0.1	--	182	0.66	<130	<130	<4	<4	<500	<500	0
MAY 31...	12	0.1	<4.3	168	0.59	300	<130	<4	<4	<500	<500	0
AUG 17...	34	0.2	<4.3	288	0.14	200	200	<4	<4	<500	<500	0

INDIANA COUNTY STUDY

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)
WEST BRANCH SUSQUEHANNA RIVER BASIN												
01540649 CUSH CUSHION CREEK AT CHERRY TREE, PA.							SITE 5 (LAT 40 43 25N LONG 078 48 58W)					
OCT 19...	0	<50	<50	<20	<20	<10	<10	<100	<100	<4	<4	50
MAY 31...	0	<50	<50	<20	<20	10	10	360	160	<4	<4	150
AUG 17...	--	--	--	--	--	--	--	--	--	--	--	--
01540660 SHRYOCK RUN NEAR ARCADIA, PA.							SITE 4 (LAT 40 46 12N LONG 078 49 43W)					
OCT 19...	0	<50	<50	<20	<20	<10	<10	690	350	<4	<4	60
MAY 31...	0	<50	<50	40	30	20	14	530	230	<4	<4	70
AUG 17...	0	<50	<50	30	30	10	13	290	130	<4	<4	200
01540670 ROCK RUN NEAR GLEN CAMPBELL, PA.							SITE 3 (LAT 40 48 01N LONG 078 48 28W)					
OCT 19...	0	<50	<50	<20	<20	<10	<10	260	<100	<4	<4	60
MAY 31...	1	<50	<50	30	30	10	18	380	220	<4	<4	50
AUG 17...	0	<50	<50	30	30	10	10	1300	340	<4	<4	110
01540705 CUSH CREEK AT GLEN CAMPBELL, PA.							SITE 2 (LAT 40 48 51N LONG 078 49 28W)					
OCT 19...	0	<50	<50	<20	<20	<10	<10	310	<100	<4	<4	290
MAY 31...	0	<50	<50	30	30	30	14	230	170	<4	<4	190
AUG 17...	0	<50	<50	30	30	20	23	420	<100	<4	<4	110
ALLEGHENY RIVER BASIN												
03033350 TRIBUTARY TO CANOE CR AT ROSSITER, PA.							SITE 1 (LAT 40 53 05N LONG 078 55 04W)					
OCT 19...	0	<50	<50	<20	<20	<10	<10	<100	<100	<4	<4	<50
MAY 31...	0	<50	<50	40	40	20	13	270	<100	<4	<4	50
AUG 17...	0	<50	<50	30	30	20	14	240	<100	<4	<4	90
03034000 LITTLE MAHONING CR NR ROCHESTER MILLS, PA.							SITE 6 (LAT 40 47 48N LONG 078 55 41W)					
OCT 19...	1	<50	<50	<20	<20	<10	11	180	100	<4	<4	70
MAY 31...	0	<50	<50	<20	<20	10	14	370	220	<4	<4	60
AUG 17...	0	<50	<50	<20	<20	10	11	390	<100	<4	<4	90
03034400 MUDLICK RUN NEAR GEORGEVILLE, PA.							SITE 7 (LAT 40 51 15N LONG 079 04 24W)					
OCT 19...	0	<50	<50	<20	<20	<10	<10	<100	<100	<4	<4	<50
MAY 31...	0	<50	<50	<20	<20	10	10	330	150	<4	<4	<50
AUG 17...	0	<50	<50	<20	<20	10	12	1200	170	<4	<4	170
03034500 LITTLE MAHONING CREEK AT MCCORMICK, PA.							SITE 8 (LAT 40 50 10N LONG 079 06 37W)					
OCT 19...	0	<50	<50	<20	<20	<10	<10	210	120	<4	<4	60
MAY 31...	0	<50	<50	<20	<20	10	10	310	150	<4	<4	90
AUG 17...	0	<50	<50	<20	<20	10	11	110	<100	<4	<4	90

INDIANA COUNTY STUDY

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	STRONTIUM, TOTAL RECOVERABLE (UG/L AS SR)	STRONTIUM, DISSOLVED (UG/L AS SR)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)
WEST BRANCH SUSQUEHANNA RIVER BASIN											
01540649 CUSH CUSHION CREEK AT CHERRY TREE, PA.							SITE 5 (LAT 40 43 25N LONG 078 48 58W)				
OCT 19...	50	--	--	<25	<25	--	--	140	140	<10	<10
MAY 31...	140	<1.0	<1.0	<25	<25	<15	<15	140	130	<10	<10
AUG 17...	--	--	--	--	--	--	--	--	--	--	--
01540660 SHRYOCK RUN NEAR ARCADIA, PA.							SITE 4 (LAT 40 46 12N LONG 078 49 43W)				
OCT 19...	60	--	--	<25	--	--	--	<100	<100	<10	--
MAY 31...	50	<1.0	<1.0	90	62	<15	<15	<100	<100	<10	<10
AUG 17...	200	<1.0	<1.0	40	42	<15	<15	150	150	20	20
01540670 ROCK RUN NEAR GLEN CAMPBELL, PA.							SITE 3 (LAT 40 48 01N LONG 078 48 28W)				
OCT 19...	50	--	--	<25	<25	--	--	<100	<100	<10	<10
MAY 31...	<50	<1.0	<1.0	100	65	<15	<15	<100	<100	<10	<10
AUG 17...	70	<1.0	<1.0	40	42	<15	<15	<100	<100	20	20
01540705 CUSH CREEK AT GLEN CAMPBELL, PA.							SITE 2 (LAT 40 48 51N LONG 078 49 28W)				
OCT 19...	270	--	--	<25	<25	--	--	300	300	<10	<10
MAY 31...	190	<1.0	<1.0	90	73	<15	<15	300	290	10	<10
AUG 17...	100	<1.0	<1.0	30	<25	<15	<15	550	550	20	20
ALLEGHENY RIVER BASIN											
03033350 TRIBUTARY TO CANOE CR AT ROSSITER, PA.							SITE 1 (LAT 40 53 05N LONG 078 55 04W)				
OCT 19...	<50	<1.0	<1.0	<25	<25	<15	<15	<100	<100	<10	<10
MAY 31...	<50	<1.0	<1.0	100	89	<15	<15	140	100	<10	<10
AUG 17...	80	<1.0	<1.0	<25	43	<15	<15	180	180	20	20
03034300 LITTLE MAHONING CR NR ROCHESTER MILLS, PA.							SITE 6 (LAT 40 47 48N LONG 078 55 41W)				
OCT 19...	60	--	--	<25	<25	--	--	100	100	<10	<10
MAY 31...	60	<1.0	<1.0	<25	<25	<15	<15	110	100	<10	<10
AUG 17...	80	<1.0	<1.0	<25	23	<15	<15	300	300	20	10
03034400 MUDLICK RUN NEAR GEORGEVILLE, PA.							SITE 7 (LAT 40 51 15N LONG 079 04 24W)				
OCT 19...	<50	<1.0	<1.0	<25	<25	<15	<15	100	<100	<10	<10
MAY 31...	<50	<1.0	<1.0	<25	<25	<15	<15	<100	<100	<10	<10
AUG 17...	120	<1.0	<1.0	30	<25	<15	<15	220	210	10	<10
03034500 LITTLE MAHONING CREEK AT MCCORMICK, PA.							SITE 8 (LAT 40 50 10N LONG 079 06 37W)				
OCT 19...	60	--	--	<25	--	--	--	140	130	<10	<10
MAY 31...	70	<1.0	<1.0	<25	<25	<15	<15	120	120	<10	<10
AUG 17...	70	<1.0	<1.0	30	34	<15	<15	300	300	20	20

INDIANA COUNTY STUDY

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY TOTAL (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)
ALLEGHENY RIVER BASIN--Continued												
03036995 CROOKED C ABOVE MCKEE RN AT CREEKSIDE, PA. SITE 10 (LAT 40 40 59N LONG 079 11 27W)												
OCT												
20...	0800	22	650	8.0	7.0	160	42	13	61	2.7	90	160
JUN												
01...	1140	25	695	7.6	20.0	180	49	14	63	2.3	94	170
AUG												
17...	1630	2.4	1000	8.2	26.0	250	67	20	180	3.4	150	310
03036997 MCKEE RUN AT ERNEST, PA. SITE 11 (LAT 40 40 26N LONG 079 09 20W)												
OCT												
19...	1715	2.3	280	8.5	10.5	87	23	7.2	14	--	62	38
JUN												
01...	1050	2.6	265	7.6	18.5	82	22	6.5	120	1.5	60	28
AUG												
17...	1545	.04	400	8.3	26.0	120	34	9.2	24	2.9	64	47
03037150 CURRY RUN AT SHELOCTA, PA. SITE 22 (LAT 40 39 15N LONG 079 16 53W)												
OCT												
20...	0850	1.2	230	8.2	8.0	62	16	5.3	8.9	--	52	22
JUN												
01...	1230	3.1	180	7.5	24.0	63	17	5.1	7.3	1.7	40	26
AUG												
17...	1730	0	--	--	--	--	--	--	--	--	--	--
KISKIMINETAS RIVER BASIN												
03041500 CONEMAUGH RIVER AT SEWARD, PA. SITE 31 (LAT 40 25 09N LONG 079 01 35W)												
OCT												
19...	1840	367	610	4.9	12.0	240	60	21	13	3.7	--	270
MAY												
31...	1815	1010	465	5.0	22.0	180	48	15	9.7	2.1	<2	180
AUG												
18...	0910	358	830	4.1	24.5	360	94	29	24	4.4	--	360
03041675 TOMS RUN NEAR BLAIRSVILLE, PA. SITE 29 (LAT 40 25 48N LONG 079 13 17W)												
OCT												
19...	1800	.77	210	7.0	11.5	69	18	6.1	--	--	28	--
MAY												
31...	1725	2.6	190	6.7	20.0	51	13	4.5	3.6	1.4	16	40
AUG												
17...	1300	<.01	235	7.8	26.0	88	23	7.4	6.8	2.1	46	62
03041900 BRUSH CREEK AT CLAGHORN, PA. SITE 30 (LAT 40 29 48N LONG 079 04 03W)												
OCT												
20...	0855	7.5	180	7.0	10.0	64	16	5.6	5.7	--	18	55
MAY												
31...	1935	13	160	7.0	20.0	48	12	4.4	3.9	1.3	10	39
AUG												
17...	1445	.57	400	7.6	25.0	140	36	11	14	2.0	30	150
03042000 BLACKLICK CREEK AT JOSEPHINE, PA. SITE 28 (LAT 40 28 24N LONG 079 11 01W)												
OCT												
19...	1500	96	820	4.8	14.0	200	55	14	61	2.5	--	390
MAY												
31...	1610	168	725	4.0	26.0	220	66	14	42	2.1	--	300
AUG												
18...	0810	76	1700	3.5	24.0	530	170	29	140	4.1	--	860
03042040 S BR TWO LICK C NR WANDIN JUNCTION, PA. SITE 14 (LAT 40 40 29N LONG 078 56 41W)												
OCT												
19...	1325	4.8	190	8.5	9.0	54	14	4.6	--	--	40	--
MAY												
31...	1330	6.4	175	7.4	21.0	54	14	4.4	9.1	1.2	34	26
AUG												
17...	1445	.11	240	7.8	26.5	76	21	6.0	12	2.6	76	31

INDIANA COUNTY STUDY

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, TOTAL (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	RESIDUE AT 105 DEG. C, DISSOLVED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)
ALLEGHENY RIVER BASIN--Continued												
03036995	CROOKED C ABOVE MCKEE RN AT CREEKSIDE, PA.						SITE 10 (LAT 40 40 59N LONG 079 11 27W)					
OCT 20...	66	0.2	6.8	404	0.60	200	200	<4	<4	<500	<500	0
JUN 01...	46	0.1	7.6	460	0.60	200	200	<4	<4	<500	<500	0
AUG 17...	120	0.3	<4.3	728	0.12	200	200	<4	<4	<500	<500	0
03036997	MCKEE RUN AT ERNEST, PA.						SITE 11 (LAT 40 40 26N LONG 079 09 20W)					
OCT 19...	26	0.1	--	186	0.26	<130	<130	<4	<4	<500	<500	0
JUN 01...	27	0.1	7.9	200	--	300	<130	<4	<4	<500	<500	0
AUG 17...	43	0.2	<4.3	208	0.26	200	<130	<4	<4	<500	<500	0
03037150	CURRY RUN AT SHELOCTA, PA.						SITE 22 (LAT 40 39 15N LONG 079 16 53W)					
OCT 20...	16	0.1	--	134	0.20	600	<130	<4	<4	<500	<500	0
JUN 01...	11	0.1	7.5	96	0.60	300	<130	<4	<4	<500	<500	0
AUG 17...	--	--	--	--	--	--	--	--	--	--	--	--
KISKIMINETAS RIVER BASIN												
03041500	CONEMAUGH RIVER AT SEWARD, PA.						SITE 31 (LAT 40 25 09N LONG 079 01 35W)					
OCT 19...	14	0.3	12	436	0.58	2300	1800	<4	<4	<500	<500	0
MAY 31...	10	0.2	11	372	0.72	1800	900	<4	<4	<500	<500	0
AUG 18...	19	0.3	12	760	0.54	2400	2300	--	--	<500	<500	0
03041675	TOMS RUN NEAR BLAIRSVILLE, PA.						SITE 29 (LAT 40 25 48N LONG 079 13 17W)					
OCT 19...	12	0.1	--	142	0.52	<130	<130	<4	<4	<500	<500	0
MAY 31...	8.0	0.1	8.1	144	0.74	200	200	<4	<4	<500	<500	0
AUG 17...	14	0.1	4.7	192	0.22	<130	<130	<4	<4	<500	<500	0
03041900	BRUSH CREEK AT CLAGHORN, PA.						SITE 30 (LAT 40 29 48N LONG 079 04 03W)					
OCT 20...	11	0.1	--	44	0.64	<130	<130	<4	<4	<500	<500	0
MAY 31...	8.0	0.1	7.0	112	0.96	200	200	<4	<4	<500	<500	0
AUG 17...	10	0.2	<4.3	320	0.22	200	<130	<4	<4	<500	<500	0
03042000	BLACKLICK CREEK AT JOSEPHINE, PA.						SITE 28 (LAT 40 28 24N LONG 079 11 01W)					
OCT 19...	11	0.3	12	596	0.50	3400	2000	<4	<4	<500	<500	0
MAY 31...	14	0.1	12	480	0.56	4000	3800	<4	<4	<500	<500	0
AUG 18...	12	0.2	12	1200	0.40	2700	15000	--	--	<500	<500	0
03042040	S BR TWO LICK C NR WANDIN JUNCTION, PA.						SITE 14 (LAT 40 40 29N LONG 078 56 41W)					
OCT 19...	10	0.1	--	116	0.22	<130	<130	<4	<4	<500	<500	0
MAY 31...	8.0	0.1	5.2	100	0.82	300	<130	<4	<4	<500	<500	0
AUG 17...	12	0.1	<4.3	128	0.14	600	500	<4	<4	<500	<500	0

INDIANA COUNTY STUDY

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)
ALLEGHENY RIVER BASIN--Continued												
03036995 CROOKED C ABOVE MCKEE RN AT CREEKSIDE, PA. SITE 10 (LAT 40 40 59N LONG 079 11 27W)												
OCT 20...	0	<50	<50	<20	<20	<10	<10	920	<100	<4	<4	190
JUN 01...	0	<50	<50	<20	<20	<10	<10	550	140	<4	<4	320
AUG 17...	0	<50	<50	<20	<20	10	<10	340	<100	<4	<4	110
03036997 MCKEE RUN AT ERNEST, PA. SITE 11 (LAT 40 40 26N LONG 079 09 20W)												
OCT 19...	0	<50	<50	<20	--	<10	<10	380	260	<4	<4	50
JUN 01...	0	<50	<50	<20	<20	<10	<10	590	200	<4	<4	220
AUG 17...	0	<50	<50	<20	<20	10	12	230	<100	<4	<4	80
03037150 CURRY RUN AT SHELOCTA, PA. SITE 22 (LAT 40 39 15N LONG 079 16 53W)												
OCT 20...	0	<50	<50	<20	<20	<10	<10	670	150	<4	<4	80
JUN 01...	0	<50	<50	<20	<20	160	13	500	200	<4	<4	80
AUG 17...	--	--	--	--	--	--	--	--	--	--	--	--
KISKIMINETAS RIVER BASIN												
03041500 CONEMAUGH RIVER AT SEWARD, PA. SITE 31 (LAT 40 25 09N LONG 079 01 35W)												
OCT 19...	1	<50	<50	50	40	<10	<10	1800	1000	10	9	1700
MAY 31...	2	<50	<50	60	60	20	73	3000	1800	10	4	1100
AUG 18...	0	<50	<50	90	90	40	35	1200	140	10	6	1900
03041675 TOMS RUN NEAR BLAIRSVILLE, PA. SITE 29 (LAT 40 25 48N LONG 079 13 17W)												
OCT 19...	0	<50	<50	<20	<20	<10	<10	130	<100	<4	<4	50
MAY 31...	1	<50	<50	<20	40	10	17	190	190	<4	<4	<50
AUG 17...	0	<50	<50	<20	<20	<10	<10	<100	<100	<4	<4	<50
03041900 BRUSH CREEK AT CLAGHORN, PA. SITE 30 (LAT 40 29 48N LONG 079 04 03W)												
OCT 20...	0	<50	<50	<20	<20	<10	<10	180	180	<4	<4	<50
MAY 31...	0	<50	<10	30	40	<10	35	280	<100	<4	<4	60
AUG 17...	0	<50	<50	<20	<20	<10	<10	260	<100	<4	<4	130
03042000 BLACKLICK CREEK AT JOSEPHINE, PA. SITE 28 (LAT 40 28 24N LONG 079 11 01W)												
OCT 19...	0	<50	<50	30	30	<10	<10	9600	5300	<4	<4	1400
MAY 31...	3	<50	<50	40	40	30	27	5400	2700	<4	<4	1100
AUG 18...	1	<50	<50	40	40	20	21	770	620	10	4	1600
03042040 S BR TWO LICK C NR WANDIN JUNCTION, PA. SITE 14 (LAT 40 40 29N LONG 078 56 41W)												
OCT 19...	0	<50	<50	<20	<20	10	12	120	<100	<4	<4	<50
MAY 31...	0	<50	<50	<20	<20	10	11	280	150	<4	<4	<50
AUG 17...	0	<50	<50	<20	<20	10	14	240	<100	<4	<4	60

INDIANA COUNTY STUDY

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	STRONTIUM, TOTAL RECOVERABLE (UG/L AS SR)	STRONTIUM, DISSOLVED (UG/L AS SR)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)
ALLEGHENY RIVER BASIN--Continued											
03036995 CROOKED C ABOVE MCKEE RN AT CREEKSIDE, PA.							SITE 10 (LAT 40 40 59N LONG 079 11 27W)				
OCT 20...	180	<1.0	<1.0	<25	<25	<15	<15	600	600	<10	<10
JUN 01...	310	<1.0	<1.0	<25	<25	<15	<15	650	650	<10	<10
AUG 17...	90	<1.0	<1.0	40	40	<15	<15	1200	1200	20	10
03036997 MCKEE RUN AT ERNEST, PA.							SITE 11 (LAT 40 40 26N LONG 079 09 20W)				
OCT 19...	50	--	--	<25	<25	--	--	150	150	10	20
JUN 01...	200	<1.0	<1.0	<25	<25	<15	<15	170	170	10	10
AUG 17...	70	<1.0	<1.0	31	30	<15	<15	200	200	10	20
03037150 CURRY RUN AT SHELOCTA, PA.							SITE 22 (LAT 40 39 15N LONG 079 16 53W)				
OCT 20...	70	--	--	30	30	--	--	160	160	--	--
JUN 01...	70	<1.0	<1.0	32	<25	<15	<15	120	120	<10	<10
AUG 17...	--	--	--	--	--	--	--	--	--	--	--
KISKIMINETAS RIVER BASIN											
03041500 CONEMAUGH RIVER AT SEWARD, PA.							SITE 31 (LAT 40 25 09N LONG 079 01 35W)				
OCT 19...	1700	<1.0	<1.0	77	70	<15	<15	290	290	200	200
MAY 31...	1100	<1.0	<1.0	130	120	<15	<15	160	150	160	170
AUG 18...	1900	<1.0	<1.0	160	160	<15	<15	350	350	450	450
03041675 TOMS RUN NEAR BLAIRSVILLE, PA.							SITE 29 (LAT 40 25 48N LONG 079 13 17W)				
OCT 19...	<50	--	--	--	--	--	--	--	--	--	--
MAY 31...	<50	<1.0	<1.0	49	60	<15	<15	<100	<100	<10	20
AUG 17...	<50	<1.0	<1.0	29	30	<15	<15	110	110	<10	<10
03041900 BRUSH CREEK AT CLAGHORN, PA.							SITE 30 (LAT 40 29 48N LONG 079 04 03W)				
OCT 20...	<50	--	--	<25	<25	--	--	130	130	20	20
MAY 31...	50	<1.0	<1.0	73	80	<15	<15	100	100	10	<10
AUG 17...	110	<1.0	<1.0	<25	<25	<15	<15	310	310	<10	<10
03042000 BLACKLICK CREEK AT JOSEPHINE, PA.							SITE 28 (LAT 40 28 24N LONG 079 11 01W)				
OCT 19...	1400	<1.0	<1.0	39	40	--	<15	420	420	100	100
MAY 31...	1100	<1.0	<1.0	120	120	<15	<15	330	330	100	170
AUG 18...	1600	<1.0	<1.0	89	80	--	--	740	740	130	130
03042040 S BR TWO LICK C NR WANDIN JUNCTION, PA.							SITE 14 (LAT 40 40 29N LONG 078 56 41W)				
OCT 19...	<50	--	--	--	--	--	--	--	--	--	--
MAY 31...	<50	<1.0	<1.0	26	20	<15	<15	140	140	<10	<10
AUG 17...	50	<1.0	<1.0	39	40	<15	<15	250	250	20	10

ANALYSIS OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

INDIANA COUNTY STUDY

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY TOTAL (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)
KISKIMINETAS RIVER BASIN--Continued												
03042045 TRIB TO N BR TWO LICK C AT COMMODORE, PA.							SITE 13 (LAT 40 42 44N LONG 078 56 25W)					
OCT 19...	1320	.04	113	7.1	9.5	35	9.3	3.2	--	--	26	--
MAY 31...	1400	.01	75	7.0	22.5	29	7.6	2.6	0.9	1.0	14	18
AUG 17...	1135	0	--	--	--	--	--	--	--	--	--	--
03042055 TRIB. TO DIXON RUN AT DIXONVILLE, PA.							SITE 12 (LAT 40 42 45N LONG 079 00 51W)					
OCT 19...	1455	.02	150	8.0	13.0	44	11	4.4	--	--	34	--
JUN 01...	0940	.02	138	7.6	15.0	58	14	5.5	4.0	1.0	36	22
AUG 17...	1335	.02	135	7.2	24.0	47	11	4.8	6.1	1.2	34	15
03042061 DIXON RUN AT CLYMER, PA.							SITE 15 (LAT 40 40 13N LONG 079 00 54W)					
OCT 19...	1425	4.6	530	8.2	10.0	260	70	21	11	2.2	50	170
JUN 01...	0915	5.3	480	7.2	16.0	220	58	19	10	1.9	50	150
AUG 17...	1310	.82	620	7.8	25.0	300	77	26	16	2.9	60	370
03042075 TWO LICK CREEK NEAR CLYMER, PA.							SITE 16 (LAT 40 38 44N LONG 079 02 12W)					
OCT 19...	1600	19	440	7.8	10.0	160	41	14	12	2.2	12	180
JUN 01...	0830	23	420	7.2	17.0	170	46	14	9.8	1.7	10	160
AUG 17...	1225	5.1	620	6.3	25.5	300	78	25	18	3.0	2	300
03042120 RAMSEY RUN NEAR INDIANA, PA.							SITE 21 (LAT 40 35 51N LONG 079 06 35W)					
OCT 20...	0800	.79	335	6.6	11.0	97	25	8.6	16	--	62	40
JUN 01...	0850	.99	315	7.6	16.0	130	33	11	19	2.0	56	33
AUG 17...	1810	.14	430	7.3	23.5	120	33	9.9	20	3.0	78	69
03042185 YELLOW CREEK NEAR PIKES PEAK, PA.							SITE 19 (LAT 40 34 58N LONG 079 00 10W)					
OCT 19...	0955	11	320	6.8	8.0	110	29	9.4	11	2.2	36	89
JUN 01...	1020	11	320	7.6	16.0	120	32	9.5	11	1.7	36	83
AUG 17...	0910	2.3	450	7.5	20.5	190	52	15	18	2.5	60	210
03042190 LAUREL RUN NEAR NOLO, PA.							SITE 18 (LAT 40 34 43N LONG 078 59 59W)					
OCT 19...	1100	1.9	120	8.8	7.0	35	8.5	3.2	5.6	--	14	20
JUN 01...	1105	3.2	120	7.6	16.0	34	8.5	3.1	6.4	1.0	10	16
AUG 17...	0950	.06	170	7.5	19.5	64	17	5.2	8.0	1.4	40	23
03042280 YELLOW CREEK NEAR HOMER CITY, PA.							SITE 20 (LAT 40 34 18N LONG 079 06 13W)					
OCT 19...	0900	23	200	6.9	12.0	59	15	5.1	6.1	1.6	20	60
JUN 01...	1500	35	170	7.4	25.0	55	15	4.5	5.9	1.2	16	35
AUG 17...	1810	9.5	200	7.4	0.0	69	18	5.6	6.8	1.3	24	55

INDIANA COUNTY STUDY

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, TOTAL (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	RESIDUE AT 105 DEG. C, DISSOLVED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)
KISKIMINETAS RIVER BASIN--Continued												
03042045 TRIB TO N BR TWO LICK C AT COMMODORE, PA. SITE 13 (LAT 40 42 44N LONG 078 56 25W)												
OCT 19...	2.0	<0.1	--	--	--	200	<130	<4	<4	<500	<500	0
MAY 31...	2.0	0.1	5.3	52	0.42	400	<130	<4	<4	<500	<500	0
AUG 17...	--	--	--	--	--	--	--	--	--	--	--	--
03042055 TRIB TO DIXON RUN AT DIXONVILLE, PA. SITE 12 (LAT 40 42 45N LONG 079 00 51W)												
OCT 19...	13	<0.1	--	100	0.20	200	<130	--	<4	<500	<500	0
JUN 01...	6.0	<0.1	5.0	40	0.80	900	<130	<4	<4	<500	<500	0
AUG 17...	10	<0.1	7.1	68	0.08	300	<130	<4	<4	<500	<500	0
03042061 DIXON RUN AT CLYMER, PA. SITE 15 (LAT 40 40 13N LONG 079 00 54W)												
OCT 19...	25	0.1	7.1	330	0.40	200	<130	<4	<4	<500	<500	0
JUN 01...	15	0.1	7.3	412	0.67	400	300	<4	<4	<500	<500	0
AUG 17...	36	0.2	<4.3	760	0.12	300	300	--	<4	<500	<500	0
03042075 TWO LICK CREEK NEAR CLYMER, PA. SITE 16 (LAT 40 38 44N LONG 079 02 12W)												
OCT 19...	16	0.1	10	348	0.48	1000	<130	<4	<4	<500	<500	0
JUN 01...	11	0.1	10	344	0.48	900	200	<4	<4	<500	<500	0
AUG 17...	22	0.2	12	524	0.24	500	300	<4	<4	<500	<500	0
03042120 RAMSEY RUN NEAR INDIANA, PA. SITE 21 (LAT 40 35 51N LONG 079 06 35W)												
OCT 20...	36	<0.1	--	220	0.32	200	<130	<4	<4	<500	<500	0
JUN 01...	34	<0.1	6.2	212	0.78	<130	<130	<4	<4	<500	<500	0
AUG 17...	58	0.2	<4.3	292	0.48	200	<130	<4	<4	<500	<500	0
03042185 YELLOW CREEK NEAR PIKES PEAK, PA. SITE 19 (LAT 40 34 58N LONG 079 00 10W)												
OCT 19...	22	<0.1	20	144	0.50	<130	<130	<4	<4	<500	<500	0
JUN 01...	16	<0.1	6.9	--	0.53	<130	<130	<4	<4	<500	<500	0
AUG 17...	26	0.2	4.3	336	0.34	<130	<130	<4	<4	<500	<500	0
03042190 LAUREL RUN NEAR NOLO, PA. SITE 18 (LAT 40 34 43N LONG 078 59 59W)												
OCT 19...	17	<0.1	--	84	0.72	<130	<130	<4	<4	<500	<500	0
JUN 01...	15	<0.1	7.4	--	0.74	<130	<130	<4	<4	<500	<500	0
AUG 17...	19	0.1	6.1	104	0.34	200	200	<4	<4	<500	<500	0
03042280 YELLOW CREEK NEAR HOMER CITY, PA. SITE 20 (LAT 40 34 18N LONG 079 06 13W)												
OCT 19...	13	<0.1	<4.3	102	0.48	<130	<130	<4	<4	<500	<500	0
JUN 01...	10	<0.1	4.7	100	0.57	200	<130	<4	<4	<500	<500	0
AUG 17...	12	0.1	<4.3	112	0.34	200	200	<4	<4	<500	<500	0

