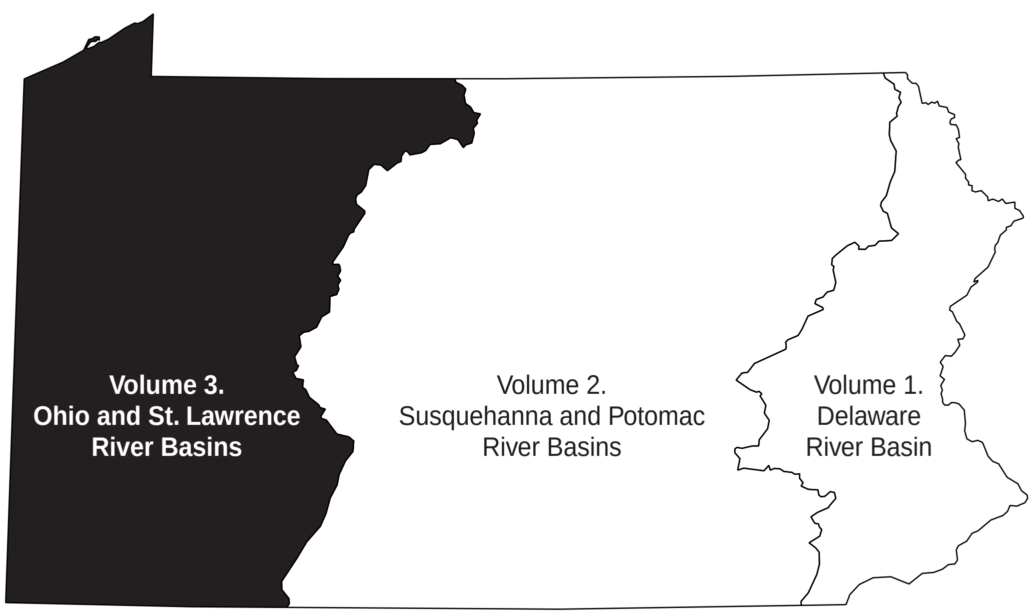
U.S. Department of the Interior
U.S. Geological Survey

Water Resources Data Pennsylvania Water Year 2004

Volume 3. Ohio and St. Lawrence River Basins

By Raymond W. Siwicki

Water-Data Report PA-04-3



Prepared in cooperation with the Pennsylvania Department of Environmental Protection, the Pittsburgh District of the U.S. Army Corps of Engineers, and with other State, municipal, and Federal agencies.

U.S. DEPARTMENT OF THE INTERIOR

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2005

PREFACE

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

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

Volume 3 was prepared in cooperation with the Commonwealth of Pennsylvania and other agencies under the general supervision of Patricia L. Lietman, Director, USGS Pennsylvania Water Science Center; Robert A. Hainly, Assistant Director for Hydrologic Surveillance and Data Management; Raymond W. Siwicki, Chief, Pittsburgh Project Office. It is the product of a team 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 author, who had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to Geological Survey policy and established guidelines, the following individuals contributed significantly to the collection, processing, and tabulation of the data:

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13. ABSTRACT *(Maximum 200 words)*

Water resources data for the 2004 water year for Pennsylvania consist of records of discharge and water quality of streams; contents and elevations of lakes and reservoirs; and water levels and water quality of ground-water wells. This report, Volume 3 contains (1) discharge records for 60 continuous-record streamflow-gaging stations, 6 partial-record stations and 13 special study and miscellaneous streamflow sites; (2) elevation and contents records for 11 lakes and reservoirs; (3) water-quality records for 4 lakes and reservoirs; (4) water-quality records for 23 gaging stations and 26 ungaged streamsites; (5) water-level records for 23 ground-water network observation wells; (6) ground-water-quality records for 19 miscellaneous wells. Site locations are shown in figures throughout the report. Additional water data collected at various sites not involved in the systematic data-collection program are also presented. These data together with the data in Volumes 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.

14. SUBJECT TERMS

*Pennsylvania, *Hydrologic data, *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

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

[Letters after station name designate type of data: (d) discharge, (c) chemical, (b) biological, (e) elevation, gage heights, or contents.]

OHIO RIVER BASIN

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

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

OHIO RIVER BASIN--Continued

GROUND-WATER WELLS, BY COUNTY, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME

(Letters after local well number designate type of data: (l) water level)

GROUND-WATER RECORDS

GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES

The following continuous-record surface-water discharge stations (listed by downstream order) have been discontinued. Daily streamflow records were collected and published for the period of record shown for each station. Discontinued stations with less than 3 years of record have not been included. Information regarding these stations may be obtained from the USGS Pennsylvania Water Science Center Office at the address given on the back of the title page of this report.

DISCONTINUED CONTINUOUS-RECORD SURFACE-WATER DISCHARGE STATIONS

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
OHIO AND ST. LAWRENCE RIVER BASINS			
Newell Creek near Port Allegany	03008000	7.79	1966-78
Potato Creek at Smethport	03009680	160	1975-95
Allegheny River at Larabee	03010000	530	1921 1926-39
Kinzua Creek at Dewdrop	03012000	171	1909-16
Allegheny River at Kinzua Dam	03012550	2,180	1936-91
Jackson Run near North Warren	03015280	12.8	1963-78
Allegheny River at Warren	03015310*	3,131	1989-94
Tionesta Creek at Sheffield	03016500	128	1942-46
South Branch Tionesta Creek at Barnes	03017000	85.3	1942-46
Tionesta Creek at Lynch	03017500*	233	1938-79
Tionesta Creek at Mayburg	03018000	307	1942-46
Tionesta Creek at Butler Bridge (near Nebraska)	03018500	420	1919-23
Tionesta Creek at Nebraska	03019000	469	1910-11 1924-40
Tionesta Creek at Tionesta Dam	03020000	479	1941-91
Oil Creek near Rouseville	03021000	315	1910-32
West Branch French Creek near Lowville	03021410	52.3	1975-93
French Creek at Carters Corners	03021500	208	1910-71
French Creek near Union City	03021520	221	1972-91
Little Conneauttee Creek near McKean	03021700	3.60	1961-78
French Creek at Venango	03022000*	597	1939-46
French Creek at Saegerstown	03022500	629	1921-39
Woodcock Creek at Blooming Valley	03022540*	31.1	1975-95
Woodcock Creek at Woodcock Creek Dam	03022554	45.6	1975-91
Cussewago Creek near Meadville	03023000	90.2	1911-38
French Creek at Carlton	03023500	998	1908-25

DISCONTINUED CONTINUOUS-RECORD SURFACE-WATER DISCHARGE STATIONS—Continued

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Sugar Creek at Wyattville	03024500	153	1910-16
Sugar Creek at Sugarcreek	03025000*	166	1933-79
Patchel Run near Franklin	03025200	5.69	1965-78
E. Branch Clarion River at E. Branch Clarion River Dam	03027500	73.2	1949-91
Clarion River at Johnsonburg	03028500*	204	1946-95
Clarion River at Ridgway	03029000*	303	1941-53
Toms Run at Cooksburg	03029400	12.6	1960-78
Clarion River near Clarion	03030000	930	1919-23
Clarion River at Callensburg	03030852*	1,163	1979-85
Clarion River at St. Petersburg	03031000	1,246	1942-53,1974-75
Big Run near Sprankle Mills	03031950	7.38	1964-81
Allegheny River near Rimer	03033000	8,389	1939-45
Stump Creek at Cramer	03033500	22.1	1942-46
Mahoning Creek at Dayton	03035000	321	1921-40
Mahoning Creek at Mahoning Creek Dam	03036000	344	1939-91
Crooked Creek at Creekside	03037000	67.6	1942-46
South Branch Plum Creek at Five Points	03037350	33.3	1996-98
South Branch Plum Creek at Willet	03037500	30.0	1942-46
Crooked Creek at Crooked Creek Dam	03039000	278	1910-91
Clear Run near Buckstown	03039200	3.68	1965-78
Stony Creek at Hollsopple	03039500	244	1937-40
North Fork Bens Creek at North Fork Reservoir	03039925	3.45	1985,1988-98
Little Conemaugh River at East Conemaugh	03041000*	183	1939-95
Little Yellow Creek near Strongstown	03042200	7.36	1961-78,1987-88
Yellow Creek near Penn Run	03042250	50.4	1964-67
Blacklick Creek at Blacklick	03043000	390	1908-51
Conemaugh River at Tunnelton	03044000	1,358	1940-91
Loyalhanna Creek at New Alexandria	03045500	265	1920-23,1926-40
Loyalhanna Creek at Loyalhanna Dam	03047000	292	1940-91
Kiskiminetas River at Avonmore	03047500	1,723	1908-37

DISCONTINUED CONTINUOUS-RECORD SURFACE-WATER DISCHARGE STATIONS—Continued

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Deer Creek near Dorseyville	03049646	27.0	1996-98
Monongahela River at Point Marion	03063000	2,720	1937-55
Stony Fork Tributary near Gibbon Glade	03070420	0.93	1977-95
Stony Fork near Elliottsville	03070455	7.44	1977-85
Monongahela River at Greensboro	03072500	[a]4,367	1939-95
Georges Creek at Smithfield	03072590	16.3	1964-78
Tenmile Creek near Clarksville	03072840	133	1969-79
South Fork Tenmile Creek at Jefferson	03073000	180	1932-95
Dunlap Creek at Allison	03074000	33.1	1943-51
Lick Run at Hopwood	03074300	3.80	1967-78
Youghiogheny River at Youghiogheny River Dam	03077500	436	1940-91
Big Piney Run near Salisbury	03078500	24.5	1932-70
Poplar Run near Normalville	03082200	9.27	1962-78
Green Lick Run at Green Lick Reservoir	03083000	3.07	1942-79
Abers Creek near Murrysville	03084000	4.39	1949-93
Turtle Creek at Trafford	03084500	55.9	1921-52
Chartiers Creek at Crafton	03085500	270	1972-75
Big Sewickley Creek near Ambridge	03086100	15.6	1968-78
Shenango River near Turnersville	03100000	152	1912-22
Sugar Run at Pymatuning Dam	03101000	8.59	1934-55
Shenango River near Jamestown	03102000	181	1920-34
Pymatuning Creek near Orangeville	03103000	169	1914-23,1926-63
Shenango River at Sharpsville	03103500	584	1938-91
Shenango River at Sharon	03104000	608	1910-38
Shenango River at New Castle	03104500*	792	1910-11,1913-34
Cool Spring Creek near Jackson Center	03104580	13.0	1962-68
Harthegig Run near Greenfield	03104760	2.26	1969-81
Neshannock Creek at Eastbrook	03105000	228	1918-23
Wolf Creek near Slippery Rock	03106140	86.6	1977-82
Ohio River at Montgomery Island Dam	03108500	[b]22,960	1941-51

DISCONTINUED CONTINUOUS-RECORD SURFACE-WATER DISCHARGE STATIONS—Continued

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Brush Run near Buffalo	03111150	10.3	1961-78,1983-85
Enlow Fork near West Finley	03111585	38.1	1979-85
Raccoon Creek near West Springfield	04213040	2.53	1969-94

***** Currently operated as a partial-record station.
[a] Formerly published as 4,407.
[b] About.

The following continuous-record water-quality stations (listed by downstream order) have been discontinued. Daily records were collected and published for the period shown for each constituent. Discontinued stations with less than 3 years of record, or stations with data collection less than daily, have not been included. If a station had one constituent with 3 or more years of record, all constituents having daily values will be listed for that station regardless of the length of record. Information regarding these stations may be obtained from the USGS Pennsylvania Water Science Center Office at the address given on the back of the title page of this report.

The following are used to identify the record type: SC (specific conductance); pH; Temp (water temperature); Sed (sediment concentration and discharge).

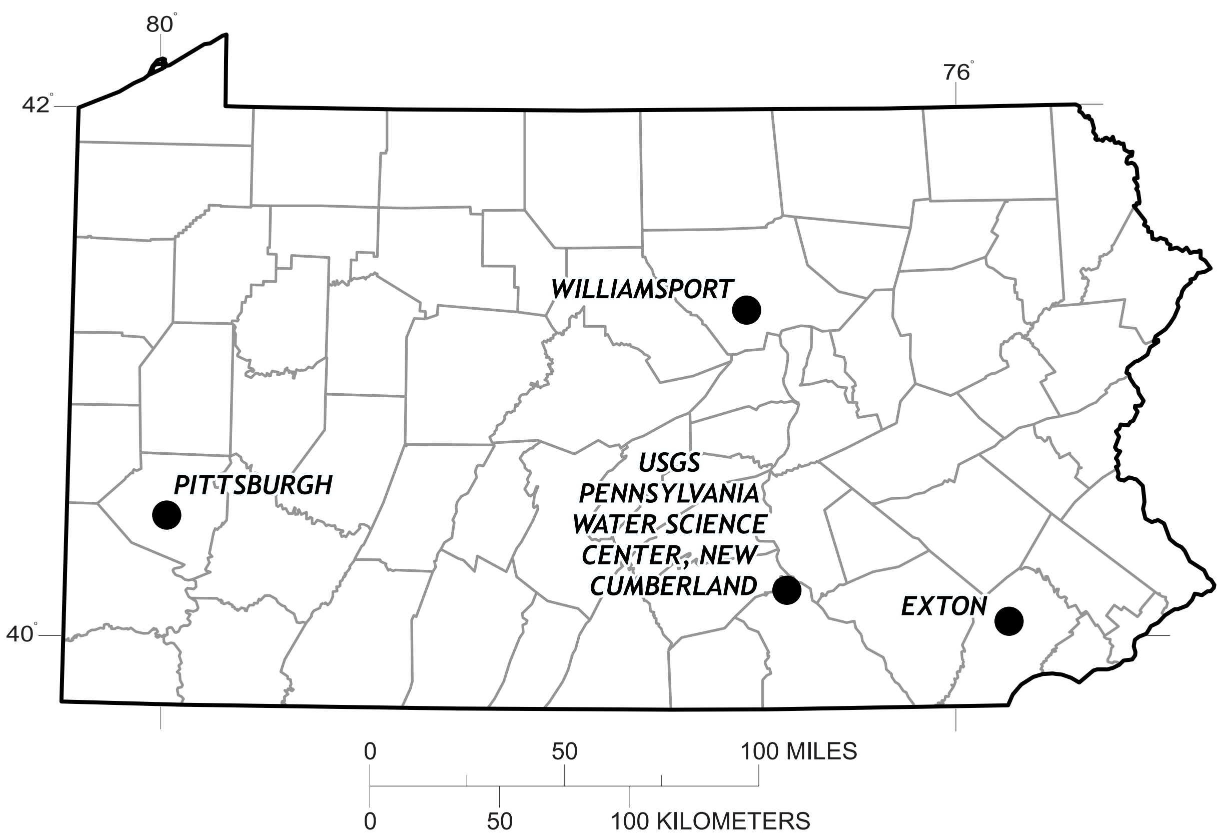
DISCONTINUED CONTINUOUS-RECORD SURFACE-WATER-QUALITY STATIONS

Station name	Station number	Drainage area (mi^2)	Type of Record	Period of record (water years)
OHIO AND ST. LAWRENCE RIVER BASINS				
Brokenstraw Creek at Youngsville	03015500	321	Sed	1969-70
Oil Creek at Rouseville	03020500	300	Sed	1971-72
Clarion River at Cooksburg	03029500	807	Sed	1971-73
Redbank Creek at St. Charles	03032500	528	Sed	1969-70,1977-79
Beaver Run near Troutville	03033222	2.21	Sed	1980-81
East Branch Mahoning Creek near Big Run	03033225	29.6	Sed	1979-81
Stonycreek River at Ferndale	03040000	451	Sed	1978-79
			Temp	1978-79,1997-98
			SC,pH	1997-98
Loyalhanna Creek at Kingston	03045000	172	Sed	1970-77
Allegheny River at New Kensington	03049625	11,500	SC	1975-81
			Temp	1975-81,1997-98
			Sed	1977-79
Stony Fork Tributary near Gibbon Glade	03070420	0.93	Sed,Temp,SC,pH	1978-88
Stony Fork near Elliotsville	03070455	7.44	Sed,Temp,SC,pH	1978-85
Whiteley Creek near Kirby	03072670	5.95	Sed	1979-82
Castile Run at Clarksville	03073030	6.21	Sed	1980-81
Champion Run at Melcroft	03082120	13.8	Sed	1986-87
Poplar Run near Normalville	03082190	8.83	Sed,Temp,SC,pH	1986-88
Indian Creek at White Bridge	03082237	91.2	Temp,SC,pH	1986-87
Monongahela River at Braddock	03085000	7,337	Temp	1973-79,1997-98
			SC	1973-75
			Sed	1973-79

DISCONTINUED CONTINUOUS-RECORD SURFACE-WATER-QUALITY STATIONS—Continued

Station name	Station number	Drainage area (mi^2)	Type of Record	Period of record (water years)
Enlow Fork near West Finley	03111585	38.1	Sed	1980-85

USGS PENNSYLVANIA WATER SCIENCE CENTER LOCATIONS AND ADDRESSES



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INTRODUCTION

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

This report, Volume 3, contains: (1) discharge records for 60 continuous-record streamflow-gaging stations, 6 partial-record stations, and 13 special study and miscellaneous streamflow sites; (2) elevation and contents records for 11 lakes and reservoirs; (3) water-quality records for 4 lakes and reservoirs; (4) water-quality records for 23 streamflow gaging stations and 26 ungaged streamsites; (5) water-level records for 23 ground-water network observation wells; (6) ground-water-quality records for 19 miscellaneous wells. Additional water data collected at various sites not involved in the systematic data-collection program may also be presented.

Publications similar to this report are published annually by the Geological Survey for all States. For the purpose of archiving, these official reports have an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this volume is identified as "U.S. Geological Survey Water-Data Report PA-04-3." These water-data reports, beginning with the 1971 water year, are for sale as paper copy or microfiche by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.

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

Prior to the introduction of this series and for several years concurrent with it, water-resources data for Pennsylvania were published in U.S. Geological Survey Water-Supply Papers. Data on stream discharge and stage, and on lake or reservoir contents and stage, through September 1960, were published annually under the title "Surface-Water Supply of the United States," which was released in numbered parts as determined by natural drainage basins. For the 1961-70 water years, these 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, and 4. Data on chemical quality, temperature, and suspended sediment for the 1941-70 water years were published annually under the title "Quality of Surface Waters of the United States," and ground-water levels for the 1935-74 water years were published annually 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 the U.S. Geological Survey, Information Services, Box 25286, Denver, CO 80225.

Information for ordering specific reports may be obtained from the USGS Pennsylvania Water Science Center at the address on the back of the title page or by phoning the Scientific and Technical Products Section at (717) 730-6940. Information on the availability of unpublished data or statistical analyses may be obtained from the USGS Pennsylvania Water Science Center Information Specialist by telephone at (717) 730-6916 or by FAX at (717) 730-6997.

COOPERATION

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

The Commonwealth of Pennsylvania, Department of Environmental Protection, Kathleen A. McGinty, Secretary, through the following:

Office of Water Management, Cathleen C. Myers, Deputy Secretary;
- Bureau of Water Supply and Wastewater Management, Frederick A. Marrocco, Director;
- Bureau of Watershed Management, Stuart I. Gansell, Director;
- Bureau of Waterways Engineering, Michael D. Conway, Director.

Allegheny County Airport Authority, Kent G. George, Executive Director.
Harmony Water Authority, David Szakelyhidi, Chairman.
Indiana County Municipal Services Authority, Michael Duffalo, Executive Director.

COOPERATION--Continued

New York State Department of Environmental Conservation, Erin M. Crotty, Commissioner.

Federal Energy Regulatory Commission Licensee:
Reliant Energy, Mid-Atlantic Power

The following Federal agency assisted in the data-collection program by providing funds or services: Corps of Engineers, U.S. Army, Pittsburgh District.

The following organizations aided in collecting records: Allegheny Power Service Corp. and Latrobe Municipal Authority.

SUMMARY OF HYDROLOGIC CONDITIONS

Surface Water

Streamflows in the Upper Ohio and St. Lawrence River Basins during water year 2004 were above normal. The annual measured streamflow was 141 percent of the median of the 1971-2000 annual mean streamflow at the Ohio River index gaging station, Oil Creek at Rouseville, Pa. (station 03020500).

The monthly mean streamflow (fig. 1) was normal for the months of November, January, February, April, and June, and above normal for the months of October, December, March, May, July, August, and September. For the purposes of this analysis, an above-normal streamflow is defined as flow greater than the long-term 75 percent flow, and below-normal streamflow is less than the long-term 25 percent flow.

The long-term drought that affected most of the Commonwealth in previous years appears to have abated near the end of water year 2003. Beginning in July 2003 and continuing through water year 2004, all of the monthly means at the index station were normal or above normal.

The months of July, August, and September were above normal, with September’s statistical average having the largest departure from the monthly mean for the year. The month of September generally has one of the lowest median flows for the year. The above-normal precipitation recorded in September, for most counties of western Pennsylvania, was due to the rain produced by the remnants of two hurricanes passing over the area.

A comparison of the monthly and annual mean streamflow during the 2004 water year with that of the 1971-2000 reference period for Oil Creek at Rouseville, Pa., is shown in figure 1.

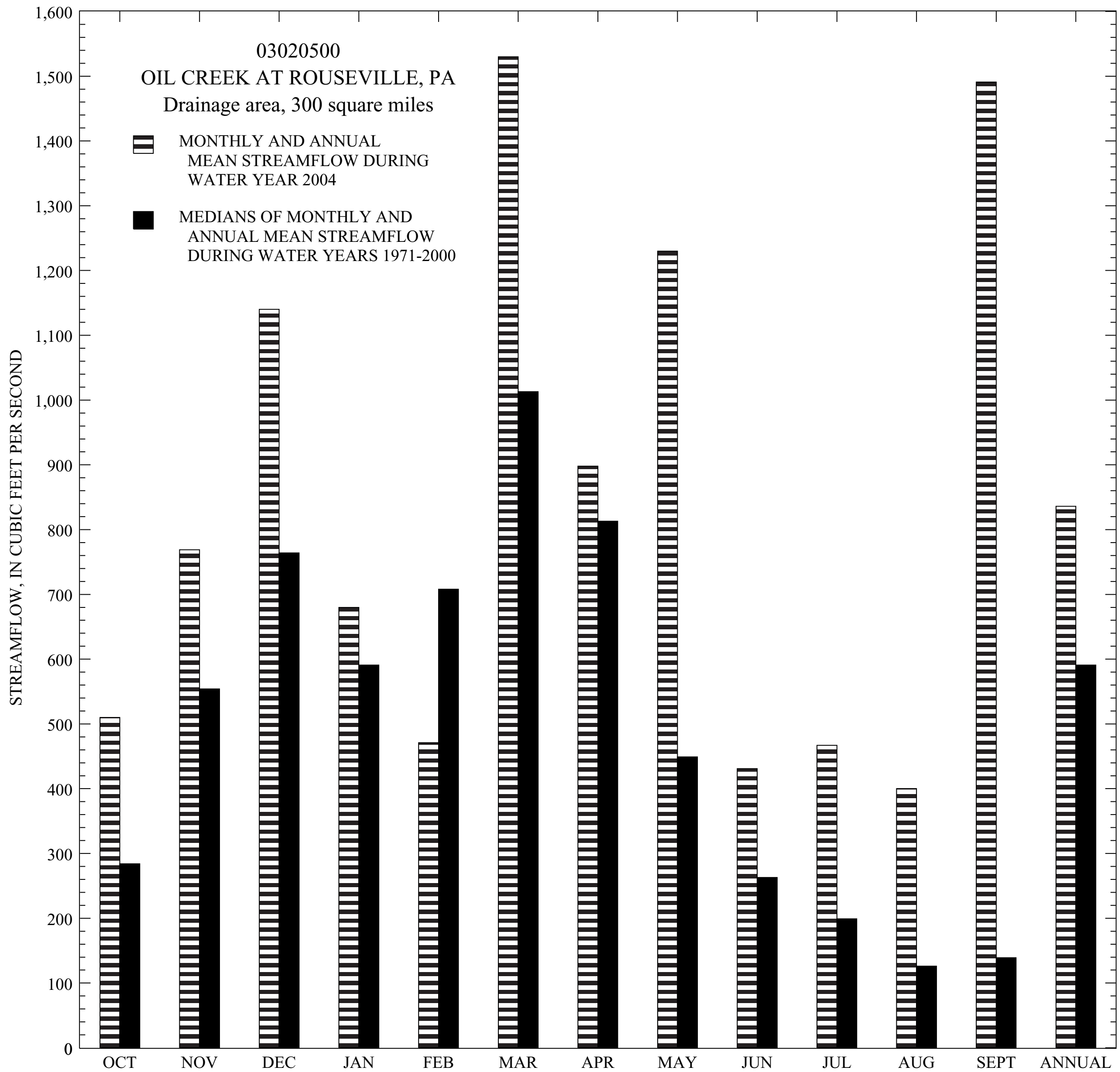

Figure 1.--Comparison of monthly and annual mean streamflow during water year 2004 with the medians of monthly and annual mean streamflow during water years 1971 through 2000.