ANALYSIS OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

INDIANA COUNTY STUDY

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)
KISKIMINETAS RIVER BASIN--Continued												
03042045 TRIB TO N BR TWO LICK C AT COMMODORE, PA. SITE 13 (LAT 40 42 44N LONG 078 56 25W)												
OCT 19...	0	<50	<50	<20	<20	<10	<10	300	<100	<4	<4	130
MAY 31...	0	<50	<50	<20	<20	<10	11	420	140	<4	<4	<50
AUG 17...	--	--	--	--	--	--	--	--	--	--	--	--
03042055 TRIB. TO DIXON RUN AT DIXONVILLE, PA. SITE 12 (LAT 40 42 45N LONG 079 00 51W)												
OCT 19...	0	<50	<50	<20	<20	<10	<10	210	<100	<4	<4	90
JUN 01...	0	<50	<50	<20	<20	<10	<10	1300	130	<4	<4	240
AUG 17...	0	<50	<50	<20	<20	14	14	1300	190	<4	<4	710
03042061 DIXON RUN AT CLYMER, PA. SITE 15 (LAT 40 40 13N LONG 079 00 54W)												
OCT 19...	0	<50	<50	<20	<20	<10	<10	730	160	<4	<4	620
JUN 01...	0	<50	<50	<20	<20	10	12	400	120	<4	<4	500
AUG 17...	0	<50	<50	30	30	20	19	120	<100	<4	<4	110
03042075 TWO LICK CREEK NEAR CLYMER, PA. SITE 16 (LAT 40 38 44N LONG 079 02 12W)												
OCT 19...	0	<50	<50	<20	<20	<10	<10	1800	960	<4	<4	730
JUN 01...	0	<50	<50	30	<20	<10	<10	1900	1100	<4	<4	540
AUG 17...	0	<50	<50	40	40	20	19	240	180	<4	<4	1100
03042120 RAMSEY RUN NEAR INDIANA, PA. SITE 21 (LAT 40 35 51N LONG 079 06 35W)												
OCT 20...	0	<50	<50	<20	<20	<10	<10	130	<100	<4	<4	<50
JUN 01...	0	<50	<50	<20	<20	10	<10	290	160	<4	<4	50
AUG 17...	1	<50	<50	30	30	50	50	110	<100	5	<4	<50
03042185 YELLOW CREEK NEAR PIKES PEAK, PA. SITE 19 (LAT 40 34 58N LONG 079 00 10W)												
OCT 19...	0	<50	<50	<20	<20	<10	<10	140	110	<4	<4	90
JUN 01...	3	<50	<50	<20	<20	<10	<10	210	140	<4	<4	50
AUG 17...	0	<50	<50	20	20	10	13	120	<100	<4	<4	<50
03042190 LAUREL RUN NEAR NOLO, PA. SITE 18 (LAT 40 34 43N LONG 078 59 59W)												
OCT 19...	0	<50	<50	<20	<20	<10	<10	<100	<100	<4	<4	<50
JUN 01...	0	<50	<50	<20	<20	<10	28	190	130	<4	<4	<50
AUG 17...	0	<50	<50	<20	<20	20	21	<100	<100	<4	<4	<50
03042280 YELLOW CREEK NEAR HOMER CITY, PA. SITE 20 (LAT 40 34 18N LONG 079 06 13W)												
OCT 19...	0	<50	<50	<20	<20	<10	<10	<100	<100	<4	<4	<50
JUN 01...	0	<50	<50	<20	<20	10	13	270	160	<4	<4	120
AUG 17...	0	<50	<50	<20	<20	<10	<10	100	<100	<4	<4	<50

INDIANA COUNTY STUDY

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	STRONTIUM, TOTAL RECOVERABLE (UG/L AS SR)	STRONTIUM, DISSOLVED (UG/L AS SR)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)
KISKIMINETAS RIVER BASIN--Continued											
03042045 TRIB TO N BR TWO LICK C AT COMMODORE, PA.							SITE 13 (LAT 40 42 44N LONG 078 56 25W)				
OCT 19...	120	--	--	--	--	--	--	--	--	--	--
MAY 31...	<50	<1.0	<1.0	30	33	<15	<15	<100	<100	<10	10
AUG 17...	--	--	--	--	--	--	--	--	--	--	--
03042055 TRIB. TO DIXON RUN AT DIXONVILLE, PA.							SITE 12 (LAT 40 42 45N LONG 079 00 51W)				
OCT 19...	60	--	--	--	--	--	--	--	--	--	--
JUN 01...	80	<1.0	<1.0	<25	<25	<15	<15	<100	<100	<10	<10
AUG 17...	450	<1.0	<1.0	40	<25	<15	<15	<100	<100	20	20
03042061 DIXON RUN AT CLYMER, PA.							SITE 15 (LAT 40 40 13N LONG 079 00 54W)				
OCT 19...	620	<1.0	<1.0	<25	<25	<15	<15	560	560	10	10
JUN 01...	500	<1.0	<1.0	30	38	<15	<15	460	460	20	20
AUG 17...	110	<1.0	<1.0	100	63	<15	<15	950	900	20	20
03042075 TWO LICK CREEK NEAR CLYMER, PA.							SITE 16 (LAT 40 38 44N LONG 079 02 12W)				
OCT 19...	720	<1.0	<1.0	<25	<25	<15	<15	500	480	40	40
JUN 01...	540	<1.0	<1.0	60	49	<15	<15	420	420	40	40
AUG 17...	1100	<1.0	<1.0	90	86	<15	<15	910	830	90	80
03042120 RAMSEY RUN NEAR INDIANA, PA.							SITE 21 (LAT 40 35 51N LONG 079 06 35W)				
OCT 20...	<50	--	--	<25	<25	--	--	150	150	<10	<10
JUN 01...	<50	<1.0	<1.0	30	<25	<15	<15	140	140	10	<10
AUG 17...	<50	<1.0	<1.0	80	75	<15	<15	220	220	30	30
03042185 YELLOW CREEK NEAR PIKES PEAK, PA.							SITE 19 (LAT 40 34 58N LONG 079 00 10W)				
OCT 19...	90	<1.0	<1.0	<25	<25	<15	<15	580	570	10	10
JUN 01...	50	<1.0	<1.0	40	37	<15	<15	460	450	<10	20
AUG 17...	<50	<1.0	<1.0	50	54	<15	<15	850	830	20	20
03042190 LAUREL RUN NEAR NOLO, PA.							SITE 18 (LAT 40 34 43N LONG 078 59 59W)				
OCT 19...	<50	--	--	<25	<25	--	--	190	190	<10	<10
JUN 01...	<50	<1.0	<1.0	40	<25	<15	<15	160	160	<10	<10
AUG 17...	<50	<1.0	<1.0	50	48	<15	<15	270	270	20	20
03042280 YELLOW CREEK NEAR HOMER CITY, PA.							SITE 20 (LAT 40 34 18N LONG 079 06 13W)				
OCT 19...	<50	<1.0	<1.0	<25	<25	<15	<15	230	230	<10	<10
JUN 01...	100	<1.0	<1.0	30	30	<15	<15	140	140	10	20
AUG 17...	<50	<1.0	<1.0	20	20	<15	<15	220	220	<10	<10

INDIANA COUNTY STUDY

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY TOTAL (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)
KISKIMINETAS RIVER BASIN--Continued												
03042500	TWO LICK CREEK AT GRACETON, PA.						SITE 27 (LAT 40 31 02N LONG 079 10 19W)					
OCT 19...	1415	69	510	4.9	12.5	140	36	12	--	--	--	--
MAY 31...	1430	122	460	4.3	25.0	130	33	11	13	2.0	--	150
AUG 18...	0730	102	420	5.7	22.5	140	42	8.8	19	3.0	6	140
03043990	AULTMANS RUN NEAR LEWISVILLE, PA.						SITE 25 (LAT 40 30 02N LONG 079 17 39W)					
OCT 19...	1230	4.0	1100	6.5	8.0	340	88	30	46	3.5	8	460
MAY 31...	1200	8.3	880	5.0	17.0	350	91	29	25	2.5	2	360
AUG 17...	1200	.27	1800	7.0	22.5	620	170	49	98	3.9	18	630
03044000	CONEMAUGH RIVER AT TUNNELTON, PA.						SITE 24 (LAT 40 27 16N LONG 079 23 28W)					
OCT 19...	1010	625	620	5.0	12.0	220	62	16	56	3.3	2	290
MAY 31...	1100	1500	440	5.0	22.0	163	43	13	14	2.0	<2	170
AUG 18...	1030	260	1100	4.2	27.5	410	120	28	51	5.4	--	500
03047480	BLACKLEGS CREEK AT CLARKSBURG, PA.						SITE 23 (LAT 40 32 14N LONG 079 22 33W)					
OCT 19...	0910	6.8	850	7.6	7.0	340	81	33	52	2.7	94	400
MAY 31...	0940	14	740	7.1	16.0	290	73	26	53	2.3	96	290
AUG 17...	0920	2.4	1200	7.7	0.0	190	0.0	46	75	3.2	120	540

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, TOTAL (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	RESIDUE AT 105 DEG. C, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)
03042500	TWO LICK CREEK AT GRACETON, PA.						SITE 27 (LAT 40 31 02N LONG 079 10 19W)					
OCT 19...	20	0.2	--	364	0.80	3300	2500	<4	<4	<500	<500	0
MAY 31...	16	0.1	10	316	0.80	3100	2800	<4	<4	<500	<500	0
AUG 18...	27	0.2	5.6	380	1.2	300	200	<4	<4	<500	<500	0
03043990	AULTMANS RUN NEAR LEWISVILLE, PA.						SITE 25 (LAT 40 30 02N LONG 079 17 39W)					
OCT 19...	78	0.2	14	704	0.45	1100	300	<4	<4	<500	<500	0
MAY 31...	32	0.2	15	664	0.51	4000	2700	<4	<4	<500	<500	0
AUG 17...	00	0.1	10	1340	0.26	300	200	--	--	<500	<500	0
03044000	CONEMAUGH RIVER AT TUNNELTON, PA.						SITE 24 (LAT 40 27 16N LONG 079 23 28W)					
OCT 19...	15	0.3	11	374	0.73	1100	1100	<4	<4	<500	<500	0
MAY 31...	11	0.2	10	344	0.77	700	600	<4	<4	<500	<500	0
AUG 18...	27	0.2	13	784	1.0	2300	3100	--	--	<500	<500	0
03047480	BLACKLEGS CREEK AT CLARKSBURG, PA.						SITE 23 (LAT 40 32 14N LONG 079 22 33W)					
OCT 19...	11	0.3	12	592	0.24	400	<130	<4	<4	<500	<500	0
MAY 31...	10	0.2	11	580	0.59	900	200	<4	<4	<500	<500	0
AUG 17...	15	0.3	8.2	896	0.42	<130	<130	--	--	<500	<500	0

INDIANA COUNTY STUDY

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)
KISKIMINETAS RIVER BASIN--Continued												
03042500 TWO LICK CREEK AT GRACETON, PA.						SITE 27 (LAT 40 31 02N LONG 079 10 19W)						
OCT 19...	0	<50	<50	<20	<20	<10	<10	14000	11000	<4	<4	840
MAY 31...	1	<50	<50	30	30	<10	23	7000	4400	<4	<4	750
AUG 18...	1	<50	<50	30	<20	20	11	2300	2100	<4	<4	880
03043990 AULTMANS RUN NEAR LEWISVILLE, PA.						SITE 25 (LAT 40 30 02N LONG 079 17 39W)						
OCT 19...	0	<50	<50	40	50	10	<10	1700	1200	<4	<4	4400
MAY 31...	1	<50	<50	80	80	30	18	2200	1600	<4	<4	4000
AUG 17...	0	<50	<50	80	60	20	13	340	170	<4	<4	5300
03044000 CONEMAUGH RIVER AT TUNNELTON, PA.						SITE 24 (LAT 40 27 16N LONG 079 23 28W)						
OCT 19...	1	<50	<50	40	50	<10	<10	610	390	<4	<4	1500
MAY 31...	1	<50	<50	<20	50	10	14	1080	910	<4	<4	1050
AUG 18...	1	<50	<50	80	70	20	24	200	180	5	5	2100
03047480 BLACKLEGS CREEK AT CLARKSBURG, PA.						SITE 23 (LAT 40 32 14N LONG 079 22 33W)						
OCT 19...	0	<50	<50	<20	30	<10	<10	450	120	<4	<4	2500
MAY 31...	0	<50	<50	50	30	10	<10	470	140	<4	<4	1500
AUG 17...	0	<50	<50	50	30	20	15	160	130	<4	<4	1600

DATE	MANGA-NESE DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	STRON-TIUM, TOTAL RECOV-ERABLE (UG/L AS SR)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
03042500 TWO LICK CREEK AT GRACETON, PA.						SITE 27 (LAT 40 31 02N LONG 079 10 19W)					
OCT 19...	840	--	--	--	--	--	--	--	--	--	--
MAY 31...	720	<1.0	<1.0	80	89	<15	<15	230	230	90	90
AUG 18...	870	<1.0	<1.0	60	45	<15	<15	220	220	60	60
03043990 AULTMANS RUN NEAR LEWISVILLE, PA.						SITE 25 (LAT 40 30 02N LONG 079 17 39W)					
OCT 19...	4400	<1.0	<1.0	70	49	<15	<15	630	630	160	110
MAY 31...	3900	<1.0	<1.0	100	70	<15	<15	500	490	150	130
AUG 17...	5200	<1.0	<1.0	110	82	<15	15	1300	1300	60	60
03044000 CONEMAUGH RIVER AT TUNNELTON, PA.						SITE 24 (LAT 40 27 16N LONG 079 23 28W)					
OCT 19...	1500	<1.0	<1.0	100	56	<15	<15	320	310	140	40
MAY 31...	1000	<1.0	<1.0	80	83	<15	<15	160	160	140	140
AUG 18...	2000	<1.0	<1.0	120	120	<15	<15	530	530	260	250
03047480 BLACKLEGS CREEK AT CLARKSBURG, PA.						SITE 23 (LAT 40 32 14N LONG 079 22 33W)					
OCT 19...	2500	<1.0	<1.0	40	28	<15	<15	820	750	60	50
MAY 31...	1400	<1.0	<1.0	50	<25	<15	<15	600	590	20	20
AUG 17...	1600	<1.0	<1.0	80	57	<15	<15	1100	1100	20	<10

INDIANA COUNTY STUDY

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY TOTAL (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)
KISKIMINETAS RIVER BASIN--Continued												
403316079113101	MINE OUTFLOW NEAR HOMER CITY, PA.							SITE 32 (LAT 40 33 16N LONG 079 11 31W)				
OCT 19...	1005	.09	3500	6.4	11.5	1400	380	83	830	6.6	210	2400
MAY 31...	1425	.08	3600	6.0	13.0	1500	390	78	540	7.3	70	2400
AUG 17...	1615	.05	4600	6.1	12.5	1200	370	75	490	6.0	86	2500

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, TOTAL (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	RESIDUE AT 105 DEG. C, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)
OCT 19...	16	2.2	24	3340	0.09	<200	<200	<10	<40	<500	<500	0
MAY 31...	16	.2	22	3340	0.04	200	200	<20	<20	<500	<500	0
AUG 17...	16	<0.1	21	2990	0.04	200	200	--	--	<500	<500	0

DATE	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)
OCT 19...	0	<50	<50	<20	<20	<10	<10	180,000	180,000	--	--	2100
MAY 31...	0	<50	<50	<20	<20	<10	<10	160,000	160,000	0	<4	1900
AUG 17...	0	<50	<50	<20	<20	<10	<10	170,000	160,000	0	<4	1600

DATE	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	STRON-TIUM, TOTAL RECOV-ERABLE (UG/L AS SR)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT 19...	2100	<1.0	<1.0	--	<25	--	--	3800	3800	60	40
MAY 31...	1900	<1.0	<1.0	60	41	--	--	3600	3700	<10	<10
AUG 17...	1600	<1.0	<1.0	70	68	--	<15	3600	3800	50	30

ALLEGHENY COUNTY

403734080063001. Local number, AG 700.

LOCATION.--Lat 40°37'34", long 80°06'30", Hydrologic Unit 05030101, at State Game Land Number 203, Bradford Woods.
Owner: U.S. Geological Survey.
AQUIFER.- Sandstone and shale of Glenshaw Formation of Late Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 6 in, depth 100 ft, cased to 24 ft, open hole.
INSTRUMENTATION.--Satellite telemeter -- 60-minute transmission.
DATUM.--Elevation of land-surface datum is 1,035 ft, from topographic map. Measuring point: Top of casing, 3.45 ft above land-surface datum.
REMARKS.--Missing record Oct. 1-26, Nov. 12, Dec. 15-22, Jan. 4, 5, and Mar. 10.
PERIOD OF RECORD.--November 1967 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 4.86 ft below land-surface datum, May 30, 1983; lowest, 8.94 ft below land-surface datum, Nov. 14, 1968.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	7.49	6.76	6.81	6.27	5.88	5.28	5.83	4.97	6.74	7.34	7.81
2	---	7.40	7.02	6.88	6.30	5.78	5.25	5.87	5.00	6.79	7.38	7.78
3	---	7.28	7.02	6.78	6.30	5.76	5.13	5.84	5.14	6.82	7.38	7.64
4	---	7.12	6.96	---	5.93	5.81	5.05	5.77	5.25	6.96	7.36	7.40
5	---	7.21	7.08	---	5.92	5.94	5.11	5.74	5.26	7.06	7.28	7.49
6	---	7.27	7.21	6.90	5.92	5.80	4.97	5.77	5.28	7.05	7.24	7.62
7	---	7.22	7.21	6.93	5.90	5.78	4.94	5.82	5.26	7.02	7.25	7.70
8	---	7.20	7.10	6.59	5.69	5.78	5.11	5.81	5.34	6.99	7.30	7.59
9	---	7.27	6.89	6.65	5.64	5.48	5.15	5.67	5.60	6.91	7.32	7.60
10	---	7.27	6.78	6.76	5.71	---	5.11	5.62	5.74	6.91	7.37	7.69
11	---	7.24	6.63	6.72	5.66	5.60	5.00	5.80	5.78	6.95	7.41	7.76
12	---	---	6.64	6.63	5.32	5.44	5.03	5.80	5.80	7.06	7.43	7.73
13	---	7.06	7.01	6.82	5.60	5.33	5.07	5.67	5.94	7.08	7.48	7.57
14	---	7.30	7.05	6.98	5.63	5.33	5.06	5.67	6.02	7.03	7.44	7.64
15	---	7.40	---	6.84	5.40	5.40	5.17	5.58	6.00	7.14	7.46	7.77
16	---	7.37	---	6.67	5.69	5.61	5.23	5.42	5.93	7.14	7.54	7.78
17	---	7.23	---	6.60	5.73	5.71	5.23	5.54	5.96	7.19	7.50	7.65
18	---	7.35	---	6.70	5.78	5.62	5.10	5.55	6.05	7.21	7.49	7.59
19	---	7.35	---	6.70	5.67	5.36	5.27	5.50	6.08	7.22	7.50	7.53
20	---	7.03	---	6.29	5.45	5.58	5.30	5.46	6.09	7.24	7.45	7.48
21	---	7.26	---	6.39	5.70	5.78	5.34	5.34	6.08	7.20	7.64	7.60
22	---	7.31	---	6.39	5.66	5.81	5.41	5.20	6.06	7.23	7.72	7.60
23	---	7.24	6.88	6.28	5.70	5.64	5.38	5.06	6.37	7.23	7.68	7.50
24	---	7.35	6.85	6.26	5.74	5.50	5.54	4.96	6.46	7.24	7.50	7.57
25	---	7.31	6.66	6.26	5.78	5.44	5.59	5.04	6.44	7.25	7.47	7.64
26	---	7.31	6.82	6.46	5.78	5.31	5.55	5.05	6.50	7.26	7.62	7.71
27	7.11	7.30	6.82	6.62	5.74	5.45	5.56	4.98	6.62	7.34	7.64	7.68
28	7.19	7.21	6.70	6.65	5.75	5.55	5.60	4.90	6.62	7.40	7.72	7.72
29	7.28	6.98	6.87	6.64	5.77	5.40	5.64	4.87	6.61	7.41	7.72	7.75
30	7.29	6.75	6.89	6.37	---	5.42	5.81	4.96	6.66	7.37	7.69	7.72
31	7.54	---	6.69	6.35	---	5.42	---	5.00	---	7.27	7.77	---
TOTAL	36.41	210.08	158.54	191.92	167.13	167.71	157.98	169.09	176.91	220.71	232.09	229.31
MEAN	7.28	7.24	6.89	6.62	5.76	5.59	5.27	5.45	5.90	7.12	7.49	7.64
MAX	7.54	7.49	7.21	6.98	6.30	5.94	5.81	5.87	6.66	7.41	7.77	7.81
MIN	7.11	6.75	6.63	6.26	5.32	5.31	4.94	4.87	4.97	6.74	7.24	7.40

WTR YR 1988 MEAN 6.46 HIGH 4.87 May 29 LOW 7.81 Sept 1

404626079344001. Local number, AR 77.

LOCATION.--Lat 40°46'26", long 79°34'40", Hydrologic Unit 05010006, at State Game Land Number 247.
Owner: U.S. Geological Survey.
AQUIFER.--Allegheny Group of Middle Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 6 in, depth 242 ft cased to 43 ft, open hole.
INSTRUMENTATION.--Continuous strip-chart recorder.
DATUM.--Elevation of land-surface datum is 1,050 ft, from topographic map. Measuring point: Top of plywood cover, 1.05 ft above land-surface datum.
REMARKS.--None.
PERIOD OF RECORD.--February 1975 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 26.85 ft below land-surface datum, May 27, 1978; lowest, 52.20 ft below land-surface datum, May 1, 1979.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30.00	31.23	30.42	29.40	30.73	30.02	29.43	30.30	30.06	32.70	33.58	34.21
2	29.74	31.15	30.29	29.39	30.70	30.04	29.32	30.35	30.09	32.71	33.57	34.29
3	29.69	30.57	30.42	29.43	30.64	30.03	29.11	30.40	30.14	32.58	33.61	34.30
4	29.86	30.25	30.25	29.44	30.56	30.03	29.01	30.42	30.25	32.73	33.62	34.25
5	29.99	30.12	30.16	29.45	30.37	30.10	29.02	30.51	30.34	33.01	33.60	34.08
6	30.01	30.25	30.17	29.57	30.30	30.10	28.99	30.55	30.43	33.15	33.60	34.10
7	29.99	30.39	30.19	29.60	30.22	30.05	28.87	30.52	30.44	33.16	33.61	34.18
8	30.10	30.45	30.16	29.59	30.18	29.99	28.90	30.58	33.27	33.06	33.65	34.22
9	30.25	30.65	29.97	29.61	30.18	29.80	29.00	30.57	33.42	33.06	33.76	34.23
10	30.26	30.91	29.64	29.76	30.15	29.59	29.00	30.56	33.22	33.07	33.85	34.25
11	30.42	31.03	29.40	30.04	30.15	29.78	29.01	30.63	32.99	33.07	33.87	34.35
12	30.42	30.99	29.31	30.22	29.82	29.80	29.05	30.73	32.61	33.03	33.88	34.36
13	30.26	30.87	29.38	30.32	29.90	29.75	29.10	30.73	32.56	32.87	33.86	34.33
14	30.27	30.87	29.56	30.51	30.09	29.59	29.13	30.72	32.67	32.89	33.86	34.23
15	30.32	30.94	29.56	30.61	30.12	29.55	29.17	30.70	32.69	33.03	33.85	34.33
16	30.32	31.03	29.49	30.64	29.98	29.67	29.27	30.58	32.80	33.09	33.91	34.40
17	30.31	31.02	29.48	30.66	29.94	29.74	29.31	30.40	32.84	33.09	33.96	34.44
18	30.39	30.99	29.52	30.65	29.97	29.77	29.27	30.40	32.83	33.06	33.96	34.49
19	30.36	31.02	29.52	30.92	29.78	29.76	29.30	30.78	32.84	33.06	33.95	34.51
20	30.21	30.94	29.48	30.93	29.66	29.72	29.38	31.22	32.87	33.03	33.88	34.51
21	30.36	30.90	29.40	30.87	29.56	29.70	29.51	31.22	32.87	32.92	33.90	35.45
22	30.53	30.87	29.41	30.77	29.56	29.78	29.72	31.15	32.91	32.91	34.01	35.70
23	30.59	30.88	29.31	30.70	29.53	29.78	29.73	31.00	32.86	32.95	34.05	35.69
24	30.70	30.92	29.40	30.63	29.62	29.70	29.73	30.89	32.53	33.24	34.01	35.57
25	30.95	30.94	29.46	30.65	29.75	29.73	29.94	30.79	32.48	33.46	33.87	35.46
26	31.15	30.90	29.58	30.64	29.85	29.72	30.01	30.66	32.46	33.64	34.01	34.95
27	31.15	30.87	29.69	30.77	29.78	29.64	30.03	30.62	32.47	33.68	34.09	34.63
28	31.00	30.89	29.68	30.90	29.74	29.65	30.04	30.58	32.57	33.65	34.09	34.53
29	30.98	30.84	29.34	30.95	29.83	29.64	30.00	30.50	32.67	33.65	34.05	34.51
30	31.01	30.62	29.38	30.95	---	29.51	30.15	29.92	32.69	33.80	34.08	34.61
31	31.21	---	29.40	30.77	---	29.46	---	30.01	---	33.77	34.11	---
TOTAL	942.80	924.30	920.42	939.34	870.66	923.19	881.50	948.99	965.87	1027.12	1049.70	1037.16
MEAN	30.41	30.81	29.69	30.30	30.02	29.78	29.38	30.61	32.20	33.13	33.86	34.57
MAX	31.21	31.23	30.42	30.95	30.73	30.10	30.15	31.22	33.42	33.80	34.11	35.70
MIN	29.69	30.12	29.31	29.39	29.53	29.46	28.87	29.92	30.06	32.58	33.57	34.08

WTR YR 1988 MEAN 31.23 HIGH 28.87 Apr 7 LOW 35.70 Sept 22

403006080252301. Local number, BV 156.

LOCATION.--Lat 40°30'06", long 80°25'23", Hydrologic Unit 05030101, at Raccoon State Park.
Owner: U.S. Geological Survey.
AQUIFER.--Shale of Glenshaw Formation of Late Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 6 in, depth 101 ft, cased to 25 ft, open hole.
INSTRUMENTAION.--Digital water-level recorder -- 60-minute punch.
DATUM.--Elevation of land-surface datum is 930 ft, from topographic map. Measuring point: Top of casing, 2.0 ft above land-surface datum.
REMARKS.--Missing record Nov. 21-26, Dec. 7-20, Jan. 22, 23, Feb. 25-27, and Sept. 13-20.
PERIOD OF RECORD.--November 1967 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 7.75 ft below land-surface datum, Aug. 18, 1980 Apr. 24, 1984; lowest 13.72 ft below land-surface datum, June 5, 1968.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.19	9.59	8.89	8.98	8.83	8.75	8.35	8.73	8.88	9.61	9.65	9.84
2	9.19	9.56	9.09	9.02	8.60	8.72	8.32	8.75	8.88	9.68	9.70	9.86
3	9.33	9.46	9.08	8.98	8.52	8.70	8.29	8.74	8.94	9.69	9.68	9.76
4	9.35	9.37	9.03	8.89	8.33	8.68	8.07	8.70	9.01	9.78	9.66	9.56
5	9.26	9.45	9.12	8.99	8.41	8.75	8.13	8.66	8.99	9.84	9.63	9.52
6	9.15	9.52	9.23	9.09	8.49	8.70	8.02	8.72	8.99	9.84	9.62	9.61
7	9.22	9.51	---	9.11	8.49	8.62	8.05	8.78	8.94	9.83	9.59	9.68
8	9.42	9.52	---	8.92	8.45	8.62	8.17	8.80	8.94	9.83	9.61	9.67
9	9.43	9.54	---	8.94	8.47	8.44	8.22	8.79	9.04	9.80	9.64	9.62
10	9.44	9.54	---	9.02	8.57	8.38	8.22	8.70	9.16	9.83	9.70	9.65
11	9.40	9.54	---	9.03	8.55	8.45	8.20	8.84	9.16	9.82	9.74	9.71
12	9.36	9.45	---	8.98	8.33	8.47	8.21	8.87	9.18	9.85	9.79	9.70
13	9.39	9.39	---	9.03	8.50	8.24	8.21	8.82	9.22	9.94	9.75	---
14	9.43	9.56	---	9.15	8.53	8.24	8.22	8.84	9.27	9.91	9.73	---
15	9.42	9.61	---	9.12	8.40	8.35	8.30	8.81	9.27	9.95	9.72	---
16	9.40	9.61	---	9.06	8.57	8.44	8.33	8.72	9.21	9.98	9.72	---
17	9.33	9.53	---	9.04	8.61	8.51	8.32	8.81	9.21	9.96	9.69	---
18	9.40	9.52	---	9.02	8.61	8.49	8.23	8.82	9.27	10.02	9.70	---
19	9.37	9.51	---	9.01	8.54	8.33	8.31	8.80	9.29	9.87	9.64	---
20	9.33	9.34	---	8.72	8.41	8.46	8.34	8.81	9.29	9.82	9.63	---
21	9.45	---	8.89	8.72	8.54	8.60	8.36	8.81	9.29	9.72	9.75	9.49
22	9.50	---	8.88	---	8.53	8.63	8.41	8.83	9.31	9.70	9.77	9.48
23	9.46	---	8.96	---	8.52	8.54	8.42	8.81	9.37	9.74	9.77	9.42
24	9.52	---	8.98	8.74	8.58	8.49	8.53	8.70	9.42	9.73	9.62	9.49
25	9.54	---	8.86	8.73	---	8.48	8.59	8.85	9.44	9.72	9.60	9.55
26	9.49	---	8.96	8.84	---	8.34	8.55	8.87	9.43	9.71	9.69	9.62
27	9.32	9.46	8.95	8.99	---	8.37	8.55	8.89	9.51	9.72	9.72	9.66
28	9.38	9.42	8.91	9.04	8.63	8.43	8.57	8.88	9.52	9.66	9.78	9.72
29	9.43	9.27	8.98	9.02	8.69	8.36	8.59	8.88	9.53	9.70	9.78	9.83
30	9.46	8.91	9.02	8.90	---	8.39	8.70	8.90	9.54	9.68	9.74	9.84
31	9.59	---	8.93	8.87	---	8.39	---	8.96	---	9.60	9.79	---
TOTAL	290.95	227.18	152.76	259.95	221.70	263.36	249.78	272.89	276.50	303.53	300.60	212.28
MEAN	9.39	9.47	8.99	8.96	8.53	8.50	8.33	8.80	9.22	9.79	9.70	9.65
MAX	9.59	9.61	9.23	9.15	8.83	8.75	8.70	8.96	9.54	10.02	9.79	9.86
MIN	9.15	8.91	8.86	8.72	8.33	8.24	8.02	8.66	8.88	9.60	9.59	9.42