SUMMARY OF HYDROLOGIC CONDITIONS

Ground Water

During the 2004 water year, ground-water levels reached annual lows in most observation wells during the fall and summer seasons. Ground-water levels in observation wells reached annual highs in most observation wells during the winter and spring. Water levels during the 2004 water year for 15 network wells were averaged by season and compared to the long-term water level for these seasons (fig. 2). Long-term water levels were calculated from records ranging from 22 to 67 years in length.

Water year 2004 was characterized by having above-average precipitation during all seasons in most areas of western Pennsylvania. The departures of precipitation above normal, for example in Pittsburgh in Allegheny County, were 1.20, 2.58, 4.66, and 11.31 inches for the fall, winter, spring, and summer seasons, respectively. This departure above normal of 19.75 inches for this 12-month period is exceedingly rare. As a result of this excess precipitation, the subsequent ground-water recharge was above normal in many areas of western Pennsylvania.

Water levels throughout the year were generally normal, above normal or much-above normal and infrequently below normal or much-below normal. In the fall, seasonal water levels were much-above normal in six wells, above normal in five wells, normal in three wells, and much-below normal in one well (fig. 2). During the winter and spring, water levels were normal or higher in 14 wells and below normal in 1 well.

During July, August, and September of 2004, most of western Pennsylvania received above-average precipitation. For example, the departures above normal for July, August, and September in Allegheny County were 1.71, 2.75, and 6.85 inches, respectively. The September surplus of 6.85 inches was due mostly to precipitation from the remnants of Hurricane Frances and Hurricane Ivan. This wet summer resulted in above-normal recharge to the ground-water system. As a result, summer water levels were much-above normal in four wells, above normal in seven wells, normal in three wells, and below normal in one well.

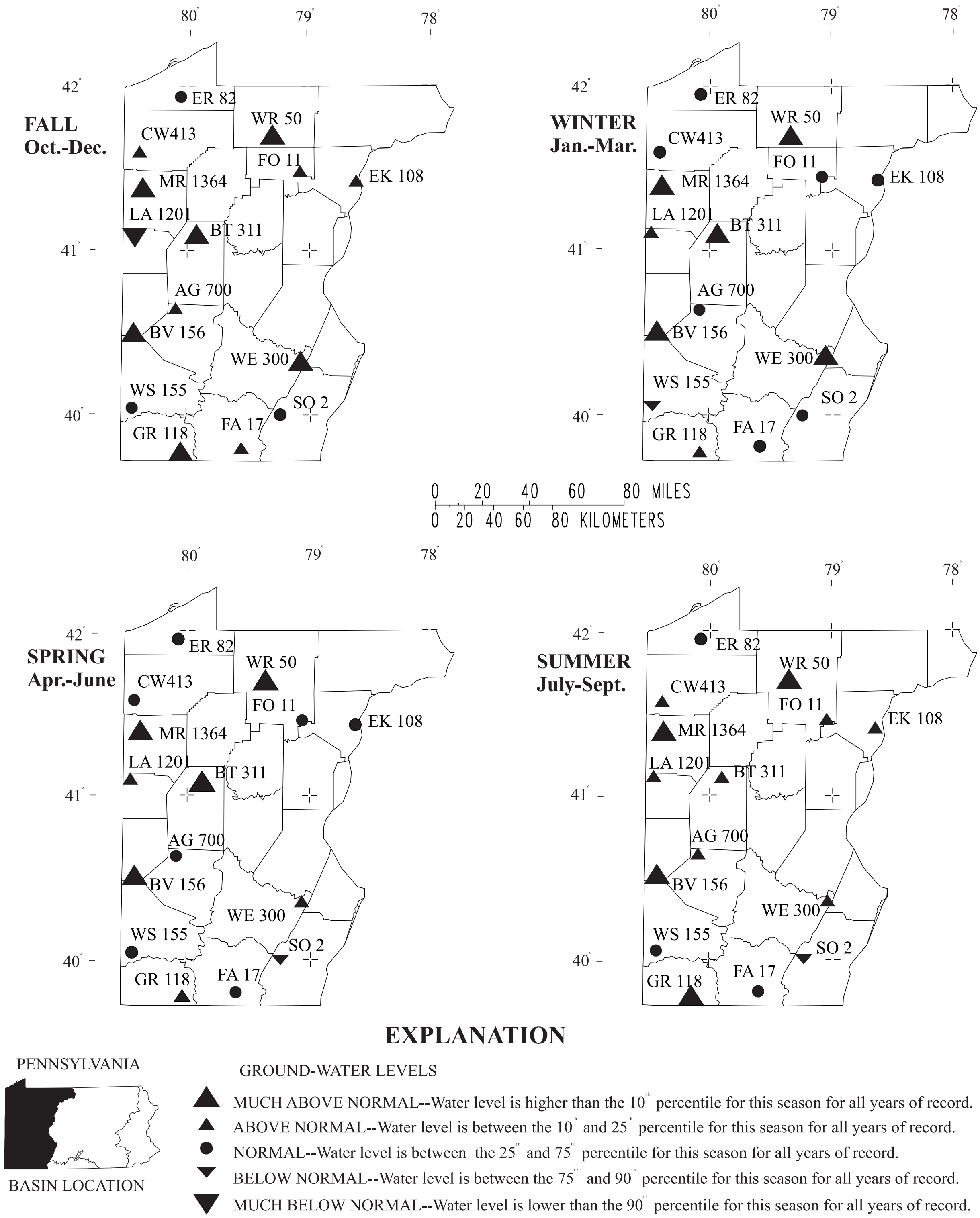

Figure 2.--Relation between 2004 seasonal mean ground-water levels and long-term mean ground-water levels *[Seasonal percentile values were determined by ranking the average monthly water levels for each month in the season from highest to lowest for all years of record and averaging the ranks for the three months. A water level that is higher than the seasonal 10th percentile value would be expected to occur only once in a ten-year period. Conversely, a water level that is lower than the seasonal 90th percentile value also would be expected to occur only once during a ten-year period.]*

SPECIAL NETWORKS AND PROGRAMS

The **Hydrologic Bench-Mark Network** is a network of 61 sites in small drainage basins in 39 States that was established in 1963 to provide consistent streamflow data representative of undeveloped watersheds nationwide, and from which data could be analyzed on a continuing basis for use in comparison and contrast with conditions observed in basins more obviously affected by human activities. At selected sites, water-quality information is being gathered on major ions and nutrients, primarily to assess the effects of acid deposition on stream chemistry. Additional information on the Hydrologic Benchmark Program may be accessed from *http://water.usgs.gov/hbn/*.

The **National Stream-Quality Accounting Network** (NASQAN) is a network of sites used to monitor the water quality of large rivers within the Nations's largest river basins. From 1995 through 1999, a network of approximately 40 stations was operated in the Mississippi, Columbia, Colorado, and Rio Grande River basins. For the period 2000 through 2004, sampling in the Colorado and Columbia River Basins was reduced to a few index stations so that a network of 5 stations could be implemented on the Yukon River. Samples are collected with sufficient frequency that the flux of a wide range of constituents can be estimated. The objective of NASQAN is to characterize the water quality of these large rivers by measuring concentration and mass transport of a wide range of dissolved and suspended constituents, including nutrients, major ions, dissolved and sediment-bound heavy metals, common pesticides, and inorganic and organic forms of carbon. This information will be used (1) to describe the long-term trends and changes in concentration and transport of these constituents; (2) to test findings of the National Water-Quality Assessment (NAWQA) Program; (3) to characterize processes unique to large-river systems such as storage and re-mobilization of sediments and associated contaminants; and (4) to refine existing estimates of off-continent transport of water, sediment, and chemicals for assessing human effects on the world's oceans and for determing global cycles of carbon, nutrients, and other chemicals. Additional information about the NASQAN Program can be found at *[http://water.usgs.gov/nasqan/]*.

The **National Atmospheric Deposition Program/National Trends Network** (NADP/NTN) is a network of monitoring sites that provide continuous measurement and assessment of the chemical constituents in precipitation throughout the United States. As the lead Federal agency, the USGS works together with over 100 organizations to provide a long-term, spatial and temporal record of atmospheric deposition generated from this network of 250 precipitation-chemistry monitoring sites. The USGS supports 74 of these 250 sites. This long-term, nationally consistent monitoring program, coupled with ecosystem research, provides critical information toward a national scorecard to evaluate the effectiveness of ongoing and future regulations intended to reduce atmospheric emissions and subsequent impacts to the Nation's land and water resources. Reports and other information on the NADP/NTN Program, as well as data from the individual sites, may be accessed from *http://bqs.usgs.gov/acidrain/*.

The **USGS National Water-Quality Assessment Program** (NAWQA) is a long-term program with goals to describe the status and trends of water-quality conditions for a large, representative part of the Nation's ground- and surface-water resources; to provide an improved understanding of the primary natural and human factors affecting these observed conditions and trends; and to provide information that supports development and evaluation of management, regulatory, and monitoring decisions by other agencies.

Assessment activities are being conducted in 42 study units (major watersheds and aquifer systems) that represent a wide range of environmental settings nationwide and that account for a large percentage of the Nation's water use. A wide array of chemical constituents is measured in ground water, surface water, streambed sediments, and fish tissues. The coordinated application of comparative hydrologic studies at a wide range of spatial and temporal scales will provide information for water-resources managers to use in making decisions and a foundation for aggregation and comparison of findings to address water-quality issues of regional and national interest.

Communication and coordination between USGS personnel and other local, State, and Federal interests are critical components of the NAWQA Program. Each study unit has a local liaison committee consisting of representatives from key Federal, State, and local water-resources agencies, Indian nations, and universities in the study unit. Liaison committees typically meet semiannually to discuss their information needs, monitoring plans and progress, desired information products, and opportunities to collaborate efforts among the agencies. Additional information about the NAWQA Program may be accessed from *http://water.usgs.gov/nawqa/*.

The **USGS National Streamflow Information Program** (NSIP) is a long-term program with goals to provide framework streamflow data across the Nation. Included in the program are creation of a permanent Federally funded streamflow network, research on the nature of streamflow, regional assessments of streamflow data and databases, and upgrades in the streamflow information delivery systems. Additional information about NSIP may be accessed from *http://water.usgs.gov/nsip/*.

EXPLANATION OF THE RECORDS

The surface-water and ground-water records in this report are for the 2004 water year that began October 1, 2003, and ended September 30, 2004. 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 streamflow stations, and ground-water-level data. The location of these stations and wells are shown in figures throughout the report. The following sections of the introductory text are presented to provide users with a more detailed explanation of how these hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

Station Identification Numbers

Each data station in this report, whether a streamsite or a 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 continuous-record 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 *03020500*, includes a 2-digit part number "*03*" plus a 6-digit downstream-order number "*020500*." The part number designates major river basins; for example, part "*03*" is the Ohio and St. Lawrence River Basins.

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 (fig. 3).

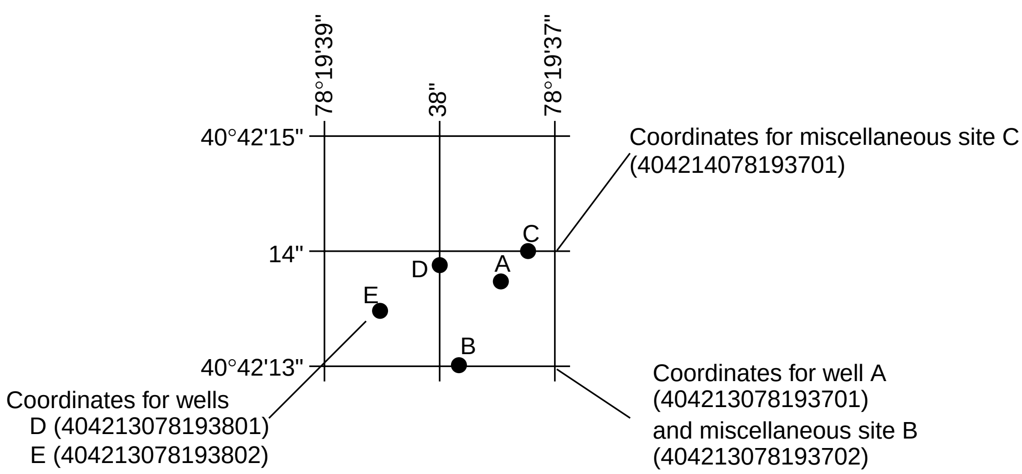

Figure 3.--System for numbering wells and miscellaneous sites (latitude and longitude).

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.

EXPLANATION OF STAGE- AND WATER-DISCHARGE RECORDS

Data Collection and Computation

The base data collected at gaging stations (fig. 4-5) consist of records of stage and measurements of discharge of streams or canals, and stage, surface area, and volume of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from a water-stage recorder that is either downloaded electronically in the field to a laptop computer or similar device or is transmitted using telemetry such as GOES satellite, land-line or cellular-phone modems, or by radio transmission. Measurements of discharge are made with a current meter or acoustic Doppler current profiler, using the general methods adopted by the USGS. These methods are described in standard textbooks, USGS Water-Supply Paper 2175, and the Techniques of Water-Resources Investigations of the United States Geological Survey (TWRIs), Book 3, Chapters A1 through A19 and Book 8, Chapters A2 and B2, which may be accessed from *http://water.usgs.gov/pubs/twri/*. The methods are consistent with the American Society for Testing and Materials (ASTM) standards and generally follow the standards of the International Organization for Standardization (ISO).

For stream-gaging stations, discharge-rating tables for any stage are prepared from stage-discharge curves. If extensions to the rating curves are necessary to express discharge greater than measured, the extensions are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, or computation of flow over dams and weirs), step-backwater techniques, velocity-area studies, and logarithmic plotting. The daily mean discharge is computed from gage heights and rating tables, then the monthly and yearly mean discharges are computed from the daily values. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features of the stream channel, the daily mean discharge is computed by the shifting-control method in which correction factors based on individual discharge measurements and notes by engineers and observers are used when applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the controlling section, the daily mean discharge is computed by the shifting-control method.

The stage-discharge relation at some stream-gaging stations is affected by backwater from reservoirs, tributary streams, or other sources. Such an occurrence 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 at some distance from the base gage.

An index velocity is measured using ultrasonic or acoustic instruments at some stream-gaging stations and this index velocity is used to calculate an average velocity for the flow in the stream. This average velocity along with a stage-area relation is then used to calculate average discharge.

At some stations, stage-discharge relation is affected by changing stage. At these stations, the rate of change in stage is used as a factor in computing discharge.

At some stream-gaging stations in the northern United States, the stage-discharge relation is affected by ice in the winter; therefore, computation of the discharge in the usual manner is impossible. Discharge for periods of ice effect is computed on the basis of gage-height record and occasional winter-discharge measurements. Consideration is given to the available information on temperature and precipitation, notes by gage observers and hydrologists, and comparable records of discharge from other stations in the same or nearby basins.

For a lake or reservoir station, capacity tables giving the volume or contents for any stage are prepared from stage-area relation curves defined by surveys. The application of the stage to the capacity table gives the contents, from which the daily, monthly, or yearly changes are computed.

If the stage-capacity curve is subject to changes because of deposition of sediment in the reservoir, periodic resurveys of the reservoir are necessary to define new stage-capacity curves. During the period between reservoir surveys, the computed contents may be increasingly in error due to the gradual accumulation of sediment.

For some stream-gaging stations, periods of time occur when no gage-height record is obtained or the recorded gage height is faulty and cannot be used to compute daily discharge or contents. Such a situation can happen when the recorder stops or otherwise fails to operate properly, the intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods, the daily discharges are estimated on the basis of recorded range in stage, prior and subsequent records, discharge measurements, weather records, and comparison with records from other stations in the same or nearby basins. Likewise, lake or reservoir volumes may be estimated on the basis of operator’s log, prior and subsequent records, inflow-outflow studies, and other information.

Data Presentation

The records published for each continuous-record surface-water discharge station (stream-gaging station) consist of five parts; (1) the station manuscript or description; (2) the data table of daily mean values for the current water year with summary data; (3) a tabular statistical summary of monthly mean flow data for a designated period, by water year; (4) a summary statistics table that includes statistical data of annual, daily, and instantaneous flows as well as data pertaining to annual runoff, 7-day low-flow minimums, and flow duration; and (5) a hydrograph of discharge.

Station manuscript

The manuscript provides, under various headings, descriptive information, such as station location; period of record; historical extremes outside the period of record; record accuracy; and other remarks pertinent to station operation and regulation. The following information, as appropriate, is provided with each continuous record of discharge or lake content. Comments follow that clarify information presented under the various headings of the station description.

LOCATION.--Location information is obtained from the most accurate maps available. The location of the gaging station with respect to the cultural and physical features in the vicinity and with respect to the reference place mentioned in the station name is given. River mileages, given for only a few stations, were determined by methods given in "River Mileage Measurement," Bulletin 14, Revision of October 1968, prepared by the Water Resources Council or were provided by the U.S. Army Corps of Engineers.

DRAINAGE AREA.--Drainage areas are measured using the most accurate maps available. Because the type of maps available varies from one drainage basin to another, the accuracy of drainage areas likewise varies. Drainage areas are updated as better maps become available.

PERIOD OF RECORD.--This term indicates the time period for which records have been published for the station or for an equivalent station. An equivalent station is one that was in operation at a time that the present station was not and whose location was such that its streamflow reasonably can be considered equivalent to the streamflow at the present station.

REVISED RECORDS.--If a critical error in published records is discovered, a revision is included in the first report published following discovery of the error.

GAGE.--The type of gage in current use, the datum of the current gage referred to referred to a standard datum, 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 either will be identified by date in this paragraph of the station description for water-discharge stations or flagged in the daily discharge table. (See section titled Identifying Estimated Daily Discharge.) Information is presented relative to the accuracy of the records, to special methods of computation, and to conditions that affect natural flow at the station. In addition, information may be presented pertaining to average discharge data for the period of record; to extremes data for the period of record and the current year; and possibly, to other pertinent items. For reservoir stations, information is given on the dam forming the reservoir, the capacity, the outlet works and spillway, and the purpose and use of the reservoir.

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

EXTREMES OUTSIDE PERIOD OF RECORD.—Information here documents 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 USGS.

PEAK DISCHARGES FOR CURRENT YEAR.--Peaks given here are similar to those found in the summary statistics table, 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 greater than a selected base discharge (see Definition of Terms) are presented under this heading. The peaks greater than the base discharge, excluding the highest one, are referred to as secondary peaks. Peak discharges are not published for streams for which the peaks are subject to substantial control by man. The time of occurrence for peaks is expressed in 24-hour local standard time. For example, 12:30 a.m. is 0030, and 1:30 p.m. is 1330.

REVISIONS.—Records are revised if errors in published records are discovered. Appropriate updates are made in the USGS distributed data system, NWIS, and subsequently to its Web-based National data system, NWISWeb *(http://water.usgs.gov/nwis/nwis)*. Users are encouraged to obtain all required data from NWIS or NWISWeb to ensure that they have the most recent data updates. Updates to NWISWeb are made on an annual basis.

Although rare, occasionally the records of a discontinued gaging station may need revision. Because no current or, possibly, future station manuscript would be published for these stations 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 USGS Pennsylvania Water Science Center (address given on the back of the title page of this report) to determine if the published records were revised after the station was discontinued. If, however, the data for a discontinued station were obtained by computer retrieval, the data would be current. Any published revision of data is always accompanied by revision of the corresponding data in computer storage.

Manuscript information for lake or reservoir stations differs from that for stream stations in the nature of the REMARKS and in the inclusion of a stage-capacity table when daily volumes are given.

Peak discharge greater than base discharge

Tables of peak discharge above base discharge are included for some stations where secondary instantaneous peak discharge data are used in flood-frequency studies of highway and bridge design, flood-control structures, and other flood-related projects. The base discharge value is selected so an average of three peaks a year will be reported. This base discharge value has a recurrence interval of approximately 1.1 years or a 91-percent chance of exceedence in any 1 year.

Data table of daily mean values

The daily table of discharge records for stream-gaging stations gives mean discharge for each day of the water year. In the monthly summary for the table, the line headed "TOTAL" gives the sum of the daily figures for each month; the line headed "MEAN" gives the arithmetic average flow in cubic feet per second for the month; and the lines headed "MAX" and "MIN" give the maximum and minimum daily mean discharges, respectively, for each month. Discharge for the month also is usually expressed in cubic feet per second per square mile (line headed "CFSM"); or in inches (line headed "IN."). Values for cubic feet per second per square mile and runoff in inches may be omitted if there is extensive regulation or diversion or if the drainage area includes large noncontributing areas. At some stations, monthly and (or) yearly observed discharges are adjusted for reservoir storage or diversion, or diversion data or reservoir volumes are given. These values are identified by a symbol and corresponding footnote.

Statistics of monthly mean data

A tabular summary of the mean (line headed MEAN), maximum (MAX), and minimum (MIN) of monthly mean flows for each month for a designated period is provided below the mean values table. The water years of the first occurrence of the maximum and minimum monthly flows are provided immediately below those values. The designated period will be expressed as "FOR WATER YEARS ____-____, BY WATER YEAR (WY)," and will list the first and last water years of the range of years selected from the PERIOD OF RECORD paragraph in the station manuscript. The designated period will consist of all of the station record within the specified water years, including complete months of record for partial water years, and may coincide with the period of record for the station. The water years for which the statistics are computed are consecutive, unless a break in the station record is indicated in the manuscript.