WTR YR 1988 MEAN 9.10 HIGH 8.02 Apr 6 LOW 10.02 July 18

410501079524401. Local number, BT 311.

LOCATION.--Lat 41°05'01", long 79°52'44", Hydrologic Unit 05030105, at State Game Land Number 95.
Owner: U.S. Geological Survey.
AQUIFER.--Kittanning Formation of Middle Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 6 in, depth 89 ft, cased to 12 ft, open hole.
INSTRUMENTATION.--Continuous strip-chart recorder.
DATUM.--Elevation of land-surface datum is 1,465 ft, from topographic map. Measuring point: Top of casing, 2.30 ft above land-surface datum.
REMARKS.--Missing record Oct. 16-23, 26-28, Nov. 1-18, Dec. 1 to Feb. 29, Mar. 19, Apr. 25-27, May 3, 4, 7-19 and June 8-19.
PERIOD OF RECORD.--November 1970 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 3.33 ft below land-surface datum, Apr. 6, 1987 lowest, 31.06 ft below land-surface datum, Oct. 16-18, 1983.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.20	---				4.95	4.18	5.47	5.73	21.10	27.41	27.59
2	9.20	---				4.83	4.19	5.61	5.73	21.28	27.28	27.58
3	9.14	---				4.79	4.18	---	5.72	21.61	27.07	27.56
4	9.22	---				4.86	3.84	---	5.81	21.88	26.80	27.43
5	9.55	---				4.93	4.10	5.34	6.00	26.28	26.73	24.09
6	9.83	---				4.75	4.09	5.34	6.20	26.55	26.59	27.23
7	9.82	---				4.76	3.93	---	6.45	26.61	26.50	27.42
8	9.83	---				4.80	3.92	---	---	26.90	26.63	27.49
9	10.43	---				4.69	3.93	---	---	26.90	26.67	27.51
10	10.52	---				4.60	3.92	---	---	26.93	26.75	27.69
11	9.39	---				4.72	4.31	---	---	27.04	26.80	27.80
12	9.43	---				4.69	4.36	---	---	27.20	26.85	27.81
13	9.90	---				4.49	4.38	---	---	27.21	26.88	27.70
14	11.08	---				4.47	4.44	---	---	27.19	26.82	27.66
15	11.52	---				4.66	4.51	---	---	27.49	26.73	27.85
16	---	---				4.82	4.55	---	---	27.53	27.06	27.83
17	---	---				4.92	4.56	---	---	27.52	27.08	27.82
18	---	---				4.84	4.49	---	---	27.58	27.04	27.76
19	---	13.35				---	4.65	---	---	27.50	27.35	27.62
20	---	13.83				4.97	4.65	4.65	18.30	27.44	27.54	27.73
21	---	13.73				5.09	4.73	4.77	18.69	27.37	27.70	27.87
22	---	12.45				5.14	4.82	4.79	18.84	27.30	27.75	27.86
23	---	11.88				5.01	4.81	4.83	19.65	27.40	27.72	27.72
24	20.02	11.94				4.80	4.73	4.83	20.01	27.34	27.53	27.74
25	20.43	13.53				4.81	---	5.05	20.10	27.40	27.51	27.83
26	---	17.24				4.35	---	5.12	20.26	27.43	27.58	27.89
27	---	17.60				4.22	---	5.21	20.34	27.53	27.61	27.89
28	---	17.82				4.19	5.16	5.33	20.53	27.75	27.66	28.06
29	18.20	19.53				4.19	5.21	5.45	20.73	27.75	27.67	28.05
30	18.54	19.60				4.19	5.36	5.59	20.88	27.74	27.42	28.08
31	18.25	---				4.19	---	5.70	---	27.57	27.52	---
MEAN	12.18	15.21				4.69	4.44	5.19	14.44	26.53	27.17	27.61
MAX	20.43	19.60				5.14	5.36	5.70	20.88	27.75	27.75	28.08
MIN	9.14	11.88				4.19	3.84	4.65	5.72	21.10	26.50	24.09

WTR YR 1988 MEAN 16.38 HIGH 3.84 Apr 4 LOW 28.08 Sept 30

401935078550601. Local number, CA 1.

LOCATION.--Lat 40°19'35", long 78°55'06", Hydrologic Unit 05010007, at Locust and Park Place, Johnstown.
Owner: Johnstown Tribune Publishing Company.
AQUIFER.--Homewood Sandstone of Middle Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled water-table well, diameter 12 in to 8 in, depth 180 ft, cased to 45 ft, open hole.
INSTRUMENTATION.--Weekly measurement with chalked tape by observer.
DATUM.--Elevation of land-surface datum is 1,165 ft, from topographic map. Measuring point: Top of casing, 10 ft below land-surface datum.
REMARKS.--None.
PERIOD OF RECORD.--March 1952 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.10 ft below land-surface datum, Sept. 3, 1975; lowest measured, 26.78 ft below land-surface datum, July 23, 1953.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	17.50	---	---	---	---	---	16.60	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	17.60	---
4	---	---	---	16.40	---	---	16.60	---	---	---	---	---
5	16.90	---	---	---	---	---	---	---	---	17.60	---	---
6	---	---	---	---	---	---	---	---	16.90	---	---	17.90
7	---	---	16.80	---	---	15.50	---	---	---	---	---	---
8	---	---	---	---	16.10	---	---	---	---	---	17.60	---
9	---	---	---	---	---	---	---	16.30	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	17.20	16.70	---	16.30	---	---	17.60	---	---
12	17.20	---	---	---	---	---	---	---	---	---	---	17.40
13	---	---	---	---	---	---	---	---	17.20	---	---	---
14	---	---	16.80	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	16.20	---	---	---	---	17.70	---
16	---	17.30	---	---	16.70	---	---	16.70	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	17.20	---	---	16.40	---	---	17.90	---	---
19	17.50	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	17.30	---	---	---
21	---	---	16.10	---	---	---	---	---	---	---	---	16.60
22	---	---	---	---	16.40	16.70	---	---	---	---	17.70	---
23	---	17.30	---	---	---	---	---	15.60	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	16.60	---	---	16.90	---	---	16.90	---	---
26	17.60	---	---	---	---	---	---	---	---	---	---	17.00
27	---	---	---	---	---	---	---	---	17.50	---	---	---
28	---	---	16.20	---	---	16.40	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	17.50	---
30	---	15.70	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	16.70	---	---	---	---
TOTAL	69.20	67.80	65.90	67.40	65.90	64.80	66.20	81.90	68.90	70.00	88.10	68.90
MEAN	17.30	16.95	16.48	16.85	16.48	16.20	16.55	16.38	17.23	17.50	17.62	17.23
MAX	17.60	17.50	16.80	17.20	16.70	16.70	16.90	16.70	17.50	17.90	17.70	17.90
MIN	16.90	15.70	16.10	16.40	16.10	15.50	16.30	15.60	16.90	16.90	17.50	16.60

WTR YR 1988 MEAN 16.90 HIGH 15.50 Mar 7 LOW 17.90 July 18, Sept 6

413542080245001. Local number, CW 413.

LOCATION.--Lat 41°35'42", long 80°24'50", Hydrologic Unit 05030102, at State Game Land Number 214 near Hartstown.
Owner: U.S. Geological Survey.
AQUIFER.--Sandstone of Cussewago Formation of Early Mississippian age.
WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 6 in, depth 100 ft, cased to 19 ft, open hole.
INSTRUMENTATION.--Continuous strip-chart recorder.
DATUM.--Elevation of land-surface datum is 1,110 ft, from topographic map. Measuring point: Top of casing, 2.7 ft above land-surface datum.
REMARKS.--Since the June 9, 1981 well pumping and clean out, the monthly mean water levels have generally been from 12 to 24 feet lower. Missing record Dec. 22 to Mar. 22, June 21, 22, July 23 to Aug. 5, and Aug. 21 to Sept. 30.
PERIOD OF RECORD.--July 1967 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 20.02 ft below land-surface datum, Feb. 23, 1975; lowest, 55.99 ft below land-surface datum, Oct. 30, 1983.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44.99	46.16	46.14			---	45.86	47.60	49.04	50.89	---	
2	45.13	46.13	46.17			---	45.88	47.61	49.12	50.95	---	
3	45.21	46.06	46.05			---	45.82	47.54	49.27	50.99	---	
4	45.17	46.10	45.90			---	45.80	47.37	49.35	51.14	---	
5	45.13	46.21	45.85			---	45.57	47.46	49.36	51.23	---	
6	45.24	46.33	45.91			---	45.25	47.52	49.51	51.23	51.94	
7	45.24	46.34	45.88			---	45.24	47.58	49.55	51.23	51.95	
8	45.25	46.37	45.71			---	45.26	47.58	49.61	51.27	52.00	
9	45.09	46.52	45.49			---	45.24	47.62	49.75	51.26	52.08	
10	44.94	46.49	45.29			---	45.14	47.75	49.91	51.34	52.07	
11	44.73	46.49	44.95			---	45.19	47.94	49.87	51.37	52.09	
12	44.56	46.67	44.95			---	45.36	47.90	49.99	51.49	52.12	
13	44.51	46.58	45.21			---	45.43	48.03	50.08	51.49	52.13	
14	44.66	46.84	45.21			---	45.72	48.11	50.16	51.57	52.21	
15	44.70	46.94	44.87			---	45.84	48.16	50.17	51.59	52.28	
16	44.79	46.90	44.93			---	46.03	48.14	50.19	51.63	52.28	
17	44.95	46.88	45.03			---	45.98	48.25	50.24	51.68	52.28	
18	45.08	47.16	44.99			---	46.14	48.24	50.32	51.67	52.30	
19	45.14	47.14	44.87			---	46.32	48.21	50.32	51.76	52.31	
20	45.40	47.10	44.73			---	46.39	48.28	50.34	51.75	52.46	
21	45.47	47.26	44.63			---	46.57	48.32	---	51.68	---	
22	45.71	47.25	---			---	46.67	48.33	---	51.86	---	
23	45.73	47.40	---			46.14	46.73	48.34	50.56	---	---	
24	45.85	47.55	---			46.12	46.93	48.47	50.59	---	---	
25	45.92	47.31	---			46.15	46.96	48.60	50.61	---	---	
26	45.99	47.37	---			46.12	46.96	48.64	50.63	---	---	
27	45.93	47.12	---			46.08	47.10	48.69	50.67	---	---	
28	45.94	46.98	---			46.08	47.21	48.75	50.71	---	---	
29	45.95	46.74	---			45.76	47.39	48.84	50.79	---	---	
30	46.16	46.40	---			45.93	47.60	48.98	50.86	---	---	
31	46.28	---	---			45.90	---	49.05	---	---	---	
MEAN	45.32	46.76	45.37			46.03	46.12	48.13	50.06	51.41	52.17	
MAX	46.28	47.55	46.17			46.15	47.60	49.05	50.86	51.86	52.46	
MIN	44.51	46.06	44.63			45.76	45.14	47.37	49.04	50.89	51.94	

WTR YR 1988 MEAN 47.77 HIGH 44.51 Oct 13 LOW 52.46 Aug 20

412458078324601. Local number, EK 108.

LOCATION.--Lat 41°24'58", long 78°32'46", Hydrologic Unit 05010005, at St. Marys.
Owner: St. Marys Municipal Joint Water Authority.
AQUIFER.--Pottsville Group of Middle Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled artesian well, diameter 12 in, depth 340 ft, cased to 40 ft, open hole.
INSTRUMENTATION.--Continuous strip-chart recorder.
DATUM.--Elevation of land-surface datum is 1,740 ft, from topographic map. Measuring point: Top of casing, 2.3 ft above land-surface datum.
REMARKS.--Missing record Nov. 19 to Dec. 20, Jan. 20 to Feb. 23, and Mar. 25 to Apr. 19.
PERIOD OF RECORD.--October 1974 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 2.90 ft below land-surface datum, Mar. 30, 1975; lowest, 6.62 ft below land-surface datum, Oct. 7, 8, 1980.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.59	4.25	---	3.75	---	3.87	---	3.60	3.23	4.43	4.43	4.39
2	3.64	4.19	---	3.83	---	3.77	---	3.61	3.27	4.48	4.46	4.37
3	3.71	4.09	---	3.81	---	3.76	---	3.60	3.33	4.55	4.49	4.25
4	3.70	3.95	---	3.55	---	3.79	---	3.54	3.40	4.65	4.48	4.02
5	3.63	3.99	---	3.74	---	3.88	---	3.51	3.40	4.72	4.43	4.03
6	3.52	4.12	---	3.85	---	3.77	---	3.49	3.36	4.73	4.36	4.15
7	3.59	4.14	---	3.93	---	3.80	---	3.56	3.31	4.72	4.28	4.20
8	3.85	4.15	---	3.85	---	3.81	---	3.61	3.41	4.73	4.34	4.22
9	3.86	4.19	---	3.76	---	3.52	---	3.55	3.58	4.70	4.34	4.14
10	3.85	4.23	---	3.90	---	3.42	---	3.45	3.69	4.74	4.37	4.26
11	3.76	4.17	---	3.87	---	3.54	---	3.61	3.73	4.79	4.39	4.29
12	3.66	4.06	---	3.83	---	3.45	---	3.64	3.74	4.87	4.38	4.30
13	3.77	4.03	---	4.05	---	3.18	---	3.57	3.84	4.92	4.37	4.16
14	3.81	4.26	---	4.10	---	3.20	---	3.58	3.89	4.91	4.33	4.26
15	3.77	4.42	---	4.01	---	3.40	---	3.51	3.89	5.01	4.31	4.40
16	3.77	4.40	---	3.96	---	3.55	---	3.35	3.80	5.03	4.37	4.40
17	3.66	4.29	---	3.94	---	3.66	---	3.32	3.81	4.95	4.36	4.26
18	3.71	4.23	---	4.00	---	3.58	---	3.36	3.93	4.94	4.36	4.21
19	3.73	---	---	4.03	---	3.35	---	3.24	3.96	4.86	4.40	4.21
20	3.70	---	---	---	---	3.60	3.36	3.07	3.93	4.91	4.43	4.15
21	3.76	---	3.60	---	---	3.65	3.47	3.10	3.92	4.64	4.61	4.22
22	3.98	---	3.65	---	---	3.74	3.55	3.13	3.92	4.66	4.66	4.23
23	4.00	---	3.76	---	---	3.62	3.57	3.09	4.13	4.67	4.61	4.17
24	4.02	---	3.79	---	3.71	3.54	3.46	3.03	4.26	4.55	4.38	4.28
25	4.03	---	3.59	---	3.78	---	3.47	3.18	4.22	4.52	4.33	4.30
26	4.02	---	3.71	---	3.77	---	3.43	3.22	4.20	4.46	4.46	4.30
27	3.87	---	3.71	---	3.77	---	3.38	3.25	4.28	4.51	4.47	4.45
28	3.92	---	3.68	---	3.79	---	3.37	3.23	4.31	4.51	4.49	4.43
29	4.01	---	3.70	---	3.81	---	3.37	3.23	4.29	4.51	4.42	4.45
30	4.02	---	3.81	---	---	---	3.58	3.27	4.33	4.50	4.32	4.43
31	4.25	---	3.77	---	---	---	---	3.29	---	4.39	4.38	---
TOTAL	118.16	75.16	40.77	73.76	22.63	86.45	38.01	104.79	114.36	145.56	136.81	127.93
MEAN	3.81	4.18	3.71	3.88	3.77	3.60	3.46	3.38	3.81	4.70	4.41	4.26
MAX	4.25	4.42	3.81	4.10	3.81	3.88	3.58	3.64	4.33	5.03	4.66	4.45
MIN	3.52	3.95	3.59	3.55	3.71	3.18	3.36	3.03	3.23	4.39	4.28	4.02

WTR YR 1988 MEAN 3.97 HIGH 3.03 May 24 LOW 5.03 July 16

415607080044601. Local number, ER 82.

LOCATION.--Lat 41°56'07", long 80°04'46", Hydrologic Unit 05010004, near McLane.
Owner: U.S. Geological Survey.
AQUIFER.--Shale of Riceville Formation of Late Devonian age.
WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 6 in, depth 82 ft, cased to 56 ft, open hole.
INSTRUMENTATION.--Continuous strip-chart recorder.
DATUM.--Elevation of land-surface datum is 1,419 ft, from topographic map. Measuring point: Top of plywood cover, 3.50 ft above land-surface datum.
REMARKS.--Missing record Jan. 7-24, and Aug. 21-28.
PERIOD OF RECORD.--July 1966 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 10.00 ft below land-surface datum, Mar. 17, 1973; lowest, 23.42 ft below land-surface datum, Sept. 1, 2, 1984.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18.71	18.15	18.45	17.83	18.67	18.26	18.05	19.42	19.55	20.74	21.22	22.37
2	18.68	18.15	18.42	17.85	18.66	18.26	18.05	19.40	19.60	20.77	21.25	22.34
3	18.67	18.16	18.41	17.90	18.62	18.25	18.05	19.36	19.63	20.78	21.30	22.31
4	18.64	18.16	18.38	17.94	18.54	18.27	18.05	19.36	19.68	20.83	21.35	22.26
5	18.62	18.16	18.35	17.98	18.46	18.27	18.01	19.35	19.70	20.87	21.40	22.13
6	18.60	18.17	18.31	18.02	18.40	18.28	17.95	19.35	19.72	20.89	21.49	22.03
7	18.58	18.15	18.30	---	18.35	18.33	17.90	19.35	19.81	20.90	21.56	21.93
8	18.56	18.16	18.30	---	18.33	18.32	17.88	19.35	19.91	20.92	21.66	21.85
9	18.51	18.15	18.30	---	18.33	18.34	18.06	19.32	20.02	20.94	21.73	21.75
10	18.44	18.14	18.30	---	18.34	18.34	18.24	19.28	20.12	20.97	21.82	21.68
11	18.37	18.14	18.27	---	18.32	18.32	18.42	19.25	20.20	21.02	21.89	21.64
12	18.29	18.14	18.21	---	18.34	18.27	18.58	19.22	20.25	21.05	21.95	21.62
13	18.22	18.14	18.14	---	18.32	18.20	18.70	19.22	20.27	21.09	22.00	21.56
14	18.16	18.15	18.11	---	18.39	18.13	18.83	19.25	20.29	21.11	22.04	21.51
15	18.12	18.18	18.08	---	18.42	18.06	18.95	19.28	20.29	21.15	22.06	21.49
16	18.11	18.19	18.04	---	18.45	18.02	19.02	19.30	20.29	21.15	22.10	21.47
17	18.09	18.21	18.00	---	18.49	18.01	19.08	19.32	20.30	21.16	22.13	21.43
18	18.09	18.23	17.97	---	18.50	18.01	19.10	19.34	20.32	21.17	22.15	21.39
19	18.10	18.25	17.95	---	18.51	18.02	19.14	19.34	20.37	21.15	22.17	21.37
20	18.10	18.25	17.92	---	18.51	18.04	19.19	19.34	20.41	21.12	22.20	21.34
21	18.11	18.26	17.92	---	18.52	18.09	19.24	19.34	20.48	21.13	---	21.32
22	18.11	18.27	17.90	---	18.47	18.13	19.29	19.33	20.50	21.15	---	21.31
23	18.07	18.31	17.90	---	18.43	18.17	19.32	19.33	20.55	21.20	---	21.26
24	18.10	18.40	17.88	---	18.42	18.20	19.37	19.31	20.60	21.23	---	21.17
25	18.11	18.43	17.88	18.55	18.40	18.20	19.39	19.31	20.63	21.25	---	21.16
26	18.13	18.46	17.88	18.56	18.35	18.20	19.41	19.32	20.66	21.26	---	21.14
27	18.15	18.48	17.88	18.58	18.32	18.19	19.43	19.33	20.68	21.26	---	21.13
28	18.15	18.48	17.88	18.60	18.30	18.15	19.44	19.39	20.70	21.26	---	21.12
29	18.17	18.48	17.86	18.62	18.25	18.11	19.45	19.41	20.73	21.25	22.42	21.11
30	18.16	18.47	17.84	18.63	---	18.06	19.45	19.44	20.73	21.25	22.41	21.10
31	18.16	---	17.83	18.64	---	18.05	---	19.52	---	21.23	22.37	---
TOTAL	567.08	547.47	560.86	237.70	534.41	563.55	563.04	599.43	606.99	653.25	502.67	647.29
MEAN	18.29	18.25	18.09	18.28	18.43	18.18	18.77	19.34	20.23	21.07	21.86	21.58
MAX	18.71	18.48	18.45	18.64	18.67	18.34	19.45	19.52	20.73	21.26	22.42	22.37
MIN	18.07	18.14	17.83	17.83	18.25	18.01	17.88	19.22	19.55	20.74	21.22	21.10

WTR YR 1988 MEAN 19.36 HIGH 17.83 Dec 31 LOW 22.42 Aug 29

394843079351401. Local number, FA 17.

LOCATION.-Lat 39°48'43", long 79°35'14", Hydrologic unit 05020006, at Fort Necessity.
Owner: U.S. Geological Survey.
AQUIFER.--Shale and sandstone of Glenshaw Formation of Late Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 6 in, depth 100 ft, cased to 19 ft, open hole.
INSTRUMENTATION.--Continuous strip-chart recorder.
DATUM.--Elevation of land-surface datum is 1,910 ft, from topographic map. Measuring point: Top of plywood cover 2.05 ft above land-surface datum.
REMARKS.--Missing record Jan. 21-23, July 25-31, and Sept. 22-24.
PERIOD OF RECORD.--November 1967 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 19.71 ft below land-surface datum, Feb. 23, 1971; lowest, 40.00 ft below land-surface datum, Nov. 8, 1967.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22.98	23.31	22.84	22.32	20.87	21.30	21.20	22.00	22.49	22.96	23.18	23.04
2	23.01	23.22	22.93	22.31	20.66	21.29	21.35	21.88	22.45	22.99	23.18	23.13
3	23.05	23.24	22.94	22.18	20.62	21.26	21.34	21.87	22.63	23.01	23.13	23.08
4	23.04	23.23	22.91	21.94	20.16	21.05	21.38	21.72	22.80	23.11	23.02	22.94
5	22.96	23.28	22.90	22.03	20.14	21.00	21.42	21.65	22.85	23.14	22.95	23.10
6	22.92	23.29	22.95	22.01	20.22	20.85	21.38	21.60	22.85	23.07	22.89	23.12
7	23.06	23.27	22.93	22.02	20.23	20.80	21.31	21.64	22.83	22.99	22.93	23.12
8	23.14	23.22	22.90	21.69	20.12	20.80	21.46	21.59	22.80	22.91	22.96	23.06
9	23.15	23.31	22.82	21.75	20.11	20.60	21.52	21.58	23.08	22.87	22.98	23.02
10	23.09	23.29	22.78	21.83	20.20	20.60	21.49	21.45	23.19	22.88	23.01	23.06
11	23.03	23.28	22.71	21.76	20.17	20.75	21.38	21.70	23.17	22.95	23.01	23.07
12	22.99	23.27	22.77	21.64	19.99	20.68	21.38	21.75	22.95	22.99	23.01	23.25
13	23.01	23.23	22.92	21.76	20.40	20.64	21.42	21.77	23.00	23.06	22.99	23.21
14	23.02	23.21	22.93	21.88	20.52	20.63	21.45	21.94	22.95	23.01	23.01	23.22
15	22.97	23.17	22.78	21.72	20.44	20.94	21.54	21.94	22.89	23.18	22.98	23.27
16	23.01	23.11	22.87	21.66	20.81	21.14	21.66	21.86	22.77	23.18	23.03	23.29
17	23.02	23.00	22.95	21.61	20.98	21.23	21.68	22.01	22.72	23.07	23.00	23.34
18	23.12	23.03	22.95	21.59	21.07	21.22	21.49	22.12	22.84	23.04	22.97	23.35
19	23.12	23.01	22.88	21.60	21.07	21.03	21.67	22.11	22.90	23.00	22.98	23.35
20	23.05	22.89	22.84	21.30	20.62	21.31	21.69	22.12	22.89	23.05	22.95	23.24
21	23.11	22.98	22.68	---	20.91	21.55	21.73	22.15	22.83	23.04	23.08	23.24
22	23.15	23.00	22.65	---	20.92	21.68	21.89	22.13	22.84	23.10	23.13	---
23	23.09	22.98	22.76	---	20.79	21.68	21.90	22.08	22.96	23.01	23.07	---
24	23.10	23.02	22.75	20.80	20.91	21.53	22.01	22.01	23.04	22.99	22.89	---
25	23.10	22.97	22.64	20.80	20.97	21.42	22.05	22.25	22.99	---	22.92	23.22
26	23.08	23.00	22.35	21.01	20.99	21.19	22.04	22.32	22.82	---	23.04	23.22
27	23.03	23.01	22.30	21.15	20.99	21.17	21.99	22.35	22.96	---	23.04	23.18
28	23.08	22.99	22.31	21.21	21.02	21.26	22.00	22.33	22.98	---	23.03	23.13
29	23.16	22.91	22.48	21.19	21.13	21.22	22.01	22.36	22.93	---	23.03	23.15
30	23.14	22.86	22.49	21.03	---	21.27	22.01	22.47	22.90	---	23.02	23.13
31	23.27	---	22.36	20.98	---	21.28	---	22.51	---	---	23.04	---
TOTAL	715.05	693.58	705.27	604.77	598.03	654.37	648.84	681.26	686.30	552.60	713.45	625.53
MEAN	23.07	23.12	22.75	21.60	20.62	21.11	21.63	21.98	22.88	23.03	23.01	23.17
MAX	23.27	23.31	22.95	22.32	21.13	21.68	22.05	22.51	23.19	23.18	23.18	23.35
MIN	22.92	22.86	22.30	20.80	19.99	20.60	21.20	21.45	22.45	22.87	22.89	22.94

WTR YR 1988 MEAN 22.32 HIGH 19.99 Feb 12 LOW 23.35 Sept 18, 19

412823079030601. Local number, FO 11.

LOCATION.--Lat 41°28'23", long 79°03'06", Hydrologic Unit 05010005, at U.S. Forest Lands.
Owner: U.S. Geological Survey.
AQUIFER.--Clarion Formation of Middle Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 6 in, depth 110 ft, cased to 23 ft, open hole.
INSTRUMENTATION.--Continuous strip-chart recorder.
DATUM.--Elevation of land-surface datum is 1,780 ft, from topographic map. Measuring point: Top of casing, 1.4 ft above land-surface datum.
REMARKS.--Missing record Nov. 27 to Dec. 19.
PERIOD OF RECORD.--August 1973 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 7.78 ft below land-surface datum, Jan. 27, 28, 1973; lowest, 12.07 ft below land-surface datum, Sept. 18, 19, 1982.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.02	9.23	---	8.74	9.02	9.07	8.72	8.85	8.92	10.57	10.80	10.87
2	9.05	9.23	---	8.80	8.89	9.07	8.70	8.85	8.99	10.65	10.80	10.87
3	9.13	9.21	---	8.80	8.82	9.07	8.70	8.85	9.03	10.72	10.81	10.87
4	9.15	9.15	---	8.78	8.68	9.06	8.60	8.84	9.05	10.79	10.83	10.62
5	9.14	9.11	---	8.84	8.65	9.07	8.53	8.84	9.07	10.86	10.84	10.60
6	9.13	9.15	---	8.91	8.67	9.07	8.48	8.80	9.10	10.89	10.83	10.62
7	9.10	9.16	---	8.90	8.68	9.10	8.39	8.78	9.16	10.92	10.81	10.68
8	9.16	9.18	---	8.86	8.69	9.11	8.43	8.78	9.24	10.94	10.82	10.70
9	9.17	9.17	---	8.93	8.70	9.13	8.45	8.78	9.36	10.96	10.84	10.72
10	9.19	9.17	---	9.02	8.78	9.05	8.48	8.70	9.48	10.97	10.87	10.79
11	9.19	9.17	---	9.03	8.79	8.96	8.51	8.62	9.56	10.97	10.92	10.86
12	9.16	9.15	---	9.07	8.73	8.95	8.54	8.60	9.65	11.00	10.91	10.88
13	9.12	9.04	---	9.11	8.78	8.85	8.58	8.55	9.74	11.05	10.96	10.80
14	9.11	9.09	---	9.20	8.84	8.75	8.59	8.51	9.82	11.07	10.98	10.78
15	9.12	9.16	---	9.20	8.83	8.65	8.62	8.50	9.88	11.12	11.02	10.82
16	9.12	9.19	---	9.24	8.89	8.68	8.67	8.42	9.89	11.14	11.08	10.83
17	9.12	9.18	---	9.27	8.98	8.77	8.68	8.37	9.90	11.15	11.08	10.83
18	9.14	9.10	---	9.22	9.01	8.80	8.65	8.35	9.95	11.16	11.13	10.80
19	9.16	9.12	---	9.18	9.01	8.85	8.69	8.28	10.00	11.14	11.16	10.74
20	9.16	8.98	8.56	9.02	8.86	8.70	8.71	8.18	10.06	11.14	11.18	10.69
21	9.17	8.93	8.56	8.91	8.92	8.88	8.73	8.17	10.10	11.11	11.28	10.63
22	9.24	8.94	8.55	8.87	8.93	8.95	8.78	8.16	10.11	10.93	11.34	10.65
23	9.25	8.95	8.56	8.85	8.91	8.94	8.78	8.17	10.21	10.93	11.34	10.60
24	9.28	8.97	8.57	8.81	8.95	8.91	8.77	8.18	10.30	10.83	11.23	10.57
25	9.26	8.98	8.58	8.83	8.97	8.85	8.78	8.28	10.32	10.82	11.13	10.60
26	9.27	8.93	8.58	8.88	8.98	8.74	8.78	8.38	10.34	10.80	11.02	10.65
27	9.24	---	8.59	8.99	8.96	8.64	8.79	8.50	10.42	10.81	11.02	10.67
28	9.17	---	8.62	9.08	9.00	8.69	8.79	8.57	10.46	10.86	10.96	10.75
29	9.17	---	8.61	9.10	9.03	8.69	8.79	8.66	10.50	10.91	10.90	10.80
30	9.16	---	8.71	9.08	---	8.71	8.85	8.77	10.53	10.92	10.80	10.81
31	9.21	---	8.70	9.06	---	8.71	---	8.86	---	10.81	10.79	---
TOTAL	284.06	236.64	103.19	278.58	256.95	275.47	259.56	265.15	293.14	338.94	340.48	322.10
MEAN	9.16	9.10	8.60	8.99	8.86	8.89	8.65	8.55	9.77	10.93	10.98	10.74
MAX	9.28	9.23	8.71	9.27	9.03	9.13	8.85	8.86	10.53	11.16	11.34	10.88
MIN	9.02	8.93	8.55	8.74	8.65	8.64	8.39	8.16	8.92	10.57	10.79	10.57

WTR YR 1988 MEAN 9.49 HIGH 8.16 May 22 LOW 11.34 Aug 22, 23

394655080014301. Local number, GR 118.

LOCATION.--Lat 39°46'55", long 80°01'43", Hydrologic Unit 05020005, at State Game Land Number 223.
Owner: U.S. Geological Survey.
AQUIFER.--Shale and sandstone of lower member of Waynesburg Formation of Late Pennsylvanian and Early Permian age.
WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 6 in, depth 104 ft, cased to 22 ft, open hole.
INSTRUMENTATION.--Digital water-level recorder -- 60-minute punch.
DATUM.--Elevation of land-surface datum is 1,000 ft, from topographic map. Measuring point: Top of plywood cover 2.02 ft above land-surface datum.
REMARKS.--Missing record Oct. 1-23, Mar. 5-22, Apr. 20, May 24 to June 20, and Aug. 22.
PERIOD OF RECORD.--June 1973 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 29.70 ft below land-surface datum, Apr. 12, 1981; lowest, 48.18 ft below land-surface datum, Aug. 17, 1987.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	44.33	43.66	43.11	41.78	37.35	35.26	36.87	---	40.11	42.24	43.62
2	---	44.28	43.73	43.08	41.69	37.45	35.36	37.00	---	40.27	42.28	43.65
3	---	44.55	43.82	43.07	39.22	37.48	35.43	37.10	---	40.39	42.47	43.71
4	---	44.50	43.82	43.10	38.89	37.20	35.44	37.20	---	40.61	42.45	43.70
5	---	45.11	43.66	43.11	38.21	---	35.08	37.21	---	40.65	42.45	43.60
6	---	45.33	43.69	43.29	38.06	---	34.88	37.16	---	40.76	42.39	43.67
7	---	44.80	43.82	43.44	37.85	---	34.79	37.04	---	41.12	42.59	43.73
8	---	44.58	43.87	43.45	37.90	---	34.79	36.99	---	40.85	42.67	43.80
9	---	44.50	43.88	43.42	38.03	---	34.76	37.02	---	40.93	42.65	43.83
10	---	44.40	43.90	43.53	38.13	---	34.75	36.96	---	41.10	42.54	43.83
11	---	44.02	43.96	43.63	38.18	---	34.84	36.93	---	41.26	42.79	43.76
12	---	43.78	44.02	43.71	38.31	---	34.94	36.94	---	41.26	42.65	43.81
13	---	43.70	44.19	43.71	38.58	---	35.09	37.02	---	41.09	42.70	43.81
14	---	43.74	44.31	43.73	38.53	---	35.25	37.05	---	41.38	42.82	43.69
15	---	43.76	44.22	43.90	38.66	---	35.45	37.08	---	41.53	42.92	43.76
16	---	43.78	44.04	44.03	38.79	---	35.62	37.13	---	41.59	42.97	43.74
17	---	43.87	43.93	44.01	38.86	---	35.70	37.29	---	41.59	43.03	43.77
18	---	43.82	43.93	43.92	38.91	---	35.74	37.29	---	41.62	42.97	43.69
19	---	43.71	43.92	43.66	38.90	---	35.64	37.18	---	41.97	42.95	43.81
20	---	43.78	43.88	43.50	38.69	---	---	36.03	---	42.45	42.85	43.80
21	---	43.98	43.53	42.35	38.16	---	35.73	33.99	38.69	41.73	43.03	43.76
22	---	44.69	43.57	42.01	37.85	---	35.82	34.08	38.87	41.63	---	43.76
23	---	45.07	43.67	41.89	37.69	35.50	35.86	34.12	38.95	41.75	43.29	43.73
24	47.21	44.82	43.73	41.82	37.56	35.53	36.02	---	39.05	41.54	43.00	43.60
25	47.89	44.88	43.77	41.77	37.25	35.58	36.13	---	39.22	41.63	43.05	43.55
26	47.61	44.96	43.67	41.73	37.17	35.51	36.25	---	39.49	41.67	43.32	43.51
27	46.60	45.35	43.13	41.67	37.09	34.97	36.37	---	39.63	41.58	43.52	43.63
28	44.55	44.80	43.12	41.70	37.12	34.99	36.49	---	39.74	42.04	43.56	43.76
29	43.99	44.60	43.08	41.71	37.25	34.91	36.62	---	39.83	42.13	43.49	43.88
30	44.13	43.94	43.03	41.73	---	35.08	36.77	---	39.84	42.15	42.91	43.93
31	44.28	---	43.10	41.77	---	35.15	---	---	---	42.23	43.35	---
MEAN	45.78	44.38	43.73	42.92	38.39	35.90	35.55	36.64	39.33	41.37	42.86	43.73
MAX	47.89	45.35	44.31	44.03	41.78	37.48	36.77	37.29	39.84	42.45	43.56	43.93
MIN	43.99	43.70	43.03	41.67	37.09	34.91	34.75	33.99	38.69	40.11	42.24	43.51

WTR YR 1988 MEAN 41.05 HIGH 33.99 May 21 LOW 47.89 Oct 25

403702079093301. Local number, IN 1.

LOCATION.--Lat 40°37'02", long 79°09'33", Hydrologic Unit 05010007, at Indiana University of Pennsylvania, Indiana.
Owner: Commonwealth of Pennsylvania.
AQUIFER.--Sandstone of Glenshaw Formation of Late Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled artesian well, diameter 6 in, depth 198 ft, casing information not available.
INSTRUMENTATION.--Continuous strip-chart recorder.
DATUM.--Elevation of land-surface datum is 1,305 ft, from topographic map. Measuring point: Top of casing, 1.2 ft above land-surface datum.
REMARKS.--Missing record Dec. 9-22, and Sept. 18.
PERIOD OF RECORD.--October 1944 to June 1947, September 1949 to January 1950, January 1951 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 72.50 ft below land-surface datum, Apr. 13, 1962; lowest, 87.03 ft below land-surface datum, Oct. 19, 1946.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	73.94	75.51	74.39	75.38	75.76	75.86	75.33	75.84	75.31	76.67	77.24	77.49
2	74.01	75.43	74.60	75.44	75.62	75.80	75.37	75.81	75.32	76.71	77.31	77.46
3	74.08	75.32	74.57	75.30	75.57	75.78	75.28	75.75	75.44	76.77	77.36	77.30
4	74.07	75.18	74.37	75.22	75.23	75.71	75.28	75.66	75.51	76.91	77.37	77.11
5	73.99	75.36	74.48	75.38	75.23	75.85	75.35	75.61	75.51	77.02	77.35	77.39
6	73.86	75.45	74.65	75.52	75.30	75.70	75.21	75.66	75.48	77.02	77.34	77.46
7	74.00	75.44	74.64	75.55	75.27	75.61	75.26	75.70	75.43	76.99	77.34	77.54
8	74.30	75.43	74.54	75.28	75.23	75.62	75.42	75.71	75.49	77.01	77.34	77.52
9	74.31	75.48	---	75.47	75.20	75.38	75.47	75.60	75.68	76.98	77.28	77.46
10	74.30	75.48	---	75.62	75.34	75.42	75.41	75.51	75.75	77.06	77.27	77.59
11	74.19	75.40	---	75.57	75.28	75.55	75.35	75.67	75.73	77.09	77.22	77.66
12	74.16	75.25	---	75.53	75.09	75.41	75.40	75.68	75.69	77.18	77.21	77.63
13	74.26	75.20	---	75.76	75.48	75.32	75.42	75.50	75.75	77.25	77.25	77.40
14	74.31	75.42	---	75.93	75.54	75.32	75.44	75.57	75.81	77.23	77.23	77.41
15	74.51	75.53	---	75.78	75.36	75.53	75.53	75.41	75.72	77.32	77.28	77.51
16	74.61	75.98	---	75.76	75.67	75.62	75.60	75.27	75.62	77.28	77.31	77.48
17	74.67	75.31	---	75.73	75.70	75.70	75.54	75.42	75.68	77.28	77.34	77.30
18	74.78	75.31	---	75.94	75.73	75.63	75.50	75.42	75.77	77.37	77.33	---
19	74.82	75.29	---	75.96	75.55	75.34	75.62	75.37	75.79	77.34	77.33	77.15
20	74.90	74.97	---	75.59	75.40	75.62	75.62	75.33	75.84	77.39	77.26	77.16
21	75.06	75.20	---	75.68	75.70	75.70	75.63	75.26	75.86	77.26	77.47	77.28
22	75.30	75.25	---	75.69	75.68	75.70	75.70	75.21	75.89	77.21	77.53	77.27
23	75.28	75.19	75.93	75.60	75.61	75.52	75.65	75.09	76.21	77.16	77.44	77.29
24	75.29	75.25	75.89	75.66	75.67	75.40	75.79	75.06	76.28	77.12	77.27	77.39
25	75.35	75.18	75.56	75.68	75.71	75.37	75.81	75.30	76.23	77.13	77.26	77.45
26	75.29	75.23	75.63	75.90	75.71	75.30	75.73	75.33	76.32	77.14	77.44	77.52
27	75.10	75.22	75.64	76.01	75.70	75.44	75.73	75.34	76.40	77.16	77.47	77.49
28	75.20	75.08	75.49	76.03	75.73	75.55	75.73	75.29	76.47	77.18	77.51	77.62
29	75.30	74.84	75.60	75.99	75.75	75.37	75.75	75.27	76.48	77.18	77.47	77.66
30	75.30	74.38	75.61	75.82	---	75.43	75.89	75.34	76.57	77.13	77.45	77.61
31	75.55	---	75.40	75.85	---	75.44	---	75.35	---	77.18	77.46	---
MEAN	74.65	75.29	75.12	75.67	75.51	75.55	75.53	75.46	75.83	77.12	77.35	77.43
MAX	75.55	75.98	75.93	76.03	75.76	75.86	75.89	75.84	76.57	77.39	77.53	77.66
MIN	73.86	74.38	74.37	75.22	75.09	75.30	75.21	75.06	75.31	76.67	77.21	77.11

WTR YR 1988 MEAN 75.90 HIGH 73.86 Oct 6 LOW 77.66 Sept 11, 29

410650078575801. Local number, JE 23.

LOCATION.--Lat 41°06'50", long 78°57'58", Hydrologic Unit 05010006, at State Game Land Number 244.
Owner: U.S. Geological Survey.
AQUIFER.--Sandstone and shale of Kittanning Formation of Middle Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 6 in , depth 101 ft, cased to 37 ft, open hole.
INSTRUMENTATION.--Continuous strip-chart recorder.
DATUM.--Elevation of land-surface datum is 1,660 ft, from topographic map. Measuring point: Top of plywood cover, 2.05 ft above land-surface datum.
REMARKS.--Missing record Oct. 14-20, Aug. 18, 19, and Sept. 28-30.
PERIOD OF RECORD.--February 1968 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 14.17 ft below land-surface datum, Apr. 13, 1970; lowest, 32.12 ft below land-surface datum, Aug. 25, 1974.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29.31	28.41	28.86	27.83	28.01	27.75	27.41	27.96	28.27	29.04	29.29	30.52
2	29.34	28.42	28.90	27.83	28.03	27.64	27.44	28.03	28.38	29.07	29.72	29.91
3	29.24	28.35	28.80	27.59	28.00	27.66	27.26	28.03	28.61	29.17	29.68	29.48
4	29.07	28.31	29.13	27.64	27.82	27.80	27.27	28.05	28.61	29.20	29.49	29.26
5	29.06	28.43	29.17	27.63	27.81	27.94	27.29	28.16	28.47	29.20	29.43	29.35
6	29.16	28.56	29.20	27.66	27.78	27.87	26.98	28.24	28.50	29.12	29.36	29.34
7	29.25	28.63	29.09	27.64	27.72	27.92	27.08	28.39	28.39	29.23	29.43	29.63
8	29.34	28.60	28.87	27.61	27.73	27.95	27.18	28.43	28.50	29.40	29.76	29.65
9	29.16	28.71	28.64	27.80	27.62	27.83	27.20	28.36	28.55	29.35	29.78	29.47
10	28.97	28.73	28.64	27.81	27.72	27.75	27.05	28.41	28.57	29.30	30.15	29.42
11	28.74	28.73	28.44	27.72	27.71	27.85	26.96	28.43	28.63	29.36	30.03	29.37
12	28.78	28.57	28.64	27.67	27.41	27.70	26.97	28.48	28.55	29.39	29.72	29.06
13	28.80	28.61	28.72	27.94	27.60	27.45	26.94	28.37	28.59	29.43	29.55	29.92
14	---	29.14	28.62	27.93	27.63	27.42	26.98	28.44	28.58	29.53	29.65	29.76
15	---	29.25	28.17	27.81	27.51	27.61	26.97	28.36	28.50	29.43	29.60	29.62
16	---	29.09	28.44	27.80	27.81	27.85	27.06	28.48	28.46	29.36	29.85	29.47
17	---	28.88	28.50	27.77	27.95	27.71	26.98	28.58	28.47	29.29	29.82	29.09
18	---	28.70	28.50	27.99	27.85	27.72	27.28	28.59	28.53	29.38	---	28.94
19	---	28.90	28.22	27.96	27.73	27.57	27.37	28.41	28.53	29.30	---	28.84
20	---	28.64	28.31	27.80	27.43	27.65	27.37	28.39	28.52	29.29	29.83	28.63
21	28.69	28.72	28.40	27.98	27.60	27.74	27.29	28.54	28.48	29.26	29.92	28.70
22	28.70	28.69	28.40	27.97	27.55	27.81	27.41	28.52	28.52	29.38	29.72	28.67
23	28.95	28.71	28.46	27.89	27.46	27.55	27.37	28.44	28.82	29.30	29.46	28.73
24	28.78	28.78	28.31	27.89	27.54	27.50	27.54	28.44	28.91	29.30	29.41	28.72
25	29.05	28.52	28.13	27.91	27.68	27.42	27.64	28.47	28.85	29.41	29.79	28.85
26	29.01	28.60	28.15	28.08	27.66	27.41	27.62	28.44	28.88	29.73	29.76	29.75
27	28.60	28.80	28.09	28.13	27.71	27.51	27.63	28.40	28.98	29.57	29.53	29.42
28	28.64	28.72	27.82	28.14	27.74	27.56	27.71	28.33	29.04	29.45	29.39	---
29	28.51	28.58	27.91	28.08	27.68	27.36	27.71	28.28	29.08	29.54	29.19	---
30	28.43	28.68	27.91	27.99	---	27.36	27.93	28.27	29.08	29.40	29.63	---
31	28.57	---	27.75	28.07	---	27.32	---	28.31	---	29.38	30.28	---
TOTAL	694.15	860.46	883.19	863.56	803.49	857.18	818.89	879.03	858.85	909.56	860.22	791.57
MEAN	28.92	28.68	28.49	27.86	27.71	27.65	27.30	28.36	28.63	29.34	29.66	29.32
MAX	29.34	29.25	29.20	28.14	28.03	27.95	27.93	28.59	29.08	29.73	30.28	30.52
MIN	28.43	28.31	27.75	27.59	27.41	27.32	26.94	27.96	28.27	29.04	29.19	28.63

WTR YR 1988 MEAN 28.48 HIGH 26.94 Apr 13 LOW 30.52 Sept 1

410538080280801. Local number, LA 1201.

LOCATION.--Lat 41°05'38", long 80°28'08", Hydrologic Unit 05030102, at State Game Land 150, near Pulaski.
Owner: U.S. Geological Survey.
AQUIFER.--Shale and sandstone of Connoquenessing Formation of Early Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 6 in, depth 150 ft, cased to 30 ft, open hole.
INSTRUMENTATION.--Satellite telemeter -- 60-minute transmission.
DATUM.--Elevation of land-surface datum is 1,040 ft, from topographic map. Measuring point: Top of casing, 3.40 ft above land-surface datum.
REMARKS.--Missing record Oct. 1-29, Dec. 16-22, and Jan. 4.
PERIOD OF RECORD.--November 1967 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 12.25 ft below land-surface datum, May 19, 1978; lowest, 22.94 ft below land-surface datum, Apr. 15, 1986.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	16.76	16.14	15.58	16.29	15.92	15.96	17.08	16.96	18.14	18.43	18.91
2	---	16.77	15.92	15.63	16.07	15.92	16.02	17.12	17.00	18.16	18.47	18.91
3	---	16.80	15.82	15.65	15.70	15.93	15.97	17.12	17.07	18.21	18.51	18.90
4	---	16.83	15.65	---	15.33	15.92	15.72	17.13	17.14	18.30	18.52	18.83
5	---	16.93	15.62	15.86	15.03	15.97	15.26	17.15	17.17	18.26	18.53	18.77
6	---	16.99	15.56	16.00	15.03	16.00	15.10	17.15	17.26	18.26	18.55	18.80
7	---	17.02	15.54	16.04	15.11	15.97	15.05	17.19	17.31	18.28	18.54	18.83
8	---	17.04	15.49	16.12	15.29	15.94	15.20	17.20	17.37	18.29	18.58	18.84
9	---	17.04	15.40	16.25	15.41	15.84	15.33	17.18	17.44	18.31	18.61	18.83
10	---	17.06	15.26	16.35	15.58	15.75	15.44	17.20	17.52	18.32	18.62	18.87
11	---	17.06	15.21	16.42	15.66	15.73	15.58	17.26	17.57	18.33	18.67	18.87
12	---	17.09	15.24	16.45	15.72	15.70	15.71	17.28	17.59	18.38	18.71	18.85
13	---	17.11	15.39	16.60	15.88	15.68	15.83	17.26	17.65	18.42	18.73	18.82
14	---	17.20	15.48	16.70	15.96	15.68	15.95	17.32	17.68	18.46	18.72	18.86
15	---	17.25	15.46	16.72	15.96	15.76	16.04	17.29	17.72	18.50	18.76	18.90
16	---	17.27	---	16.77	15.93	15.82	16.08	17.23	17.75	18.53	18.80	18.91
17	---	17.26	---	16.80	15.93	15.88	16.17	17.17	17.71	18.51	18.80	18.91
18	---	17.32	---	16.80	15.90	15.89	16.24	17.16	17.73	18.50	18.80	18.91
19	---	17.33	---	16.79	15.83	15.86	16.36	17.10	17.78	18.46	18.82	18.93
20	---	17.32	---	16.67	15.66	15.88	16.50	16.96	17.79	18.49	18.84	18.93
21	---	17.39	---	16.41	15.60	15.96	16.58	16.76	17.81	18.48	18.89	18.96
22	---	17.41	---	16.30	15.59	16.00	16.66	16.66	17.84	18.40	18.91	18.98
23	---	17.42	15.17	16.23	15.57	15.96	16.67	16.60	17.91	18.39	18.90	18.93
24	---	17.45	15.18	16.19	15.53	15.97	16.79	16.61	17.93	18.36	18.82	18.88
25	---	17.46	15.20	16.18	15.59	15.97	16.82	16.68	17.96	18.38	18.86	18.90
26	---	17.44	15.27	16.22	15.62	15.89	16.87	16.73	17.97	18.33	18.87	18.92
27	---	17.44	15.41	16.31	15.71	15.85	16.90	16.77	18.00	18.36	18.91	18.92
28	---	17.41	15.44	16.37	15.77	15.84	16.94	16.79	18.05	18.39	18.91	18.96
29	---	17.35	15.55	16.37	15.88	15.79	16.99	16.85	18.07	18.39	18.89	18.98
30	16.62	16.62	15.60	16.39	---	15.87	17.05	16.91	18.09	18.39	18.86	18.98
31	16.71	---	15.59	16.39	---	15.90	---	16.96	---	18.42	18.88	---
TOTAL	33.33	514.84	371.59	489.56	454.13	492.04	483.78	527.87	528.84	569.40	580.71	566.79
MEAN	16.67	17.16	15.48	16.32	15.66	15.87	16.13	17.03	17.63	18.37	18.73	18.89
MAX	16.71	17.46	16.14	16.80	16.29	16.00	17.05	17.32	18.09	18.53	18.91	18.98
MIN	16.62	16.62	15.17	15.58	15.03	15.68	15.05	16.60	16.96	18.14	18.43	18.77

WTR YR 1988 MEAN 17.06 HIGH 15.03 Feb 5, 6 LOW 18.98 Sept 22, 29, 30

413852078341401. Local number, MC 110.

LOCATION.--Lat 41°38'52", long 78°34'14", Hydrologic Unit 05010005, at State Forest Land.
Owner: U.S. Geological Survey.
AQUIFER.--Pottsville Formation of Middle Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 6 in , depth 107 ft, cased to 28 ft, open hole.
INSTRUMENTATION.--Continuous strip-chart recorder.
DATUM.--Elevation of land-surface datum is 2,050 ft, from topographic map. Measuring point: Top of casing, 2.1 ft above land-surface datum.
REMARKS.--Missing record Oct. 5-14, Nov. 1-5, and Nov. 18 to June 19.
PERIOD OF RECORD.--August 1973 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 26.62 ft below land-surface datum, Apr. 12, 1974; lowest, 30.09 ft below land-surface datum, Aug. 8, 1973.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26.99	---							---	27.38	27.46	27.57
2	27.14	---							---	27.44	27.47	27.58
3	27.19	---							---	27.46	27.53	27.53
4	27.21	---							---	27.51	27.53	27.44
5	---	---							---	27.52	27.53	27.46
6	---	27.22							---	27.53	27.43	27.53
7	---	27.26							---	27.50	27.42	27.60
8	---	27.26							---	27.50	27.44	27.75
9	---	27.31							---	27.48	27.44	27.70
10	---	27.32							---	27.43	27.47	27.58
11	---	27.31							---	27.42	27.49	27.59
12	---	27.18							---	27.45	27.49	27.67
13	---	27.16							---	27.51	27.49	27.64
14	---	27.37							---	27.47	27.50	27.49
15	27.30	27.44							---	27.50	27.48	27.62
16	27.26	27.44							---	27.50	27.50	27.66
17	27.21	27.35							---	27.48	27.50	27.62
18	27.17	---							---	27.47	27.45	27.48
19	27.18	---							---	27.47	27.45	27.57
20	27.16	---							27.34	27.48	27.41	27.56
21	27.22	---							27.28	27.46	27.58	27.59
22	27.31	---							27.27	27.48	27.61	27.59
23	27.32	---							27.40	27.52	27.61	27.59
24	27.32	---							27.45	27.51	27.40	27.49
25	27.31	---							27.41	27.50	27.41	27.55
26	27.31	---							27.30	27.50	27.47	27.55
27	27.21	---							27.37	27.51	27.50	27.55
28	27.25	---							27.38	27.53	27.51	27.55
29	27.44	---							27.35	27.53	27.49	27.64
30	27.53	---							27.33	27.53	27.51	27.64
31	27.53	---							---	27.49	27.51	---
MEAN	27.26	27.30							27.35	27.49	27.49	27.58
MAX	27.53	27.44							27.45	27.53	27.61	27.75
MIN	26.99	27.16							27.27	27.38	27.40	27.44

WTR YR 1988 MEAN 27.45 HIGH 26.99 Oct 1 LOW 27.75 Sept 8

412350080223701. Local number, MR 1364.

LOCATION.--Lat 41°23'50", long 80°22'37", Hydrologic Unit 05030102, at Greenville.
Owner: Borough of Greenville.
AQUIFER.--Sandstone of Cussewago Formation of Early Mississippian age.
WELL CHARACTERISTICS.--Drilled artesian well, diameter 6 in, depth 235 ft, cased to 41 ft, open hole.
INSTRUMENTATION.--Continuous stript-chart recorder.
DATUM.--Elevation of land-surface datum is 965 ft, from topographic map. Measuring point: Top of plywood cover, 2.26 ft above land-surface datum.
REMARKS.--Missing record Sept. 20.
PERIOD OF RECORD.--March 1964 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 1.43 ft below land-surface datum, Dec. 25, 1968; lowest, 8.31 ft below land-surface datum, Feb. 12, 1967.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.40	5.31	4.07	4.58	4.79	4.70	4.39	4.73	4.94	5.60	5.18	5.13
2	4.38	5.02	4.48	4.47	4.54	4.55	4.55	4.74	4.71	5.60	5.35	5.13
3	4.43	4.81	4.27	4.90	4.25	4.38	4.58	4.85	4.59	5.94	5.39	5.00
4	4.90	4.72	4.23	4.66	4.45	4.48	4.12	4.71	4.92	5.98	5.42	4.88
5	4.54	4.91	4.34	4.43	4.44	4.50	3.87	4.51	4.84	5.97	5.34	4.81
6	4.44	4.87	4.42	4.44	4.48	4.45	3.83	4.64	4.88	6.31	5.23	4.86
7	4.46	5.09	4.37	4.48	4.62	4.62	3.80	4.78	5.00	5.94	5.30	4.87
8	4.38	4.98	4.24	4.46	4.81	4.58	3.93	4.92	4.83	5.93	5.32	4.90
9	4.35	5.00	4.21	4.42	4.46	4.40	4.09	4.87	5.06	5.92	5.28	4.92
10	4.32	4.96	4.09	4.54	4.62	4.42	4.30	4.60	4.88	5.97	5.34	5.00
11	4.54	4.83	3.92	4.74	4.64	4.35	4.20	4.73	5.01	5.97	5.34	5.04
12	4.54	4.78	4.22	4.57	4.60	4.55	4.22	4.69	5.11	5.80	5.35	5.03
13	4.51	4.76	4.55	4.54	4.67	4.45	4.21	4.72	5.13	5.85	5.49	5.00
14	4.51	5.10	4.47	4.72	4.70	4.66	4.40	4.83	5.21	5.83	5.52	5.09
15	4.68	5.24	4.33	4.80	4.79	4.53	4.40	4.83	5.04	6.00	5.59	5.13
16	4.65	5.00	4.31	4.79	4.48	4.50	4.42	4.68	5.04	5.95	5.35	5.06
17	4.81	4.86	4.35	4.65	4.57	4.47	4.53	4.43	4.90	5.80	5.28	5.05
18	4.89	4.90	4.37	4.78	4.39	4.37	4.54	4.34	5.01	5.72	5.31	5.07
19	4.67	4.90	4.50	4.79	4.31	4.54	4.53	4.38	5.07	5.66	5.25	4.95
20	4.62	4.69	4.25	4.70	4.17	4.79	4.32	4.66	5.34	5.62	5.31	---
21	4.74	5.01	3.83	4.50	4.28	4.70	4.38	4.57	5.16	5.62	5.48	4.55
22	4.74	5.04	3.86	4.62	4.14	4.62	4.37	4.74	5.20	5.23	5.49	4.55
23	4.75	4.84	4.07	4.52	4.00	4.85	4.79	4.64	5.19	5.41	5.46	4.66
24	4.89	4.93	4.13	4.60	3.98	4.72	4.71	4.70	5.30	5.39	5.12	5.02
25	5.02	4.90	4.19	4.54	4.23	4.52	4.80	4.48	5.29	5.34	5.13	5.17
26	4.87	4.86	4.39	4.68	4.36	4.58	4.80	4.56	5.10	5.25	5.25	5.09
27	4.72	4.83	4.58	4.95	4.28	4.57	4.65	4.61	5.54	5.34	5.51	4.85
28	5.39	4.92	4.63	4.93	4.58	4.43	4.76	4.86	5.53	5.54	5.65	5.05
29	4.96	4.90	5.03	4.89	4.44	4.41	4.83	5.02	5.52	5.51	5.30	5.03
30	4.81	4.12	4.87	4.80	---	4.70	4.82	5.02	5.48	5.45	4.83	4.95
31	4.93	---	4.51	4.91	---	4.62	---	5.03	---	5.34	4.94	---
TOTAL	144.84	147.08	134.08	144.40	129.07	141.01	132.14	145.87	152.82	176.78	165.10	143.84
MEAN	4.67	4.90	4.33	4.66	4.45	4.55	4.40	4.71	5.09	5.70	5.33	4.96
MAX	5.39	5.31	5.03	4.95	4.81	4.85	4.83	5.03	5.54	6.31	5.65	5.17
MIN	4.32	4.12	3.83	4.42	3.98	4.35	3.80	4.34	4.59	5.23	4.83	4.55

WTR YR 1988 MEAN 4.81 HIGH 3.80 Apr 7 LOW 6.31 July 6

400008079142801. Local number, SO 2.

LOCATION.--Lat 40°00'08", long 79°14'28", Hydrologic Unit 05020006, at Laurel Hill State Park.
Owner: Commonwealth of Pennsylvania.
AQUIFER.--Shale and sandstone of Allegheny Group of Middle Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled artesian well, diameter 6 in to 4 in, depth 450 ft, cased to 311 ft, open hole.
INSTRUMENTATION.--Continuous strip-chart recorder.
DATUM.--Elevation of land-surface datum is 2,040 ft, from topographic map. Measuring point: Top of casing, 1.43 ft above land-surface datum.
REMARKS.--Water levels affected by pumping.
PERIOD OF RECORD.--April 1937 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 27.42 ft below land-surface datum, Apr. 9, 1980; lowest, 50.33 ft below land-surface datum, May 31, 1987 (affected by pumping of nearby well).