Summary statistics

A table titled "SUMMARY STATISTICS" follows the statistics of monthly mean data tabulation. This table consists of four columns, with the first column containing the line headings of the statistics being reported. The table provides a statistical summary of yearly, daily, and instantaneous flows, not only for the current water year but also for the previous calendar year and for a designated period, as appropriate. The designated period selected, "WATER YEARS ____-____," will consist of all of the station record within the specified water years, including complete months of record for partial water years, and may coincide with the period of record for the station. The water years for which the statistics are computed are consecutive, unless a break in the station record is indicated in the manuscript. All of the calculations for the statistical characteristics designated ANNUAL (see line headings below), except for the "ANNUAL 7-DAY MINIMUM" statistic, are calculated for the designated period using complete water years. The other statistical characteristics may be calculated using partial water years.

The date or water year, as appropriate, of the first occurrence of each statistic reporting extreme values of discharge is provided adjacent to the statistic. Repeated occurrences may be noted in the REMARKS paragraph of the manuscript or in footnotes. Because the designated period may not be the same as the station period of record published in the manuscript, occasionally the dates of occurrence listed for the daily and instantaneous extremes may not be within the selected water years listed in the heading. When the dates of occurrence do not fall within the selected water years listed in the heading, it will be noted in the REMARKS paragraph or in footnotes. Selected streamflow duration-curve statistics and runoff data also are given. Runoff data may be omitted if extensive regulation or diversion of flow is in effect in the drainage basin.

The following summary statistics data are provided with each continuous record of discharge. Comments that follow clarify information presented under the various line headings of the SUMMARY STATISTICS table.

ANNUAL TOTAL.--The sum of the daily mean values of discharge for the year.

ANNUAL MEAN.--The arithmetic mean for the individual daily mean discharges for the year noted or for the designated period.

HIGHEST ANNUAL MEAN.--The maximum annual mean discharge occurring for the designated period.

LOWEST ANNUAL MEAN.--The minimum annual mean discharge occurring for the designated period.

HIGHEST DAILY MEAN.--The maximum daily mean discharge for the year or for the designated period.

LOWEST DAILY MEAN.--The minimum daily mean discharge for the year or for the designated period.

ANNUAL 7-DAY MINIMUM.--The lowest mean discharge for 7 consecutive days for a calendar year or a water year. Note that most low-flow frequency analyses of annual 7-day minimum flows use a climatic year (April 1-March 31). The date shown in the summary statistics table is the initial date of the 7-day period. This value should not be confused with the 7-day 10-year low-flow statistic.

MAXIMUM PEAK FLOW.--The maximum instantaneous peak discharge occurring for the water year or designated period. Occasionally the maximum flow for a year may occur at midnight at the beginning or end of the year, on a recession from or rise toward a higher peak in the adjoining year. In this case, the maximum peak flow is given in the table and the maximum flow may be reported in a footnote or in the REMARKS paragraph in the manuscript.

MAXIMUM PEAK STAGE.--The maximum instantaneous peak stage occurring for the water year or designated period. Occasionally the maximum stage for a year may occur at midnight at the beginning or end of the year, on a recession from or rise toward a higher peak in the adjoining year. In this case, the maximum peak stage is given in the table and the maximum stage may be reported in the REMARKS paragraph in the manuscript or in a footnote. If the dates of occurrence of the maximum peak stage and maximum peak flow are different, the REMARKS paragraph in the manuscript or a footnote may be used to provide further information.

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

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

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

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

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

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

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

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

Data collected at partial-record stations follow the information for continuous-record sites. Data for partial-record discharge stations are presented in two tables. The first table lists annual maximum stage and discharge at crest-stage stations, and the second table lists 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 often 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. This identification is shown either by flagging individual daily values with the letter “*e*” and noting in a table footnote, “*e–Estimated*,” or by listing the dates of the estimated record in the REMARKS paragraph of the station description.

Accuracy of Field Data and Computed Results

The accuracy of streamflow data 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 observations of stage, measurements of discharge, and interpretations of records.

The degree of accuracy of the records is stated in the REMARKS in the station description. "*Excellent*" indicates that about 95 percent of the daily discharges are within 5 percent of the true value; "*good*," within 10 percent; and "*fair*," within 15 percent. "*Poor*" indicates that daily discharges have less than "*fair*" accuracy. Different accuracies may be attributed to different parts of a given record.

Values of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharges of less than 1 ft^3/s; to the nearest tenths between 1.0 and 10 ft^3/s; to whole numbers between 10 and 1,000 ft^3/s; and to 3 significant figures above 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 discharge values listed for partial-record stations.

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 Data Records Available

Information of a more detailed nature than that published for most of the stream-gaging stations such as observations of water temperature, discharge measurements, gage-height records, and rating tables is available from the USGS Pennsylvania Water Science Center. Also, most stream-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 USGS Pennsylvania Water Science Center (see address that is shown on the back of the title page of this report).

EXPLANATION OF WATER-QUALITY RECORDS

Collection and Examination of Data

Surface-water samples for analysis usually are collected at or near stream-gaging stations. The quality-of-water records are given immediately following the discharge records at these stations.

The descriptive heading for water-quality records gives the period of record for all water-quality data; the period of daily record for parameters that are measured on a daily basis (specific conductance, water temperature, sediment discharge, and so forth); extremes for the current year; and general remarks.

For ground-water records, no descriptive statements are given; however, the well number, depth of well, sampling date, or other pertinent data are given in the table containing the chemical analyses of the ground water.

Water Analysis

Most of the methods used for collecting and analyzing water samples are described in the TWRIs, which may be accessed from *http://water.usgs.gov/pubs/twri/*.

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 at several verticals to obtain a representative sample needed for an accurate mean concentration and for use in calculating load.

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 and minimum values (and sometimes mean or median values) for each constituent measured, and are based on 15-minute or 1-hour intervals of recorded data beginning at 0000 hours and ending at 2400 hours for the day of record.

Records of Surface-Water Quality

Records of surface-water quality ordinarily are obtained at or near stream-gaging stations because discharge data is useful in the interpretation of surface-water quality. Records of surface-water quality in this report 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 *continuous-record station* is a site where data are collected on a regularly scheduled basis. Frequency may be one 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 continuous- or partial-record station, where 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 *continuous records* as used in this report and *continuous recordings* that refer to a continuous graph or a series of discrete values recorded at short intervals. 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 4-5.

Accuracy of the records

One of four accuracy classifications is applied for measured physical properties at continuous-record stations on a scale ranging from poor to excellent. The accuracy rating is based on data values recorded before any shifts or corrections are made. Additional consideration also is given to the amount of publishable record and to the amount of data that have been corrected or shifted.

Rating classifications for continuous water-quality records

[≤, less than or equal to; ±, plus or minus value shown; °C, degree Celsius; >, greater than; %, percent; mg/L, milligram per liter; pH unit, standard pH unit]

Measured physical property	Rating			
	Excellent	Good	Fair	Poor
Water temperature	≤ ±0.2 °C	> ±0.2 to 0.5 °C	> ±0.5 to 0.8 °C	> ±0.8 °C
Specific conductance	≤ ±3%	> ±3 to 10%	> ±10 to 15%	> ±15%
Dissolved oxygen	≤ ±0.3 mg/L	> ±0.3 to 0.5 mg/L	> ±0.5 to 0.8 mg/L	> ±0.8 mg/L
pH	≤ ±0.2 unit	> ±0.2 to 0.5 unit	> ±0.5 to 0.8 unit	> ±0.8 unit
Turbidity	≤ ±5%	> ±5 to 10%	> ±10 to 15%	> ±15%

Arrangement of records

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

On-site measurements and sample collection

In obtaining water-quality data, a major concern is assuring that the data obtained represent the naturally occurring quality of the water. To ensure this, certain measurements, such as water temperature, pH, and dissolved oxygen, must be made on site when the samples are taken. To assure that measurements made in the laboratory also represent the naturally occurring water, carefully prescribed procedures must be followed in collecting the samples, in treating the samples to prevent changes in quality pending analysis, and in shipping the samples to the laboratory. Procedures for on-site measurements and for collecting, treating, and shipping samples are given in TWRIs Book 1, Chapter D2; Book 3, Chapters A1, A3, and A4; and Book 9, Chapters A1-A9. Most of the methods used for collecting and analyzing water samples are described in the TWRIs, which may be accessed from *http://water.usgs.gov/pubs/twri/*. Also, detailed information on collecting, treating, and shipping samples can be obtained from the USGS Pennsylvania Water Science Center (see address that is shown on the back of title page in this report).

Water temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at the time of discharge measurements for water-discharge stations. For stations where water temperatures are taken manually once or twice daily, the water temperatures are taken at about the same time each day. Large streams have a small diurnal temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

At stations where recording instruments are used, maximum, minimum, and mean temperatures for each day are published. Water temperatures measured at the time of water-discharge measurements are on file in the USGS Pennsylvania Water Science Center.

Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross section.

During periods of rapidly changing flow or rapidly changing concentration, samples may be collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided-day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided-day method. For periods when no samples were collected, daily discharges of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

At other stations, suspended-sediment samples are collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observation, 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

Samples for biochemical oxygen demand (BOD) and indicator bacteria are analyzed locally. All other samples are analyzed in the USGS laboratory in Lakewood, Colorado, unless otherwise noted. Methods used in analyzing sediment samples and computing sediment records are given in TWRI, Book 5, Chapter C1. Methods used by the USGS laboratories are given in the TWRIs, Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4. The TWRI publications may be accessed from *http://water.usgs.gov/pubs/twri/*. These methods are consistent with ASTM standards and generally follow ISO standards.

Data presentation

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

In the descriptive headings, if the location is identical to that of the streamflow-gaging station, neither the LOCATION nor the DRAINAGE AREA statements are repeated. The following information 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 information in the "Records of Stage and Water Discharge" section of this report (same comments apply).

DRAINAGE AREA.--See Data Presentation under "Records of Stage and Water Discharge" section of this report (same comments apply).

PERIOD OF RECORD.--This indicates the time periods for which published water-quality records for the station are available. 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 parameters measured daily or more frequently. For parameters measured weekly or less frequently, true maximums or minimums may not have been obtained. Extremes, when given, are provided for both the period of record and for the current water year.

REVISIONS.—Records are revised if errors in published water-quality records are discovered. Appropriate updates are made in the USGS distributed data system, NWIS, and subsequently to its Web-based National data system, NWISWeb (*http://waterdata.usgs.gov/nwis)*. Users of USGS water-quality data are encouraged to obtain all required data from NWIS or NWISWeb to ensure that they have the most recent updates. Updates to the NWISWeb are made on an annual basis.

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.

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,e	Value is estimated.
>	Actual value is known to be greater than the value shown.
<	Actual value is known to be less than the value shown.
M	Presence of material verified, but not quantified.
N	Presumptive evidence of presence of material.
U	Material specifically analyzed for, but not detected.
A	Value is an average.
V	Analyte was detected in both the environmental sample and the associated blanks.
S	Most probable value.

Water-Quality-Control Data

The USGS National Water Quality Laboratory collects quality-control data on a continuing basis to evaluate selected analytical methods to determine long-term method detection levels (LT-MDLs) and laboratory reporting levels (LRLs). These values are re-evaluated each year on the basis of the most recent quality-control data and, consequently, may change from year to year.

This reporting procedure limits the occurrence of false positive error. Falsely reporting a concentration greater than the LT-MDL for a sample in which the analyte is not present is 1 percent or less. Application of the LRL limits the occurrence of false negative error. The chance of falsely reporting a non-detection for a sample in which the analyte is present at a concentration equal to or greater than the LRL is 1 percent or less.

Accordingly, concentrations are reported as less than LRL for samples in which the analyte was either not detected or did not pass identification. Analytes detected at concentrations between the LT-MDL and the LRL and that pass identification criteria are estimated. Estimated concentrations will be noted with a remark code of “E.” These data should be used with the understanding that their uncertainty is greater than that of data reported without the E remark code.

Data generated from quality-control (QC) samples are a requisite for evaluating the quality of the sampling and processing techniques as well as data from the actual samples themselves. Without QC data, environmental sample data cannot be adequately interpreted because the errors associated with the sample data are unknown. The various types of QC samples collected by this USGS Water Science Center are described in the following section. Procedures have been established for the storage of water-quality-control data within the USGS. These procedures allow for storage of all derived QC data and are identified so that they can be related to corresponding environmental samples. These data are not presented in this report but are available from the USGS Pennsylvania Water Science Center.

Blank samples

Blank samples are collected and analyzed to ensure that environmental samples have not been contaminated in the overall data-collection process. The blank solution used to develop specific types of blank samples is a solution that is free of the analytes of interest. Any measured value in a blank sample for an analyte (a specific component measured in a chemical analysis) that was absent in the blank solution is believed to be due to contamination. Many types of blank samples are possible; each is designed to segregate a different part of the overall data-collection process. The types of blank samples collected in this USGS Water Science Center are:

Field blank--A blank solution that is subjected to all aspects of sample collection, field processing, preservation, transportation, and laboratory handling as an environmental sample.

Trip blank--A blank solution that is put in the same type of bottle used for an environmental sample and kept with the set of sample bottles before and after sample collection.

Equipment blank--A blank solution that is processed through all equipment used for collecting and processing an environmental sample (similar to a field blank but normally done in the more controlled conditions of the office).

Sampler blank--A blank solution that is poured or pumped through the same field sampler used for collecting an environmental sample.

Filter blank--A blank solution that is filtered in the same manner and through the same filter apparatus used for an environmental sample.

Splitter blank--A blank solution that is mixed and separated using a field sample splitter in the same manner and through the same apparatus used for an environmental sample.

Preservation blank--A blank solution that is treated with the same preservatives used for an environmental sample.

Reference samples

Reference material is a solution or material prepared by a laboratory. The reference material composition is certified for one or more properties so that it can be used to assess a measurement method. Samples of reference material are submitted for analysis to ensure that an analytical method is accurate for the known properties of the reference material. Generally, the selected reference material properties are similar to the environmental sample properties.

Replicate samples

Replicate samples are a set of environmental samples collected in a manner such that the samples are thought to be essentially identical in composition. Replicate is the general case for which a duplicate is the special case consisting of two samples. Replicate samples are collected and analyzed to establish the amount of variability in the data contributed by some part of the collection and analytical process. Many types of replicate samples are possible, each of which may yield slightly different results in a dynamic hydrologic setting, such as a flowing stream. The types of replicate samples collected in this USGS Water Science Center are:

Concurrent samples—A type of replicate sample in which the samples are collected simultaneously with two or more samplers or by using one sampler and alternating the collection of samples into two or more compositing containers.

Sequential samples—A type of replicate sample in which the samples are collected one after the other, typically over a short time.

Split sample—A type of replicate sample in which a sample is split into subsamples, each subsample contemporaneous in time and space.

Spike samples

Spike samples are samples to which known quantities of a solution with one or more well-established analyte concentrations have been added. These samples are analyzed to determine the extent of matrix interference or degradation on the analyte concentration during sample processing and analysis.

EXPLANATION OF GROUND-WATER-LEVEL RECORDS

Generally, only ground-water-level data from selected wells with continuous recorders from a basic network of observation wells are published in this report. This basic network contains observation wells located so that the most significant data are obtained from the fewest wells in the most important aquifers.

Site Identification Numbers

Each well is identified by means of (1) a 15-digit number that is based on latitude and longitude and (2) a local number that is produced for local needs. (See "Numbering System for Wells and Miscellaneous Sites" in this report for a detailed explanation)

Data Collection and Computation

Measurements are made in many types of wells, under varying conditions of access and at different temperatures; hence, neither the method of measurement nor the equipment can be standardized. At each observation well, however, the equipment and techniques used are those that will ensure that measurements at each well are consistent.

Most methods for collecting and analyzing water samples are described in the TWRIs referred to in the On-site Measurements and Sample Collection and the Laboratory Measurements sections in this report. In addition, TWRI Book 1, Chapter D2, describes guidelines for the collection and field analysis of ground-water samples for selected unstable constituents. Procedures for on-site measurements and for collecting, treating, and shipping samples are given in TWRIs Book 1, Chapter D2; Book 3, Chapters A1, A3, and A4; and Book 9, Chapters A1 through A9. The TWRI publications may be accessed from *http://water.usgs.gov/pubs/twri/*. The values in this report represent water-quality conditions at the time of sampling, as much as possible, and that are consistent with available sampling techniques and methods of analysis. These methods are consistent with ASTM standards and generally follow ISO standards. Trained personnel collected all samples. The wells sampled were pumped long enough to ensure that the water collected came directly from the aquifer and had not stood for a long time in the well casing where it would have been exposed to the atmosphere and to the material, possibly metal, comprising the casings.

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 above sea level 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 daily.

Water levels are reported to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth of water of several hundred feet, the error in determining the absolute value of the total depth to water may be a few tenths of a foot, whereas the error in determining the net change of water level between successive measurements may be only a hundredth or a few hundredths of a foot. For lesser depths to water the accuracy is greater. Accordingly, most measurements are reported to a hundredth of a foot, but some are given only to a tenth of a foot or a larger unit.

Data Presentation

Water-level data are presented in alphabetical order by county. The primary identification number for a given well is the 15-digit site identification number that appears in the upper left corner of the table. The secondary identification number is the local or county well number. Well locations are shown in figure 4; each well is identified on the map by its local well or county well number.

Each well record consists of three parts: the well description, the data table of water levels observed during the water year, and, for most wells, a hydrograph following the data table. Well descriptions are presented in the headings preceding the tabular data.

The following comments clarify information presented in these various headings.

LOCATION.—This paragraph follows the well-identification number and reports the hydrologic-unit number and a geographic point of reference. Latitudes and longitudes used in this report are reported as North American Datum of 1927 unless otherwise specified.

AQUIFER.--This entry designates by name and geologic age of the aquifer that the well taps.

WELL CHARACTERISTICS.--This entry describes the well in terms of depth, casing diameter and depth or screened interval, method of construction, use, and 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 continuous, monthly, or some other frequency of measurement.

DATUM.--This entry describes both the measuring point and the land-surface elevation at the well. The altitude of the land-surface datum is described in feet above the altitude datum; it is reported with a precision depending on the method of determination. The measuring point is described physically (such as top of casing, top of instrument shelf, and so forth), 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 National Geodetic Vertical Datum of 1929 (NGVD 29); 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, when various methods of measurement were begun, and the network (climatic, terrane, local, or areal effects) or the special project to which the well belongs.

PERIOD OF RECORD.—This entry indicates the time period for which records are published for the well, the month and year at the start of publication of water-level records by the USGS, and the words “to current year” if the records are to be continued into the following year. Time periods for which water-level records are available, but are not published by the USGS, may be noted.

EXTREMES FOR PERIOD OF RECORD.—This entry contains the highest and lowest instantaneously recorded or measured water levels of the period of published record, with respect to land-surface datum or sea level, and the dates of occurrence.

Water-level tables

A table of water levels follows the well description for each well. Water-level measurements in this report are given in feet with reference to either sea level or land-surface datum (lsd). Missing records are indicated by dashes in place of the water-level value.

For wells not equipped with recorders, water-level measurements were obtained periodically by steel or electric tape. Tables of periodic water-level measurements in these wells show the date of measurement and the measured water-level value.

Hydrographs

Hydrographs are a graphic display of water-level fluctuations over a period of time. In this report, current water year and, when appropriate, period-of-record hydrographs are shown. Hydrographs that display recorder data show a solid line representing the maximum or mean water level recorded for each day. Missing data are indicated by a blank space or break in a hydrograph. Missing data may occur as a result of recorder malfunctions, battery failures, or mechanical problems related to the response of the recorder's float mechanism to water-level fluctuations in a well.

GROUND-WATER-QUALITY DATA

Data Collection and Computation

The ground-water-quality data in this report were obtained as a part of special studies in specific areas. Consequently, a number of chemical analyses are presented for some wells within a county but not for others. As a result, the records for this year, by themselves, do not provide a balanced view of ground-water quality Statewide.

Most methods for collecting and analyzing water samples are described in the TWRIs, which may be accessed from *http://water.usgs.gov/pubs/twri/*. Procedures for on-site measurements and for collecting, treating, and shipping samples are given in TWRI, Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4. Also, detailed information on collecting, treating, and shipping samples may be obtained from the USGS Pennsylvania Water Science Center (see address shown on back of title page in this report).

Laboratory Measurements

Analysis for sulfide and measurement of alkalinity, pH, water temperature, specific conductance, and dissolved oxygen are performed on site. All other sample analyses are performed at the USGS laboratory in Lakewood, Colorado, unless otherwise noted. Methods used by the USGS laboratory are given in TWRI, Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4, which may be accessed from *http://water.usgs.gov/pubs/twri/*.

ACCESS TO USGS WATER DATA

The USGS provides near real-time stage and discharge data for many of the gaging stations equipped with the necessary telemetry and historic daily-mean and peak-flow discharge data for most current or discontinued gaging stations through the World Wide Web (WWW). These data may be accessed from *http://water.usgs.gov*.

Water-quality data and ground-water data also are available through the WWW. In addition, data can be provided in various machine-readable formats on various media. Information about the availability of specific types of data or products, and user charges, can be obtained locally from each USGS Water Science Center (See address that is shown on the back of the title page of this report.)

DEFINITION OF TERMS

Specialized technical terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. Terms such as algae, water level, and precipitation are used in their common everyday meanings, definitions of which are given in standard dictionaries. Not all terms defined in this alphabetical list apply to every State. See also table for converting English units to International System (SI) Units. Other glossaries that also define water-related terms are accessible from *http://water.usgs.gov/glossaries.html.*

Acid neutralizing capacity (ANC) is the equivalent sum of all bases or base-producing materials, solutes plus particulates, in an aqueous system that can be titrated with acid to an equivalence point. This term designates titration of an "unfiltered" sample (formerly reported as alkalinity).

Acre-foot (AC-FT, acre-ft) is a unit of volume, commonly used to measure quantities of water used or stored, equivalent to the volume of water required to cover 1 acre to a depth of 1 foot and equivalent to 43,560 cubic feet, 325,851 gallons, or 1,233 cubic meters. (See also "Annual runoff")

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

Adjusted discharge is discharge data that have been mathematically adjusted (for example, to remove the effects of a daily tide cycle or reservoir storage).

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. (See also "Biomass" and "Dry weight")

Alkalinity is the capacity of solutes in an aqueous system to neutralize acid. This term designates titration of a "filtered" sample.

Annual runoff is the total quantity of water that is discharged ("runs off") from a drainage basin in a year. Data reports may present annual runoff data as volumes in acre-feet, as discharges per unit of drainage area in cubic feet per second per square mile, or as depths of water on the drainage basin in inches.

Annual 7-day minimum is the lowest mean value for any 7-consecutive-day period in a year. Annual 7-day minimum values are reported herein for the calendar year and the water year (October 1 through September 30). Most low-flow frequency analyses use a climatic year (April 1-March 31), which tends to prevent the low-flow period from being artificially split between adjacent years. The date shown in the summary statistics table is the initial date of the 7-day period. (This value should not be confused with the 7-day, 10-year low-flow statistic.)

Aroclor is the registered trademark for a group of poly-chlorinated biphenyls that were manufactured by the Monsanto Company prior to 1976. Aroclors are assigned specific 4-digit reference numbers dependent upon molecular type and degree of substitution of the biphenyl ring hydrogen atoms by chlorine atoms. The first two digits of a numbered aroclor represent the molecular type, and the last two digits represent the percentage weight of the hydrogen-substituted chlorine.

Artificial substrate is a device that 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 collected. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multiplate samplers (made of hardboard) for benthic organism collection, and plexiglass strips for periphyton collection. (See also "Substrate")

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. Ash mass of zooplankton and phytoplankton is expressed in grams per cubic meter (g/m^3), and periphyton and benthic organisms in grams per square meter (g/m^2). (See also "Biomass" and "Dry mass")

Aspect is the direction toward which a slope faces with respect to the compass.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, whereas 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.

Bankfull stage, as used in this report, is the stage at which a stream first overflows its natural banks formed by floods with 1- to 3-year recurrence intervals.

Base discharge (for peak discharge) is a discharge value, determined for selected stations, above which peak discharge data are published. The base discharge at each station is selected so that an average of about three peak flows per year will be published. (See also "Peak flow")

Base flow is sustained flow of a stream in the absence of direct runoff. It includes natural and human-induced streamflows. Natural base flow is sustained largely by ground-water discharge.

Bedload is material in transport that is supported primarily by the streambed. In this report, bedload is considered to consist of particles in transit from the bed to an elevation equal to the top of the bedload sampler nozzle (ranging from 0.25 to 0.5 foot) that are retained in the bedload sampler. A sample collected with a pressure-differential bedload sampler also may contain a component of the suspended load.

Bedload discharge (tons per day) is the rate of sediment moving as bedload, reported as dry weight, that passes through a cross section in a given time. NOTE: Bedload discharge values in this report may include a component of the suspended-sediment discharge. A correction may be necessary when computing the total sediment discharge by summing the bedload discharge and the suspended-sediment discharge. (See also "Bedload," "Dry weight," "Sediment," and "Suspended-sediment discharge")

Bed material is the sediment mixture of which a stream-bed, lake, pond, reservoir, or estuary bottom is composed. (See also "Bedload" and "Sediment")

Benthic organisms are the group of organisms inhabiting the bottom of an aquatic environment. They include a number of types of organisms, such as bacteria, fungi, insect larvae and nymphs, snails, clams, and crayfish. They are useful as indicators of water quality.

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 mass per unit area or volume of habitat.

Biomass pigment ratio is an indicator of the total proportion of periphyton that are autotrophic (plants). This is also called the Autotrophic Index.

Blue-green algae (*Cyanophyta*) 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. Concentrations are expressed as a number of cells per milliliter (cells/mL) of sample. (See also “Phytoplankton”)

Bottom material (See “Bed material”)

Bulk electrical conductivity is the combined electrical conductivity of all material within a doughnut-shaped volume surrounding an induction probe. Bulk conductivity is affected by different physical and chemical properties of the material including the dissolved solids content of the pore water and lithology and porosity of the rock.

Canadian Geodetic Vertical Datum 1928 is a geodetic datum derived from a general adjustment of Canada’s first order level network in 1928.

Cell volume (biovolume) determination is one of several common methods used to estimate biomass of algae in aquatic systems. Cell members of algae are frequently used in aquatic surveys as an indicator of algal production. However, cell numbers alone cannot represent true biomass because of considerable cell-size variation among the algal species. Cell volume (μm^3) is determined by obtaining critical cell measurements or cell dimensions (for example, length, width, height, or radius) for 20 to 50 cells of each important species to obtain an average biovolume per cell. Cells are categorized according to the correspondence of their cellular shape to the nearest geometric solid or combinations of simple solids (for example, spheres, cones, or cylinders). Representative formulae used to compute biovolume are as follows:

$$\text{sphere } 4/3\, \pi r^3 \quad \text{cone } 1/3\, \pi r^2 h \quad \text{cylinder } \pi r^2 h.$$

pi (π) is the ratio of the circumference to the diameter of a circle; pi = 3.14159….

From cell volume, total algal biomass expressed as biovolume (μm^3/mL) is thus determined by multiplying the number of cells of a given species by its average cell volume and then summing these volumes for all species.

Cells/volume refers to the number of cells of any organism that 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 volume, and are generally reported as cells or units per milliliter (mL) or liter (L).

Cfs-day (See “Cubic foot per second-day”)

Channel bars, as used in this report, are the lowest prominent geomorphic features higher than the channel bed.

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 BOD or with carbonaceous organic pollution from sewage or industrial wastes. [See also “Biochemical oxygen demand (BOD)”]

Clostridium perfringens *(C. perfringens)* is a spore-forming bacterium that is common in the feces of human and other warm-blooded animals. Clostridial spores are being used experimentally as an indicator of past fecal contamination and presence of microorganisms that are resistant to disinfection and environmental stresses. (See also “Bacteria”)

Coliphages are viruses that infect and replicate in coliform bacteria. They are indicative of sewage contamination of water and of the survival and transport of viruses in the environment.

Color unit is produced by 1 milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

Confined aquifer is a term used to describe an aquifer containing water between two relatively impermeable bound-aries. The water level in a well tapping a confined aquifer stands above the top of the confined aquifer and can be higher or lower than the water table that may be present in the material above it. In some cases, the water level can rise above the ground surface, yielding a flowing well.

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

Continuous-record station is a site where data are collected with sufficient frequency to define daily mean values and variations within a day.

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

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

Cubic foot per second (CFS, ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point in 1 second. It is equivalent to approximately 7.48 gallons per second or approximately 449 gallons per minute, or 0.02832 cubic meters per second. The term “second-foot” sometimes is used synonymously with “cubic foot per second” but is now obsolete.

Cubic foot per second-day (CFS-DAY, Cfs-day, $[(ft^3/s)/d]$) is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, 1.98347 acre-feet, 646,317 gallons, or 2,446.6 cubic meters. The daily mean discharges reported in the daily value data tables are numerically equal to the daily volumes in cfs-days, and the totals also represent volumes in cfs-days.

Cubic foot per second per square mile [CFSM, $(ft^3/s)/mi^2$] is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming the runoff is distributed uniformly in time and area. (See also “Annual runoff”)

Daily mean suspended-sediment concentration is the time-weighted concentration of suspended sediment passing a stream cross section during a 24-hour day. (See also “Sediment” and “Suspended-sediment concentration”)

Daily-record station is a site where data are collected with sufficient frequency to develop a record of one or more data values per day. The frequency of data collection can range from continuous recording to periodic sample or data collection on a daily or near-daily basis.

Data collection platform (DCP) is an electronic instrument that collects, processes, and stores data from various sensors, and transmits the data by satellite data relay, line-of-sight radio, and/or landline telemetry.

Data logger is a microprocessor-based data acquisition system designed specifically to acquire, process, and store data. Data are usually downloaded from onsite data loggers for entry into office data systems.

Datum is a surface or point relative to which measurements of height and/or horizontal position are reported. A vertical datum is a horizontal surface used as the zero point for measurements of gage height, stage, or elevation; a horizontal datum is a reference for positions given in terms of latitude-longitude, State Plane coordinates, or UTM coordinates. (See also “Gage datum,” “Land-surface datum,” “National Geodetic Vertical Datum of 1929,” and “North American Vertical Datum of 1988”)

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. (See also “Phytoplankton”)

Diel is of or pertaining to a 24-hour period of time; a regular daily cycle.

Discharge, or **flow**, is the rate that matter passes through a cross section of a stream channel or other water body per unit of time. The term commonly refers to the volume of water (including, unless otherwise stated, any sediment or other constituents suspended or dissolved in the water) that passes a cross section in a stream channel, canal, pipeline, etc., within a given period of time (cubic feet per second). Discharge also can apply to the rate at which constituents, such as suspended sediment, bedload, and dissolved or suspended chemicals, pass through a cross section, in which cases the quantity is expressed as the mass of constituent that passes the cross section in a given period of time (tons per day).

Dissolved refers to that material in a representative water sample that passes through a 0.45-micrometer membrane filter. This is a convenient operational definition used by Federal and State agencies that collect water-quality data. Determinations of “dissolved” constituent concentrations are made on sample water that has been filtered.

Dissolved oxygen (DO) is the molecular oxygen (oxygen gas) dissolved in water. The concentration in water is a function of atmospheric pressure, temperature, and dissolved-solids concentration of the water. The ability of water to retain oxygen decreases with increasing temperature or dissolved-solids concentration. Photosynthesis and respiration by plants commonly cause diurnal variations in dissolved-oxygen concentration in water from some streams.

Dissolved-solids concentration in water is the quantity of dissolved material in a sample of water. It 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, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. In the mathematical calculation, the bicarbonate value, in milligrams per liter, is multiplied by 0.4926 to convert it to carbonate. Alternatively, alkalinity concentration (as mg/L $CaCO_3$) can be converted to carbonate concentration by multiplying by 0.60.

Diversity index (H) (Shannon index) is a numerical expression of evenness of distribution of aquatic organisms. The formula for diversity index is:

$$\overline{d} = -\sum_{i=1}^{s} \frac{n_i}{n} \log_2 \frac{n_i}{n} \, ,$$

where n_i is the number of individuals per taxon, n is the total number of individuals, and s is the total number of taxa in the sample of the community. Index values range from zero, when all the organisms in the sample are the same, to some positive number, when some or all of the organisms in the sample are different.

Drainage area of a stream at a specific location is that area upstream from the location, measured in a horizontal plane, that has a common outlet at the site for its surface runoff from precipitation that normally drains by gravity into a stream. Drainage areas given herein include all closed basins, or noncontributing areas, within the area unless otherwise specified.

Drainage basin is a part of the Earth’s surface that contains a drainage system with a common outlet for its surface runoff. (See “Drainage area”)

Dry mass refers to the mass of residue present after drying in an oven at 105 ˚C, 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. (See also “Ash mass,” “Biomass,” and “Wet mass”)

Dry weight refers to the weight of animal tissue after it has been dried in an oven at 65 ˚C until a constant weight is achieved. Dry weight represents total organic and inorganic matter in the tissue. (See also “Wet weight”)

Embeddedness is the degree to which gravel-sized and larger particles are surrounded or enclosed by finer-sized particles. (See also “Substrate embeddedness class”)

Enterococcus bacteria are commonly found in the feces of humans and other warmblooded animals. Although some strains are ubiquitous and not related to fecal pollution, the presence of enterococci in water is an indication of fecal pollution and the possible presence of enteric pathogens. Enterococcus bacteria are those bacteria that produce pink to red colonies with black or reddish-brown precipitate after incubation at 41 ˚C on mE agar (nutrient medium for bacterial growth) and subsequent transfer to EIA medium. Enterococci include *Streptococcus feacalis*, *Streptococcus feacium*, *Streptococcus avium*, and their variants. (See also “Bacteria”)

EPT Index is the total number of distinct taxa within the insect orders Ephemeroptera, Plecoptera, and Trichoptera. This index summarizes the taxa richness within the aquatic insects that are generally considered pollution sensitive; the index usually decreases with pollution.

***Escherichia coli** (E. coli)* are bacteria present in the intestine and feces of warmblooded animals. E. coli are a member species of the fecal coliform group of indicator bacteria. In the laboratory, they are defined as those bacteria that produce yellow or yellow-brown colonies on a filter pad saturated with urea substrate broth after primary culturing for 22 to 24 hours at 44.5°C on mTEC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (See also “Bacteria”)

Estimated (E) concentration value is reported when an analyte is detected and all criteria for a positive result are met. If the concentration is less than the method detection limit (MDL), an ‘E’ code will be reported with the value. If the analyte is qualitatively identified as present, but the quantitative determination is substantially more uncertain, the National Water Quality Laboratory will identify the result with an ‘E’ code even though the measured value is greater than the MDL. A value reported with an ‘E’ code should be used with caution. When no analyte is detected in a sample, the default reporting value is the MDL preceded by a less than sign (<).

Euglenoids (*Euglenophyta*) are a group of algae that are usually free-swimming and rarely creeping. They have the ability to grow either photosynthetically in the light or heterotrophically in the dark. (See also “Phytoplankton”)

Extractable organic halides (EOX) are organic compounds that contain halogen atoms such as chlorine. These organic compounds are semivolatile and extractable by ethyl acetate from air-dried streambed sediment. The ethyl acetate extract is combusted, and the concentration is determined by microcoulometric determination of the halides formed. The concentration is reported as micrograms of chlorine per gram of the dry weight of the streambed sediment.

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

Fecal streptococcal bacteria are present in the intestines of warmblooded animals and are ubiquitous in the environment. They are characterized as gram-positive, cocci bacteria that are capable of growth in brain-heart infusion broth. In the laboratory, they are defined as all the organisms that produce red or pink colonies within 48 hours at 35 °C plus or minus 1.0 °C on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (See also “Bacteria”)

Filtered pertains to constituents in a water sample passed through a filter of specified pore diameter, most commonly 0.45 micrometer or less for inorganic analytes and 0.7 micrometer for organic analytes.

Filtered, recoverable is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that has passed through a filter has been extracted. Complete recovery is not achieved by the extraction procedure and thus the analytical determination represents something less than 95 percent of the total constituent concentration in the sample. To achieve comparability of analytical data, equivalent extraction procedures are required of all laboratories performing such analyses because different procedures are likely to produce different analytical results.

Fire algae (*Pyrrhophyta*) are free-swimming unicells characterized by a red pigment spot. (See also “Phytoplankton”)

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

Gage datum is a horizontal surface used as a zero point for measurement of stage or gage height. This surface usually is located slightly below the lowest point of the stream bottom such that the gage height is usually slightly greater than the maximum depth of water. Because the gage datum itself is not an actual physical object, the datum usually is defined by specifying the elevations of permanent reference marks such as bridge abutments and survey monuments, and the gage is set to agree with the reference marks. Gage datum is a local datum that is maintained independently of any national geodetic datum. However, if the elevation of the gage datum relative to the national datum (North American Vertical Datum of 1988 or National Geodetic Vertical Datum of 1929) has been determined, then the gage readings can be converted to elevations above the national datum by adding the elevation of the gage datum to the gage reading.

Gage height (G.H.) is the water-surface elevation, in feet above the gage datum. If the water surface is below the gage datum, the gage height is negative. Gage height often is used interchangeably with the more general term “stage,” although gage height is more appropriate when used in reference to a reading on a gage.

Gage values are values that are recorded, transmitted, and/or computed from a gaging station. Gage values typically are collected at 5-, 15-, or 30-minute intervals.

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

Gas chromatography/flame ionization detector (GC/FID) is a laboratory analytical method used as a screening technique for semivolatile organic compounds that are extractable from water in methylene chloride.

Geomorphic channel units, as used in this report, are fluvial geomorphic descriptors of channel shape and stream velocity. Pools, riffles, and runs are types of geomorphic channel units considered for National Water-Quality Assessment (NAWQA) Program habitat sampling.

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

Habitat, as used in this report, includes all nonliving (physical) aspects of the aquatic ecosystem, although living components like aquatic macrophytes and riparian vegetation also are usually included. Measurements of habitat are typically made over a wider geographic scale than are measurements of species distribution.

Habitat quality index is the qualitative description (level 1) of instream habitat and riparian conditions surrounding the reach sampled. Scores range from 0 to 100 percent with higher scores indicative of desirable habitat conditions for aquatic life. Index only applicable to wadable streams.

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

High tide is the maximum height reached by each rising tide. The high-high and low-high tides are the higher and lower of the two high tides, respectively, of each tidal day. See NOAA web site: *http://www.co-ops.nos.noaa.gov/tideglos.html*

Hilsenhoff’s Biotic Index (HBI) is an indicator of organic pollution that uses tolerance values to weight taxa abundances; usually increases with pollution. It is calculated as follows:

$$HBI = sum\frac{(n)(a)}{N} ,$$

where n is the number of individuals of each taxon, a is the tolerance value of each taxon, and N is the total number of organisms in the sample.

Horizontal datum (See “Datum”)

Hydrologic index stations referred to in this report are continuous-record gaging stations that have been selected as representative of streamflow patterns for their respective regions. Station locations are shown on index maps.

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

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

Instantaneous discharge is the discharge at a particular instant of time. (See also “Discharge”)

International Boundary Commission Survey Datum refers to a geodetic datum established at numerous monuments along the United States-Canada boundary by the International Boundary Commission.

Island, as used in this report, is a mid-channel bar that has permanent woody vegetation, is flooded once a year on average, and remains stable except during large flood events.

Laboratory reporting level (LRL) is generally equal to twice the yearly determined long-term method detection level (LT-MDL). The LRL controls false negative error. The probability of falsely reporting a nondetection for a sample that contained an analyte at a concentration equal to or greater than the LRL is predicted to be less than or equal to 1 percent. The value of the LRL will be reported with a “less than” (<) remark code for samples in which the analyte was not detected. The National Water Quality Laboratory (NWQL) collects quality-control data from selected analytical methods on a continuing basis to determine LT-MDLs and to establish LRLs. These values are reevaluated annually on the basis of the most current quality-control data and, therefore, may change. [Note: In several previous NWQL documents (NWQL Technical Memorandum 98.07, 1998), the LRL was called the nondetection value or NDV—a term that is no longer used.]

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

Latent heat flux (often used interchangeably with latent heat-flux density) is the amount of heat energy that converts water from liquid to vapor (evaporation) or from vapor to liquid (condensation) across a specified cross-sectional area per unit time. Usually expressed in watts per square meter.

Light-attenuation coefficient, also known as the extinction coefficient, is a measure of water clarity. Light is attenuated according to the Lambert-Beer equation:

$$I = I_o e^{-\lambda L} ,$$

where I_o is the source light intensity, I is the light intensity at length L (in meters) from the source, λ is the light-attenuation coefficient, and e is the base of the natural logarithm. The light-attenuation coefficient is defined as

$$\lambda = -\frac{1}{L}\log_e\frac{I}{I_o} .$$

Lipid is any one of a family of compounds that are insoluble in water and that make up one of the principal components of living cells. Lipids include fats, oils, waxes, and steroids. Many environmental contaminants such as organochlorine pesticides are lipophilic.

Long-term method detection level (LT-MDL) is a detection level derived by determining the standard deviation of a minimum of 24 method detection limit (MDL) spike sample measurements over an extended period of time. LT-MDL data are collected on a continuous basis to assess year-to-year variations in the LT-MDL.

The LT-MDL controls false positive error. The chance of falsely reporting a concentration at or greater than the LT-MDL for a sample that did not contain the analyte is predicted to be less than or equal to 1 percent.

Low tide is the minimum height reached by each falling tide. The high-low and low-low tides are the higher and lower of the two low tides, respectively, of each tidal day. *See NOAA web site: http://www.co-ops.nos.noaa.gov/tideglos.html*

Macrophytes are the macroscopic plants in the aquatic environment. The most common macrophytes are the rooted vascular plants that usually are arranged in zones in aquatic ecosystems and restricted in the area by the extent of illumination through the water and sediment deposition along the shoreline.

Mean concentration of suspended sediment (Daily mean suspended-sediment concentration) is the time-weighted concentration of suspended sediment passing a stream cross section during a given time period. (See also “Daily mean suspended-sediment concentration” and “Suspended-sediment concentration”)

Mean discharge (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period. (See also “Discharge”)

Mean high or low tide is the average of all high or low tides, respectively, over a specific period.

Mean sea level is a local tidal datum. It is the arithmetic mean of hourly heights observed over the National Tidal Datum Epoch. Shorter series are specified in the name; for example, monthly mean sea level and yearly mean sea level. In order that they may be recovered when needed, such datums are referenced to fixed points known as benchmarks. (See also “Datum”)

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

Megahertz is a unit of frequency. One megahertz equals one million cycles per second.

Membrane filter is a thin microporous material of specific pore size used to filter bacteria, algae, and other very small particles from water.

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

Method code is a one-character code that identifies the analytical or field method used to determine a value stored in the National Water Information System (NWIS).

Method detection limit (MDL) is the minimum concentration of a substance that can be measured and reported with 99-percent confidence that the analyte concentration is greater than zero. It is determined from the analysis of a sample in a given matrix containing the analyte. At the MDL concentration, the risk of a false positive is predicted to be less than or equal to 1 percent.

Method of Cubatures is a method of computing discharge in tidal estuaries based on the conservation of mass equation.

Methylene blue active substances (MBAS) are apparent detergents. The determination depends on the formation of a blue color when methylene blue dye reacts with synthetic anionic detergent compounds.

Micrograms per gram (UG/G, µg/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 kilogram (UG/KG, µg/kg) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the constituent per unit mass (kilogram) of the material analyzed. One microgram per kilogram is equivalent to 1 part per billion.

Micrograms per liter (UG/L, µg/L) is a unit expressing the concentration of chemical constituents in water as mass (micrograms) of constituent per unit volume (liter) of water. One thousand micrograms per liter is equivalent to 1 milligram per liter. One microgram per liter is equivalent to 1 part per billion.

Microsiemens per centimeter (US/CM, µS/cm) is a unit expressing the amount of electrical conductivity of a solution as measured between opposite faces of a centimeter cube of solution at a specified temperature. Siemens is the International System of Units nomenclature. It is synonymous with mhos and is the reciprocal of resistance in ohms.

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

Minimum reporting level (MRL) is the smallest measured concentration of a constituent that may be reliably reported by using a given analytical method.

Miscellaneous site, miscellaneous station, or miscellaneous sampling site is a site where streamflow, sediment, and/or water-quality data or water-quality or sediment samples are collected once, or more often on a random or discontinuous basis to provide better areal coverage for defining hydrologic and water-quality conditions over a broad area in a river basin.

Most probable number (MPN) is an index of the number of coliform bacteria that, more probably than any other number, would give the results shown by the laboratory examination; it is not an actual enumeration. MPN is determined from the distribution of gas-positive cultures among multiple inoculated tubes.

Multiple-plate samplers are artificial substrates of known surface area used for obtaining benthic invertebrate samples. They consist of a series of spaced, hardboard plates on an eyebolt.

Nanograms per liter (NG/L, ng/L) is a unit expressing the concentration of chemical constituents in solution as mass (nanograms) of solute per unit volume (liter) of water. One million nanograms per liter is equivalent to 1 milligram per liter.

National Geodetic Vertical Datum of 1929 (NGVD of 1929) is a fixed reference adopted as a standard geodetic datum for elevations determined by leveling. It was formerly called “Sea Level Datum of 1929” or “mean sea level.” Although the datum was derived from the mean sea level at 26 tide stations**,** it does not necessarily represent local mean sea level at any particular place. *See NOAA web site: http://www.ngs.noaa.gov/faq.shtml#WhatVD29VD88* (See “North American Vertical Datum of 1988”)

Natural substrate refers to any naturally occurring immersed or submersed solid surface, such as a rock or tree, upon which an organism lives. (See also “Substrate”)

Nekton are the consumers in the aquatic environment and consist of large free-swimming organisms that are capable of sustained, directed mobility.

Nonfilterable refers to the portion of the total residue retained by a filter.

North American Datum of 1927 (NAD 27) is the horizontal control datum for the United States that was defined by a location and azimuth on the Clarke spheroid of 1866.

North American Datum of 1983 (NAD 83) is the horizontal control datum for the United States, Canada, Mexico, and Central America that is based on the adjustment of 250,000 points including 600 satellite Doppler stations that constrain the system to a geocentric origin. NAD 83 has been officially adopted as the legal horizontal datum for the United States by the Federal government.