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35.88	35.31	34.66	33.91	33.81	33.54	33.44	33.35	33.26	33.94	34.87	35.57
2	35.86	35.31	34.70	33.96	33.73	33.54	33.45	33.37	33.20	34.00	34.91	35.59
3	35.80	35.31	34.70	33.95	33.65	33.51	33.44	33.38	33.20	34.04	34.93	35.58
4	35.79	35.24	34.60	33.90	33.66	33.43	33.39	33.37	33.27	34.09	34.98	35.55
5	35.76	35.24	34.59	33.90	33.66	33.38	33.41	33.35	33.27	34.11	34.98	35.41
6	35.71	35.27	34.62	33.92	33.68	33.41	33.39	33.27	33.27	34.20	34.98	35.50
7	35.64	35.27	34.62	33.92	33.71	33.44	33.25	33.30	33.26	34.21	35.02	35.57
8	35.65	35.27	34.62	33.88	33.67	33.45	33.30	33.30	33.27	34.26	35.05	35.59
9	35.65	35.25	34.57	33.85	33.67	33.42	33.33	33.30	33.27	34.29	35.07	35.60
10	35.64	35.24	34.49	33.85	33.71	33.37	33.33	33.27	33.30	34.32	35.11	35.64
11	35.60	35.18	34.41	33.85	33.71	33.43	33.33	33.30	33.36	34.35	35.16	35.67
12	35.55	35.16	34.37	33.85	33.67	33.58	33.33	33.32	33.39	34.37	35.18	35.68
13	35.51	35.16	34.40	33.85	33.65	33.58	33.33	33.33	33.40	34.43	35.18	35.66
14	35.51	35.16	34.41	33.89	33.65	33.59	33.33	33.34	33.49	34.43	35.19	35.66
15	35.50	35.22	34.35	33.87	33.63	33.59	33.33	33.33	33.51	34.48	35.25	35.72
16	35.44	35.22	34.23	33.89	33.65	33.54	33.34	33.30	33.51	34.53	35.25	35.72
17	35.40	35.21	34.31	33.86	33.65	33.70	33.34	33.30	33.52	34.56	35.25	35.72
18	35.38	35.18	34.29	33.87	33.64	33.58	33.30	33.30	33.57	34.58	35.25	35.61
19	35.36	35.16	34.28	33.85	33.63	33.53	33.30	33.20	33.59	34.60	35.25	35.64
20	35.33	35.10	34.21	33.65	33.47	33.43	33.30	33.17	33.62	34.60	35.25	35.63
21	35.30	35.07	34.18	33.72	33.51	33.46	33.30	33.14	33.65	34.51	35.32	35.66
22	35.30	35.06	34.18	33.67	33.51	33.50	33.33	33.17	33.66	34.57	35.41	35.71
23	35.34	35.04	34.18	33.67	33.50	33.50	33.33	33.17	33.69	34.59	35.41	35.66
24	35.34	35.02	34.12	33.67	33.46	33.43	33.33	33.14	33.75	34.59	35.33	35.67
25	35.34	35.03	34.12	33.67	33.47	33.40	33.36	33.15	33.78	34.64	35.36	35.64
26	35.33	35.01	34.04	33.68	33.47	33.40	33.36	33.19	33.79	34.68	35.39	35.61
27	35.30	35.01	34.04	33.76	33.46	33.38	33.36	33.20	33.84	34.71	35.46	35.63
28	35.23	35.01	34.03	33.79	33.46	33.42	33.36	33.20	33.87	34.80	35.49	35.63
29	35.23	34.95	33.97	33.79	33.50	33.42	33.33	33.20	33.88	34.83	35.48	35.67
30	35.23	34.65	34.01	33.80	---	33.44	33.30	33.27	33.93	34.83	35.45	35.68
31	35.30	---	34.01	33.81	---	33.45	---	33.28	---	34.84	35.50	---
TOTAL	1100.20	1054.31	1064.31	1048.50	974.64	1037.84	1000.32	1031.26	1005.37	1067.98	1091.71	1068.87
MEAN	35.49	35.14	34.33	33.82	33.61	33.48	33.34	33.27	33.51	34.45	35.22	35.63
MAX	35.88	35.31	34.70	33.96	33.81	33.70	33.45	33.38	33.93	34.84	35.50	35.72
MIN	35.23	34.65	33.97	33.65	33.46	33.37	33.25	33.14	33.20	33.94	34.87	35.41

WTR YR 1988 MEAN 34.28 HIGH 33.14 May 21 LOW 35.88 Oct 1

WARREN COUNTY

414159079213601. Local number, WR 50.

LOCATION.--Lat 41°41'59", long 79°21'36", Hydrologic Unit 05010003, at State Game Land Number 86.
Owner: U.S. Geological Survey.
AQUIFER.--Shale of Venango Formation of late Devonian age.
WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 6 in depth 105 ft , cased to 46 ft, open hole.
INSTRUMENTATION.--Satellite telemeter -- 60-minute transmission.
DATUM.--Elevation of land-surface datum is 1,170 ft, from topographic map. Measuring point: Top of casing, 2.0 ft above land-surface datum.
REMARKS.--Missing record Oct. 1 to Dec. 2, and Sept 16-19.
PERIOD OF RECORD.--August 1972 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 39.49 ft below land-surface datum, Aug. 2, 1987; lowest, 45.42 ft below land-surface datum, Nov. 2, 1984.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			---	40.64	41.75	41.34	40.72	40.96	41.07	42.56	43.40	43.86
2			---	40.77	41.61	41.33	40.66	41.02	41.09	42.62	43.45	43.87
3			40.29	40.77	41.57	41.24	40.63	41.04	41.15	42.67	43.46	43.84
4			40.23	40.74	41.40	41.22	40.23	41.03	41.26	42.76	43.50	43.73
5			40.36	40.81	41.30	41.37	39.89	41.01	41.31	42.83	43.53	43.55
6			40.55	40.97	41.40	41.38	39.83	40.98	41.33	42.87	43.45	43.69
7			40.61	41.05	41.44	41.34	39.64	41.04	41.33	42.89	43.47	43.81
8			40.61	41.05	41.43	41.38	39.77	41.06	41.39	42.89	43.53	43.85
9			40.53	40.97	41.44	41.31	39.87	41.04	41.53	42.89	43.55	43.84
10			40.31	41.13	41.51	41.05	39.89	41.01	41.67	42.88	43.58	43.89
11			40.26	41.16	41.52	41.07	39.89	41.13	41.78	42.89	43.62	43.98
12			40.08	41.16	41.44	41.06	39.90	41.20	41.83	42.95	43.66	43.99
13			40.33	41.23	41.32	40.87	39.94	41.19	41.94	43.02	43.71	43.93
14			40.46	41.46	41.44	40.77	39.96	41.17	42.01	43.01	43.67	43.88
15			40.46	41.46	41.43	40.76	40.06	41.16	42.03	43.08	43.63	43.99
16			40.11	41.44	41.27	40.86	40.16	41.03	41.95	43.12	43.61	---
17			40.37	41.44	41.35	40.94	40.19	40.99	42.00	43.16	43.60	---
18			40.47	41.47	41.41	40.94	40.09	41.02	42.09	43.21	43.61	---
19			40.47	41.53	41.41	40.82	40.23	40.99	42.16	43.20	43.64	---
20			40.45	41.50	41.16	40.79	40.32	40.92	42.18	43.25	43.64	43.87
21			40.30	41.31	41.21	41.01	40.38	40.85	42.18	43.23	43.74	43.87
22			40.30	41.36	41.22	41.12	40.52	40.83	42.18	43.22	43.81	43.87
23			40.37	41.36	41.11	41.12	40.53	40.79	42.28	43.27	43.81	43.82
24			40.39	41.33	41.20	41.00	40.57	40.69	42.37	43.30	43.69	43.84
25			40.29	41.36	41.24	40.97	40.69	40.75	42.40	43.34	43.66	43.92
26			40.36	41.42	41.24	40.82	40.71	40.84	42.35	43.37	43.71	44.02
27			40.42	41.67	41.16	40.66	40.71	40.91	42.43	43.43	43.77	44.05
28			40.42	41.84	41.24	40.76	40.72	40.94	42.48	43.38	43.76	44.12
29			40.42	41.86	41.28	40.76	40.75	40.96	42.51	43.37	43.76	44.16
30			40.60	41.83	---	40.68	40.90	41.01	42.52	43.38	43.76	44.16
31			40.60	41.76	---	40.73	---	41.07	---	43.31	43.81	---
TOTAL			1171.42	1279.85	1199.50	1271.47	1208.35	1270.63	1256.80	1335.35	1352.59	1141.40
MEAN			40.39	41.29	41.36	41.02	40.28	40.99	41.89	43.08	43.63	43.90
MAX			40.61	41.86	41.75	41.38	40.90	41.20	42.52	43.43	43.81	44.16
MIN			40.08	40.64	41.11	40.66	39.64	40.69	41.07	42.56	43.40	43.55

WTR YR 1988 MEAN 41.76 HIGH 39.64 Apr 7 LOW 44.16 Sept 29, 30

400233080261301. Local number, WS 155.

LOCATION.--Lat 40°02'33", long 80°26'13", Hydrologic Unit 05030106, near Good Intent.
Owner: U.S. Geological Survey.
AQUIFER.--Washington Formation of Early Permian age.
WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 6 in, depth 160 ft, cased to 19 ft, open hole.
INSTRUMENTATION.--Digital water-level recorder -- 60-minute punch.
DATUM.--Elevation of land-surface datum is 1,110 ft, from topographic map. Measuring point: Top of casing, 2.0 ft above land-surface datum.
REMARKS.--Missing record Apr. 20.
PERIOD OF RECORD.--July 1971 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 32.25 ft below land-surface datum, Jan. 14, 1974; lowest, 39.01 ft below land-surface datum, July 11, 1971.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35.95	36.19	35.11	35.02	35.61	35.74	35.65	35.96	36.21	37.17	36.48	36.61
2	35.97	36.17	35.30	35.05	35.42	35.72	35.67	36.00	36.19	37.20	36.58	36.62
3	36.03	36.13	35.30	35.04	34.76	35.71	35.65	35.99	36.24	37.25	36.64	36.60
4	36.03	36.06	35.29	35.05	34.27	35.63	35.62	35.96	36.28	37.33	36.71	36.58
5	36.00	36.12	35.34	35.29	34.24	35.23	35.32	35.95	36.28	37.38	36.77	36.38
6	35.92	36.15	35.43	35.43	34.38	34.88	35.14	36.00	36.26	37.42	36.75	36.40
7	35.93	36.14	35.44	35.47	34.47	34.81	35.13	36.03	36.26	37.43	36.70	36.43
8	36.05	36.14	35.44	35.42	34.64	34.83	35.22	36.05	36.26	37.43	36.63	36.42
9	36.06	36.11	35.43	35.55	34.80	34.85	35.26	36.04	36.29	37.42	36.58	36.40
10	36.07	36.11	35.43	35.64	34.98	35.07	35.27	36.04	36.33	37.45	36.62	36.46
11	36.06	36.07	35.41	35.64	34.99	35.15	35.33	36.15	36.35	37.48	36.67	36.51
12	36.05	36.02	35.46	35.64	35.04	35.16	35.41	36.17	36.34	37.53	36.73	36.52
13	36.05	35.99	35.64	35.79	35.28	35.15	35.44	36.15	36.39	37.56	36.79	36.52
14	36.06	36.04	35.66	35.87	35.30	35.15	35.52	36.17	36.42	37.55	36.84	36.54
15	36.07	36.09	35.57	35.86	35.32	35.29	35.61	36.15	36.42	37.62	36.93	36.58
16	36.07	36.09	35.61	35.84	35.49	35.41	35.65	36.08	36.41	37.63	36.99	36.58
17	36.05	36.04	35.73	35.85	35.55	35.47	35.65	36.15	36.43	37.66	37.02	36.55
18	36.07	36.00	35.73	35.92	35.60	35.47	35.61	36.15	36.47	37.66	37.07	36.49
19	36.06	36.00	35.69	35.93	35.57	35.42	35.69	36.11	36.51	37.63	37.08	36.45
20	36.03	35.85	35.59	35.74	35.44	35.60	---	36.08	36.53	37.62	37.06	36.37
21	36.09	35.93	35.40	35.22	35.52	35.68	35.73	36.08	36.55	37.23	37.15	36.41
22	36.15	35.96	35.25	35.05	35.53	35.71	35.77	36.08	36.58	36.77	37.18	36.41
23	36.15	35.96	35.31	35.05	35.52	35.68	35.77	36.10	36.73	36.61	37.18	36.36
24	36.16	36.02	35.33	35.19	35.52	35.65	35.86	36.05	36.77	36.49	37.08	36.39
25	36.17	36.01	35.36	35.20	35.55	35.65	35.88	36.07	36.80	36.45	36.86	36.41
26	36.15	35.99	35.37	35.43	35.56	35.61	35.88	36.10	36.90	36.43	36.69	36.41
27	36.04	35.99	35.30	35.57	35.62	35.54	35.89	36.12	36.97	36.44	36.68	36.41
28	36.04	35.96	35.18	35.64	35.63	35.59	35.89	36.11	37.01	36.42	36.69	36.39
29	36.06	35.84	34.98	35.64	35.67	35.54	35.89	36.13	37.05	36.42	36.69	36.42
30	36.09	35.41	34.98	35.62	---	35.63	35.94	36.19	37.10	36.41	36.67	36.44
31	36.21	---	34.95	35.64	---	35.64	---	36.21	---	36.40	36.61	---
TOTAL	1117.89	1080.58	1097.01	1100.29	1021.27	1097.66	1032.34	1118.62	1095.33	1151.49	1141.12	1094.06
MEAN	36.06	36.02	35.39	35.49	35.22	35.41	35.60	36.08	36.51	37.14	36.81	36.47
MAX	36.21	36.19	35.73	35.93	35.67	35.74	35.94	36.21	37.10	37.66	37.18	36.62
MIN	35.92	35.41	34.95	35.02	34.24	34.81	35.13	35.95	36.19	36.40	36.48	36.36

WTR YR 1988 MEAN 36.02 HIGH 34.24 Feb 5 LOW 37.66 July 17, 18

402138079031802. Local number, WE 300.

LOCATION.--Lat 40°21'38", long 79°03'18", Hydrologic Unit 05010007, at State Game Land Number 42.
Owner: U.S. Geological Survey.
AQUIFER.--Shale of Clarion Formation of Middle Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 6 in, depth 110 ft, cased to 22 ft, open hole.
INSTRUMENTATION.--Continuous strip-chart recorder.
DATUM.--Elevation of land-surface datum is 1,270 ft, from topographic map. Measuring point: Top of plywood cover, 3.05 ft above land-surface datum.
REMARKS.--None.
PERIOD OF RECORD.--February 1968 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 13.61 ft below land-surface datum, Apr. 24, 1984; lowest, 29.22 ft below land-surface datum, July 3, 1968.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.64	17.43	16.06	15.73	15.81	15.06	14.44	15.43	14.29	16.53	17.77	18.27
2	16.73	17.43	16.34	15.82	15.69	15.06	14.43	15.38	14.47	16.59	17.79	18.26
3	16.77	17.39	16.33	15.69	15.65	15.02	14.35	15.34	14.75	16.67	17.82	18.21
4	16.73	17.32	16.19	15.47	15.37	15.04	14.23	15.18	14.97	16.79	17.83	18.12
5	16.62	17.53	16.29	15.67	15.42	15.10	14.32	15.09	15.01	16.90	17.82	18.16
6	16.42	17.59	16.44	15.81	15.48	14.86	14.24	15.00	15.05	16.91	17.83	18.17
7	16.54	17.60	16.44	15.87	15.48	14.86	14.17	15.06	15.05	16.93	17.86	18.20
8	16.74	17.60	16.33	15.52	15.31	14.85	14.37	15.05	15.20	16.96	17.89	18.17
9	16.73	17.71	16.09	15.75	15.18	14.52	14.41	14.88	15.45	16.98	17.91	18.11
10	16.67	17.71	15.91	15.90	15.33	14.52	14.36	14.71	15.57	17.05	17.95	18.12
11	16.59	17.66	15.80	15.89	15.27	14.62	14.21	14.78	15.58	17.10	17.97	18.14
12	16.55	17.65	15.83	15.83	14.90	14.43	14.19	14.79	15.52	17.12	17.98	18.14
13	16.67	17.60	16.28	16.08	15.27	14.27	14.21	14.61	15.58	17.22	18.00	18.07
14	16.70	17.75	16.34	16.29	15.35	14.27	14.20	14.52	15.64	17.24	18.01	18.06
15	16.67	17.80	16.20	16.19	15.02	14.52	14.33	14.41	15.56	17.32	18.04	18.11
16	16.66	17.70	15.99	16.11	15.38	14.67	14.42	14.19	15.45	17.34	18.05	18.09
17	16.67	17.46	16.33	16.07	15.41	14.77	14.41	14.31	15.60	17.37	18.06	18.02
18	16.73	17.48	16.42	16.18	15.41	14.68	14.26	14.31	15.71	17.42	18.06	17.93
19	16.73	17.48	16.22	16.24	15.30	14.38	14.43	14.28	15.74	17.44	18.08	17.87
20	16.77	17.08	16.12	15.97	14.82	14.67	14.54	14.24	15.75	17.49	18.07	17.75
21	16.93	17.23	16.00	16.01	15.09	14.89	14.59	14.19	15.75	17.51	18.11	17.73
22	17.04	17.28	15.93	16.03	15.07	14.95	14.70	14.09	15.79	17.54	18.18	17.68
23	17.06	17.11	15.98	15.94	15.03	14.82	14.70	13.97	16.07	17.55	18.16	17.51
24	17.07	17.16	15.96	15.90	15.05	14.68	14.89	13.85	16.13	17.58	18.11	17.51
25	17.15	17.08	15.69	15.89	15.08	14.64	14.95	13.97	16.08	17.59	18.13	17.42
26	17.07	16.91	15.84	16.05	15.08	14.53	14.99	14.03	16.18	17.62	18.20	17.40
27	17.07	16.91	15.82	16.21	15.01	14.60	15.01	14.07	16.27	17.67	18.22	17.32
28	17.18	16.81	15.68	16.26	15.04	14.72	15.10	14.02	16.31	17.70	18.26	17.21
29	17.28	16.57	15.76	16.24	15.08	14.60	15.19	14.06	16.35	17.72	18.25	17.21
30	17.28	16.21	15.83	15.95	---	14.54	15.42	14.19	16.43	17.71	18.24	17.16
31	17.50	---	15.65	15.92	---	14.56	---	14.25	---	17.73	18.26	---
TOTAL	521.96	520.24	498.09	494.48	442.38	455.70	436.06	450.25	467.30	535.29	558.91	536.12
MEAN	16.84	17.34	16.07	15.95	15.25	14.70	14.54	14.52	15.58	17.27	18.03	17.87
MAX	17.50	17.80	16.44	16.29	15.81	15.10	15.42	15.43	16.43	17.73	18.26	18.27
MIN	16.42	16.21	15.65	15.47	14.82	14.27	14.17	13.85	14.29	16.53	17.77	17.16

WTR YR 1988 MEAN 16.17 HIGH 13.85 May 24 LOW 18.27 Sept 1

INDIANA COUNTY

404541079082001. Local number, IN 120.

LOCATION.--Lat 40°45'41", long 79°08'20", Hydrologic Unit 05010006, near Home.
Owner: James McMillan.
AQUIFER.--Glenshaw Formation of Late Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled well, diameter 6 in, depth 69 ft, cased to 15 ft, open hole.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 1140 ft, from topographic map. Measuring point: Top of casing, 1.20 ft above land-surface datum.
REMARKS.--None.
PERIOD OF RECORD.--October 1986 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 17.27 ft below land-surface datum, Feb. 4, 1988; lowest 20.22 ft below land-surface datum, July 18, 1988.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18.44	19.06	18.08	18.15	18.43	18.43	18.28	18.93	19.01	19.65	19.85	19.82
2	18.49	19.02	18.23	18.22	17.98	18.42	18.38	18.90	19.00	19.69	19.88	19.85
3	18.58	18.95	18.18	18.18	17.46	18.44	18.28	18.89	18.97	19.73	20.01	19.80
4	18.64	18.89	18.08	18.19	17.27	18.29	18.23	18.87	19.16	20.07	19.93	19.63
5	18.56	19.01	18.15	18.32	17.37	18.31	18.28	18.79	19.07	19.91	19.89	19.61
6	18.51	19.04	18.28	18.43	17.62	18.16	18.22	18.76	19.05	19.88	19.87	19.69
7	18.48	19.07	18.26	18.48	17.62	18.13	18.13	18.81	19.04	19.86	20.05	19.77
8	18.54	19.09	18.22	18.35	17.78	18.13	18.23	18.81	19.25	20.03	19.87	19.76
9	18.54	19.11	18.14	18.46	17.90	17.96	18.31	18.76	19.18	20.00	20.20	19.69
10	18.56	19.07	18.11	18.60	18.05	18.00	18.23	18.62	19.25	19.92	20.10	19.77
11	18.48	18.98	18.06	18.61	18.06	18.04	18.27	18.69	19.33	19.89	20.00	19.83
12	18.44	18.94	18.08	18.53	18.07	18.07	18.35	18.72	19.33	20.03	20.05	19.80
13	18.51	18.95	18.37	18.71	18.26	18.01	18.36	18.63	19.42	20.11	20.03	19.69
14	18.57	19.12	18.36	18.78	18.31	18.06	18.39	18.66	19.36	20.13	19.96	19.69
15	18.61	19.21	18.20	18.73	18.23	18.17	18.47	18.63	19.45	20.11	20.19	19.82
16	18.61	19.16	18.10	18.74	18.40	18.22	18.64	18.55	19.31	20.11	20.11	19.81
17	18.61	19.04	18.22	18.71	18.39	18.30	18.55	18.83	19.44	20.08	20.06	19.73
18	18.69	19.00	18.26	18.65	18.44	18.23	18.49	18.68	19.53	20.22	19.99	19.69
19	18.67	18.97	18.24	18.63	18.33	18.22	18.62	18.60	19.53	20.12	19.98	19.67
20	18.71	18.80	18.12	18.16	18.12	18.31	18.64	18.62	19.44	20.11	19.91	19.59
21	18.76	18.99	17.94	18.16	18.24	18.41	18.68	18.69	19.90	20.05	19.99	19.64
22	18.83	19.01	17.93	18.22	18.16	18.43	18.76	18.65	19.45	19.94	20.08	19.65
23	18.89	19.00	18.06	18.26	18.15	18.32	18.73	18.70	19.62	19.89	20.00	19.61
24	18.90	19.06	18.09	18.25	18.16	18.35	18.85	18.59	19.63	19.84	19.91	19.69
25	18.96	19.02	18.01	18.26	18.27	18.29	18.82	18.72	19.72	19.83	19.85	19.69
26	18.91	19.05	18.11	18.42	18.24	18.19	18.81	18.74	19.53	19.76	19.91	19.73
27	18.81	19.06	18.08	18.54	18.30	18.19	18.84	18.81	19.59	19.81	19.89	19.69
28	18.84	19.03	18.03	18.59	18.31	18.25	18.83	18.90	19.59	19.81	19.85	19.72
29	18.89	18.93	18.24	18.56	18.42	18.20	18.82	18.84	19.60	19.95	19.81	19.76
30	18.95	18.23	18.27	18.54	---	18.27	18.91	18.97	19.61	19.88	19.74	19.73
31	19.14	---	18.16	18.51	---	18.29	---	18.99	---	19.76	19.80	---
MEAN	18.68	19.00	18.15	18.45	18.08	18.23	18.51	18.75	19.38	19.94	19.96	19.72
MAX	19.14	19.21	18.37	18.78	18.44	18.44	18.91	18.99	19.90	20.22	20.20	19.85
MIN	18.44	18.23	17.93	18.15	17.27	17.96	18.13	18.55	18.97	19.65	19.74	19.59

WTR YR 1988 MEAN 18.91 HIGH 17.27 Feb 4 LOW 20.22 July 18

404723079105201. Local number, IN 121.

LOCATION.--Lat 40°47'23", long 79°10'52", Hydrologic Unit 05010006, at Plumville.
Owner: Fred Tost.
AQUIFER.--Glenshaw Formation of Late Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled well, diameter 6 in, depth 49 ft, cased to 20 ft, open hole.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 1210 ft, from topographic map. Measuring point: Top of recorder shelf, 1.60 ft above land-surface datum.
REMARKS.--Missing record June 13 to July 27 and Sept. 6-30.
PERIOD OF RECORD.--October 1986 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 27.89 ft below land-surface datum, Apr. 5, 1987; lowest 41.88 ft below land-surface datum, Aug. 24, 1988.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33.52	37.40	31.44	32.62	32.95	32.69	32.22	33.69	33.64	---	41.64	41.35
2	33.78	37.52	32.04	32.11	30.51	32.75	32.24	33.73	33.81	---	41.67	41.35
3	33.77	37.60	32.22	32.15	28.49	32.77	32.26	33.73	33.96	---	41.71	41.35
4	33.75	37.67	32.21	32.22	28.55	32.61	32.26	33.73	34.09	---	41.73	41.35
5	33.92	37.78	32.19	32.60	29.49	31.24	32.20	33.73	34.29	---	41.76	41.35
6	34.06	37.83	32.35	32.88	31.09	31.32	32.22	33.12	34.59	---	41.79	---
7	34.06	37.87	32.51	33.07	31.56	31.59	32.21	32.39	34.99	---	41.79	---
8	33.98	37.88	32.56	33.30	31.92	31.67	31.70	32.46	35.29	---	41.66	---
9	33.93	37.88	32.56	33.51	32.20	31.75	31.68	32.51	35.74	---	41.58	---
10	34.01	37.88	32.30	33.73	32.27	31.59	31.85	32.42	36.15	---	41.58	---
11	34.01	37.85	32.13	33.88	32.52	31.65	32.12	31.98	36.54	---	41.64	---
12	34.03	37.80	32.13	33.95	32.63	31.71	32.19	32.16	36.58	---	41.69	---
13	34.22	37.74	32.34	34.07	32.80	31.68	32.25	32.22	---	---	41.74	---
14	34.36	37.69	32.56	34.31	32.88	31.68	32.28	32.16	---	---	41.77	---
15	34.50	37.68	32.57	34.66	32.88	31.84	32.33	32.25	---	---	41.79	---
16	34.68	37.65	32.08	35.04	32.77	32.05	32.38	32.26	---	---	41.81	---
17	34.87	37.59	32.11	35.07	32.83	32.14	32.44	32.22	---	---	41.84	---
18	35.01	37.50	32.15	35.06	32.81	32.16	32.52	32.23	---	---	41.86	---
19	35.05	36.55	32.28	34.26	32.72	32.13	32.63	31.89	---	---	41.86	---
20	35.17	36.55	32.28	33.85	32.48	32.15	32.73	31.43	---	---	41.84	---
21	35.36	36.55	31.46	31.04	32.05	32.23	32.93	31.60	---	---	41.83	---
22	35.60	36.55	31.92	31.59	32.10	32.26	33.17	32.00	---	---	41.86	---
23	36.02	36.55	32.14	32.01	32.10	32.25	33.32	32.15	---	---	41.87	---
24	36.36	35.30	32.22	32.19	32.04	32.21	33.46	32.16	---	---	41.88	---
25	36.62	35.53	32.26	32.26	32.14	32.22	33.72	32.27	---	---	41.87	---
26	36.82	35.80	32.18	32.59	32.23	32.20	33.93	32.42	---	---	41.71	---
27	36.97	35.99	32.16	32.79	32.31	31.05	34.08	32.57	---	---	41.66	---
28	36.95	36.15	32.17	32.99	32.53	31.46	34.16	32.69	---	41.54	41.64	---
29	37.02	36.17	32.25	33.07	32.65	31.61	34.13	32.88	---	41.57	41.65	---
30	37.11	30.27	32.57	33.08	---	31.93	33.90	33.10	---	41.59	41.68	---
31	37.26	---	32.66	33.01	---	32.17	---	33.41	---	41.62	41.56	---
MEAN	35.06	36.89	32.23	33.19	31.95	31.96	32.72	32.57	34.97	41.58	41.74	41.35
MAX	37.26	37.88	32.66	35.07	32.95	32.77	34.16	33.73	36.58	41.62	41.88	41.35
MIN	33.52	30.27	31.44	31.04	28.49	31.05	31.68	31.43	33.64	41.54	41.56	41.35

WTR YR 1988 MEAN 34.52 HIGH 28.49 Feb 5 LOW 41.88 Aug 24

403511079125501. Local number, IN 364.

LOCATION.--Lat 40°35'11", long 79°12'55", Hydrologic Unit 05010007, near Indiana.
Owner: T. Graham.
AQUIFER.--Glenshaw Formation of Late Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled well, diameter 6 in, depth 150 ft, cased to 20 ft, open hole.
INSTRUMENTATION.--Water-level recorder.
Datum.--Elevation of land-surface datum is 1320 ft, from topographic map. Measuring point: Top of recorder shelf, 1.36 ft above land-surface datum.
REMARKS.--Missing record, Feb. 2-6.
PERIOD OR RECORD.--October 1986 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 6.80 ft below land-surface datum, Sept. 18, 1987; lowest 18.69 ft below land-surface datum, Nov. 10-12, 17, 18, 1987.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.17	18.50	16.68	17.38	16.00	17.30	16.02	16.66	16.38	17.47	17.70	18.00
2	17.22	18.52	17.00	17.38	---	17.30	16.04	16.68	16.43	17.52	17.70	18.04
3	17.28	18.53	17.22	17.38	---	17.27	16.08	16.70	16.47	17.53	17.80	18.06
4	17.32	18.54	17.31	17.37	---	15.67	16.08	16.70	16.55	17.58	17.81	18.07
5	17.37	18.56	17.37	17.37	---	15.98	16.09	16.70	16.60	17.64	17.83	18.03
6	17.42	18.59	17.50	17.42	---	16.19	16.10	16.70	16.65	17.66	17.84	17.99
7	17.42	18.63	17.59	17.48	14.50	16.29	16.10	16.68	16.69	17.70	17.84	17.98
8	17.48	18.66	17.62	17.54	15.33	16.36	16.08	16.66	16.69	17.70	17.84	18.00
9	17.54	18.68	17.63	17.58	15.91	16.39	16.07	16.65	16.78	17.70	17.85	18.03
10	17.60	18.69	17.63	17.63	16.37	16.39	16.07	16.60	16.82	17.71	17.89	18.07
11	17.68	18.69	17.62	17.67	16.73	16.40	16.05	16.54	16.87	17.72	17.90	18.10
12	17.68	18.69	17.60	17.75	16.93	16.40	16.04	16.50	16.93	17.72	17.91	18.15
13	17.72	18.68	17.60	17.80	17.12	16.38	16.06	16.47	17.00	17.73	17.96	18.16
14	18.00	18.67	17.63	17.86	17.27	16.36	16.08	16.45	17.06	17.75	17.97	17.93
15	18.06	18.67	17.62	17.91	17.30	16.33	16.11	16.42	17.10	17.75	17.98	17.91
16	18.10	18.68	17.60	17.98	17.33	16.33	16.15	16.40	17.12	17.77	18.00	17.90
17	18.12	18.69	17.60	18.01	17.41	16.36	16.20	16.38	17.16	17.77	18.00	17.90
18	18.17	18.69	17.60	18.03	17.47	16.37	16.20	16.37	17.18	17.78	18.00	17.90
19	18.19	18.68	17.60	17.80	17.49	16.37	16.23	16.35	17.22	17.79	18.00	17.87
20	18.20	18.65	17.30	16.96	17.41	16.37	16.27	16.38	17.25	17.79	18.00	17.86
21	18.23	18.63	17.33	17.05	17.40	16.34	16.30	16.38	17.27	17.78	18.00	17.83
22	18.27	18.63	17.32	17.21	17.38	16.35	16.37	16.37	17.28	17.75	18.01	17.82
23	18.30	18.63	17.33	17.31	17.35	16.35	16.42	16.30	17.30	17.73	18.01	17.79
24	18.37	18.68	17.39	17.38	17.34	16.27	16.46	16.23	17.33	17.70	18.02	17.80
25	18.38	18.68	17.40	17.42	17.32	16.23	16.51	16.19	17.37	17.69	18.05	17.82
26	18.40	18.67	17.41	17.47	17.32	16.19	16.56	16.14	17.37	17.68	18.01	17.88
27	18.44	18.67	17.41	17.53	17.30	16.08	16.60	16.16	17.40	17.68	18.02	17.93
28	18.44	18.66	17.42	17.59	17.30	16.03	16.62	16.17	17.42	17.68	18.03	17.97
29	18.43	15.38	17.41	17.62	17.29	16.02	16.64	16.21	17.44	17.69	18.04	18.00
30	18.43	16.17	17.42	17.63	---	16.01	16.64	16.27	17.45	17.70	18.02	18.06
31	18.48	---	17.41	17.60	---	16.00	---	16.33	---	17.70	18.00	---
MEAN	17.93	18.45	17.44	17.55	16.94	16.34	16.24	16.44	17.02	17.70	17.94	17.96
MAX	18.48	18.69	17.63	18.03	17.49	17.30	16.64	16.70	17.45	17.79	18.05	18.16
MIN	17.17	15.38	16.68	16.96	14.50	15.67	16.02	16.14	16.38	17.47	17.70	17.79