North American Vertical Datum of 1988 (NAVD 1988) is a fixed reference adopted as the official civilian vertical datum for elevations determined by Federal surveying and mapping activities in the United States. This datum was established in 1991 by minimum-constraint adjustment of the Canadian**,** Mexican, and United States first-order terrestrial leveling networks.

Open or screened interval is the length of unscreened opening or of well screen through which water enters a well, in feet below land surface.

Organic carbon (OC) is a measure of organic matter present in aqueous solution, suspension, or bottom sediment. May be reported as dissolved organic carbon (DOC), particulate organic carbon (POC), or total organic carbon (TOC).

Organic mass or volatile mass of a living substance is the difference between the dry mass and ash mass and represents the actual mass of the living matter. Organic mass is expressed in the same units as for ash mass and dry mass. (See also “Ash mass,” “Biomass,” and “Dry mass”)

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

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

Organochlorine compounds are any chemicals that contain carbon and chlorine. Organochlorine compounds that are important in investigations of water, sediment, and biological quality include certain pesticides and industrial compounds.

Parameter code is a 5-digit number used in the USGS computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property.

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

Particle size is the diameter, in millimeters (mm), of a particle determined by sieve or sedimentation methods. The sedimentation method utilizes the principle of Stokes law to calculate sediment particle sizes. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube, sedigraph) 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, as used in this report, agrees with the recommendation 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	>0.004 - 0.062	Sedimentation
Sand	>0.062 - 2.0	Sedimentation/sieve
Gravel	>2.0 - 64.0	Sieve
Cobble	>64 - 256	Manual measurement
Boulder	>256	Manual measurement

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

Peak flow (peak stage) is an instantaneous local maximum value in the continuous time series of streamflows or stages, preceded by a period of increasing values and followed by a period of decreasing values. Several peak values ordinarily occur in a year. The maximum peak value in a year is called the annual peak; peaks lower than the annual peak are called secondary peaks. Occasionally, the annual peak may not be the maximum value for the year; in such cases, the maximum value occurs at midnight at the beginning or end of the year, on the recession from or rise toward a higher peak in the adjoining year. If values are recorded at a discrete series of times, the peak recorded value may be taken as an approximation of the true peak, which may occur between the recording instants. If the values are recorded with finite precision, a sequence of equal recorded values may occur at the peak; in this case, the first value is taken as the peak.

Percent composition or percent of total 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, weight, mass, or volume.

Percent shading is a measure of the amount of sunlight potentially reaching the stream. A clinometer is used to measure left and right bank canopy angles. These values are added together, divided by 180, and multiplied by 100 to compute percentage of shade.

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

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

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

pH of water is the negative logarithm of the hydrogen-ion activity. Solutions with pH less than 7.0 standard units are termed “acidic,” and solutions with a pH greater than 7.0 are termed “basic.” Solutions with a pH of 7.0 are neutral. The presence and concentration of many dissolved chemical constituents found in water are affected, in part, by the hydrogen-ion activity of water. Biological processes including growth, distribution of organisms, and toxicity of the water to organisms also are affected, in part, by the hydrogen-ion activity of water.

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 commonly are known as algae. (See also “Plankton”)

Picocurie (PC, pCi) is one trillionth (1×10^{-12}) of the amount of radioactive nuclide represented by a curie (Ci). A curie is the quantity of radioactive nuclide that yields 3.7×10^{10} radioactive disintegrations per second (dps). A picocurie yields 0.037 dps, or 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. Concentrations are expressed as a number of cells per milliliter (cells/mL) of sample.

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.

Polychlorinated naphthalenes (PCNs) are industrial chemicals that are mixtures of chlorinated naphthalene compounds. They have properties and applications similar to polychlorinated biphenyls (PCBs) and have been identified in commercial PCB preparations.

Pool, as used in this report, is a small part of a stream reach with little velocity, commonly with water deeper than surrounding areas.

Primary productivity is a measure of the rate at which new organic matter is formed and accumulated through photo-synthetic 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 (carbon method) by the plants.

Primary productivity (carbon method) is expressed as milligrams of carbon per area per unit time [mg C/(m^2/time)] for periphyton and macrophytes or per volume [mg C/(m^3/time)] for phytoplankton. The carbon method defines 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 with unenriched water samples. Unit time may be either the hour or day, depending on the incubation period. (See also “Primary productivity”)

Primary productivity (oxygen method) is expressed as milligrams of oxygen per area per unit time [mg O/(m^2/time)] for periphyton and macrophytes or per volume [mg O/(m^3/time)] for phytoplankton. The oxygen method defines 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. (See also “Primary productivity”)

Radioisotopes are isotopic forms of elements that exhibit radioactivity. Isotopes are varieties of a chemical element that differ in atomic weight but are very nearly alike in chemical properties. The difference arises because the atoms of the isotopic forms of an element differ in the number of neutrons in the nucleus; for example, ordinary chlorine is a mixture of isotopes having atomic weights of 35 and 37, and the natural mixture has an atomic weight of about 35.453. Many of the elements similarly exist as mixtures of isotopes, and a great many new isotopes have been produced in the operation of nuclear devices such as the cyclotron. There are 275 isotopes of the 81 stable elements, in addition to more than 800 radioactive isotopes.

Reach, as used in this report, is a length of stream that is chosen to represent a uniform set of physical, chemical, and biological conditions within a segment. It is the principal sampling unit for collecting physical, chemical, and biological data.

Recoverable is the amount of a given constituent that is in solution after a representative water sample has been extracted or digested. Complete recovery is not achieved by the extraction or digestion and thus the determination represents something less than 95 percent of the constituent present in the sample. To achieve comparability of analytical data, equivalent extraction or digestion procedures are required of all laboratories performing such analyses because different procedures are likely to produce different analytical results. (See also “Bed material”)

Recurrence interval, also referred to as return period, is the average time, usually expressed in years, between occurrences of hydrologic events of a specified type (such as exceedances of a specified high flow or nonexceedance of a specified low flow). The terms “return period” and “recurrence interval” do not imply regular cyclic occurrence. The actual times between occurrences vary randomly, with most of the times being less than the average and a few being substantially greater than the average. For example, the 100-year flood is the flow rate that is exceeded by the annual maximum peak flow at intervals whose average length is 100 years (that is, once in 100 years, on average); almost two-thirds of all exceedances of the 100-year flood occur less than 100 years after the previous exceedance, half occur less than 70 years after the previous exceedance, and about one-eighth occur more than 200 years after the previous exceedance. Similarly, the 7-day, 10-year low flow ($7Q_{10}$) is the flow rate below which the annual minimum 7-day-mean flow dips at intervals whose average length is 10 years (that is, once in 10 years, on average); almost two-thirds of the nonexceedances of the $7Q_{10}$ occur less than 10 years after the previous nonexceedance, half occur less than 7 years after, and about one-eighth occur more than 20 years after the previous nonexceedance. The recurrence interval for annual events is the reciprocal of the annual probability of occurrence. Thus, the 100-year flood has a 1-percent chance of being exceeded by the maximum peak flow in any year, and there is a 10-percent chance in any year that the annual minimum 7-day-mean flow will be less than the $7Q_{10}$.

Replicate samples are a group of samples collected in a manner such that the samples are thought to be essentially identical in composition.

Return period (See “Recurrence interval”)

Riffle, as used in this report, is a shallow part of the stream where water flows swiftly over completely or partially submerged obstructions to produce surface agitation.

River mileage is the curvilinear distance, in miles, measured upstream from the mouth along the meandering path of a stream channel in accordance with Bulletin No. 14 (October 1968) of the Water Resources Council and typically is used to denote location along a river.

Run, as used in this report, is a relatively shallow part of a stream with moderate velocity and little or no surface turbulence.

Runoff is the quantity of water that is discharged (“runs off”) from a drainage basin during a given time period. Runoff data may be presented as volumes in acre-feet, as mean discharges per unit of drainage area in cubic feet per second per square mile, or as depths of water on the drainage basin in inches. (See also “Annual runoff”)

Salinity is the total quantity of dissolved salts, measured by weight in parts per thousand. Values in this report are calculated from specific conductance and temperature. Seawater has an average salinity of about 35 parts per thousand (for additional information, refer to: Miller, R.L., Bradford, W.L., and Peters, N.E., 1988, Specific conductance: theoretical considerations and application to analytical quality control: U.S. Geological Survey Water-Supply Paper 2311, 16 p.)

Sea level, as used in this report, refers to one of the two commonly used national vertical datums (NGVD 1929 or NAVD 1988). See separate entries for definitions of these datums.

Sediment is solid material that originates mostly from disintegrated rocks; when transported by, suspended in, or deposited from water, it is referred to as “fluvial sediment.” Sediment 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 affected by environmental and land-use factors. Some major factors are topography, soil characteristics, land cover, and depth and intensity of precipitation.

Sensible heat flux (often used interchangeably with latent sensible heat-flux density) is the amount of heat energy that moves by turbulent transport through the air across a specified cross-sectional area per unit time and goes to heating (cooling) the air. Usually expressed in watts per square meter.

Seven-day, 10-year low flow ($7Q_{10}$) is the discharge below which the annual 7-day minimum flow falls in 1 year out of 10 on the long-term average. The recurrence interval of the $7Q_{10}$ is 10 years; the chance that the annual 7-day minimum flow will be less than the $7Q_{10}$ is 10 percent in any given year. (See also “Annual 7-day minimum” and “Recurrence interval”)

Shelves, as used in this report, are streambank features extending nearly horizontally from the flood plain to the lower limit of persistent woody vegetation.

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. Sodium hazard in water is an index that can be used to evaluate the suitability of water for irrigating crops.

Soil heat flux (often used interchangeably with soil heat-flux density) is the amount of heat energy that moves by conduction across a specified cross-sectional area of soil per unit time and goes to heating (or cooling) the soil. Usually expressed in watts per square meter.

Soil-water content is the water lost from the soil upon drying to constant mass at 105 °C; expressed either as mass of water per unit mass of dry soil or as the volume of water per unit bulk volume of soil.

Specific electrical conductance (conductivity) is a measure of the capacity of water (or other media) to conduct an electrical current. It is expressed in microsiemens per centimeter at 25 °C. Specific electrical conductance is a function of the types and quantity of dissolved substances in water and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is from 55 to 75 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.

Stable isotope ratio (per MIL/MIL) is a unit expressing the ratio of the abundance of two radioactive isotopes. Isotope ratios are used in hydrologic studies to determine the age or source of specific water, to evaluate mixing of different water, as an aid in determining reaction rates, and other chemical or hydrologic processes.

Stage (See “Gage height”)

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

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

Substrate is the physical surface upon which an organism lives.

Substrate embeddedness class is a visual estimate of riffle streambed substrate larger than gravel that is surrounded or covered by fine sediment (<2mm, sand or finer). Below are the class categories expressed as the percentage covered by fine sediment:

0	no gravel or larger substrate	3	26-50 percent
1	> 75 percent	4	5-25 percent
2	51-75 percent	5	< 5 percent

Surface area of a lake is that area (acres) encompassed by the boundary of the lake as shown on USGS topographic maps, or other available maps or photographs. Because surface area changes with lake stage, surface areas listed in this report represent those determined for the stage at the time the maps or photographs were obtained.

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

Surrogate is an analyte that behaves similarly to a target analyte, but that is highly unlikely to occur in a sample. A surrogate is added to a sample in known amounts before extraction and is measured with the same laboratory procedures used to measure the target analyte. Its purpose is to monitor method performance for an individual sample.

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of undissolved material in a water-sediment mixture. It is defined operationally as 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 suspended water-sediment sample that is retained on a 0.45-micrometer membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the “total” amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results. Determinations of “suspended, recoverable” constituents are made either by directly analyzing the suspended mate-rial collected on the filter or, more commonly, by difference, on the basis of determinations of (1) dissolved and (2) total recoverable concentrations of the constituent. (See also “Suspended”)

Suspended sediment is the sediment maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid. (See also “Sediment”)

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 foot above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L). The analytical technique uses the mass of all of the sediment and the net weight of the water-sediment mixture in a sample to compute the suspended-sediment concentration. (See also “Sediment” and “Suspended sediment”)

Suspended-sediment discharge (tons/d) is the rate of sediment transport, as measured by dry mass or volume, that passes a cross 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. (See also “Sediment,” “Suspended sediment,” and “Suspended-sediment concentration”)

Suspended-sediment load is a general term that refers to a given characteristic of the material in suspension that passes a point during a specified period of time. The term needs to be qualified, such as “annual suspended-sediment load” or “sand-size suspended-sediment load,” and so on. It is not synonymous with either suspended-sediment discharge or concentration. (See also “Sediment”)

Suspended solids, total residue at 105 °C concentration is the concentration of inorganic and organic material retained on a filter, expressed as milligrams of dry material per liter of water (mg/L). An aliquot of the sample is used for this analysis.

Suspended, total is the total amount of a given constituent in the part of a water-sediment sample that is retained on a 0.45-micrometer membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. 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 directly analyzing portions of the suspended material collected on the filter or, more commonly, by difference, on the basis of determinations of (1) dissolved and (2) total concentrations of the constituent. (See also “Suspended”)

Synoptic studies are short-term investigations of specific water-quality conditions during selected seasonal or hydrologic periods to provide improved spatial resolution for critical water-quality conditions. For the period and conditions sampled, they assess the spatial distribution of selected water-quality conditions in relation to causative factors, such as land use and contaminant sources.

Taxa (Species) richness is the number of species (taxa) present in a defined area or sampling unit.

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

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

Thalweg is the line formed by connecting points of minimum streambed elevation (deepest part of the channel).

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

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water resulting from the mixing of flow proportionally to the duration of the concentration.

Tons per acre-foot (T/acre-ft) is the dry mass (tons) of a constituent per unit volume (acre-foot) of water. It is computed by multiplying the concentration of the constituent, in milligrams per liter, by 0.00136.

Tons per day (T/DAY, tons/d) is a common chemical or sediment discharge unit. It is the quantity of a substance in solution, in suspension, or as bedload that passes a stream section during a 24-hour period. It is equivalent to 2,000 pounds per day, or 0.9072 metric tons per day.

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

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. This group includes coliforms that inhabit the intestine of warmblooded animals and those that inhabit soils. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria that ferment lactose with gas formation within 48 hours at 35 °C. In the laboratory, these bacteria are defined as all the organisms that produce colonies with a golden-green metallic sheen within 24 hours when incubated at 35 °C plus or minus 1.0 °C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 milliliters of sample. (See also “Bacteria”)

Total discharge is the quantity of a given constituent, measured as dry mass or volume, that passes a stream cross section per unit of time. When referring to constituents other than water, this term needs to be qualified, such as “total sediment discharge,” “total chloride discharge,” and so on.

Total in bottom material is the amount of a given constituent in a representative sample of bottom material. 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 judge when the results should be reported as “total in bottom material.”

Total length (fish) is the straight-line distance from the anterior point of a fish specimen’s snout, with the mouth closed, to the posterior end of the caudal (tail) fin, with the lobes of the caudal fin squeezed together.

Total load refers to all of a constituent in transport. When referring to sediment, it includes suspended load plus bed load.

Total organism count is the number of organisms collected and enumerated in any particular sample. (See also “Organism count/volume”)

Total recoverable is the amount of a given constituent in a whole-water sample after a 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 for whole-water samples, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures may produce different analytical results.

Total sediment discharge is the mass of suspended-sediment plus bed-load transport, measured as dry weight, that passes a cross section in a given time. It is a rate and is reported as tons per day. (See also “Bedload,” “Bedload discharge,” “Sediment,” “Suspended sediment,” and “Suspended-sediment concentration”)

Total sediment load or **total load** is the sediment in transport as bedload and suspended-sediment load. The term may be qualified, such as “annual suspended-sediment load” or “sand-size suspended-sediment load,” and so on. It differs from total sediment discharge in that load refers to the material, whereas discharge refers to the quantity of material, expressed in units of mass per unit time. (See also “Sediment,” “Suspended-sediment load,” and “Total load”)

Transect, as used in this report, is a line across a stream perpendicular to the flow and along which measurements are taken, so that morphological and flow characteristics along the line are described from bank to bank. Unlike a cross section, no attempt is made to determine known elevation points along the line.

Turbidity is an expression of the optical properties of a liquid that causes light rays to be scattered and absorbed rather than transmitted in straight lines through water. Turbidity, which can make water appear cloudy or muddy, is caused by the presence of suspended and dissolved matter, such as clay, silt, finely divided organic matter, plankton and other microscopic organisms, organic acids, and dyes (ASTM International, 2003, D1889–00 Standard test method for turbidity of water, *in* ASTM International, Annual Book of ASTM Standards, Water and Environmental Technology, v. 11.01: West Conshohocken, Pennsylvania, 6 p.). The color of water, whether resulting from dissolved compounds or suspended particles, can affect a turbidity measurement. To ensure that USGS turbidity data can be understood and interpreted properly within the context of the instrument used and site conditions encountered, data from each instrument type are stored and reported in the National Water Information System

(NWIS) using parameter codes and measurement reporting units that are specific to the instrument type, with specific instruments designated by the method code. The respective measurement units, many of which also are in use internationally, fall into two categories: (1) the designations NTU, NTRU, BU, AU, and NTMU signify the use of a broad spectrum incident light in the wavelength range of 400-680 nanometers (nm), but having different light detection configurations; (2) The designations FNU, FNRU, FBU, FAU, and FNMU generally signify an incident light in the range between 780-900 nm, also with varying light detection configurations. These reporting units are equivalent when measuring a calibration solution (for example, formazin or polymer beads), but their respective instruments may not produce equivalent results for environmental samples. Specific reporting units are as follows:

NTU (Nephelometric Turbidity Units): white or broadband [400-680 nm] light source, 90 degree detection angle, one detector.

NTRU (Nephelometric Turbidity Ratio Units): white or broadband [400-680 nm] light source, 90 degree detection angle, multiple detectors with ratio compensation.

BU (Backscatter Units): white or broadband [400-680 nm] light source, 30 15 degree detection angle (backscatter).

AU (Attenuation Units): white or broadband [400-680 nm] light source, 180 degree detection angle (attenuation).

NTMU (Nephelometric Turbidity Multibeam Units): white or broadband [400-680 nm] light source, multiple light sources, detectors at 90 degrees and possibly other angles to each beam.

FNU (Formazin Nephelometric Units): near infrared [780-900 nm] or monochrome light source, 90 degree detection angle, one detector.

FNRU (Formazin Nephelometric Ratio Units): near infrared [780-900 nm] or monochrome light source, 90 degree detection angle, multiple detectors, ratio compensation.

FBU (Formazin Backscatter Units): near infrared [780-900 nm] or monochrome light source, 30 15 degree detection angle.

FAU (Formazin Attenuation Units): near infrared [780-900 nm] light source, 180 degree detection angle.

FNMU (Formazin Nephelometric Multibeam Units): near infrared [780-900 nm] or monochrome light source, multiple light sources, detectors at 90 degrees and possibly other angles to each beam.

For more information please see http://water.usgs.gov/owq/FieldManual/Chapter6/6.7_contents.html.

Ultraviolet (UV) absorbance (absorption) at 254 or 280 nanometers is a measure of the aggregate concentration of the mixture of UV absorbing organic materials dissolved in the analyzed water, such as lignin, tannin, humic substances, and various aromatic compounds. UV absorbance (absorption) at 254 or 280 nanometers is measured in UV absorption units per centimeter of pathlength of UV light through a sample.

Unconfined aquifer is an aquifer whose upper surface is a water table free to fluctuate under atmospheric pressure. (See “Water-table aquifer”)

Unfiltered pertains to the constituents in an unfiltered, representative water-suspended sediment sample.

Unfiltered, recoverable is the amount of a given constituent in a representative water-suspended sediment sample that has been extracted or digested. Complete recovery is not achieved by the extraction or digestion treatment and thus the determination represents less than 95 percent of the constituent present in the sample. To achieve comparability of analytical data, equivalent extraction or digestion procedures are required of all laboratories performing such analyses because different procedures are likely to produce different analytical results.

Vertical datum (See “Datum”)

Volatile organic compounds (VOCs) are organic compounds that can be isolated from the water phase of a sample by purging the water sample with inert gas, such as helium, and subsequently analyzed by gas chromatography. Many VOCs are human-made chemicals that are used and produced in the manufacture of paints, adhesives, petroleum products, pharmaceuticals, and refrigerants. They are often components of fuels, solvents, hydraulic fluids, paint thinners, and dry cleaning agents commonly used in urban settings. VOC contamination of drinking-water supplies is a human health concern because many are toxic and are known or suspected human carcinogens.

Water table is that surface in a ground-water body at which the water pressure is equal to the atmospheric pressure.

Water-table aquifer is an unconfined aquifer within which the water table is found.

Water year in USGS 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, 2002, is called the “2002 water year.”

Watershed (See “Drainage basin”)

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

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

Wet mass is the mass of living matter plus contained water. (See also “Biomass” and “Dry mass”)

Wet weight refers to the weight of animal tissue or other substance including its contained water. (See also “Dry weight”)

WSP is used as an acronym for “Water-Supply Paper” in reference to previously published reports.

Zooplankton is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column and often are 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. (See also “Plankton”)

Techniques of Water-Resources Investigations of the U.S. Geological Survey

The USGS publishes a series of manuals, the Techniques of Water-Resources Investigations, 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.

Reports in the Techniques of Water-Resources Investigations series, which are listed below, are online at *http://water.usgs.gov/pubs/twri/*. Printed copies are for sale by the USGS, Information Services, Box 25286, Federal Center, Denver, Colorado 80225 (authorized agent of the Superintendent of Documents, Government Printing Office), telephone 1-888-ASK-USGS. Please telephone 1-888-ASK-USGS for current prices, and refer to the title, book number, chapter number, and mention the “U.S. Geological Survey Techniques of Water-Resources Investigations.” Products can then be ordered by telephone, or online at http://www.usgs.gov/sales.html, or by FAX to (303)236-469 of an order form available online at *http://mac.usgs.gov/isb/pubs/forms/*. Prepayment by major credit card or by a check or money order payable to the “U.S. Geological Survey” is required.