WTR YR 1988 MEAN 17.34 HIGH 14.50 Feb 7 LOW 18.69 Nov 10, 11, 12, 17, 18

403521079122701. Local number, IN 389.

LOCATION.--Lat 40°35'21", long 79°12'27", Hydrologic Unit 05010007, near Indiana.
Owner: Charles Heglund.
AQUIFER.--Glenshaw Formation of Late Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled well, diameter 6 in, depth 62 ft, cased to 20 ft, open hole.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 1220 ft, from topographic map. Measuring point: Top of recorder shelf, 1.50 ft above land-surface datum.
REMARKS.--None.
PERIOD OF RECORD.--November 1986 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 5.61 ft below land-surface datum, Apr. 5, 1987; lowest water level, 14.08 ft below land-surface datum, Aug. 16, 1988.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.89	10.83	7.65	9.04	9.15	9.46	9.19	10.32	10.30	11.70	12.43	12.93
2	8.92	10.76	7.96	9.13	7.30	9.66	9.35	10.47	9.91	12.10	12.45	13.30
3	8.93	10.81	8.04	9.25	6.20	9.43	9.06	10.45	9.97	12.19	12.24	13.21
4	9.05	10.88	8.09	9.33	5.94	9.12	9.15	10.62	9.87	12.27	12.75	12.98
5	9.02	10.95	8.10	9.44	6.38	8.39	9.18	10.18	9.79	12.19	12.58	12.90
6	9.44	11.04	8.22	9.49	6.98	8.32	9.25	10.41	10.04	12.34	12.37	12.89
7	9.49	11.02	8.59	9.58	7.31	8.41	9.09	10.37	10.04	12.21	12.77	12.71
8	9.53	11.24	8.34	9.67	7.97	8.36	9.20	10.29	10.14	12.16	12.66	12.72
9	9.46	11.43	8.79	9.74	7.86	8.65	9.55	10.56	10.05	12.43	12.78	13.16
10	9.59	11.18	8.50	9.82	8.41	8.60	9.38	9.87	10.14	12.58	12.74	12.93
11	9.57	11.09	8.43	9.32	8.39	8.71	9.31	10.17	10.63	12.53	13.72	13.96
12	9.76	11.02	8.33	9.73	8.64	8.30	9.31	10.04	10.61	12.51	12.95	13.09
13	9.62	11.03	8.96	9.67	9.14	8.75	9.58	9.96	10.44	12.52	12.68	12.65
14	9.95	11.12	8.64	9.98	9.34	8.77	9.49	10.21	10.55	12.75	13.94	12.14
15	9.77	11.24	8.52	9.70	9.30	8.97	9.63	10.14	10.80	12.66	13.26	11.70
16	9.96	11.52	8.56	10.25	9.17	9.22	9.93	10.06	10.92	12.75	14.08	11.37
17	9.97	11.19	8.31	10.06	9.27	9.18	9.74	9.92	10.66	12.96	12.95	11.14
18	10.14	11.08	8.48	9.93	9.39	9.34	9.64	10.08	10.93	12.67	13.34	11.06
19	9.95	10.95	9.09	9.98	9.07	9.40	9.82	9.85	11.19	13.16	13.17	10.94
20	10.05	10.71	8.73	8.89	8.60	9.22	9.88	9.93	11.25	12.56	13.38	10.63
21	10.09	10.76	8.03	8.15	8.97	9.16	9.77	9.11	10.98	12.35	13.31	10.74
22	10.20	11.01	8.09	8.33	9.00	9.15	9.96	9.15	11.32	12.26	13.55	10.92
23	10.72	10.95	8.27	8.62	8.83	9.18	10.33	9.16	11.44	12.48	13.79	10.97
24	10.49	10.62	8.44	8.99	8.87	9.04	10.16	9.16	11.82	12.27	13.11	11.03
25	10.35	10.61	8.50	8.90	9.06	8.88	10.27	9.08	11.61	12.52	13.25	11.05
26	10.46	10.70	8.47	8.91	9.31	8.42	10.29	9.37	11.82	12.11	13.01	11.49
27	10.62	10.42	8.25	9.92	9.34	8.46	10.13	9.53	11.49	12.42	13.18	11.29
28	10.50	10.36	8.23	9.19	9.52	8.84	10.14	10.03	11.45	12.27	13.19	11.31
29	10.58	10.17	8.52	9.35	9.62	8.50	10.03	9.66	11.51	12.42	13.40	11.78
30	10.68	7.95	8.84	9.86	---	8.64	10.24	9.98	11.96	12.46	13.16	11.45
31	10.85	---	8.95	9.73	---	8.96	---	9.84	---	12.25	12.89	---
MEAN	9.89	10.82	8.42	9.42	8.49	8.89	9.67	9.93	10.79	12.42	13.07	12.01
MAX	10.85	11.52	9.09	10.25	9.62	9.66	10.33	10.62	11.96	13.16	14.08	13.96
MIN	8.89	7.95	7.65	8.15	5.94	8.30	9.06	9.08	9.79	11.70	12.24	10.63

WTR YR 1988 MEAN 10.32 HIGH 5.94 Feb 4 LOW 14.08 Aug 16

404509079104001. Local number, IN 390.

LOCATION.--Lat 40°45'09", long 79°10'40", Hydrologic Unit 05010006, near Willet.
Owner: George Wyant.
AQUIFER.--Glenshaw Formation of Late Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled well, diameter 6 in, depth 128 ft, cased to 22 ft, open hole.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 1140 ft, from topographic map. Measuring point: Top of recorder shelf, 2.00 ft above land-surface datum.
REMARKS.--Missing record Oct. 1-8, Nov. 30 to Feb. 24, and Sept. 15-30.
PERIOD OF RECORD.--December 1986 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water-level 22.42 ft, below land-surface datum, Dec. 25, 1986; lowest, 25.13 ft below land-surface datum, Aug. 16, 1988.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	23.97			---	23.33	22.88	23.50	23.51	24.54	24.91	24.65
2	---	23.97			---	23.27	22.91	23.56	23.56	24.62	24.94	24.65
3	---	23.95			---	23.28	22.93	23.56	23.59	24.61	24.96	24.63
4	---	23.94			---	23.10	22.86	23.58	23.60	24.69	24.98	24.59
5	---	24.07			---	23.01	22.90	23.57	23.59	24.79	24.99	24.41
6	---	24.07			---	22.89	22.90	23.48	23.70	24.77	24.94	24.48
7	---	24.07			---	22.96	22.85	23.48	23.65	24.72	24.84	24.52
8	---	24.08			---	22.97	22.94	23.50	23.86	24.82	24.81	24.50
9	23.37	24.10			---	22.84	22.97	23.49	23.83	24.70	24.80	24.50
10	23.32	24.10			---	22.87	22.92	23.41	23.86	24.73	24.84	24.54
11	23.26	24.06			---	22.96	22.88	23.45	23.86	24.72	24.86	24.57
12	23.25	24.03			---	22.86	22.96	23.45	23.90	24.77	24.89	24.60
13	23.32	24.05			---	22.99	23.01	23.41	23.96	24.81	24.98	24.55
14	23.39	24.14			---	22.98	23.06	23.42	24.00	24.79	25.03	24.56
15	23.42	24.17			---	23.09	23.16	23.41	23.98	24.95	25.02	---
16	23.44	24.16			---	23.15	23.17	23.38	24.00	24.84	25.13	---
17	23.47	24.12			---	23.17	23.15	23.40	24.03	24.88	25.07	---
18	23.54	24.08			---	23.13	23.14	23.40	24.10	24.99	25.02	---
19	23.55	24.07			---	22.97	23.24	23.29	24.10	24.90	24.99	---
20	23.57	23.99			---	23.36	23.27	23.31	24.18	24.94	24.94	---
21	23.66	24.11			---	23.64	23.39	23.37	24.17	24.87	25.02	---
22	23.70	24.11			---	23.39	23.40	23.34	24.18	24.72	25.05	---
23	23.74	24.08			---	23.10	23.39	23.29	24.30	24.70	25.07	---
24	23.79	24.10			---	23.02	23.48	23.26	24.32	24.68	24.93	---
25	23.80	24.08			23.20	23.01	23.52	23.38	24.31	24.66	24.85	---
26	23.78	24.08			23.19	22.88	23.49	23.41	24.37	24.71	24.84	---
27	23.77	24.08			23.24	22.82	23.54	23.47	24.43	24.74	24.83	---
28	23.80	24.04			23.24	22.91	23.53	23.46	24.44	24.78	24.81	---
29	23.84	23.98			23.25	22.84	23.47	23.44	24.55	24.86	24.81	---
30	23.89	---			---	22.90	23.49	23.52	24.52	24.85	24.64	---
31	23.99	---			---	22.92	---	23.53	---	24.86	24.65	---
MEAN	23.59	24.06			23.22	23.05	23.16	23.44	24.02	24.77	24.92	24.55
MAX	23.99	24.17			23.25	23.64	23.54	23.58	24.55	24.99	25.13	24.65
MIN	23.25	23.94			23.19	22.82	22.85	23.26	23.51	24.54	24.64	24.41

WTR YR 1988 MEAN 23.91 HIGH 22.82 Mar 27 LOW 25.13 Aug 16

INDIANA COUNTY

404509079104003. Local number, IN 392.

LOCATION.--Lat 40°45'09", long 79°10'40", Hydrologic Unit 05010006, near Willet.
Owner: George Wyant.
AQUIFER.--Glenshaw Formation of Late Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled well, diameter 6 in, depth 110 ft, cased to 22 ft, open hole.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 1140 ft, from topographic map. Measuring point: Top of casing, 1.30 ft above land-surface datum.
REMARKS.--Missing record Nov. 12-23, and Sept. 15-30.
PERIOD OF RECORD.--December 1986 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water-level 20.69 ft below land-surface datum, Apr. 5, 1987; lowest, 24.37 ft below land-surface datum, Aug. 22, 1988.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22.12	22.92	22.26	22.25	22.49	22.51	22.11	22.77	22.87	23.83	24.12	23.99
2	22.16	22.92	22.39	22.27	22.09	22.48	22.14	22.82	22.93	23.89	24.16	24.00
3	22.21	22.90	22.39	22.28	21.70	22.48	22.14	22.83	22.97	23.89	24.19	23.97
4	22.22	22.89	22.28	22.36	21.52	22.31	22.06	22.83	22.98	23.96	24.22	23.95
5	22.19	23.02	22.31	22.49	21.61	22.19	22.11	22.79	22.98	24.00	24.23	23.75
6	22.17	23.03	22.42	22.57	21.79	22.10	22.09	22.72	23.04	24.01	24.18	23.82
7	22.16	23.03	22.42	22.60	21.80	22.16	22.01	22.73	23.02	24.01	24.05	23.85
8	22.20	23.04	22.40	22.42	21.93	22.17	22.11	22.75	23.15	24.09	24.05	23.85
9	22.21	23.05	22.37	22.54	21.98	22.08	22.17	22.75	23.16	24.03	24.05	23.86
10	22.19	23.05	22.27	22.63	22.11	22.05	22.15	22.72	23.20	24.06	24.10	23.91
11	22.17	23.05	22.24	22.63	22.11	22.14	22.16	22.68	23.21	24.02	24.13	23.95
12	22.17	---	22.28	22.63	22.10	22.10	22.21	22.71	23.25	24.05	24.18	23.98
13	22.27	---	22.47	22.76	22.28	22.05	22.25	22.68	23.32	24.09	24.23	23.93
14	22.31	---	22.49	22.80	22.30	22.06	22.29	22.72	23.37	24.10	24.25	23.89
15	22.33	---	22.42	22.80	22.23	22.19	22.36	22.71	23.36	24.16	24.28	---
16	22.35	---	22.19	22.81	22.38	22.26	22.39	22.67	23.36	24.15	24.35	---
17	22.38	---	22.38	22.81	22.40	22.29	22.38	22.72	23.35	24.19	24.35	---
18	22.46	---	22.38	22.77	22.41	22.26	22.37	22.73	23.41	24.23	24.32	---
19	22.48	---	22.35	22.66	22.37	22.15	22.45	22.67	23.42	24.22	24.31	---
20	22.50	---	22.31	22.45	22.07	22.39	22.50	22.67	23.47	24.23	24.26	---
21	22.59	---	22.09	22.29	22.21	22.63	22.58	22.68	23.46	24.18	24.32	---
22	22.64	---	22.10	22.35	22.22	22.51	22.60	22.67	23.48	23.96	24.37	---
23	22.68	---	22.27	22.35	22.24	22.31	22.60	22.64	23.57	23.92	24.36	---
24	22.71	23.04	22.28	22.35	22.26	22.20	22.69	22.64	23.61	23.90	24.22	---
25	22.74	23.04	22.22	22.38	22.33	22.19	22.71	22.70	23.62	23.91	24.14	---
26	22.73	23.05	22.20	22.51	22.33	22.08	22.71	22.75	23.67	23.96	24.14	---
27	22.68	23.05	22.21	22.62	22.41	22.01	22.78	22.79	23.72	24.00	24.12	---
28	22.73	23.03	22.21	22.66	22.42	22.09	22.78	22.79	23.74	24.01	24.11	---
29	22.78	22.98	22.36	22.66	22.47	22.04	22.74	22.80	23.77	24.04	24.11	---
30	22.83	22.36	22.38	22.59	---	22.10	22.75	22.85	23.79	24.04	23.95	---
31	22.94	---	22.37	22.55	---	22.12	---	22.87	---	24.07	23.97	---
MEAN	22.43	22.97	22.31	22.54	22.16	22.22	22.38	22.74	23.34	24.04	24.19	23.91
MAX	22.94	23.05	22.49	22.81	22.49	22.63	22.78	22.87	23.79	24.23	24.37	24.00
MIN	22.12	22.36	22.09	22.25	21.52	22.01	22.01	22.64	22.87	23.83	23.95	23.75

WTR YR 1988 MEAN 22.89 HIGH 21.52 Feb 4 LOW 24.37 Aug 22

404509079104004. Local number, IN 393.

LOCATION.--Lat 40°45'09", long 79°10'40", Hydrologic Unit 05010006, near Willet.
Owner: George Wyant.
AQUIFER.--Glenshaw Formation of Late Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled well, diameter 6 in, depth 110 ft, cased to 22 ft, open hole.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 1140 ft, from topographic map. Measuring point: Top of recorder shelf, 2.00 ft above land-surface datum.
REMARKS.--Missing record Sept. 15-30.
PERIOD OF RECORD.--December 1986 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water-level 17.32 ft below land-surface datum, Feb. 5, 1988; lowest 20.89 ft below land-surface datum, Aug. 16, 1988.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18.49	19.41	18.84	18.64	18.80	18.60	17.90	18.81	18.80	20.04	20.37	20.42
2	18.57	19.44	19.01	18.68	18.36	18.53	17.93	18.84	18.87	20.24	20.40	20.42
3	18.64	19.46	18.92	18.58	18.09	18.58	17.92	18.83	18.91	20.14	20.42	20.40
4	18.60	19.51	18.71	18.66	17.42	18.50	18.04	18.84	18.92	20.22	20.44	20.37
5	18.53	19.60	18.68	18.81	17.32	18.53	18.05	18.84	18.91	20.48	20.46	20.33
6	18.50	19.61	18.80	18.93	17.41	18.27	17.96	18.85	19.35	20.47	20.42	20.31
7	18.65	19.62	18.76	18.94	17.39	18.21	18.03	18.86	18.96	20.31	20.39	20.30
8	18.74	19.62	18.67	18.83	17.45	18.18	18.18	18.86	19.63	20.39	20.38	20.29
9	18.73	19.73	18.60	18.96	17.58	17.92	18.20	18.85	19.22	20.22	20.40	20.30
10	18.62	19.66	18.63	19.05	17.70	18.08	18.16	18.82	19.16	20.16	20.43	20.32
11	18.54	19.65	18.52	19.01	17.69	18.17	18.06	18.85	19.16	20.38	20.43	20.34
12	18.52	19.65	18.70	19.01	17.77	18.02	18.13	18.84	19.21	20.52	20.44	20.34
13	18.64	19.72	18.93	19.27	18.17	17.98	18.17	18.81	19.26	20.40	20.67	20.34
14	18.67	19.71	18.92	19.22	18.21	17.99	18.23	18.80	19.30	20.23	20.80	20.33
15	18.67	19.71	18.68	19.19	18.22	18.20	18.37	18.75	19.32	20.67	20.68	---
16	18.69	19.69	18.65	19.22	18.43	18.29	18.39	18.77	19.36	20.31	20.89	---
17	18.77	19.65	18.85	19.24	18.44	18.34	18.35	18.83	19.41	20.49	20.69	---
18	18.82	19.72	18.82	19.31	18.44	18.25	18.43	18.83	19.43	20.65	20.54	---
19	18.84	19.66	18.63	19.26	18.23	18.07	18.50	18.77	19.45	20.34	20.53	---
20	18.89	19.54	18.48	18.82	18.21	19.32	18.50	18.76	19.46	20.33	20.53	---
21	19.09	19.67	18.46	18.89	18.31	19.80	18.58	18.74	19.50	20.32	20.56	---
22	19.08	19.62	18.40	18.84	18.22	19.01	18.60	18.73	19.52	20.27	20.57	---
23	19.13	19.59	18.50	18.64	18.33	18.48	18.58	18.70	19.62	20.25	20.58	---
24	19.20	19.62	18.45	18.69	18.33	18.24	18.69	18.69	19.62	20.24	20.55	---
25	19.22	19.55	18.36	18.68	18.34	18.21	18.68	18.75	19.62	20.23	20.52	---
26	19.18	19.60	18.53	18.93	18.34	18.14	18.70	18.73	19.69	20.25	20.53	---
27	19.26	19.56	18.49	19.02	18.52	18.04	18.79	18.73	19.72	20.26	20.49	---
28	19.27	19.55	18.42	19.03	18.54	18.08	18.77	18.81	19.79	20.28	20.49	---
29	19.33	19.50	18.70	18.97	18.58	17.88	18.78	18.75	20.25	20.30	20.47	---
30	19.36	19.08	18.72	18.92	---	17.83	18.85	18.79	20.12	20.33	20.44	---
31	19.46	---	18.53	18.92	---	17.85	---	18.79	---	20.35	20.43	---
MEAN	18.86	19.59	18.66	18.94	18.10	18.31	18.35	18.79	19.38	20.32	20.51	20.34
MAX	19.46	19.73	19.01	19.31	18.80	19.80	18.85	18.86	20.25	20.67	20.89	20.42
MIN	18.49	19.08	18.36	18.58	17.32	17.83	17.90	18.69	18.80	20.04	20.37	20.29

WTR YR 1988 MEAN 19.13 HIGH 17.32 Feb 5 LOW 20.89 Aug 16

403450079120301. Local number, IN 801.

LOCATION.--Lat 40°34'50", long 79°12'03", Hydrologic Unit 05010007, near Indiana.
Owner: John King, Sr.
AQUIFER.--Glenshaw Formation of Late Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled well, diameter 6 in, depth 137 ft, cased to 10 ft, open hole.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 1180 ft, from topographic map. Measuring point: Top of recorder shelf, 2.00 ft above land-surface datum.
REMARKS.--None.
PERIOD OF RECORD.--October 1986 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 3.08 ft below land-surface datum, Apr. 5, 1987; lowest, 31.85 ft below land-surface datum, Oct. 1, 1986.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26.75	28.34	5.17	26.57	26.88	27.19	26.48	27.65	26.59	27.83	27.96	28.30
2	26.87	28.29	5.90	25.82	25.39	27.19	26.54	27.65	26.59	27.93	28.04	28.30
3	27.18	28.20	6.27	23.11	3.55	27.13	26.52	27.65	26.77	27.96	28.10	28.22
4	27.23	28.01	8.46	25.76	3.57	27.04	26.41	27.57	26.98	28.10	28.13	28.06
5	27.17	28.04	7.78	26.54	4.25	21.67	26.55	27.49	27.03	28.21	28.13	27.87
6	27.00	28.29	12.57	26.84	5.30	5.28	26.55	27.36	27.01	28.20	28.08	28.11
7	27.09	28.33	22.18	26.95	6.16	6.04	26.38	27.44	27.00	28.14	28.02	28.18
8	27.53	28.33	25.17	26.79	18.32	14.25	26.70	27.48	26.97	28.09	28.09	28.18
9	27.66	28.37	25.70	26.75	24.46	22.68	26.81	27.42	27.22	28.04	28.14	28.15
10	27.64	28.43	25.94	26.99	25.79	25.24	26.80	27.23	27.44	28.05	28.15	28.12
11	27.59	28.42	25.94	27.02	25.96	26.02	26.68	27.29	27.50	28.12	28.18	28.22
12	27.50	28.30	26.09	26.99	25.92	26.04	26.64	27.35	27.48	28.17	28.20	28.22
13	27.51	28.22	26.73	27.05	26.15	26.03	26.68	27.28	27.57	28.27	28.21	28.18
14	27.62	28.41	26.89	27.46	26.43	26.13	26.66	27.11	27.63	28.23	28.23	27.56
15	27.60	28.58	26.86	27.46	26.35	26.38	26.72	27.06	27.61	28.29	28.20	27.82
16	27.57	28.59	26.19	27.30	26.60	26.66	26.87	26.82	27.50	28.30	28.25	27.89
17	27.51	28.47	25.78	27.27	26.82	26.86	26.88	26.78	27.46	28.27	28.28	27.84
18	27.52	28.23	26.44	27.27	26.93	26.86	26.66	26.84	27.61	28.35	28.29	27.69
19	27.57	28.41	26.59	27.43	26.93	26.62	26.82	26.84	27.66	28.35	28.22	27.62
20	27.54	28.18	26.58	27.30	26.44	26.67	26.95	26.85	27.65	28.39	28.22	27.53
21	27.71	28.19	20.39	19.90	26.71	27.04	26.96	26.63	27.59	28.37	28.27	27.58
22	27.91	28.30	6.16	13.25	26.80	27.15	27.11	5.22	27.57	28.27	28.43	27.61
23	27.92	28.18	19.48	22.73	26.78	27.12	27.12	6.03	27.67	28.23	28.43	27.50
24	27.98	28.21	25.03	25.88	26.96	26.84	27.20	12.36	27.83	28.13	28.35	27.59
25	28.03	28.21	25.95	26.31	27.01	26.79	27.34	22.50	27.82	28.08	28.19	27.63
26	28.02	28.07	26.38	26.72	27.06	26.61	27.34	25.72	27.62	28.04	28.18	27.75
27	27.81	28.08	26.49	27.12	26.86	25.15	27.28	26.19	27.77	28.01	28.30	27.75
28	27.87	28.03	26.49	27.28	27.02	17.97	27.28	26.28	27.82	28.04	28.31	27.72
29	28.01	27.81	26.54	27.30	27.04	24.83	27.34	26.37	27.81	28.07	28.35	27.82
30	28.05	14.70	26.81	27.11	---	26.19	27.60	26.52	27.77	28.08	28.32	27.81
31	28.32	---	26.80	26.96	---	26.47	---	26.60	---	28.04	28.32	---
MEAN	27.59	27.81	21.48	25.98	22.43	24.20	26.86	25.02	27.42	28.15	28.21	27.89
MAX	28.32	28.59	26.89	27.46	27.06	27.19	27.60	27.65	27.83	28.39	28.43	28.30
MIN	26.75	14.70	5.17	13.25	3.55	5.28	26.38	5.22	26.59	27.83	27.96	27.50

WTR YR 1988 MEAN 26.09 HIGH 3.55 Feb 3 LOW 28.59 Nov 16

403556079215201. Local number, IN 803.

LOCATION.--Lat 40°35'56", long 79°21'52", Hydrologic Unit 05010008, at West Lebanon.
Owner: Mike Bertolino.
AQUIFER.--Monongahela Group of Late Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled well, diameter 6 in, depth 138 ft, cased to 20 ft, open hole.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 1220 ft, from topographic map. Measuring point: Top of recorder shelf, 2.00 ft above land-surface datum.
REMARKS.--None.
PERIOD OR RECORD.--October 1986 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 84.57 ft below land-surface datum, May 28, 1987; lowest, 89.24 ft below land-surface datum, Oct. 1, 1986.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	87.83	87.90	87.57	87.08	87.64	87.76	87.53	87.82	87.79	87.95	88.07	88.15
2	87.85	87.89	87.68	87.29	87.28	87.73	87.54	87.83	87.81	87.95	88.07	88.14
3	87.87	87.87	87.67	87.10	87.19	87.76	87.54	87.82	87.83	87.96	88.08	88.13
4	87.87	87.84	87.57	87.40	87.19	87.71	87.55	87.81	87.85	87.99	88.08	88.11
5	87.84	87.92	87.47	87.50	87.19	87.44	87.57	87.81	87.84	88.01	88.06	88.15
6	87.82	87.92	87.56	87.58	87.16	87.19	87.53	87.83	87.85	88.00	88.07	88.16
7	87.85	87.92	87.57	87.61	86.96	87.23	87.47	87.84	87.83	87.99	88.08	88.16
8	87.90	87.91	87.56	87.56	87.22	87.25	87.40	87.84	87.84	87.99	88.08	88.15
9	87.90	87.93	87.53	87.64	87.37	87.30	87.31	87.81	87.89	87.97	88.08	88.14
10	87.87	87.93	87.55	87.69	87.46	87.38	87.32	87.80	87.90	87.98	88.09	88.16
11	87.85	87.92	87.51	87.68	87.47	87.40	87.35	87.83	87.89	87.99	88.10	88.16
12	87.83	87.91	87.57	87.68	87.48	87.37	87.40	87.82	87.89	88.02	88.10	88.16
13	87.85	87.91	87.70	87.80	87.63	87.42	87.46	87.80	87.90	88.02	88.10	88.11
14	87.86	87.95	87.71	87.83	87.70	87.43	87.53	87.81	87.91	88.00	88.09	88.09
15	87.84	87.97	87.61	87.79	87.69	87.48	87.57	87.78	87.89	88.02	88.10	88.16
16	87.83	87.96	87.42	87.79	87.76	87.52	87.61	87.78	87.88	88.02	88.10	88.17
17	87.83	87.93	87.56	87.79	87.77	87.56	87.60	87.81	87.89	88.03	88.10	88.15
18	87.84	87.97	87.59	87.83	87.76	87.54	87.65	87.80	87.91	88.03	88.10	88.12
19	87.83	87.97	87.56	87.83	87.69	87.50	87.68	87.81	87.90	88.03	88.10	88.08
20	87.82	87.92	87.52	87.68	87.58	87.57	87.68	87.80	87.90	88.03	88.10	88.10
21	87.85	87.98	87.13	87.41	87.62	87.62	87.72	87.41	87.90	88.03	88.14	88.14
22	87.88	87.99	87.19	87.43	87.59	87.60	87.74	87.45	87.90	88.04	88.14	88.13
23	87.87	87.97	87.33	87.45	87.63	87.51	87.73	87.54	87.94	88.03	88.12	88.13
24	87.88	88.00	87.40	87.52	87.66	87.49	87.79	87.57	87.94	88.04	88.10	88.14
25	87.89	87.98	87.46	87.55	87.66	87.49	87.79	87.65	87.92	88.03	88.10	88.13
26	87.85	88.01	87.51	87.66	87.67	87.48	87.78	87.69	87.92	88.04	88.14	88.14
27	87.85	87.99	87.47	87.72	87.68	87.36	87.80	87.71	87.93	88.05	88.14	88.13
28	87.86	87.97	87.44	87.73	87.70	87.37	87.79	87.72	87.93	88.06	88.14	88.14
29	87.87	87.93	87.33	87.72	87.72	87.37	87.80	87.77	87.93	88.06	88.14	88.14
30	87.88	87.43	87.32	87.68	---	87.46	87.84	87.80	87.94	88.04	88.14	88.13
31	87.92	---	87.25	87.68	---	87.49	---	87.80	---	88.05	88.15	---
MEAN	87.86	87.92	87.49	87.60	87.52	87.48	87.60	87.75	87.89	88.01	88.10	88.14
MAX	87.92	88.01	87.71	87.83	87.77	87.76	87.84	87.84	87.94	88.06	88.15	88.17
MIN	87.82	87.43	87.13	87.08	86.96	87.19	87.31	87.41	87.79	87.95	88.06	88.08

WTR YR 1988 MEAN 87.78 HIGH 86.96 Feb 7 LOW 88.17 Sept 16

403408078543701. Local number, IN 822.

LOCATION.--Lat 40°34'08", long 78°54'37", Hydrologic Unit 05010007, near Strongstown.
Owner: Kevin Bracken.
AQUIFER.--Glenshaw Formation of Late Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled well, diameter 6 in, depth 159 ft, cased to 10 ft, open hole.
INSTRUMENTATIONS.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 1900 ft, from topographic map. Measuring point: Top of casing, 1.00 ft above land-surface datum.
REMARKS.--None.
PERIOD OF RECORD.--June 1987 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 57.81 ft below land-surface datum, Apr. 4, 1988; lowest, 69.23 ft below land-surface datum, Sept. 16, 17, 1988.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62.53	63.41	63.90	59.75	60.45	59.04	58.01	60.28	59.28	62.99	66.28	68.39
2	62.50	63.45	63.71	59.85	60.35	59.03	58.00	60.38	59.26	63.13	66.35	68.40
3	62.47	63.49	63.70	59.81	60.21	58.97	57.96	60.41	59.39	63.25	66.40	68.40
4	62.45	63.46	63.19	59.54	59.86	58.99	57.81	60.41	59.54	63.47	66.45	68.40
5	62.30	63.62	63.18	59.59	59.71	59.08	57.98	60.40	59.62	63.56	66.53	68.59
6	62.10	63.81	63.06	59.65	59.52	59.01	57.98	60.38	59.74	63.65	66.60	68.67
7	61.94	63.93	62.99	59.65	59.44	58.77	57.87	60.53	59.76	63.74	66.73	68.76
8	61.95	63.99	62.80	59.50	59.10	58.74	58.05	60.55	59.87	63.80	66.77	68.76
9	61.95	64.12	62.44	59.48	59.00	58.50	58.19	60.55	60.08	63.86	66.86	68.79
10	62.07	64.22	62.20	59.66	58.86	58.17	58.19	60.52	60.32	63.97	66.95	68.88
11	61.97	64.27	61.93	59.66	58.85	58.25	58.24	60.54	60.43	64.09	67.00	68.92
12	61.91	64.29	61.54	59.61	58.60	58.17	58.25	60.54	60.61	64.20	67.06	68.97
13	61.91	64.35	61.61	59.85	58.67	58.05	58.28	60.49	60.76	64.31	67.11	68.99
14	61.96	64.59	61.61	60.07	58.67	58.02	58.28	60.38	60.97	64.42	67.20	69.04
15	61.95	64.73	61.43	60.07	58.66	58.05	58.34	60.35	61.03	64.54	67.23	69.15
16	61.95	64.75	61.07	60.18	58.73	58.12	58.49	60.12	61.09	64.65	67.32	69.23
17	61.90	64.72	61.16	60.32	58.83	58.20	58.50	60.04	61.20	64.75	67.34	69.23
18	61.92	64.74	61.19	60.50	58.87	58.20	58.49	60.03	61.40	64.86	67.38	69.21
19	61.96	64.74	60.99	60.57	58.87	58.05	58.66	59.98	61.54	64.98	67.46	69.22
20	61.96	64.56	60.84	60.49	58.60	58.24	58.72	59.95	61.63	65.09	67.48	69.21
21	61.96	64.69	60.66	60.53	58.91	58.38	58.87	59.87	61.74	65.20	67.65	69.21
22	62.29	64.71	60.59	60.60	58.91	58.52	59.02	59.82	61.78	65.32	67.75	69.21
23	62.36	64.67	60.47	60.59	58.90	58.52	59.08	59.65	62.02	65.43	67.75	69.05
24	62.47	64.61	60.43	60.50	58.96	58.46	59.37	59.48	62.16	65.55	67.77	69.03
25	62.57	64.61	60.21	60.47	58.96	58.43	59.51	59.39	62.15	65.65	67.81	68.96
26	62.59	64.50	60.09	60.42	58.97	58.29	59.57	59.40	62.29	65.74	67.98	68.88
27	62.59	64.49	60.08	60.60	58.92	58.28	59.71	59.36	62.55	65.87	68.08	68.82
28	62.76	64.44	60.01	60.61	58.93	58.36	59.81	59.35	62.59	65.96	68.13	68.70
29	62.91	64.26	59.85	60.61	58.93	58.36	59.90	59.26	62.67	66.01	68.17	68.61
30	63.07	64.00	59.90	60.50	---	58.11	60.17	59.29	62.84	66.05	68.21	68.49
31	63.37	---	59.84	60.45	---	58.11	---	59.31	---	66.15	68.22	---
MEAN	62.28	64.27	61.51	60.12	59.11	58.43	58.64	60.03	61.01	64.65	67.29	68.87
MAX	63.37	64.75	63.90	60.61	60.45	59.08	60.17	60.55	62.84	66.15	68.22	69.23
MIN	61.90	63.41	59.84	59.48	58.60	58.02	57.81	59.26	59.26	62.99	66.28	68.39

WTR YR 1988 MEAN 62.19 HIGH 57.81 Apr 4 LOW 69.23 Sept 16, 17

403144078561602. Local number, IN 833.

LOCATION.--Lat 40°31'44", long 78°56'16", Hydrologic Unit 05010007, near Strongstown.
Owner: Charles Schultz.
AQUIFER.--Casselman Formation of Late Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled well, diameter 6 in, depth 137 ft, cased to 18 ft, open hole.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 1910 ft, from topographic map. Measuring point: Top of casing, 0.85 ft above land-surface datum.
REMARKS.--Missing record Nov. 21-23, and Dec. 1 to Jan. 7.
PERIOD OF RECORD.--May 1987 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 15.80 ft below land-surface datum, Mar. 28, 1988; lowest, 27.44 ft below land-surface datum, Aug. 23, 1988.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22.24	24.49		---	20.00	18.63	17.17	19.28	22.11	25.35	26.17	26.14
2	21.85	24.49		---	18.43	18.85	17.67	18.27	22.41	25.59	26.27	26.15
3	21.61	24.39		---	16.97	18.83	17.93	17.78	22.60	25.67	26.44	26.56
4	20.69	24.22		---	16.54	18.05	17.92	17.92	22.82	25.71	26.48	26.55
5	20.18	24.10		---	16.53	16.83	18.31	18.24	23.07	26.00	26.54	25.97
6	20.69	24.17		---	16.57	16.59	18.31	18.16	23.35	26.09	26.72	25.35
7	20.72	24.27		---	16.74	16.26	17.70	17.86	23.79	26.07	26.65	25.35
8	21.25	24.40		19.71	17.07	16.42	16.81	18.51	23.79	26.26	26.41	25.57
9	21.58	24.71		20.48	17.46	16.41	16.16	18.57	23.85	26.46	26.49	25.74
10	21.82	24.75		20.75	17.85	16.35	16.59	18.21	23.98	26.39	26.65	25.93
11	22.03	24.50		21.47	18.58	16.76	16.88	17.60	24.12	26.38	26.79	26.30
12	22.17	24.10		22.18	18.64	16.76	17.29	17.18	24.10	26.37	26.80	26.39
13	22.45	23.73		22.58	19.42	16.89	17.85	17.32	24.08	26.35	26.77	26.39
14	22.67	23.19		23.15	19.64	16.87	18.19	17.68	24.20	26.32	26.90	25.65
15	22.85	22.83		23.55	19.66	17.08	19.12	17.91	24.24	26.40	26.92	24.93
16	23.00	22.54		23.91	19.98	17.65	19.65	18.16	24.33	26.45	27.03	25.30
17	23.27	21.87		23.82	20.28	17.80	19.82	18.66	24.39	26.90	27.13	25.27
18	23.60	21.22		23.56	20.30	17.80	19.83	18.81	24.57	26.88	27.11	25.00
19	23.69	20.93		23.16	20.05	17.89	20.19	18.45	24.68	26.58	27.33	24.21
20	23.68	20.46		22.62	19.63	18.25	20.41	17.07	24.63	26.50	27.27	24.11
21	23.72	---		19.86	19.04	18.82	20.84	16.21	24.76	26.09	27.35	24.03
22	24.26	---		18.67	18.19	19.02	20.92	16.10	24.75	25.40	27.41	23.53
23	24.26	---		18.56	17.59	19.10	20.95	16.57	24.87	25.24	27.44	23.73
24	24.25	21.10		18.80	17.59	18.88	21.55	16.64	24.86	24.95	27.28	23.77
25	24.35	21.15		18.80	17.52	17.81	21.56	17.05	25.34	24.95	26.89	23.34
26	24.48	21.11		19.26	17.52	17.12	21.88	17.71	25.42	25.36	26.78	23.14
27	24.47	20.89		19.70	17.71	15.85	21.93	18.20	25.35	25.53	27.27	22.82
28	24.45	20.85		20.18	18.33	15.80	22.02	18.83	25.09	25.69	27.27	22.96
29	24.71	20.80		20.21	18.46	16.06	22.24	20.00	25.20	25.81	27.09	23.65
30	24.72	20.76		20.24	---	16.80	22.13	20.79	25.38	25.88	26.86	23.93
31	24.47	---		20.23	---	16.93	---	21.44	---	26.10	26.35	---
MEAN	22.91	22.82		21.06	18.35	17.39	19.33	18.10	24.20	25.99	26.87	24.93
MAX	24.72	24.75		23.91	20.30	19.10	22.24	21.44	25.42	26.90	27.44	26.56
MIN	20.18	20.46		18.56	16.53	15.80	16.16	16.10	22.11	24.95	26.17	22.82

WTR YR 1988 MEAN 22.02 HIGH 15.80 Mar 28 LOW 27.44 Aug 23

402632078573101. Local number, IN 856.

LOCATION.--Lat 40°26'32", long 78°57'31", Hydrologic Unit 05010007, near Dilltown.
Owner: George Gresh.
AQUIFER.--Glensbaw Formation of Late Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled well, diameter 6 in, depth 180 ft, cased to 54 ft, open hole.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 1860 ft, from topographic map. Measuring point: Top of casing, 1.00 ft above land-surface datum.
REMARKS.--None.
PERIOD OF RECORD.--October 1987 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 72.34 ft below land-surface datum, Oct. 1, 1987; lowest, 76.75 ft below land-surface datum, Aug. 27, 1988.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	72.34	73.52	73.36	73.51	73.72	73.70	73.83	75.07	75.17	75.95	76.28	76.63
2	72.38	73.53	73.53	73.34	73.59	73.70	73.95	75.11	75.18	76.02	76.26	76.63
3	72.39	73.52	73.54	73.34	73.05	73.63	73.90	75.09	75.16	76.04	76.33	76.54
4	72.38	73.52	73.53	73.42	72.96	73.50	73.95	75.08	75.32	76.10	76.34	76.50
5	72.40	73.64	73.58	73.58	73.02	72.96	74.05	75.08	75.31	76.18	76.31	76.41
6	72.38	73.67	73.66	73.65	73.29	73.14	74.04	75.12	75.29	76.17	76.30	76.45
7	72.41	73.70	73.66	73.71	73.36	73.38	73.95	75.16	75.29	76.13	76.40	76.47
8	72.52	73.70	73.65	73.65	73.52	73.40	74.02	75.26	75.31	76.13	76.43	76.49
9	72.53	73.79	73.58	73.73	73.63	73.33	74.07	75.24	75.42	76.18	76.43	76.55
10	72.59	73.81	73.42	73.82	73.72	73.25	74.06	75.18	75.41	76.37	76.43	76.59
11	72.59	73.90	73.34	73.84	73.72	73.24	74.15	75.15	75.47	76.34	76.48	76.64
12	72.60	73.85	73.43	73.85	73.64	73.24	74.30	75.21	75.48	76.35	76.49	76.60
13	72.68	73.85	73.59	73.94	73.86	73.34	74.29	75.16	75.51	76.37	76.51	76.53
14	72.70	73.95	73.66	74.00	73.86	73.39	74.27	75.18	75.51	76.32	76.54	76.28
15	72.77	73.95	73.62	74.00	73.87	73.55	74.28	75.21	75.56	76.39	76.53	76.26
16	72.80	73.96	73.59	74.11	73.95	73.69	74.39	75.15	75.49	76.47	76.54	76.28
17	72.83	73.88	73.69	74.11	73.95	73.71	74.39	75.22	75.47	76.49	76.66	76.26
18	72.85	73.99	73.69	74.04	73.84	73.70	74.38	75.21	75.57	76.46	76.66	75.71
19	72.92	73.99	73.74	74.04	73.69	73.61	74.48	75.11	75.57	76.45	76.59	75.73
20	72.96	73.86	73.74	73.82	73.42	73.76	74.53	74.99	75.64	76.45	76.54	75.81
21	73.03	73.99	73.36	73.27	73.11	73.93	74.54	74.84	75.63	76.34	76.60	75.68
22	73.07	74.00	73.36	73.50	73.21	74.00	74.67	74.80	75.66	76.14	76.66	75.64
23	73.09	74.01	73.51	73.66	73.46	73.93	74.68	74.79	75.71	76.13	76.61	75.79
24	73.16	74.07	73.51	73.73	73.47	73.75	74.78	74.79	75.72	76.11	76.59	75.88
25	73.18	74.06	73.50	73.79	73.49	73.56	74.86	74.86	75.83	76.16	76.53	75.86
26	73.18	74.03	73.41	73.92	73.49	73.54	74.87	74.91	75.76	76.15	76.58	75.59
27	73.22	74.04	73.19	74.01	73.63	73.40	74.96	74.98	75.84	76.15	76.75	75.61
28	73.28	74.01	73.19	74.03	73.63	73.57	74.96	75.08	75.87	76.20	76.70	75.70
29	73.33	73.97	73.45	74.03	73.70	73.63	74.95	75.09	75.99	76.18	76.68	75.75
30	73.33	73.24	73.52	74.09	---	73.72	75.06	75.18	75.93	76.31	76.51	75.78
31	73.53	---	73.52	73.96	---	73.83	---	75.23	---	76.24	76.52	---
MEAN	72.82	73.83	73.52	73.79	73.55	73.55	74.39	75.08	75.54	76.24	76.51	76.15
MAX	73.53	74.07	73.74	74.11	73.95	74.00	75.06	75.26	75.99	76.49	76.75	76.64
MIN	72.34	73.24	73.19	73.27	72.96	72.96	73.83	74.79	75.16	75.95	76.26	75.59

WTR YR 1988 MEAN 74.58 HIGH 72.34 Oct 1 LOW 76.75 Aug 27

403025079211501. Local number, IN 859.

LOCATION.--Lat 40°30'25", long 79°21'15", Hydrologic Unit 05010007, near Clarksburg.
Owner: Bob Repine.
AQUIFER.--Glenshaw Formation of Late Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled well, diameter 6 in, depth 227 ft, cased to 20 ft, open hole.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 1350 ft, from topographic map. Measuring point: Top of casing, 1.00 ft above land-surface datum.
REMARKS.--None.
PERIOD OF RECORD.--October 1987 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 58.53 ft below land-surface datum, Apr. 7, 1988; lowest, 65.49 ft below land-surface datum, Sept. 30, 1988.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62.81	63.23	63.90	61.76	61.03	59.21	58.92	60.18	60.40	61.43	63.28	64.59
2	62.50	63.01	64.23	61.74	60.86	59.21	59.06	60.28	60.08	61.55	63.35	64.61
3	62.96	62.94	63.94	61.63	60.87	59.20	59.53	60.07	60.14	61.59	63.37	64.66
4	62.83	62.88	63.95	61.46	60.59	59.18	59.48	60.07	60.64	61.70	63.42	64.66
5	62.55	63.09	63.94	61.47	60.49	59.89	59.29	59.97	60.67	61.76	63.50	64.75
6	62.52	63.30	64.09	61.46	60.57	59.84	59.04	60.10	60.46	61.77	63.70	64.83
7	62.35	63.40	63.89	61.44	60.57	59.22	58.53	60.67	60.47	61.85	63.73	64.88
8	62.81	63.55	63.84	61.24	60.20	59.45	58.63	60.70	60.55	61.87	63.73	64.89
9	62.46	63.56	63.73	61.33	60.18	59.18	58.82	60.61	60.52	61.88	63.70	64.91
10	62.78	63.48	63.62	61.40	60.33	58.80	58.82	60.18	60.51	61.99	63.75	64.99
11	62.79	63.53	63.58	61.40	60.12	58.91	58.72	60.32	60.77	62.07	63.84	65.05
12	62.59	63.35	63.68	61.31	59.74	59.05	58.60	60.71	61.02	62.16	63.86	65.06
13	62.30	63.64	63.90	61.46	60.06	59.08	58.57	60.56	61.02	62.27	63.90	65.04
14	62.33	63.88	63.76	61.55	59.94	58.89	58.56	60.71	60.63	62.29	63.95	65.09
15	62.27	63.91	63.39	61.47	59.64	58.67	58.63	60.72	60.83	62.37	63.95	65.20
16	62.27	63.71	63.29	61.39	59.58	58.85	58.90	60.76	60.71	62.39	63.95	65.24
17	62.78	63.57	63.54	61.39	59.61	59.37	58.90	60.44	60.60	62.75	63.95	65.28
18	62.85	63.70	63.23	61.49	59.58	59.37	58.73	60.78	61.09	62.75	63.93	65.31
19	62.85	63.96	63.21	61.53	59.48	59.06	58.75	60.80	61.12	62.59	63.95	65.31
20	62.65	63.94	63.15	61.28	59.12	59.43	58.94	60.58	61.09	62.61	64.02	65.30
21	62.48	63.91	63.10	61.32	59.32	59.22	59.24	60.72	61.26	62.61	64.13	65.38
22	62.54	64.16	62.87	61.32	59.31	59.12	59.25	60.76	61.34	62.73	64.30	65.38
23	62.47	64.06	63.12	61.32	59.04	59.07	59.53	60.76	61.14	62.76	64.31	65.38
24	62.92	63.97	62.89	61.22	59.14	59.33	59.95	60.36	61.15	62.89	64.22	65.43
25	62.78	63.97	62.64	61.21	59.76	59.28	59.92	60.69	61.15	62.94	64.26	65.45
26	62.45	64.32	62.58	61.30	59.61	59.27	59.47	60.69	61.23	62.96	64.37	65.46
27	62.79	64.03	62.34	61.32	59.30	59.22	59.40	60.37	61.23	63.04	64.41	65.45
28	62.98	64.18	62.15	61.34	59.30	58.96	59.42	60.57	61.28	63.09	64.41	65.44
29	62.71	64.13	62.11	61.34	59.19	58.96	59.46	60.83	61.28	63.12	64.43	65.48
30	62.75	64.00	62.10	61.13	---	59.01	59.99	60.87	61.29	63.16	64.51	65.49
31	63.28	---	61.83	61.10	---	59.12	---	60.55	---	63.24	64.56	---
MEAN	62.66	63.68	63.28	61.39	59.88	59.17	59.10	60.53	60.86	62.39	63.96	65.13
MAX	63.28	64.32	64.23	61.76	61.03	59.89	59.99	60.87	61.34	63.24	64.56	65.49
MIN	62.27	62.88	61.83	61.10	59.04	58.67	58.53	59.97	60.08	61.43	63.28	64.59

WTR YR 1988 MEAN 61.84 HIGH 58.53 Apr 7 LOW 65.49 Sept 30

404231078540901. Local number, IN 860.

LOCATION.--Lat 40°42'31", long 78°54'09", Hydrologic Unit 05010007, at Cookport.
Owner: Dennis McCoy.
AQUIFER.--Glenshaw Formation of Late Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled well, diameter 6 in, depth 58 ft, cased to 18 ft, open hole.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 1600 ft, from topographic map. Measuring point: Top of casing, 1.00 ft above land-surface datum.
REMARKS.--Missing record Oct. 1-5, and Mar. 23 to Apr. 10.
PERIOD OF RECORD.--October 1987 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 0.50 ft below land-surface datum, Feb. 2, 1988; lowest, 20.50 ft below land-surface datum, Oct. 6, 1987.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	19.19	1.60	1.73	2.64	12.22	---	15.45	15.85	17.38	17.55	17.62
2	---	19.13	1.72	2.26	.50	12.22	---	15.45	15.87	17.45	17.60	17.63
3	---	19.05	1.76	2.48	.87	12.22	---	15.45	15.96	17.49	17.63	17.58
4	---	18.96	1.74	3.00	.80	1.69	---	15.44	16.05	17.56	17.64	17.50
5	---	19.02	1.90	17.95	1.33	1.82	---	15.44	16.08	17.62	17.62	14.27
6	20.50	19.15	2.01	19.27	1.61	1.86	---	15.42	16.09	17.62	17.59	16.83
7	20.37	19.18	2.10	19.24	1.99	2.06	---	15.47	16.09	17.61	17.60	17.32
8	20.21	19.18	2.16	18.61	2.29	2.19	---	15.52	16.15	17.62	17.64	17.38
9	20.21	19.18	1.80	18.19	2.48	2.06	---	15.52	16.26	17.64	17.65	17.38
10	20.01	19.21	1.82	18.32	2.63	1.79	---	15.49	16.39	17.71	17.68	17.40
11	19.78	19.18	1.95	18.32	2.70	2.06	14.96	15.53	16.43	17.75	17.70	17.44
12	19.47	19.14	2.09	18.22	5.46	2.20	15.02	15.59	16.45	17.81	17.70	17.44
13	19.34	19.15	2.30	18.17	15.41	2.13	15.08	15.59	16.54	17.86	17.73	17.39
14	19.33	19.23	2.40	18.32	16.55	2.29	15.08	15.58	16.59	17.85	17.72	14.45
15	19.27	19.32	2.40	18.31	16.41	2.48	15.16	15.57	16.60	17.91	17.72	16.82
16	19.22	19.31	1.78	18.16	15.11	2.63	15.24	15.50	16.61	17.93	17.78	17.15
17	19.14	19.22	2.00	18.14	15.88	2.71	15.25	15.54	16.66	17.93	17.79	17.16
18	19.11	19.12	2.15	18.07	15.18	2.69	15.14	15.59	16.78	17.98	17.79	4.76
19	19.12	19.16	2.28	18.06	14.95	2.76	15.18	8.67	16.83	17.97	17.82	14.22
20	19.11	19.03	2.28	2.37	2.27	8.82	15.23	2.64	16.86	17.98	17.81	16.58
21	19.04	19.09	1.70	2.72	2.55	15.31	15.22	6.71	16.87	17.96	17.89	17.00
22	19.11	19.21	1.88	10.74	2.71	16.05	15.30	14.12	16.89	17.20	17.95	17.06
23	19.05	19.19	2.02	16.57	10.16	---	15.32	15.43	17.03	17.44	17.94	17.04
24	19.05	19.27	2.19	17.00	15.39	---	15.37	15.59	17.12	17.47	17.13	17.09
25	19.04	19.27	2.20	16.96	15.91	---	15.45	15.69	17.12	17.48	17.61	17.09
26	19.02	19.22	1.90	17.01	15.96	---	15.46	15.71	17.10	17.46	17.77	17.13
27	18.91	19.25	2.11	17.16	15.87	---	15.44	15.71	17.22	17.46	17.82	17.13
28	18.96	19.24	2.21	17.16	15.96	---	15.49	15.69	17.26	17.49	17.85	17.12
29	19.04	19.13	2.48	17.14	15.95	---	15.49	15.74	17.28	17.51	17.86	17.17
30	19.06	1.49	2.64	17.03	---	---	15.46	15.81	17.31	17.50	15.21	17.16
31	19.18	---	3.43	9.21	---	---	---	15.85	---	17.48	17.32	---
MEAN	19.37	18.58	2.10	14.38	8.54	5.10	15.27	14.60	16.61	17.65	17.62	16.51
MAX	20.50	19.32	3.43	19.27	16.55	16.05	15.49	15.85	17.31	17.98	17.95	17.63
MIN	18.91	1.49	1.60	1.73	.50	1.69	14.96	2.64	15.85	17.20	15.21	4.76

WTR YR 1988 MEAN 13.97 HIGH .50 Feb 2 LOW 20.50 Oct 6

404230078540901. Local number, IN 861.

LOCATION.--Lat 40°42'30", long 78°54'09", Hydrologic Unit 05010007, at Cookport.
Owner: Dennis McCoy.
AQUIFER.--Glenshaw Formation of Late Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled well, diameter 6 in, depth 84 ft, cased to 18 ft, open hole.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 1600 ft, from topographic map. Measuring Point: Top of recorder shelf, 2.00 ft above land-surface datum.
REMARKS.--None.
PERIOD OF RECORD.--October 1987 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 33.10 ft below land-surface datum, Apr. 7, 11, 1988; lowest, 39.43 ft below land-surface datum, Sept. 15, 1988.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37.13	37.19	37.35	35.91	35.75	34.98	33.45	33.99	33.99	36.57	38.31	39.13
2	37.13	37.16	37.60	35.98	35.65	34.86	33.45	33.91	34.12	36.63	38.32	39.12
3	37.15	37.13	37.53	35.79	35.63	34.79	33.35	33.87	34.31	36.73	38.35	39.09
4	37.05	37.10	37.38	35.65	35.14	34.71	33.24	33.80	34.42	36.86	38.37	39.11
5	36.90	37.33	37.37	35.78	35.12	34.83	33.29	33.77	34.43	36.91	38.41	39.25
6	36.78	37.35	37.43	35.86	35.19	34.62	33.15	33.83	34.49	36.94	38.43	39.25
7	36.89	37.32	37.36	35.90	35.18	34.50	33.10	33.92	34.52	37.02	38.47	39.26
8	37.01	37.31	37.15	35.61	35.08	34.50	33.24	33.95	34.65	37.08	38.51	39.24
9	36.99	37.44	36.92	35.79	35.01	34.17	33.28	33.84	34.91	37.18	38.52	39.24
10	36.85	37.44	36.88	35.91	35.17	34.07	33.21	33.79	35.01	37.23	38.57	39.29
11	36.75	37.39	36.76	35.82	35.08	34.20	33.10	33.98	35.03	37.32	38.59	39.30
12	36.72	37.42	36.89	35.76	34.75	34.03	33.13	33.99	35.08	37.43	38.61	39.29
13	36.80	37.48	37.10	36.01	35.17	33.80	33.15	33.87	35.20	37.44	38.64	39.36
14	36.82	37.66	37.06	36.12	35.24	33.78	33.15	33.90	35.28	37.54	38.64	39.38
15	36.76	37.69	36.69	35.91	34.93	33.97	33.24	33.81	35.26	37.60	38.72	39.43
16	36.75	37.60	36.67	35.92	35.25	34.07	33.31	33.68	35.31	37.64	38.72	39.37
17	36.75	37.46	36.86	35.91	35.29	34.16	33.28	33.81	35.45	37.75	38.73	39.25
18	36.80	37.71	36.83	36.10	35.30	34.04	33.22	33.82	35.55	37.79	38.73	39.18
19	36.77	37.67	36.54	36.11	35.14	33.77	33.34	33.72	35.58	37.83	38.75	39.15
20	36.75	37.50	36.38	35.74	34.85	34.06	33.36	33.67	35.64	37.87	38.78	39.12
21	36.89	37.69	36.42	35.96	35.12	34.21	33.41	33.62	35.70	37.96	38.85	39.12
22	36.98	37.71	36.32	35.96	35.04	34.26	33.47	33.58	35.74	38.00	38.86	39.08
23	36.94	37.63	36.40	35.84	34.94	34.10	33.47	33.49	36.01	38.01	38.81	39.08
24	36.94	37.73	36.31	35.84	34.99	33.89	33.63	33.49	36.04	38.05	38.84	39.08
25	37.01	37.62	36.06	35.87	34.92	33.80	33.67	33.71	35.99	38.06	38.87	39.00
26	36.91	37.75	36.16	36.04	34.92	33.62	33.66	33.78	36.16	38.08	38.97	39.01
27	36.99	37.72	36.12	36.10	34.88	33.58	33.71	33.80	36.24	38.13	38.97	38.96
28	37.05	37.67	35.94	36.07	34.92	33.73	33.77	33.79	36.28	38.17	39.01	38.99
29	37.10	37.56	36.11	36.04	34.89	33.58	33.84	33.85	36.40	38.19	39.05	38.99
30	37.11	37.31	36.11	35.83	---	33.55	34.01	33.96	36.48	38.17	39.06	38.97
31	37.31	---	35.84	35.86	---	33.58	---	34.00	---	38.23	39.11	---
MEAN	36.93	37.49	36.73	35.90	35.12	34.12	33.39	33.81	35.31	37.56	38.70	39.17
MAX	37.31	37.75	37.60	36.12	35.75	34.98	34.01	34.00	36.48	38.23	39.11	39.43
MIN	36.72	37.10	35.84	35.61	34.75	33.55	33.10	33.49	33.99	36.57	38.31	38.96

WTR YR 1988 MEAN 36.19 HIGH 33.10 Apr 7, 11 LOW 39.43 Sept 15

403629079041901. Local number, IN 864.

LOCATION.--Lat 40°36'29", long 79°04'19", Hydrologic Unit 05010007, near Penn Run.
Owner: Frank Novak.
AQUIFER.--Allegheny Group of Middle Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled well, diameter 6 in, depth 71 ft, open hole.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 1570 ft, from topographic map. Measuring point: Top of shelf, 3.20 ft below land-surface datum.
REMARKS.--None.
PERIOD OF RECORD.--October 1987 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 49.43 ft below land-surface datum, Feb. 12, 1988; lowest 62.30 ft below land-surface datum, Aug. 30, 1988, which was the result of a pump test performed on the well on Aug. 30, 1988.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49.73	49.91	49.95	49.72	49.54	49.71	49.62	49.83	49.85	50.17	50.54	52.92
2	49.73	49.88	50.11	49.77	49.60	49.69	49.62	49.81	49.86	50.20	50.55	51.18
3	49.74	49.86	50.11	49.72	49.62	49.67	49.59	49.81	49.91	50.20	50.55	50.92
4	49.73	49.84	50.03	49.62	49.57	49.69	49.60	49.78	49.95	50.23	50.54	50.86
5	49.68	49.94	50.04	49.75	49.60	49.82	49.66	49.79	49.94	50.26	50.53	50.98
6	49.64	49.99	50.03	49.76	49.63	49.74	49.62	49.85	49.90	50.24	50.54	51.03
7	49.73	49.97	50.03	49.76	49.64	49.72	49.65	49.90	49.88	50.23	50.56	51.02
8	49.82	49.95	49.91	49.59	49.55	49.72	49.76	49.91	49.91	50.23	50.58	51.01
9	49.82	50.00	49.81	49.66	49.55	49.59	49.75	49.87	50.00	50.23	50.57	50.98
10	49.77	50.00	49.80	49.72	49.58	49.63	49.70	49.86	50.05	50.25	50.58	51.02
11	49.75	49.97	49.77	49.70	49.58	49.73	49.62	49.97	50.04	50.26	50.59	51.06
12	49.75	49.98	49.80	49.64	49.43	49.66	49.63	49.99	50.00	50.29	50.59	51.04
13	49.78	49.99	49.97	49.77	49.60	49.57	49.63	49.93	50.02	50.32	50.59	51.02
14	49.80	50.07	49.97	49.83	49.68	49.57	49.61	49.92	50.02	50.30	50.57	51.18
15	49.77	50.10	49.82	49.78	49.52	49.66	49.61	49.90	50.00	50.35	50.58	51.33
16	49.76	50.07	49.78	49.72	49.68	49.71	49.63	49.85	49.96	50.35	50.60	51.33
17	49.75	50.01	49.91	49.71	49.70	49.72	49.63	49.92	49.99	50.36	50.59	51.29
18	49.78	50.09	49.91	49.53	49.67	49.69	49.57	49.93	50.03	50.38	50.59	51.30
19	49.79	50.10	49.77	49.57	49.64	49.54	49.65	49.91	50.03	50.38	50.60	51.31
20	49.78	50.01	49.72	49.44	49.53	49.74	49.67	49.91	50.02	50.40	50.59	51.12
21	49.83	50.13	49.76	49.56	49.75	49.81	49.65	49.91	50.01	50.44	50.66	51.16
22	49.87	50.15	49.75	49.58	49.75	49.81	49.68	49.89	50.01	50.48	50.67	51.16
23	49.83	50.09	49.81	49.56	49.66	49.73	49.68	49.86	50.09	50.48	50.64	51.14
24	49.84	50.13	49.81	49.54	49.71	49.69	49.73	49.83	50.12	50.48	50.59	51.18
25	49.83	50.12	49.68	49.55	49.69	49.69	49.74	49.96	50.08	50.48	50.61	51.19
26	49.81	50.10	49.76	49.63	49.70	49.66	49.71	49.97	50.08	50.49	50.67	51.20
27	49.80	50.10	49.77	49.69	49.66	49.72	49.70	49.94	50.12	50.53	50.69	51.20
28	49.84	50.06	49.70	49.68	49.71	49.77	49.71	49.91	50.12	50.54	50.68	51.19
29	49.86	50.00	49.78	49.64	49.68	49.72	49.74	49.92	50.11	50.53	50.68	51.19
30	49.86	49.92	49.82	49.52	---	49.67	49.84	49.95	50.12	50.51	62.30	51.14
31	49.94	---	49.73	49.54	---	49.68	---	49.91	---	50.51	60.69	---
MEAN	49.79	50.02	49.86	49.65	49.63	49.69	49.67	49.89	50.01	50.36	51.30	51.19
MAX	49.94	50.15	50.11	49.83	49.75	49.82	49.84	49.99	50.12	50.54	62.30	52.92
MIN	49.64	49.84	49.68	49.44	49.43	49.54	49.57	49.78	49.85	50.17	50.53	50.86