Book 1. Collection of Water Data by Direct Measurement

Section D. Water Quality

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

Book 2. Collection of Environmental Data

Section D. Surface Geophysical Methods

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

Section E. Subsurface Geophysical Methods

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

Section F. Drilling and Sampling Methods

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

Book 3. Applications of Hydraulics

Section A. Surface-Water Techniques

3–A1.*General field and office procedures for indirect discharge measurements,* by M.A. Benson and Tate Dalrymple: USGS–TWRI book 3, chap. A1. 1967. 30 p.
3–A2.*Measurement of peak discharge by the slope-area method,* by Tate Dalrymple and M.A. Benson: USGS–TWRI book 3, chap. A2. 1967. 12 p.
3–A3.*Measurement of peak discharge at culverts by indirect methods,* by G.L. Bodhaine: USGS–TWRI book 3, chap. A3. 1968. 60 p.
3–A4.*Measurement of peak discharge at width contractions by indirect methods,* by H.F. Matthai: USGS-TWRI book 3, chap. A4. 1967. 44 p.
3–A5.*Measurement of peak discharge at dams by indirect methods,* by Harry Hulsing: USGS–TWRI book 3, chap. A5. 1967. 29 p.
3–A6.*General procedure for gaging streams,* by R.W. Carter and Jacob Davidian: USGS–TWRI book 3, chap. A6. 1968. 13 p.
3–A7.*Stage measurement at gaging stations,* by T.J. Buchanan and W.P. Somers: USGS–TWRI book 3, chap. A7. 1968. 28 p.
3–A8.*Discharge measurements at gaging stations,* by T.J. Buchanan and W.P. Somers: USGS–TWRI book 3, chap. A8. 1969. 65 p.
3–A9.*Measurement of time of travel in streams by dye tracing,* by F.A. Kilpatrick and J.F. Wilson, Jr.: USGS–TWRI book 3, chap. A9. 1989. 27 p.
3–Al0.*Discharge ratings at gaging stations,* by E.J. Kennedy: USGS–TWRI book 3, chap. A10. 1984. 59 p.
3–A11.*Measurement of discharge by the moving-boat method,* by G.F. Smoot and C.E. Novak: USGS–TWRI book 3, chap. A11. 1969. 22 p.
3–A12.*Fluorometric procedures for dye tracing,* Revised, by J.F. Wilson, Jr., E.D. Cobb, and F.A. Kilpatrick: USGS–TWRI book 3, chap. A12. 1986. 34 p.
3–A13.*Computation of continuous records of streamflow,* by E.J. Kennedy: USGS–TWRI book 3, chap. A13. 1983. 53 p.
3–A14.*Use of flumes in measuring discharge,* by F.A. Kilpatrick and V.R. Schneider: USGS–TWRI book 3, chap. A14. 1983. 46 p.
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3–A16.*Measurement of discharge using tracers*, by F.A. Kilpatrick and E.D. Cobb: USGS–TWRI book 3, chap. A16. 1985. 52 p.
3–A17.*Acoustic velocity meter systems,* by Antonius Laenen: USGS–TWRI book 3, chap. A17. 1985. 38 p.
3–A18.*Determination of stream reaeration coefficients by use of tracers,* by F.A. Kilpatrick, R.E. Rathbun, Nobuhiro Yotsukura, G.W. Parker, and L.L. DeLong: USGS–TWRI book 3, chap. A18. 1989. 52 p.
3–A19.*Levels at streamflow gaging stations*, by E.J. Kennedy: USGS–TWRI book 3, chap. A19. 1990. 31 p.
3–A20.*Simulation of soluble waste transport and buildup in surface waters using tracers,* by F.A. Kilpatrick: USGS–TWRI book 3, chap. A20. 1993. 38 p.
3–A21*Stream-gaging cableways,* by C. Russell Wagner: USGS–TWRI book 3, chap. A21. 1995. 56 p.

Section B. Ground-Water Techniques

3–B1. *Aquifer-test design, observation, and data analysis,* by R.W. Stallman: USGS–TWRI book 3, chap. B1. 1971. 26 p.
3–B2.*Introduction to ground-water hydraulics, a programed text for self-instruction*, by G.D. Bennett: USGS–TWRI book 3, chap. B2. 1976. 172 p.
3–B3.*Type curves for selected problems of flow to wells in confined aquifers,* by J.E. Reed: USGS–TWRI book 3, chap. B3. 1980. 106 p.
3–B4.*Regression modeling of ground-water flow,* by R.L. Cooley and R.L. Naff: USGS–TWRI book 3, chap. B4. 1990. 232 p.

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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, chap. B5. 1987. 15 p.
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3–B7.*Analytical solutions for one-, two-, and three-dimensional solute transport in ground-water systems with uniform flow*, by E.J. Wexler: USGS–TWRI book 3, chap. B7. 1992. 190 p.
3–B8.*System and boundary conceptualization in ground-water flow simulation*, by T.E. Reilly: USGS–TWRI book 3, chap. B8. 2001. 29 p.

Section C. Sedimentation and Erosion Techniques

3–C1.*Fluvial sediment concepts*, by H.P. Guy: USGS–TWRI book 3, chap. C1. 1970. 55 p.
3–C2.*Field methods for measurement of fluvial sediment*, by T.K. Edwards and G.D. Glysson: USGS–TWRI book 3, chap. C2. 1999. 89 p.
3–C3.*Computation of fluvial-sediment discharge*, by George Porterfield: USGS–TWRI book 3, chap. C3. 1972. 66 p.

Book 4. Hydrologic Analysis and Interpretation

Section A. Statistical Analysis

4–A1.*Some statistical tools in hydrology*, by H.C. Riggs: USGS–TWRI book 4, chap. A1. 1968. 39 p.
4–A2.*Frequency curves*, by H.C. Riggs: USGS–TWRI book 4, chap. A2. 1968. 15 p.
4–A3.*Statistical methods in water resources*, by D.R. Helsel and R.M. Hirsch: USGS–TWRI book 4, chap. A3. 1991. Available only online at http://water.usgs.gov/pubs/twri/twri4a3/. (Accessed August 30, 2002.)

Section B. Surface Water

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

Section D. Interrelated Phases of the Hydrologic Cycle

4–D1.*Computation of rate and volume of stream depletion by wells*, by C.T. Jenkins: USGS–TWRI book 4, chap. D1. 1970. 17 p.

Book 5. Laboratory Analysis

Section A. Water Analysis

5–A1.*Methods for determination of inorganic substances in water and fluvial sediments*, by M.J. Fishman and L.C. Friedman, editors: USGS–TWRI book 5, chap. A1. 1989. 545 p.
5–A2.*Determination of minor elements in water by emission spectroscopy*, by P.R. Barnett and E.C. Mallory, Jr.: USGS–TWRI book 5, chap. A2. 1971. 31 p.
5–A3.*Methods for the determination of organic substances in water and fluvial sediments*, edited by R.L. Wershaw, M.J. Fishman, R.R. Grabbe, and L.E. Lowe: USGS–TWRI book 5, chap. A3. 1987. 80 p.

5–A4.*Methods for collection and analysis of aquatic biological and microbiological samples*, by L.J. Britton and P.E. Greeson, editors: USGS–TWRI book 5, chap. A4. 1989. 363 p.
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, chap. A5. 1977. 95 p.
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, chap. A6. 1982. 181 p.

Section C. Sediment Analysis

5–C1.*Laboratory theory and methods for sediment analysis*, by H.P. Guy: USGS–TWRI book 5, chap. C1. 1969. 58 p.

Book 6. Modeling Techniques

Section A. Ground Water

6–A1.*A modular three-dimensional finite-difference ground-water flow model*, by M.G. McDonald and A.W. Harbaugh: USGS–TWRI book 6, chap. A1. 1988. 586 p.
6–A2.*Documentation of a computer program to simulate aquifer-system compaction using the modular finite-difference ground-water flow model,* by S.A. Leake and D.E. Prudic: USGS–TWRI book 6, chap. A2. 1991. 68 p.
6–A3.*A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 1: Model Description and User's Manual,* by L.J. Torak: USGS–TWRI book 6, chap. A3. 1993. 136 p.
6–A4.*A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 2: Derivation of finite-element equations and comparisons with analytical solutions,* by R.L. Cooley: USGS–TWRI book 6, chap. A4. 1992. 108 p.
6–A5.*A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 3: Design philosophy and programming details,* by L.J. Torak: USGS–TWRI book 6, chap. A5. 1993. 243 p.
6–A6.*A coupled surface-water and ground-water flow model (MODBRANCH) for simulation of stream-aquifer interaction,* by Eric D. Swain and Eliezer J. Wexler: USGS–TWRI book 6, chap. A6. 1996. 125 p.
6–A7.*User's guide to SEAWAT: A computer program for simulation of three-dimensional variable-density ground-water flow*, by Weixing Guo and Christian D. Langevin: USGS–TWRI book 6, chap. A7. 2002.
77 p.

Book 7. Automated Data Processing and Computations

Section C. Computer Programs

7–C1.*Finite difference model for aquifer simulation in two dimensions with results of numerical experiments,* by P.C. Trescott, G.F. Pinder, and S.P. Larson: USGS–TWRI book 7, chap. C1. 1976. 116 p.
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, chap. C2. 1978. 90 p.
7–C3.*A model for simulation of flow in singular and interconnected channels,* by R.W. Schaffranek, R.A. Baltzer, and D.E. Goldberg: USGS–TWRI book 7, chap. C3. 1981. 110 p.

Book 8. Instrumentation

Section A. Instruments for Measurement of Water Level

8–A1.*Methods of measuring water levels in deep wells,* by M.S. Garber and F.C. Koopman: USGS–TWRI book 8, chap. A1. 1968. 23 p.

8–A2.*Installation and service manual for U.S. Geological Survey manometers*, by J.D. Craig: USGS–TWRI book 8, chap. A2. 1983. 57 p.

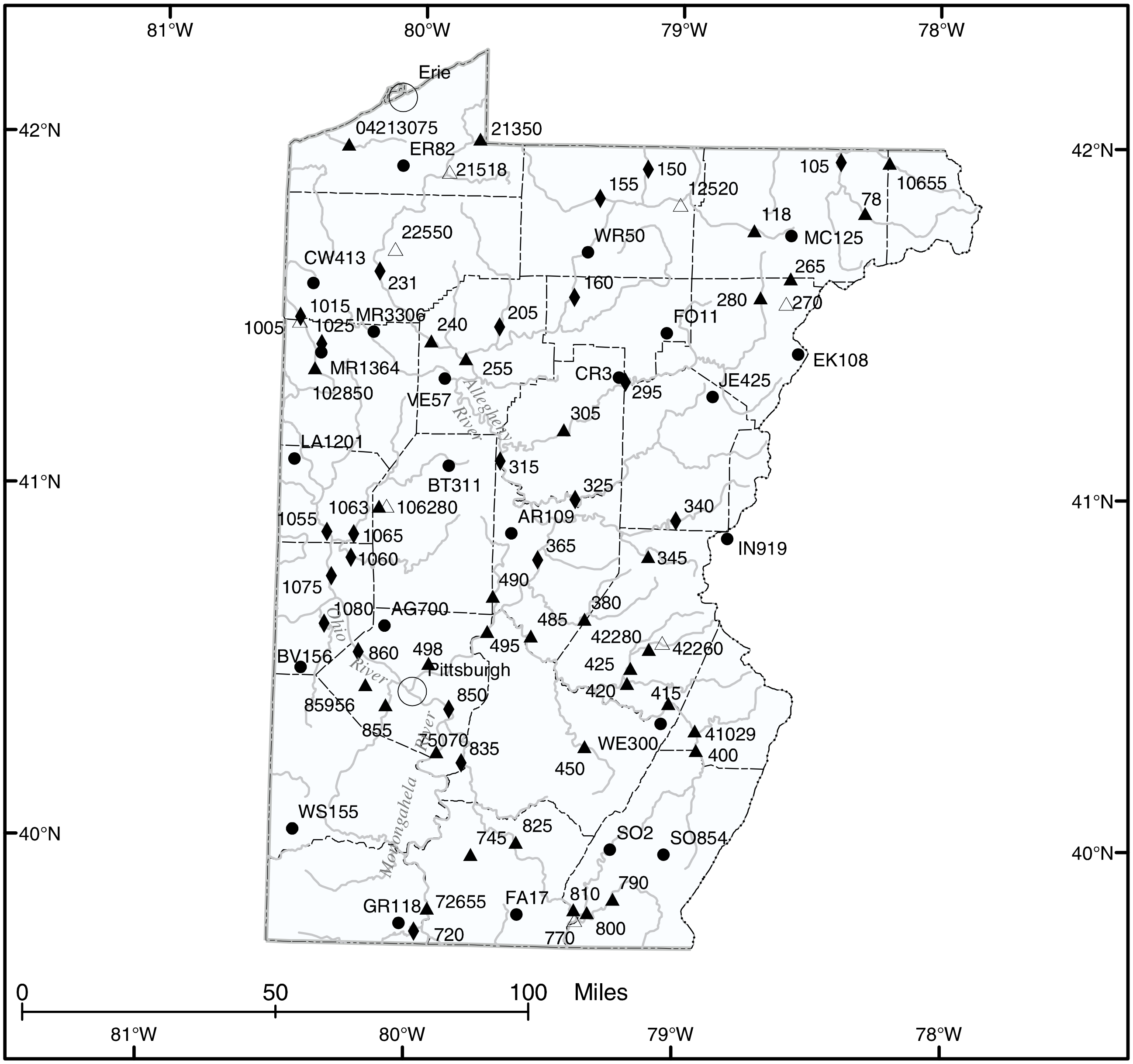
Section B. Instruments for Measurement of Discharge

8–B2.*Calibration and maintenance of vertical-axis type current meters,* by G.F. Smoot and C.E. Novak: USGS–TWRI book 8, chap. B2. 1968. 15 p.

Book 9. Handbooks for Water-Resources Investigations

Section A. National Field Manual for the Collection of Water-Quality Data

9–A1.*National field manual for the collection of water-quality data: Preparations for water sampling,* by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A1. 1998. 47 p.
9–A2.*National field manual for the collection of water-quality data: Selection of equipment for water sampling*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A2. 1998. 94 p.
9–A3.*National field manual for the collection of water-quality data: Cleaning of equipment for water sampling*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A3. 1998. 75 p.
9–A4.*National field manual for the collection of water-quality data: Collection of water samples*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A4. 1999. 156 p.
9–A5.*National field manual for the collection of water-quality data: Processing of water samples,* edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A5. 1999, 149 p.
9–A6.*National field manual for the collection of water-quality data: Field measurements*, edited by F.D. Wilde and D.B. Radtke: USGS–TWRI book 9, chap. A6. 1998. Variously paginated.
9–A7.*National field manual for the collection of water-quality data: Biological indicators*, edited by D.N. Myers and F.D. Wilde: USGS–TWRI book 9, chap. A7. 1997 and 1999. Variously paginated.
9–A8.*National field manual for the collection of water-quality data: Bottom-material samples*, by D.B. Radtke: USGS–TWRI book 9, chap. A8. 1998. 48 p.
9–A9.*National field manual for the collection of water-quality data: Safety in field activities*, by S.L. Lane and R.G. Fay: USGS–TWRI book 9, chap. A9. 1998. 60 p.



EXPLANATION

TYPE

▲ Streamflow station

△ Lake

♦ Streamflow and water-quality station

● Observation well

NOTE: Downstream station numbers are abbreviated; the first two digits (part number) and the last two digits (if zeros) are omitted (for example, station number 03041000 is shown as 410, and station number 03105940 is shown as 105940).

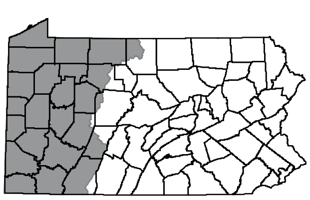
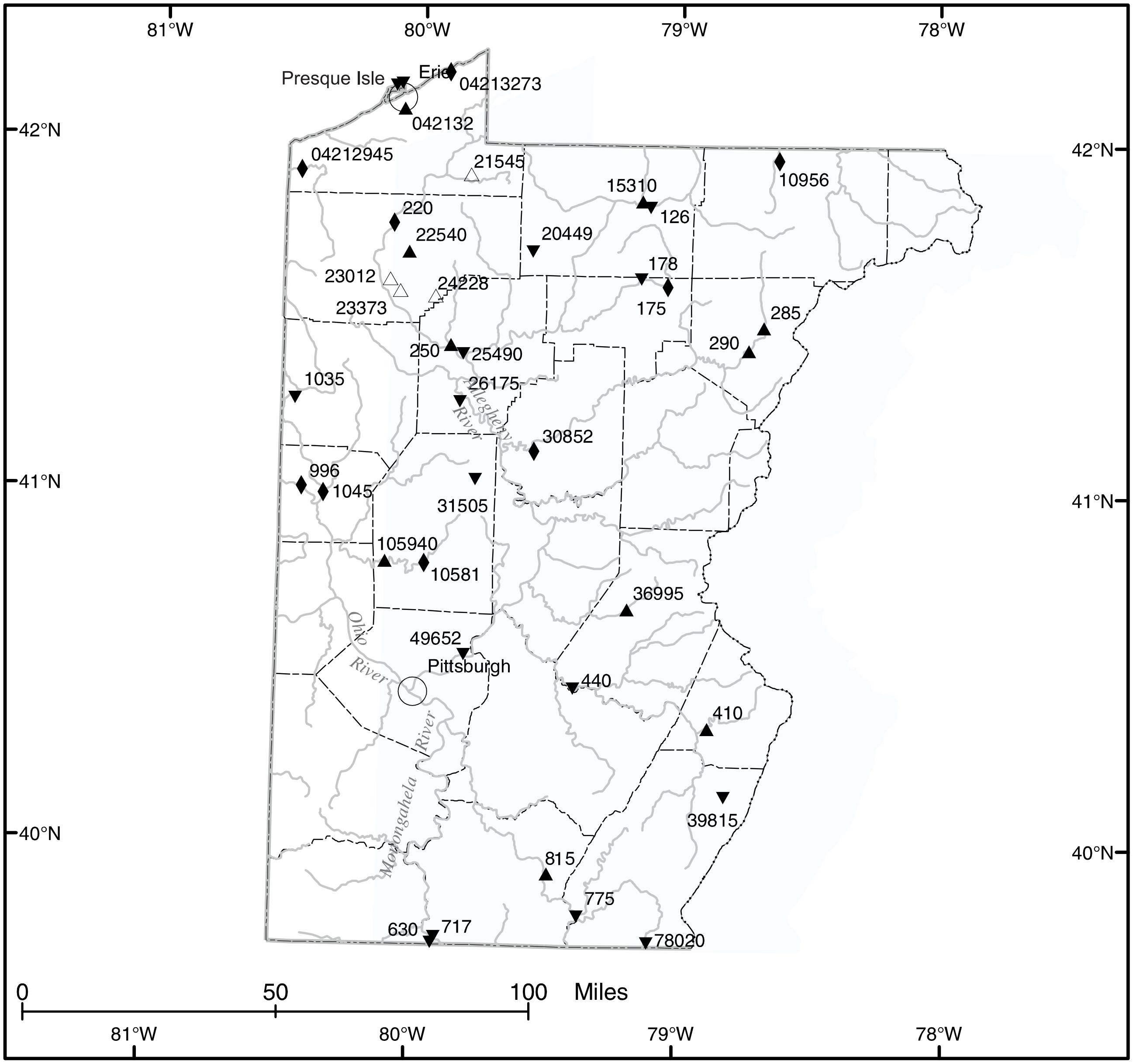
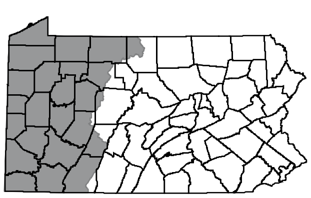


Figure 4.--Location of continuous-record data-collection stations and network observation wells.



EXPLANATION



TYPE

▲ Streamflow station

△ Lake

♦ Streamflow and water-quality station

▼ Water-quality station

NOTE: Downstream station numbers are abbreviated; the first two digits (part number) and the last two digits (if zeros) are omitted (for example, station number 03041000 is shown as 410, and station number 03105940 is shown as 105940).

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

SPECIAL NOTES, REMARK CODES, AND SELECTED CONSTITUENT DEFINITIONS

****

NOTES--Traditionally, dissolved trace-element concentrations have been reported at the microgram per liter(µG/L) level. Recent evidence, mostly from large rivers, indicates that actual dissolved-phase concentrations for a number of trace elements are within the range of 10's to 100's of nanograms per liter (ng/L). Data above the µG/L level should be viewed with caution. Such data may actually represent elevated environmental concentrations from natural or human causes; however, these data could reflect contamination introduced during sampling, processing, or analysis. To confidently produce dissolved trace-element data with insignificant contamination, the U.S. Geological Survey began using new trace-element protocols at some stations in water year 1994. Full implementation of the protocols took place during the 1995 water year.

--Sample handling procedures at all **National Trends Network** stations were changed substantially on January 11, 1994, in order to reduce contamination from the sample shipping container. The data for samples before and after that date are different and not directly comparable. A tabular summary of the differences based on a special intercomparison study, is available from the NADP/NTN Coordination Office, Colorado State University, Fort Collins, CO 80523 (Telephone: 303-491-5643).

--In March 1989 a bias was discovered in the turbidimetric method for sulfate analysis for those samples analyzed by the U.S. Geological Survey National Water-Quality Laboratory indicating that values below 75 mg/L have a median positive bias of 2 mg/L above the true value for the period between 1982 and 1989.

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

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

where:

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

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

****

Remark Codes.--The following remark codes may appear with the data tables in this report:

PRINTED OUTPUT	REMARK
E,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.
M	Presence of material verified, but not quantified.
N	Presumptive evidence of presence of material.
U	Material specifically analyzed for, but not detected.
A	Value is an average.
V	Analyte was detected in both the environmental sample and the associated blanks.
S	Most probable value.

****

EXPLANATION OF CODES USED TO DEFINE SAMPLE COLLECTION PROCEDURES (partial listing)

(71999) SAMPLE PURPOSE CODES:

10--Routine
15--NAWQA
20--NASQAN
30--Benchmark
50--GW Network

(82398) SAMPLE METHOD CODES:

10--Equal width increment
20--Equal discharge increment
30--Single vertical
40--Multiple verticals
50--Point sample
70--Grab sample
120--Velocity integrated
4040--Submersible pump

(84164) SAMPLER TYPE: (partial list)

110--Sewage sampler

3011--US D-77

3035--DH-76 Trace metal sampler with teflon gasket and nozzle

3039--D-77 Trace metal

3040--D-77 Trace metal modified teflon bag sampler

3045--DH-81 with Teflon cap and nozzle

8010--Other (other than a defined sampler type)

SPECIAL NOTES, REMARK CODES AND SELECTED CONSTITUENT DEFINITIONS--Continued

Explanation of selected abbreviations used in constituent definitions in water-quality tables:

AC-FT	acre-feet
BOT MAT	bottom material (Unconsolidated material of which a streambed, lake, pond, reservoir, or estuary bottom is composed.)
COLS/100 ML	colonies per 100 milliliters
DIS	dissolved
FET	fixed end-point titration
FLD	field (Measurement determined at field site.)
F/S	feet per second
G/M	gallons per minute
G/SQM; MG/M2	grams or milligrams per square meter
IT	incremental titration
KF AGAR	nutrient medium for growth of fecal streptococcal bacteria
µG/L	micrograms per liter
µS/CM	microsiemens per centimeter
MG/L	milligrams per liter
MG/M2	milligrams per square meter
MM OF HG	millimeters of mercury
NONCARB	noncarbonate
NTU	nephelometric turbidity unit
PCI/L	picocuries per liter
REC	recoverable
TOT	total
T/DAY	tons per day
WH IT	whole water, incremental titration (Alkalinity, bicarbonate, and carbonate as determined by incremental titration of unfiltered water at the field site.)
2 SIGMA	Counting statistic that represents error in the reported radon, uranium, or tritium value caused by variations in sample counting, background radiation, volume of sample, and decay since sample was collected.
0.7µ GF	0.7 micron glass-fiber filter (Water filtered through a glass-fiber membrane filter with openings that are 0.7 microns in size.)