WTR YR 1988 MEAN 50.09 HIGH 49.43 Feb 12 LOW 62.30 Aug 30

404050078514201. Local number, IN 868.

LOCATION.--Lat 40°40'50", long 78°51'42", Hydrologic Unit 05010007, near Uniontown.
Owner: Rich Karlinsey.
AQUIFER.--Glenshaw Formation of Late Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled well, diameter 6 in, depth 220 ft, cased to 20 ft, open hole.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 1660 ft, from topographic map. Measuring point: Top of recorder shelf, 2.00 ft above land-surface datum.
REMARKS.--Missing record Oct. 1 to Nov. 2, Dec. 16 to Jan. 7, Feb. 7-24, and May 26 to July 27.
PERIOD OF RECORD.--November 1987 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 193.27 ft below land-surface datum, Feb. 5, 1988; lowest, 196.64 ft below land-surface datum, Nov. 16-19, 1987.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		---	196.16	---	194.26	193.86	194.45	193.57		---	194.75	195.48
2		---	196.09	---	194.25	193.87	194.48	193.61		---	194.88	195.48
3		196.62	196.07	---	194.13	193.94	194.50	193.74		---	194.94	195.47
4		196.62	196.02	---	193.78	194.14	194.50	193.75		---	194.98	195.47
5		196.62	196.02	---	193.27	194.50	194.46	193.75		---	195.04	195.47
6		196.62	196.02	---	193.30	194.75	194.69	193.75		---	195.05	195.49
7		196.62	196.02	---	---	194.75	194.40	193.75		---	195.06	195.49
8		196.62	196.01	194.63	---	194.44	194.20	193.75		---	195.06	195.50
9		196.62	196.01	194.56	---	194.54	194.19	193.83		---	195.07	195.51
10		196.62	195.98	194.56	---	194.54	194.29	193.83		---	195.15	195.53
11		196.62	195.98	194.56	---	194.34	194.29	193.83		---	195.23	195.53
12		196.62	195.84	194.54	---	194.56	193.92	193.82		---	195.23	195.53
13		196.62	195.86	194.64	---	194.56	193.87	193.82		---	195.24	195.56
14		196.62	195.86	194.69	---	194.44	193.87	193.82		---	195.29	195.59
15		196.62	195.86	194.63	---	194.41	193.78	194.19		---	195.31	195.61
16		196.64	---	194.63	---	194.03	193.72	194.20		---	195.34	195.61
17		196.64	---	194.64	---	193.98	193.92	194.20		---	195.39	195.61
18		196.64	---	194.64	---	194.12	193.92	194.15		---	195.41	195.61
19		196.64	---	194.64	---	194.13	193.82	194.14		---	195.41	195.60
20		196.61	---	194.41	---	194.19	193.58	194.23		---	195.42	195.60
21		196.57	---	194.36	---	194.03	193.59	194.23		---	195.46	195.60
22		196.56	---	194.36	---	194.08	193.55	194.33		---	195.47	195.60
23		196.52	---	194.28	---	194.20	193.55	194.33		---	195.47	195.60
24		196.50	---	194.29	---	194.23	193.55	194.33		---	195.47	195.58
25		196.48	---	194.29	194.10	194.38	193.50	194.33		---	195.47	195.58
26		196.41	---	194.25	194.16	194.73	193.50	---		---	195.47	195.58
27		196.41	---	194.30	194.16	194.73	193.50	---		---	195.47	195.60
28		196.38	---	194.31	193.94	194.67	193.50	---		194.52	195.47	195.63
29		196.32	---	194.31	193.95	194.61	193.50	---		194.54	195.47	195.63
30		196.22	---	194.31	---	194.61	193.50	---		194.54	195.47	195.62
31		---	---	194.26	---	194.45	---	---		194.55	195.47	---
MEAN		196.56	195.99	194.46	193.94	194.35	193.94	193.97		194.54	195.27	195.56
MAX		196.64	196.16	194.69	194.26	194.75	194.69	194.33		194.55	195.47	195.63
MIN		196.22	195.84	194.25	193.27	193.86	193.50	193.57		194.52	194.75	195.47

WTR YR 1988 MEAN 194.91 HIGH 193.27 Feb 5 LOW 196.64 Nov 16-19

INDIANA COUNTY

404327078485001. Local number, IN 880.

LOCATION.--Lat 40°43'27", long 78°48'50", Hydrologic Unit 02050201, at Cherry Tree.
Owner: Cherry Tree Water Authority.
AQUIFER.--Glenshaw Formation of Late Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled well, diameter 6 in, depth 49 ft, cased to 17 ft, open hole.
INSTRUMENTATION.--Water-level recorder.
DATUM.--Elevation of land-surface datum is 1380 ft, from topographic map. Measuring point: Top of casing, 1.70 ft above land-surface datum.
REMARKS.--Missing record Oct. 1 to Nov. 16.
PERIOD OF RECORD.--November 1987 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 25.22 ft below land-surface datum, Feb. 12, 1988; lowest, 28.53 ft below land-surface datum, Aug. 27, 28, 1988.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		---	26.58	26.10	26.29	25.89	25.48	26.19	25.84	27.05	27.88	28.02
2		---	26.83	26.19	26.03	25.83	25.48	26.23	25.92	27.16	27.90	27.98
3		---	26.79	26.11	25.67	25.79	25.40	26.16	25.94	27.17	27.92	27.85
4		---	26.69	25.88	25.36	25.71	25.35	26.06	26.02	27.28	27.93	27.71
5		---	26.79	26.07	25.40	25.89	25.41	25.99	26.00	27.42	27.87	27.81
6		---	26.91	26.20	25.51	25.73	25.27	26.03	26.00	27.39	27.85	27.95
7		---	26.92	26.21	25.53	25.66	25.23	26.15	25.93	27.38	27.89	28.03
8		---	26.80	26.00	25.45	25.69	25.42	26.18	26.02	27.39	27.96	27.99
9		---	26.59	26.04	25.40	25.42	25.51	26.09	26.20	27.43	27.94	27.90
10		---	26.42	26.23	25.52	25.36	25.45	25.99	26.34	27.35	27.99	28.00
11		---	26.33	26.19	25.48	25.51	25.41	26.18	26.38	27.40	28.06	28.07
12		---	26.32	26.12	25.22	25.40	25.45	26.25	26.38	27.53	28.05	28.06
13		---	26.65	26.27	25.35	25.26	25.50	26.15	26.53	27.61	28.11	27.86
14		---	26.69	26.45	25.59	25.25	25.43	26.18	26.57	27.53	28.06	27.91
15		---	26.50	26.39	25.32	25.43	25.53	26.07	26.52	27.70	28.04	28.08
16		---	26.29	26.33	25.64	25.57	25.63	25.91	26.44	27.71	28.13	28.13
17		27.37	26.57	26.31	25.71	25.69	25.60	26.01	26.46	27.73	28.11	27.99
18		27.46	26.59	26.40	25.76	25.62	25.44	26.03	26.55	27.79	28.11	27.84
19		27.43	26.41	26.43	25.70	25.40	25.60	25.96	26.60	27.74	28.15	27.79
20		27.16	26.30	26.21	25.35	25.61	25.67	25.93	26.62	27.77	28.15	27.69
21		27.41	26.21	26.19	25.69	25.79	25.69	25.88	26.57	27.70	28.40	27.82
22		27.48	26.17	26.23	25.64	25.90	25.79	25.84	26.55	27.74	28.50	27.83
23		27.40	26.24	26.18	25.57	25.76	25.79	25.75	26.81	27.78	28.40	27.75
24		27.51	26.24	26.17	25.67	25.60	25.91	25.66	26.88	27.76	28.26	27.88
25		27.47	25.99	26.18	25.71	25.55	26.01	25.84	26.81	27.77	28.28	27.87
26		27.47	26.18	26.37	25.71	25.41	25.93	25.91	26.79	27.73	28.50	27.96
27		27.50	26.17	26.59	25.71	25.50	25.93	25.97	26.91	27.84	28.53	27.96
28		27.41	26.05	26.61	25.77	25.65	25.95	25.87	26.94	27.88	28.53	27.94
29		27.24	26.16	26.60	25.80	25.55	25.96	25.86	26.95	27.91	28.51	28.00
30		26.70	26.21	26.41	---	25.56	26.18	25.95	26.95	27.84	28.46	27.94
31		---	26.09	26.41	---	25.59	---	25.93	---	27.77	27.95	---
MEAN		27.36	26.44	26.26	25.61	25.60	25.61	26.01	26.45	27.59	28.14	27.92
MAX		27.51	26.92	26.61	26.29	25.90	26.18	26.25	26.95	27.91	28.53	28.13
MIN		26.70	25.99	25.88	25.22	25.25	25.23	25.66	25.84	27.05	27.85	27.69

WTR YR 1988 MEAN 26.60 HIGH 25.22 Feb 12 LOW 28.53 Aug 27, 28

	Page
ABERS CREEK NEAR MURRYSVILLE	130
ACRE-FOOT, DEFINITION OF	14
ACCESS TO WATSTORE DATA	13
ALGAE, DEFINITION OF	14
ALGAL GROWTH POTENTIAL, DEFINITION OF	14
ALLEGHENY RIVER AT ELDRED	29
AT FRANKLIN	45
AT KINZUA DAM	33
AT KITTANNING	63
AT LARABEE	151
AT NATRONA	86
AT NEW KENSINGTON	87
AT PARKER	58
AT PORT ALLEGANY	27
AT SALAMANCA, NY	31
AT WEST HICKORY	36
AQUIFER, DEFINITION OF	14
ARCADIA, SHRYOCK RUN NEAR	162
ARTESIAN, DEFINITION OF	14
ARTIFICIAL SUBSTRATE, DEFINITION OF	19
ASH MASS, DEFINITION OF	14
AULTMANS RUN NEAR LEWISVILLE	174
BACTERIA, DEFINITION OF	14
BAKERSVILLE, LAUREL HILL CREEK NEAR	152
BEAVER RIVER, AT BEAVER FALLS	143
AT WAMPUM	139
BEAVER RIVER BASIN, LAKES AND RESERVOIRS IN	145
BED MATERIAL, DEFINITION OF	14
BIG MEADOW RUN AT OHIOPYLE	111
BIG RUN NEAR SPRANKLE MILLS	152
BIOCHEMICAL OXYGEN DEMAND, DEFINITION OF	14
BIOMASS, DEFINITION OF	14
BLACKLEGS CREEK AT CLARKSBURG	174
BLACKLICK CREEK AT JOSEPHINE	73, 166
BLAIRSVILLE, TOMS RUN NEAR	166
BLOOMING VALLEY, WOODCOCK CREEK AT	42
BLUE-GREEN ALGAE, DEFINITION OF	18
BLUEJAY CREEK NEAR LYNCH	151
BOTTOM MATERIAL, DEFINITION OF, SEE BED MATERIAL	15
BRADDOCK, MONONGAHELA RIVER AT	131
BRANDY RUN NEAR GIRARD	148
BROKENSTRAW CREEK AT YOUNGSVILLE	35
BROWNS CREEK NEAR NINEVEH	150
BROWNS RUN AT WARREN	151
BRUSH CREEK AT CLAGHORN	166
BUFFALO CREEK, NEAR FREEPORT	85
BULL CREEK AT TARENTUM	152
CALLENSBURG, CLARION RIVER AT	152
CARNEGIE, CHARTIERS CREEK AT	133
CASSELMAN RIVER, AT GRANTSVILLE, MD	107
AT MARKLETON	108
CELLS/VOLUME, DEFINITION OF	15
CFS-DAY, DEFINITION OF	15
CHARTIERS CREEK, AT CARNEGIE	133
CHEMICAL OXYGEN DEMAND, DEFINITION OF	15
CHERRY RUN NEAR HOMER CITY	79
CHERRY TREE, CUSH CUSHION CREEK AT	162
CHLOROPHYLL, DEFINITION OF	15
CLAGHORN, BRUSH CREEK AT	166
CLARION RIVER, AT CALLENSBURG	152
AT COOKSBURG	56
AT JOHNSONBURG	55
AT RIDGWAY	151
EAST BRANCH AT EAST BRANCH CLARION RIVER DAM	53
NEAR PINEY	57
WEST BRANCH, AT WILCOX	54
CLARKSBURG, BLACKLEGS CREEK AT	174
CLARKSVILLE, TENMILE CREEK NEAR	152
CLYMER, DIXON RUN AT	170
TWO LICK CREEK NEAR	170
COLOR UNIT, DEFINITION OF	15
COMMODORE UNNAMED TRIB. TO N. BRANCH TWO LICK CREEK AT	170
CONEMAUGH RIVER, AT SEWARD	72, 166
AT TUNNELTON	81, 174
CONEWANGO CREEK AT RUSSELL	34
CONFLUENCE, YOUGHIOGHENY RIVER BELOW	110
CONNELLSVILLE, YOUGHIOGHENY RIVER AT	128
CONNOQUENESSING CREEK NEAR ZELIENOPLE	140
CONTENTS, DEFINITION OF	15
CONTROL, DEFINITION OF	15
CONTROL STRUCTURE, DEFINITION OF	15
COOKSBURG, CLARION RIVER AT	56
COOPERATION	1
CORAOPOLIS, MONTOUR RUN NEAR	152
CORRY, HARE CREEK NEAR	150
CREEKSIDE, CROOKED CREEK ABOVE MCKEE RUN AT	166
CROOKED CREEK ABOVE McKEE RUN AT CREEKSIDE	166
AT CROOKED CREEK DAM	67
AT IDAHO	66
CROOKED CREEK DAM, CROOKED CREEK AT	67
CROSSINGVILLE, CUSSEWAGO CREEK AT	151
CUBIC FEET PER SECOND PER SQUARE MILE, DEFINITION OF	15
CUBIC FOOT PER SECOND, DEFINITION OF	15
CURRY RUN AT SHELOCTA	166
CUSH CREEK AT GLEN CAMPBELL	162
CUSH CUSHION CREEK AT CHERRY TREE	162
CUSSEWAGO CREEK AT CROSSINGVILLE	151
DANIELS RUN AT MARIANNA	152
DARLINGTON, N. FORK LITTLE BEAVER CREEK AT	153
DEFINITION OF TERMS	14
DIATOMS, DEFINITION OF	18
DISCHARGE, DEFINITION OF	15
DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES	149
DISSOLVED, DEFINITION OF	15
DIXON RUN AT CLYMER	170
DIXONVILLE, UNNAMED TRIB. TO DIXON RUN AT	170
DOWNSTREAM ORDER AND STATION NUMBER	6
DRAINAGE AREA, DEFINITION OF	16
DRAINAGE BASIN, DEFINITION OF	16
DRY MASS, DEFINITION OF	14
DUBOIS, LABORDE BRANCH NEAR	152
DUNKARD CREEK AT SHANNOPIN	100
EAST BRANCH CLARION RIVER, AT EAST BRANCH CLARION RIVER DAM	53
EAST CONEMAUGH, LITTLE CONEMAUGH RIVER AT	71
ELDRED, ALLEGHENY RIVER AT	29
ELIZABETH, MONONGAHELA RIVER AT	104
ELK CREEK AT NORTH GIRARD	153
AT RIDGWAY	151
ERIE, MILL CREEK AT	150, 153
ETNA, LITTLE PINE CREEK NEAR	89
PINE CREEK AT	149
ERNEST, McKEE RUN AT	166
EXPLANATION OF GROUND-WATER LEVEL RECORDS	11
OF STAGE AND WATER-DISCHARGE RECORDS	6
OF WATER-QUALTIY RECORDS	9
FECAL COLIFORM BACTERIA, DEFINITION OF	14
FECAL STREPTOCOCCAL BACTERIA, DEFINITION OF	14
FERNDALE, STONEYCREEK RIVER AT	70
FRANKLIN, ALLEGHENY RIVER AT	45
FREEPORT, BUFFALO CREEK NEAR	85
FRENCH CREEK, AT UTICA	44
NEAR UNION CITY	41
NEAR WATTSBURG	39
NEAR LOWVILLE	40
FRIENDSVILLE, MD, YOUGHIOGHENY RIVER AT	105
GAGE HEIGHT, DEFINITION OF	16
GAGING STATION, DEFINITION OF	16
GAGING STATION RECORDS	27
GEORGEVILLE, MUDLICK RUN NEAR	162
GIBSON GLADE, STONY FORK TRIBUTARY NEAR	90
GIRARD, BRANDY RUN NEAR	148
GLEN CAMPBELL, CUSH CREEK AT	162
ROCK RUN NEAR	162
GRACETON, TWO LICK CREEK AT	78, 174
GRANTSVILLE, MD, CASSELMAN RIVER AT	107
GREEN ALGAE, DEFINITION OF	18
GREENFIELD, HARTHEGIG RUN NEAR	153
GREENSBORO, MONONGAHELA RIVER AT	101
GREENVILLE, LITTLE SHENANGO RIVER AT	136
GROUND WATER, LEVEL DATA	177
INDIANA COUNTY STUDY	197
GUFFEY, KINZUA CREEK NEAR	32
HARDNESS, DEFINITION OF	16
HARE CREEK NEAR CORRY	150
HARTHEGIG RUN NEAR GREENFIELD	153
HOME, SOUTH BRANCH PLUM CREEK NEAR	64
HOMER CITY, CHERRY RUN NEAR	79
MINE OUTFLOW NEAR	176
YELLOW CREEK NEAR	77, 170
HOPWOOD, LICK RUN AT	152
HORNBY, W. BRANCH FRENCH CREEK NEAR	151
HYDROLOGIC CONDITIONS	2
HYDROLOGIC UNIT, DEFINITION OF	16

Page

IDAHO, CROOKED CREEK AT..... 66
INDIANA, RAMSEY RUN NEAR..... 170
INSTANTANEOUS DISCHARGE, DEFINITION OF..... 15
INTRODUCTION..... 1

JACKSON RUN NEAR NORTH WARREN..... 151
JACOBS CREEK AT JACOBS CREEK..... 149
JEFFERSON, SOUTH FORK TENMILE CREEK AT..... 102
JOHNSONBURG, CLARION RIVER AT..... 55
JOSEPHINE, BLACKLICK CREEK AT.....73, 166

KEISTERS, SLIPPERY ROCK CREEK AT..... 153
KEYSTONE STATE PARK, McCUNE RUN AT..... 149
KINGSTON, LOYALHANNA CREEK AT..... 82
KINZUA CREEK NEAR GUFFEY..... 32
KINZUA DAM, ALLEGHENY RIVER AT..... 33
KISKIMINETAS RIVER AT VANDERGRIFT..... 84
KISKIMINETAS RIVER BASIN, LAKES IN..... 76
KITTANNING, ALLEGHENY RIVER AT..... 63

LABORDE BRANCH NEAR DUBOIS..... 152
LAKE ARTHUR..... 145
LAKES AND RESERVOIRS
  LAKE ARTHUR..... 145
  PYMATUNING RESERVOIR..... 145
  YELLOW CREEK LAKE..... 76
LARABEE, ALLEGHENY RIVER AT..... 151
LARGE, PETERS CREEK AT..... 152
LAUREL HILL CREEK NEAR BAKERSVILLE..... 152
  AT URSINA..... 109
LAUREL RUN NEAR NOLO..... 170
LEWISVILLE, AULTMANS RUN NEAR..... 174
LICK RUN AT HOPWOOD..... 152
LISBON, LITTLE SCRUBGRASS CREEK NEAR..... 46
LITTLE CONEMAUGH RIVER AT EAST CONEMAUGH..... 71
LITTLE MAHONING CREEK AT McCORMICK.....61, 162
  NEAR ROCHESTER MILLS..... 162
LITTLE PINE CREEK NEAR ETNA..... 89
LITTLE SCRUBGRASS CREEK NEAR LISBON..... 46
LITTLE SHENANGO RIVER AT GREENVILLE..... 136
LITTLE TOBY CREEK AT PORTLAND MILLS..... 149
LITTLE YELLOW CREEK NEAR STRONGSTOWN..... 74
LOWVILLE, WEST BRANCH FRENCH CREEK NEAR..... 40
LOYALHANNA CREEK, AT KINGSTON..... 82
  AT LOYALHANNA DAM..... 83
LYNCH, BLUEJAY CREEK NEAR..... 151
  TIONESTA CREEK AT..... 151

McCORMICK, LITTLE MAHONING CREEK AT.....61, 162
McCUNE RUN AT KEYSTONE STATE PARK..... 149
McKEE RUN AT ERNEST..... 166
MAHONING CREEK, AT MAHONING CREEK DAM..... 62
  AT PUNXSUTAWNEY..... 60
MAHONING CREEK DAM, MAHONING CREEK AT..... 62
MARIANNA, DANIELS RUN AT..... 152
MARKELTON, CASSELMAN RIVER AT..... 108
MEAN CONCENTRATION, DEFINITION OF..... 19
MEAN DISCHARGE, DEFINITION OF..... 15
MERCER, OTTER CREEK AT..... 153
METHYLENE BLUE ACTIVE SUBSTANCE, DEFINITION OF..... 16
MICROGRAMS PER GRAM, DEFINITION OF..... 16
MICROGRAMS PER LITER, DEFINITION OF..... 16
MILL CREEK AT ERIE.....150, 153
MILLIGRAMS PER LITER, DEFINITION OF..... 16
MINE OUTFLOW NEAR HOMER CITY..... 176
MOFFATTS MILL, RACCOON CREEK AT..... 146
MONONGAHELA RIVER AT BRADDOCK..... 131
  AT ELIZABETH..... 104
  AT GREENSBORO..... 101
MONTOUR RUN NEAR CORAOPOLIS..... 152
MUDDY CREEK NEAR PORTERSVILLE..... 141
MUDLICK RUN NEAR GEORGEVILLE..... 162
MURRYSVILLE, ABERS CREEK NEAR..... 130

NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD), DEFINITION OF..... 16
NATIONAL STREAM-QUALITY ACCOUNTING NETWORK (NASQAN) STATIONS.....17, 87, 131, 143
NATRONA, ALLEGHENY RIVER AT..... 86
NATURAL SUBSTRATE, DEFINITION OF..... 19
NEW KENSINGTON, ALLEGHENY RIVER AT..... 87
NINEVEH, BROWNS CREEK NEAR..... 150
NOLO, LAUREL RUN NEAR..... 170

Page

NORMALVILLE, POPLAR RUN NEAR..... 118
NORTH FORK BENS CREEK AT NORTH FORK RES..... 68
NORTH FORK LITTLE BEAVER CREEK AT DARLINGTON 153
NORTH GIRARD, ELK CREEK AT..... 153
NORTH WARREN, JACKSON RUN NEAR..... 151
NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES..... 6

OHIOPYLE, BIG MEADOW RUN AT..... 111
OHIO RIVER AT SEWICKLEY..... 134
OIL CREEK AT ROUSEVILLE..... 38
ORGANIC MASS, DEFINITION OF..... 15
ORGANISM, DEFINITION OF..... 17
ORGANISM COUNT/AREA, DEFINITION OF..... 17
ORGANISM COUNT/VOLUME, DEFINITION OF..... 17
OSWAYO CREEK AT SHINGLEHOUSE..... 30
OTTER CREEK AT MERCER..... 153

PARKER, ALLEGHENY RIVER AT..... 58
PARTIAL-RECORD STATION, DEFINITION OF..... 17
PARTICLE SIZE, DEFINITION OF..... 17
PARTICLE-SIZE CLASSIFICATION, DEFINITION OF. 17
PERCENT COMPOSITION, DEFINITION OF..... 17
PESTICIDES, DEFINITION OF..... 17
PETERS CREEK AT LARGE..... 152
PHYTOPLANKTON, DEFINITION OF..... 18
PICOCURIE, DEFINITION OF..... 17
PIKES PEAK, YELLOW CREEK NEAR..... 170
PINE CREEK AT ETNA..... 149
PINEY, CLARION RIVER NEAR..... 57
PINEY CREEK AT PINEY..... 149
PLANKTON, DEFINITION OF..... 17
POLYCHLORINATED BIPHENYLS, DEFINITION OF.... 18
POPLAR RUN BASIN..... 158
POPLAR RUN NEAR NORMALVILLE..... 118
PORT ALLEGANY, ALLEGHENY RIVER AT..... 27
PORTERSVILLE, MUDDY CREEK NEAR..... 141
PORTLAND MILLS, LITTLE TOBY CREEK AT..... 149
POTATO CREEK AT SMETHPORT..... 28
PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS..... 22
PUNXSUTAWNEY, MAHONING CREEK AT..... 60
PYMATUNING DAM, SHENANGO RIVER AT..... 135
PYMATUNING RESERVOIR..... 145

RACCOON CREEK, AT MOFFATTS MILL..... 146
  NEAR WEST SPRINGFIELD..... 147
RAMSEY RUN NEAR INDIANA..... 170
RASSELAS, SEVENMILE RUN NEAR..... 52
RECOVERABLE FROM, BOTTOM MATERIAL, DEFINITION OF..... 18
REDBANK CREEK AT ST. CHARLES..... 59
REDSTONE CREEK AT WALTERSBURG..... 103
RESERVOIRS, SEE LAKES AND RESERVOIRS
RIDGWAY, CLARION RIVER AT..... 151
  ELK CREEK AT..... 151
ROCHESTER MILLS, LITTLE MAHONING CREEK NEAR. 162
ROCK RUN NEAR GLENN CAMPBELL..... 162
ROSSITER, TRIBUTARY TO CANOE CREEK AT..... 162
ROUSEVILLE, OIL CREEK AT..... 38
RUNOFF IN INCHES, DEFINITION OF..... 18
RUSSELL, CONEWANGO CREEK AT..... 34

SALAMANCA, NY, ALLEGHENY RIVER AT..... 31
ST. CHARLES, REDBANK CREEK AT..... 59
SEDIMENT, DEFINITION OF..... 19
SEVENMILE RUN AT RASSELAS..... 52
SEWARD, CONEMAUGH RIVER AT.....72, 166
SEWICKLEY, OHIO RIVER AT..... 134
SHANNOPIN, DUNKARD CREEK AT..... 100
SHARPSVILLE, SHENANGO RIVER AT..... 138
SHELOCTA, CURRY RUN AT..... 166
SHENANGO RIVER, AT PYMATUNING DAM..... 135
  AT SHARPSVILLE..... 138
  NEAR TRANSFER..... 137
SHINGLEHOUSE, OSWAYO CREEK AT..... 30
SHRYOCK RUN NEAR ARCADIA..... 162
SLIPPERY ROCK CREEK AT KEISTERS..... 153
  AT WURTEMBURG..... 142
SMETHPORT, POTATO CREEK AT..... 28
SOLUTE, DEFINITION OF..... 19
SOUTH BRANCH PLUM CREEK NEAR HOME..... 64
SOUTH BRANCH TWO LICK CREEK NEAR WANDIN JUNCTION..... 166

	Page
SOUTH FORK TENMILE CREEK AT JEFFERSON	102
SPECIAL NETWORKS AND PROGRAMS	5
SPECIFIC CONDUCTANCE, DEFINITION OF	19
SPRANKLE MILLS, BIG RUN NEAR	152
STAGE-DISCHARGE RELATION, DEFINITION OF	19
STONYCREEK RIVER AT FERNDALE	70
STONY FORK STUDY	154
STONY FORK, TRIBUTARY NEAR GIBBON GLADE	90
STREAMFLOW, DEFINITION OF	19
STRONGSTOWN, LITTLE YELLOW CREEK NEAR	74
SUBSTRATE, DEFINITION OF	19
SUGAR CREEK AT SUGARCREEK	151
SURFACE AREA, DEFINITION OF	20
SURFICIAL BED MATERIAL, DEFINITION OF	20
SUSPENDED, RECOVERABLE, DEFINITION OF	20
SUSPENDED SEDIMENT, DEFINITION OF	19
SUSPENDED-SEDIMENT CONCENTRATION, DEFINITION OF	19
SUSPENDED-SEDIMENT DISCHARGE, DEFINITION OF	19
SUSPENDED-SEDIMENT LOAD, DEFINITION OF	19
SUSPENDED, TOTAL, DEFINITION OF	20
SUTERSVILLE, YOUGHIOGHENY RIVER AT	129
TARENTUM, BULL CREEK AT	152
TAXONOMY, DEFINITION OF	20
TENMILE CREEK NEAR CLARKSVILLE	152
TIME-WEIGHTED AVERAGE, DEFINITION OF	20
TIONESTA CREEK AT LYNCH	151
AT TIONESTA DAM	37
TOMS RUN NEAR BLAIRSVILLE	166
TONS PER ACRE-FOOT, DEFINITION OF	20
TONS PER DAY, DEFINITION OF	20
TOTAL, DEFINITION OF	21
TOTAL COLIFORM BACTERIA, DEFINITION OF	14
TOTAL ORGANISM COUNT, DEFINITION OF	17
TOTAL, RECOVERABLE, DEFINITION OF	21
TOTAL SEDIMENT DISCHARGE, DEFINITION OF	19
TRANSFER, SHENANGO RIVER NEAR	137
TRIBUTARY TO CANOE CREEK AT ROSSITER	162
TUNNELTON, CONEMAUGH RIVER AT	81, 174
TWO LICK CREEK AT GRACETON	78, 174
NEAR CLYMER	170
UNION CITY, FRENCH CREEK NEAR	41
UNNAMED TRIB. TO DIXON RUN AT DIXONVILLE	170
UNNAMED TRIB. TO N. BRANCH TWO LICK CREEK AT COMMODORE	170
URSINA, LAUREL HILL CREEK AT	109
UTICA, FRENCH CREEK AT	44
VANDERGRIFT, KISKIMINETAS RIVER AT	84
WRD, DEFINITION OF	21
WSP, DEFINITION OF	21
WALTERSBURG, REDSTONE CREEK AT	103
WAMPUM, BEAVER RIVER AT	139
WANDIN JUNCTION, SOUNTH BRANCH TWO LICK CREEK NEAR	166
WATTSBURG, FRENCH CREEK NEAR	39
WARREN, BROWNS RUN AT	151
WATER QUALITY AT PARTIAL RECORD STATIONS	
INDIANA COUNTY STUDY	162
STONY FORK STUDY	154
POPLAR RUN BASIN	158
WEIGHTED AVERAGE, DEFINITION OF	21
WEST BRANCH CLARION RIVER AT WILCOX	54
WEST BRANCH FRENCH CREEK NEAR HORNBY	151
NEAR LOWVILLE	40
WEST HICKORY, ALLEGHENY RIVER AT	36
WEST HICKORY CREEK NEAR WEST HICKORY	151
WEST SPRINGFIELD, RACCOON CREEK NEAR	147
WET MASS, DEFINITION OF	15
WILCOX, WEST BRANCH CLARION RIVER AT	54
WOODCOCK CREEK, AT BLOOMING VALLEY	42
AT WOODCOCK CREEK DAM	43
WURTEMBURG, SLIPPERY ROCK CREEK AT	142
YELLOW CREEK LAKE	76
YELLOW CREEK NEAR HOMER CITY	77, 170
NEAR PIKES PEAK	170
YOUGHIOGHENY RIVER, AT CONNELLSVILLE	128
AT FRIENDSVILLE, MD	105
AT SUTERSVILLE	129
AT YOUGHIOGHENY RIVER DAM	106
BELOW CONFLUENCE	110
YOUGHIOGHENY RIVER DAM, YOUGHIOGHENY RIVER AT	106
YOUNGSVILLE, BROKENSTRAW CREEK AT	35
ZELIENOPLE, CONNOQUENESSING CREEK NEAR	140
ZOOPLANKTON, DEFINITION OF	18

October 1, 1978

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
	Length	
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)
	Area	
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)
	Volume	
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)
	Flow	
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)
	Mass	
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons

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