****

(00027) AGENCY COLLECTING SAMPLE CODES: (partial listing)

1028 --U.S. Geological Survey
84218 --Erie County Health Department

(00028) AGENCY ANALYZING SAMPLE CODES: (partial listing)

1028 --U.S. Geological Survey
80020 --U.S. Geological Survey, National Water-Quality Laboratory, Denver, Colorado
9813 --Pennsylvania Department of Environmental Protection
83613 --USGS Water Science Center, Water-Quality Laboratory, Troy, New York
84218 --Erie County Health Department

MEDIUM CODES: (partial listing)

9-- Surface water.
6-- Ground water.
R-- Quality-control sample. Surface water.
S-- Quality-control sample, Ground water.
Q-- Quality-control sample. Artificial.

SURFACE-WATER STATION RECORDS

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, at mile 285.5.

DRAINAGE AREA.--248 mi^2.

PERIOD OF RECORD.--October 1974 to current year. Discharge measurements obtained by U.S. Army 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 those for estimated daily discharges, which are poor. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

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 U.S. Army Corps of Engineers discharge measurement. Actual peak discharge may have been greater.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a 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. 20	1100	5,820	12.10	July 27	1815	2,830	8.79
Mar. 6	2100	3,780	10.23	Sept. 9	2030	3,870	10.34
Apr. 14	0600	2,640	8.46	Sept. 18	1830	*6,460	*12.60
May 9	1100	3,400	9.71				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1170	554	742	689	e127	213	869	597	391	84	1640	272
2	936	501	693	795	e127	487	839	621	304	74	1220	226
3	736	456	599	987	e127	1090	765	633	298	68	895	198
4	841	408	534	1350	e120	1320	733	505	254	63	673	176
5	792	401	491	1870	e127	2030	659	502	238	78	544	158
6	695	406	461	1710	e134	3420	575	450	230	68	412	141
7	637	351	409	1400	e130	3310	524	520	209	59	342	130
8	557	323	366	1120	e141	2400	478	450	188	57	291	163
9	487	299	346	885	138	1630	444	2800	171	54	249	2930
10	425	286	334	661	138	1190	387	2420	178	50	224	2930
11	373	283	1850	e518	129	945	348	2210	197	47	235	1770
12	331	300	2020	e431	127	797	328	1680	157	68	203	1140
13	302	371	1590	e373	121	642	970	1380	139	85	244	807
14	296	349	1220	e301	112	545	2530	1060	145	121	205	593
15	840	352	988	e279	e99	582	2010	907	139	243	179	470
16	651	370	778	e257	e99	497	1430	724	129	189	185	394
17	615	385	699	e235	e107	476	1070	567	191	162	171	1210
18	577	389	594	e229	103	432	841	699	243	174	160	5880
19	536	2080	503	e214	103	408	678	682	174	373	154	4780
20	470	5410	442	e185	106	519	572	567	149	403	155	2180
21	426	3470	388	e178	e148	989	487	565	131	291	699	1330
22	393	1980	361	e163	e142	810	514	1020	125	245	537	929
23	354	1370	466	e149	e144	738	528	1020	119	288	465	690
24	313	1080	1240	e141	e131	706	482	978	104	253	400	540
25	279	968	1660	e134	e138	810	476	787	97	200	339	444
26	267	746	1420	e134	e138	925	1080	690	94	812	286	374
27	571	637	1110	e141	e136	1570	1130	564	84	2150	251	320
28	666	691	890	e134	e142	1680	1050	499	83	2390	228	287
29	743	828	740	e141	170	1390	858	401	113	1910	206	259
30	705	729	881	e127	---	1100	703	337	87	1400	345	234
31	613	---	735	e127	---	976	---	339	---	2020	439	---
TOTAL	17597	26773	25550	16058	3704	34627	24358	27174	5161	14479	12576	31955
MEAN	568	892	824	518	128	1117	812	877	172	467	406	1065
MAX	1170	5410	2020	1870	170	3420	2530	2800	391	2390	1640	5880
MIN	267	283	334	127	99	213	328	337	83	47	154	130
CFSM	2.29	3.60	3.32	2.09	0.52	4.50	3.27	3.53	0.69	1.88	1.64	4.30
IN.	2.64	4.02	3.83	2.41	0.56	5.19	3.65	4.08	0.77	2.17	1.89	4.79

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	277	457	517	439	532	837	893	505	371	206	195	248
MAX	964	1018	1082	1119	1572	1730	2006	1127	1484	598	1230	1226
(WY)	1991	1997	1978	1998	1976	1979	1993	1996	1989	1977	2003	1977
MIN	31.2	39.7	150	78.2	98.0	326	359	142	48.5	28.5	15.0	20.7
(WY)	1983	1999	1999	1981	1980	1993	1976	1985	1991	1991	1999	1991

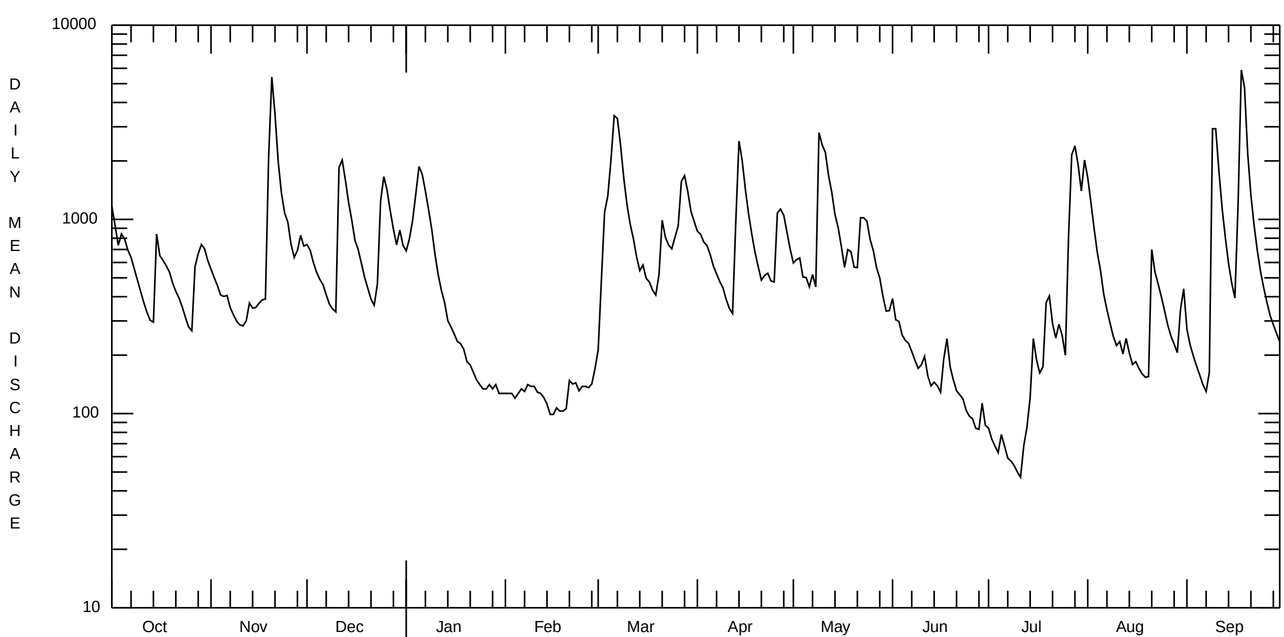
e Estimated.

OHIO RIVER MAIN STEM

03007800 ALLEGHENY RIVER AT PORT ALLEGANY, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1975 - 2004	
ANNUAL TOTAL	239022		240012			
ANNUAL MEAN	655		656		455	
HIGHEST ANNUAL MEAN					670	1994
LOWEST ANNUAL MEAN					275	2001
HIGHEST DAILY MEAN	5410	Nov 20	5880	Sep 18	8860	Jan 20 1996
LOWEST DAILY MEAN	60	Jul 17	47	Jul 11	5.4	Sep 5 1999
ANNUAL SEVEN-DAY MINIMUM	81	Jul 11	58	Jul 6	6.4	Aug 31 1999
MAXIMUM PEAK FLOW			6460	Sep 18	**a**12600	Jan 19 1996
MAXIMUM PEAK STAGE			12.60	Sep 18	**b**15.37	Jan 19 1996
INSTANTANEOUS LOW FLOW			45	Jul 11,12	5.1	Sep 6 1999
ANNUAL RUNOFF (CFSM)	2.64		2.64		1.84	
ANNUAL RUNOFF (INCHES)	35.85		36.00		24.95	
10 PERCENT EXCEEDS	1610		1410		1030	
50 PERCENT EXCEEDS	371		443		250	
90 PERCENT EXCEEDS	117		127		48	

a From rating curve extended above 6,700 ft^3/s.
b From peak-stage indicator.



OCTOBER 1, 2003 TO SEPTEMBER 30, 2004

OHIO RIVER MAIN STEM

03010500 ALLEGHENY RIVER AT ELDRED, PA
(Pennsylvania Water-Quality Network Station)

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, at mile 267.8.

DRAINAGE AREA.--550 mi^2.

WATER-DISCHARGE RECORDS

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 those for estimated daily discharges, which are poor. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a 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)
Nov. 21	1300	8,280	16.07	Sept. 11	0030	6,590	14.85
Mar. 7	2200	6,510	14.78	Sept. 19	2015	*8,800	*16.70

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2050	1070	1940	1640	481	743	2100	1280	1190	185	2970	770
2	1600	1010	1840	1780	459	1320	2400	1360	908	171	2340	557
3	1370	956	1600	2300	453	3030	2170	1660	819	153	1740	461
4	1330	879	1390	2930	461	3450	2060	1320	696	143	1340	399
5	1800	847	1270	3370	452	3860	1810	1220	610	172	1170	352
6	1380	1040	1180	3660	459	4650	1540	1190	608	172	924	310
7	1230	896	1070	3410	e468	6090	1370	1230	549	142	749	275
8	1120	804	913	2750	e528	6190	1230	1150	485	130	638	282
9	1000	736	949	2170	e468	5050	1140	3610	430	125	546	3630
10	897	689	850	1550	e455	3770	994	4790	400	117	488	5580
11	805	675	2520	e1380	e428	2460	883	4740	486	112	726	6200
12	714	716	3630	e1220	e419	1950	802	4300	402	112	512	4630
13	655	943	3480	e1100	e411	1620	1690	3470	341	235	504	2680
14	608	1050	2730	e990	e402	1360	3710	2480	325	258	505	1550
15	1670	985	2200	e925	e384	1400	4240	2030	351	552	407	1170
16	1900	1100	1790	e880	381	1290	3840	1750	317	524	360	977
17	1450	1180	1710	e848	366	1200	2740	1360	292	385	352	1580
18	1300	1190	1570	e791	381	1120	2000	1360	700	373	312	4620
19	1210	2520	1330	e752	376	1050	1600	1680	476	945	292	7990
20	1090	5410	1180	e701	398	1110	1390	1390	363	918	282	7900
21	980	7920	1040	e669	e420	2570	1190	1340	310	666	1160	5410
22	921	6640	954	e656	e798	2320	1170	2050	280	516	1690	3250
23	857	4720	1080	e630	e573	1900	1190	2860	275	505	980	1760
24	758	3130	2210	e611	e546	1830	1230	2660	244	641	804	1300
25	676	2400	3250	e579	e528	2140	1060	2250	219	441	681	1060
26	625	1850	3080	e559	e519	2570	1620	1790	218	961	576	905
27	931	1550	2530	e559	e546	3200	2200	1530	198	3570	505	772
28	1430	1620	2040	e540	574	3490	2020	1330	181	3750	470	682
29	1280	2420	1700	e534	612	3260	1750	1140	230	3730	438	618
30	1280	2080	1880	530	---	2620	1480	909	232	3020	845	552
31	1150	---	2010	502	---	2250	---	829	---	2720	1230	---
TOTAL	36067	59026	56916	41516	13746	80863	54619	62058	13135	26444	26536	68222
MEAN	1163	1968	1836	1339	474	2608	1821	2002	438	853	856	2274
MAX	2050	7920	3630	3660	798	6190	4240	4790	1190	3750	2970	7990
MIN	608	675	850	502	366	743	802	829	181	112	282	275
CFSM	2.12	3.58	3.34	2.43	0.86	4.74	3.31	3.64	0.80	1.55	1.56	4.13
IN.	2.44	3.99	3.85	2.81	0.93	5.47	3.69	4.20	0.89	1.79	1.79	4.61

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	454	829	1076	1034	1092	1881	2041	1192	787	431	287	354
MAX	1894	3175	2390	3359	3250	4697	5314	3273	6490	3893	2336	2340
(WY)	1991	1951	1973	1952	1976	1945	1940	1943	1972	1942	2003	1977
MIN	41.6	62.0	55.1	87.3	213	728	385	292	109	57.8	43.4	34.6
(WY)	1965	1965	1961	1961	1980	1993	1946	1985	1991	1966	1957	1959

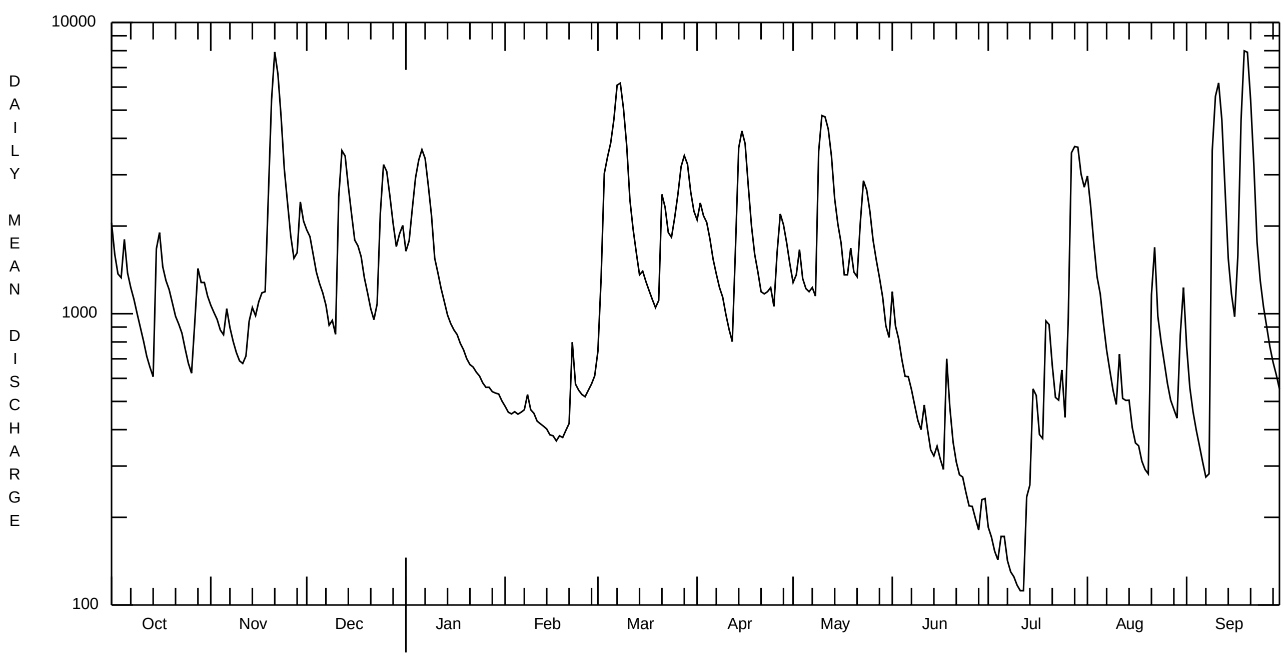
e Estimated.

OHIO RIVER MAIN STEM

03010500 ALLEGHENY RIVER AT ELDRED, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1940 - 2004	
ANNUAL TOTAL	515581		539148			
ANNUAL MEAN	1413		1473		954	
HIGHEST ANNUAL MEAN					1475	1972
LOWEST ANNUAL MEAN					631	1962
HIGHEST DAILY MEAN	8400	Mar 23	7990	Sep 19	55700	Jun 23 1972
LOWEST DAILY MEAN	140	Jul 17	112	Jul 11,12	16	Sep 6 1999
ANNUAL SEVEN-DAY MINIMUM	190	Jul 11	130	Jul 6	20	Sep 1 1999
MAXIMUM PEAK FLOW			8800	Sep 19	**a**65400	Jun 23 1972
MAXIMUM PEAK STAGE			16.70	Sep 19	**b**29.05	Jun 23 1972
INSTANTANEOUS LOW FLOW			108	Jul 11,12	15	Sep 6 1999
ANNUAL RUNOFF (CFSM)	2.57		2.68		1.73	
ANNUAL RUNOFF (INCHES)	34.87		36.47		23.56	
10 PERCENT EXCEEDS	3300		3290		2280	
50 PERCENT EXCEEDS	913		1080		528	
90 PERCENT EXCEEDS	326		352		86	

a From rating curve extended above 21,000 ft^3/s on basis of slope-area measurement at gage height 27.6 ft.
b From floodmark.



03010500 ALLEGHENY RIVER AT ELDRED, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 240-288.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unf lab, µS/cm 25 degC (90095)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water unfltrd recoverable, mg/L (00916)	Magnesium, water, unfltrd recoverable, mg/L (00927)
OCT 2003													
14...	1400	1028	9813	593	10.2	7.4	6.8	79	77	11.3	26	7.0	2.0
DEC													
18...	1300	1028	9813	1560	12.3	6.8	7.0	75	76	2.2	24	6.4	1.8
APR 2004													
27...	1315	1028	9813	2150	10.6	6.9	7.0	62	62	9.4	21	5.7	1.7
JUN													
23...	1230	1028	9813	280	9.2	6.8	7.1	90	88	20.2	29	8.0	2.2
AUG													
12...	1045	1028	9813	507	8.5	7.0	7.2	82	81	18.2	28	7.8	2.0

Date	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recoverable, µg/L (01105)	Copper, water, unfltrd recoverable, µg/L (01042)
OCT 2003													
14...	23	8.2	82	34	<.020	.35	<.040	.01	.017	.61	1.6	<200	<10
DEC													
18...	13	8.7	66	8	<.020	.56	<.040	.02	.021	.46	1.4	290	<10
APR 2004													
27...	12	8.1	16	34	<.020	.44	<.040	.04	.043	.72	2.2	1200	<10
JUN													
23...	24	8.0	92	2	.030	.17	<.040	.01	.026	.28	2.1	<200	<10
AUG													
12...	21	7.6	34	10	.040	.31	<.040	.02	.025	.52	2.2	380	<10

Date	Iron, water, unfltrd recoverable, µg/L (01045)	Lead, water, unfltrd recoverable, µg/L (01051)	Manganese, water, unfltrd recoverable, µg/L (01055)	Nickel, water, unfltrd recoverable, µg/L (01067)	Zinc, water, unfltrd recoverable, µg/L (01092)
OCT 2003					
14...	470	<1.0	60	<50	30
DEC					
18...	540	<1.0	60	<50	40
APR 2004					
27...	1560	1.5	70	<50	<10
JUN					
23...	770	<1.0	90	<50	<10
AUG					
12...	880	1.7	70	<50	20

OHIO RIVER MAIN STEM

03010500 ALLEGHENY RIVER AT ELDRED, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 animal (approximate) subsamples.

Date	10/14/03
Benthic Macroinvertebrate	Count
Nematoda (NEMATODES)	3
Nemertea (PROBOSCIS WORMS)	
Enopla	
Hoplonemertea	
Tetrastemmatidae	
Prostoma	4
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Ancylidae	
Ferrissia	2
Lymnaeidae	
Pseudosuccinea columella	1
Bivalvia (CLAMS)	
Veneroida	
Sphaeriidae	
Sphaerium	1
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Lumbricina	3
Lumbriculida	
Lumbriculidae	2
Tubificida	
Naididae	15
Tubificidae	18
Arthropoda	
Acariformes	
Hydrachnidia (WATER MITES)	12
Crustacea	
Isopoda (AQUATIC SOWBUGS)	
Asellidae	
Caecidotea	1
Insecta	
Ephemeroptera (MAYFLIES)	
Baetiscidae	
Baetisca	8
Caenidae	
Caenis	2
Ephemerellidae	
Eurylophella	4
Heptageniidae	
Stenonema	4
Odonata (DRAGONFLIES AND DAMSELFLIES)	
Gomphidae	1
Plecoptera (STONEFLIES)	
Taeniopterygidae	
Taeniopteryx	41
Megaloptera	
Corydalidae (FISHFLIES AND DOBSONFLIES)	
Nigronia	1

03010500 ALLEGHENY RIVER AT ELDRED, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES--Continued

Date	10/14/03
Benthic Macroinvertebrate	Count
Trichoptera (CADDISFLIES)	
Hydropsychidae	
Cheumatopsyche	9
Hydroptilidae	
Hydroptila	1
Leptoceridae	
Oecetis	1
Limnephilidae	
Hydatophylax	1
Polycentropodidae	
Neureclipsis	1
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
Dubiraphia	8
Hydrophilidae	
Berosus	1
Diptera (TRUE FLIES)	
Ceratopogonidae (BITING MIDGES)	
Probezzia	1
Chironomidae (MIDGES)	18
Empididae (DANCE FLIES)	
Hemerodromia	1
Tipulidae (CRANE FLIES)	
Antocha	1
Total Organisms	166
Total Taxa	29

OSWAYO CREEK BASIN

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 (U.S. Army Corps of Engineers benchmark).

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a 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)
Nov. 20	0800	*2,220	*10.17	Aug. 31	0100	1,270	8.48
Mar. 6	1800	1,520	9.04	Sept. 9	2200	1,720	9.41
Apr. 14	0400	1,070	7.99	Sept. 18	1530	2,110	10.01
May 9	1600	1,570	9.14				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	317	199	284	244	e99	e156	310	193	145	29	421	323
2	259	185	267	273	e104	e222	322	212	115	25	343	226
3	212	170	231	319	e102	e369	313	212	106	24	261	171
4	246	152	207	402	e99	524	311	188	89	23	206	134
5	235	151	192	522	e99	840	286	195	82	23	172	108
6	213	148	179	e438	e102	1420	254	176	78	21	132	87
7	202	131	162	e350	e99	1200	232	220	70	21	110	75
8	183	123	155	e291	e97	807	210	200	63	21	91	81
9	162	114	135	e228	e93	533	191	1240	58	20	76	1210
10	142	108	133	e186	e89	405	167	1230	57	19	69	1300
11	124	108	734	e157	e84	328	149	827	54	18	71	648
12	110	107	762	e136	e84	286	138	534	49	19	59	399
13	99	131	551	e153	e84	241	359	425	45	22	69	285
14	92	115	419	e119	e81	212	997	339	45	53	56	217
15	216	116	339	e119	e79	218	756	302	44	60	49	173
16	178	119	274	e119	e73	193	510	250	41	44	45	144
17	175	124	254	e115	e81	188	381	202	43	39	42	356
18	171	132	219	e111	e83	176	304	225	50	40	39	1890
19	166	644	191	e111	e83	165	252	211	46	86	37	1250
20	147	1990	170	e102	e84	191	226	189	37	69	36	620
21	136	1130	150	e111	e97	303	191	241	34	52	184	414
22	130	632	140	e106	e114	275	207	345	33	45	126	300
23	118	441	179	e106	e100	256	211	414	32	63	107	230
24	104	363	387	e94	e94	247	201	422	29	57	91	183
25	92	320	535	e90	e100	280	213	350	29	47	79	152
26	88	256	480	e77	e100	326	266	296	29	135	67	129
27	176	226	380	e81	e102	564	265	240	26	434	62	111
28	210	255	305	e81	e104	559	264	213	27	485	106	96
29	251	293	260	e86	e120	463	240	167	41	370	73	86
30	243	278	302	e98	---	375	213	139	30	286	272	78
31	219	---	253	e99	---	327	---	139	---	456	614	---
TOTAL	5416	9261	9229	5524	2730	12649	8939	10536	1627	3106	4165	11476
MEAN	175	309	298	178	94.1	408	298	340	54.2	100	134	383
MAX	317	1990	762	522	120	1420	997	1240	145	485	614	1890
MIN	88	107	133	77	73	156	138	139	26	18	36	75
CFSM	1.77	3.13	3.02	1.81	0.95	4.13	3.02	3.44	0.55	1.02	1.36	3.88
IN.	2.04	3.49	3.48	2.08	1.03	4.77	3.37	3.97	0.61	1.17	1.57	4.33

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	91.8	153	182	160	194	286	310	176	125	73.2	67.4	77.3
MAX	331	371	318	388	561	517	755	489	612	264	437	452
(WY)	1991	1997	1978	1979	1976	1979	1993	1996	1989	2003	2003	1977
MIN	8.35	9.35	28.7	27.0	41.2	120	131	50.8	6.28	7.69	7.12	6.08
(WY)	1992	1999	1999	2001	1987	1981	1976	1993	1993	1993	1991	1991

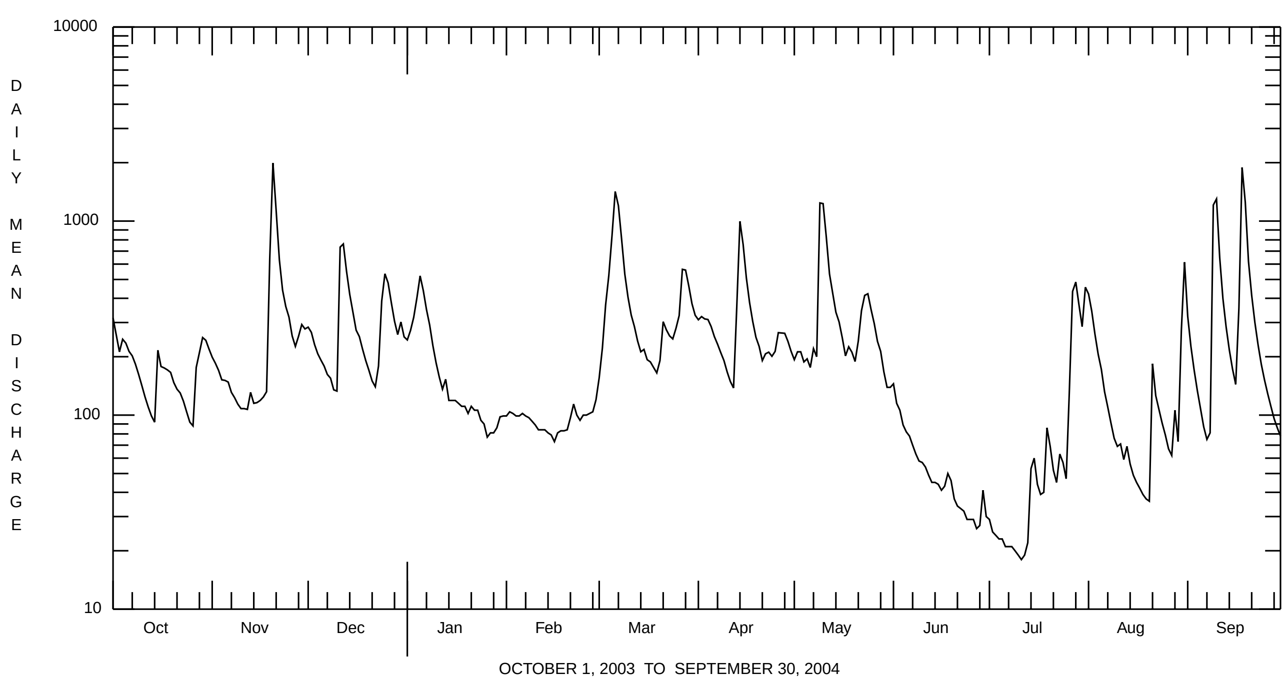
e Estimated.

OSWAYO CREEK BASIN

03010655 OSWAYO CREEK AT SHINGLEHOUSE, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1975 - 2004	
ANNUAL TOTAL	87905		84658			
ANNUAL MEAN	241		231		158	
HIGHEST ANNUAL MEAN					231	2004
LOWEST ANNUAL MEAN					85.0	2001
HIGHEST DAILY MEAN	1990	Nov 20	1990	Nov 20	3270	Jun 21 1989
LOWEST DAILY MEAN	25	Jul 15	18	Jul 11	3.2	Sep 13 1989
ANNUAL SEVEN-DAY MINIMUM	33	Jul 11	20	Jul 6	4.1	Aug 31 1999
MAXIMUM PEAK FLOW			2220	Nov 20	**a**4660	Jan 19 1996
MAXIMUM PEAK STAGE			10.17	Nov 20	**b**12.74	Jan 19 1996
INSTANTANEOUS LOW FLOW			17	Jul 11	3.2	Sep 13 1989
ANNUAL RUNOFF (CFSM)	2.44		2.34		1.60	
ANNUAL RUNOFF (INCHES)	33.13		31.91		21.70	
10 PERCENT EXCEEDS	591		439		358	
50 PERCENT EXCEEDS	136		167		88	
90 PERCENT EXCEEDS	58		45		15	

a From rating curve extended above 2,600 ft^3/s.
b From peak-stage indicator.



OHIO RIVER MAIN STEM

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.

REMARKS.--Records good except those for estimated daily discharges, which are fair. U.S. Army Corps of Engineers telephone gage-height telemeter and satellite gage-height and precipitation telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 73,000 ft^3/s, June 23, 1972, gage height, 24.01 ft, from floodmarks; minimum instantaneous discharge not determined.

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)
Nov. 20	0800	20,100	10.95	May 9	1900	18,000	10.26
Jan. 20	0115	21,500	11.38	Sept. 9	1815	*24,600	*12.33
Mar. 6	1300	20,000	10.92	Sept. 18	1345	19,700	10.82

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,660	2,660	6,100	4,770	e1,300	e1,700	5,680	2,960	3,580	745	5,980	3,470
2	2,950	2,860	5,730	4,730	e1,300	e4,700	9,080	3,180	3,050	653	4,710	2,330
3	2,690	2,680	4,870	6,160	e1,360	9,740	8,510	3,930	2,780	589	3,520	1,800
4	2,840	2,430	4,150	7,880	e1,340	11,100	7,490	3,350	2,300	551	2,790	1,470
5	4,290	2,200	3,770	8,180	e1,300	14,400	6,130	3,040	1,960	712	2,490	1,250
6	3,530	2,300	3,450	8,210	e1,250	19,600	5,100	2,960	1,820	692	2,060	1,070
7	2,920	2,230	3,100	7,110	e1,350	17,600	4,490	3,600	1,680	549	1,660	948
8	2,570	1,970	2,600	6,200	e1,400	15,400	3,960	3,400	1,490	515	1,430	934
9	2,280	1,800	2,610	5,080	e1,420	12,600	3,530	13,800	1,360	483	1,240	16,700
10	2,030	1,660	2,470	3,720	e1,450	9,300	3,080	15,000	1,340	451	1,150	20,000
11	1,810	1,610	6,800	3,240	e1,400	6,510	2,700	13,300	1,290	413	2,060	14,800
12	1,630	1,670	9,940	3,490	e1,400	5,050	2,440	10,700	1,230	393	1,520	10,400
13	1,480	1,910	8,440	3,390	e1,350	4,270	4,610	8,300	1,050	448	1,250	6,610
14	1,380	2,390	6,810	2,640	e1,300	3,680	12,700	6,190	998	577	1,270	4,000
15	3,490	2,340	5,480	2,230	e1,280	3,710	10,900	5,300	1,050	1,660	1,110	3,000
16	4,920	2,730	4,620	e2,150	e1,250	3,570	8,970	5,070	1,010	2,840	956	2,490
17	3,550	3,620	5,100	e2,050	e1,250	3,200	6,870	3,940	957	2,070	872	5,550
18	3,000	4,010	4,960	e2,300	e1,250	3,160	5,090	3,390	1,270	1,460	817	18,500
19	2,790	7,890	4,180	e2,200	e1,200	2,900	4,200	3,670	1,710	1,830	753	16,600
20	2,540	19,400	3,650	e2,000	e1,200	2,990	3,740	3,180	1,180	2,470	760	14,700
21	2,260	16,800	3,220	e1,900	e1,400	7,140	3,280	4,030	960	1,860	2,100	11,700
22	2,110	15,100	2,950	e1,700	e1,500	6,560	3,220	5,460	872	1,380	3,460	7,370
23	2,020	11,500	3,250	e1,600	e1,400	5,080	3,430	9,970	853	1,170	2,160	4,290
24	1,840	7,890	6,210	e1,500	e1,350	4,730	3,490	14,000	788	1,240	1,680	3,140
25	1,660	6,420	8,960	e1,400	e1,330	6,360	3,140	11,300	732	1,110	1,440	2,600
26	1,570	5,020	7,920	e1,400	e1,300	8,850	3,720	6,820	740	1,200	1,250	2,220
27	2,650	4,200	6,480	e1,350	e1,250	12,300	4,590	5,040	699	6,560	1,110	1,920
28	4,040	4,660	5,210	e1,350	e1,250	11,400	4,230	5,820	656	6,690	1,460	1,690
29	3,510	8,180	4,450	e1,300	e1,300	9,010	3,820	4,740	894	5,990	1,520	1,530
30	3,250	7,090	5,100	e1,350	---	7,200	3,330	3,300	829	5,110	3,530	1,400
31	2,910	---	5,820	e1,300	---	6,050	---	2,920	---	4,890	5,590	---
TOTAL	84,170	157,220	158,400	103,880	38,430	239,860	155,520	191,660	41,128	57,301	63,698	184,482
MEAN	2,715	5,241	5,110	3,351	1,325	7,737	5,184	6,183	1,371	1,848	2,055	6,149
MAX	4,920	19,400	9,940	8,210	1,500	19,600	12,700	15,000	3,580	6,690	5,980	20,000
MIN	1,380	1,610	2,470	1,300	1,200	1,700	2,440	2,920	656	393	753	934
CFSM	1.69	3.26	3.18	2.08	0.82	4.81	3.22	3.84	0.85	1.15	1.28	3.82
IN.	1.95	3.64	3.66	2.40	0.89	5.55	3.60	4.43	0.95	1.33	1.47	4.27

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1904 - 2004, BY WATER YEAR (WY)

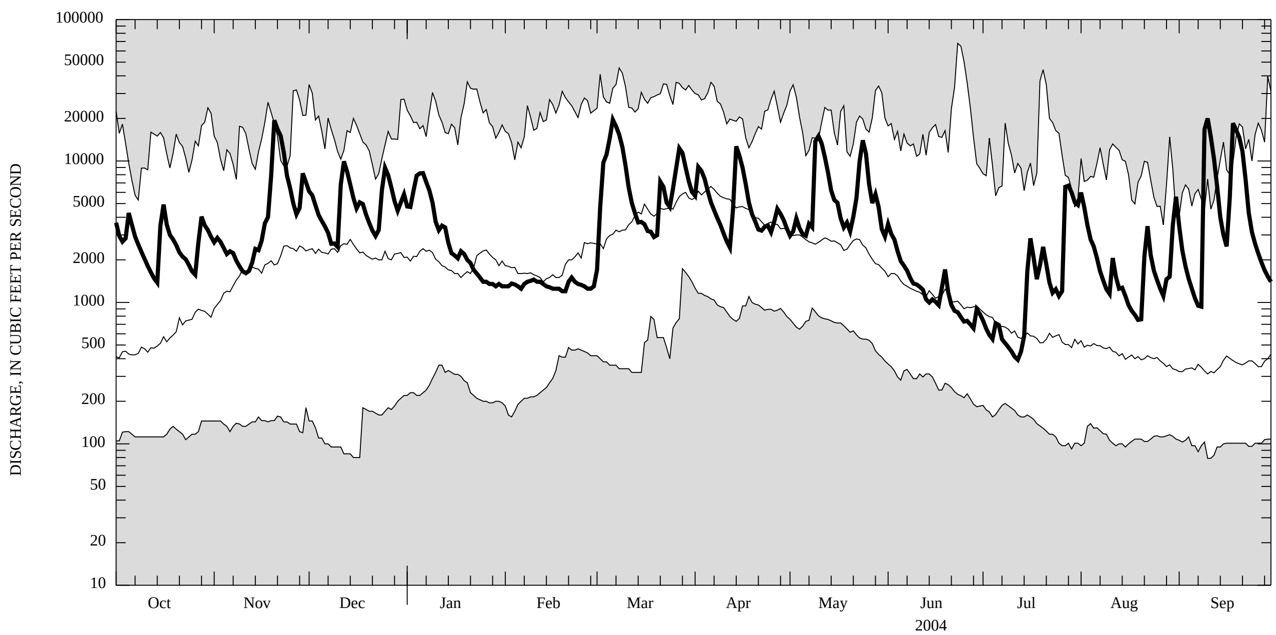
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1,336	2,529	3,091	3,312	3,159	5,937	5,808	3,482	2,030	1,121	770	890
MAX	5,801	8,605	9,147	10,200	9,683	14,850	15,540	9,574	11,520	6,074	5,108	7,477
(WY)	(1991)	(1928)	(1928)	(1913)	(1976)	(1936)	(1940)	(1943)	(1972)	(1942)	(2003)	(1977)
MIN	124	146	189	255	550	1,983	970	796	299	150	119	118
(WY)	(1931)	(1931)	(1961)	(1961)	(1905)	(1937)	(1946)	(1985)	(1934)	(1934)	(1930)	(1932)

e Estimated.

OHIO RIVER MAIN STEM

03011020 ALLEGHENY RIVER AT SALAMANCA, NY--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1904 - 2004	
ANNUAL TOTAL	1,411,154		1,475,749			
ANNUAL MEAN	3,866		4,032		2,786	
HIGHEST ANNUAL MEAN					4,174	1916
LOWEST ANNUAL MEAN					1,777	1999
HIGHEST DAILY MEAN	23,100	Mar 22	20,000	Sep 10	67,900	Jun 23, 1972
LOWEST DAILY MEAN	622	Jul 15	393	Jul 12	79	Sep 10, 1971
ANNUAL SEVEN-DAY MINIMUM	694	Feb 14	465	Jul 7	84	Dec 11, 1908
ANNUAL RUNOFF (CFSM)	2.40		2.51		1.73	
ANNUAL RUNOFF (INCHES)	32.65		34.14		23.54	
10 PERCENT EXCEEDS	7,910		8,880		6,740	
50 PERCENT EXCEEDS	2,520		2,920		1,530	
90 PERCENT EXCEEDS	936		1,060		290	



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

KINZUA CREEK BASIN

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.--38.8 mi^2.

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 those for estimated daily discharges, which are poor. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 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. 19	1800	941	5.66	Sept. 9	1015	*1,190	*6.10
Mar. 6	0530	629	4.97	Sept. 18	0145	1,030	5.82
July 26	2115	568	4.80				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66	66	151	136	e66	89	167	70	133	20	130	41
2	63	67	141	179	e65	161	180	95	89	18	97	34
3	64	66	123	262	e64	237	159	97	79	17	81	30
4	110	62	113	279	e63	256	148	76	65	20	77	28
5	118	79	103	304	e65	411	124	79	64	27	74	27
6	88	90	99	247	e88	578	115	71	62	20	58	25
7	77	73	91	e198	e121	390	102	66	54	18	51	24
8	71	63	99	e139	e70	303	94	62	47	16	46	41
9	66	58	80	e132	e49	224	91	280	42	15	40	777
10	61	55	81	e121	e35	183	80	149	46	15	46	347
11	56	58	294	e120	e33	159	72	200	44	14	58	218
12	52	76	199	e105	e34	143	69	146	36	21	42	158
13	49	138	163	e95	e34	123	233	123	32	22	42	122
14	53	107	147	e90	e34	116	300	112	36	37	38	100
15	189	100	132	e83	e34	125	191	112	31	70	33	86
16	131	109	120	e103	e38	113	158	104	28	77	30	75
17	103	121	141	e125	e39	106	138	86	74	45	28	317
18	93	119	123	e102	e40	98	120	111	76	37	26	636
19	88	474	109	e96	e43	94	107	90	44	55	25	296
20	81	469	100	e92	e49	145	104	76	34	87	26	211
21	77	299	93	e85	e184	226	93	91	30	50	160	166
22	76	225	89	e82	e105	161	94	199	29	39	86	133
23	69	178	124	e80	e82	141	104	157	27	57	54	111
24	62	162	257	e80	e75	139	92	142	24	67	45	95
25	57	156	213	e80	e71	199	85	118	26	40	41	85
26	61	126	179	e77	e71	235	110	109	25	230	37	75
27	108	115	155	e72	e76	363	94	99	22	303	37	66
28	100	161	135	e70	e84	260	86	112	22	191	44	60
29	79	204	124	e71	e85	209	78	86	26	146	42	54
30	71	155	199	e72	---	172	72	71	21	114	47	48
31	66	---	161	e71	---	162	---	90	---	147	58	---
TOTAL	2505	4231	4338	3848	1897	6321	3660	3479	1368	2035	1699	4486
MEAN	80.8	141	140	124	65.4	204	122	112	45.6	65.6	54.8	150
MAX	189	474	294	304	184	578	300	280	133	303	160	777
MIN	49	55	80	70	33	89	69	62	21	14	25	24
CFSM	2.08	3.63	3.61	3.20	1.69	5.26	3.14	2.89	1.18	1.69	1.41	3.85
IN.	2.40	4.06	4.16	3.69	1.82	6.06	3.51	3.34	1.31	1.95	1.63	4.30

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	47.4	83.2	104	80.3	89.5	137	137	85.8	69.5	34.9	30.3	40.5
MAX	137	166	281	166	251	269	289	182	272	99.8	126	154
(WY)	1991	1971	1984	1998	1976	1979	1994	1989	1989	2003	1980	1977
MIN	6.69	15.3	32.6	19.8	18.4	61.6	67.9	23.8	9.49	6.29	4.96	5.16
(WY)	1992	1992	1990	1981	1987	1970	1976	1985	1991	1991	1991	1991

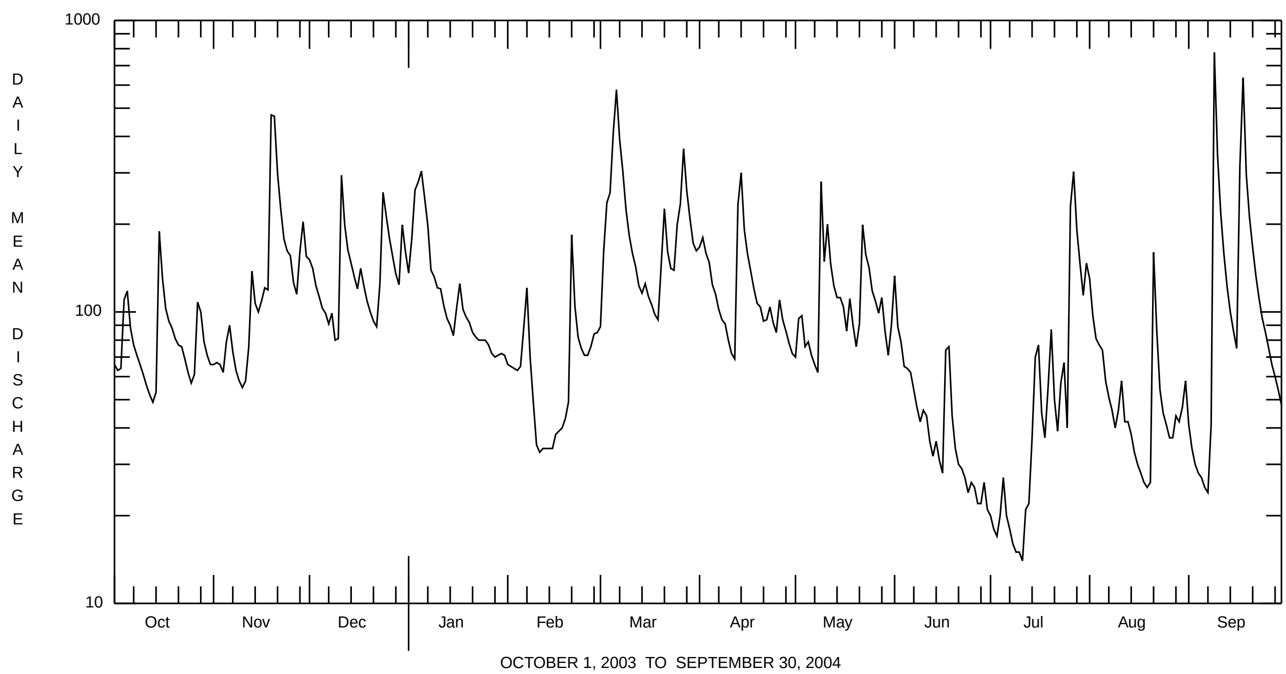
e Estimated.

KINZUA CREEK BASIN

03011800 KINZUA CREEK NEAR GUFFEY, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1966 - 2004	
ANNUAL TOTAL	37657		39867			
ANNUAL MEAN	103		109		78.1	
HIGHEST ANNUAL MEAN					113	1984
LOWEST ANNUAL MEAN					49.2	2001
HIGHEST DAILY MEAN	750	Mar 22	777	Sep 9	2120	Jun 23 1972
LOWEST DAILY MEAN	14	Jul 15,17	14	Jul 11	2.2	Sep 30 1995
ANNUAL SEVEN-DAY MINIMUM	17	Jul 11	17	Jul 6	3.3	Sep 10 1991
MAXIMUM PEAK FLOW			1190	Sep 9	**a**5220	Jun 22 1972
MAXIMUM PEAK STAGE			6.10	Sep 9	**b**8.99	Jun 22 1972
INSTANTANEOUS LOW FLOW			14	Jul 10-12	2.0	Jul 29 1978
ANNUAL RUNOFF (CFSM)	2.66		2.81		2.01	
ANNUAL RUNOFF (INCHES)	36.10		38.22		27.36	
10 PERCENT EXCEEDS	190		201		169	
50 PERCENT EXCEEDS	78		86		51	
90 PERCENT EXCEEDS	28		33		12	

a From rating curve extended above 1,300 ft^3/s on basis of slope-area measurement at gage height 8.33 ft.
b From peak-stage indicator.



CONEWANGO CREEK BASIN

03015000 CONEWANGO CREEK AT RUSSELL, PA
(Pennsylvania Water-Quality Network Station)

LOCATION.--Lat 41°56'17", long 79°08'00", Warren County, Hydrologic Unit 05010002, on left bank of highway bridge on SR 957 at Russell, 0.5 mi upstream from Akeley Run, and 8.0 mi upstream from mouth.

DRAINAGE AREA.--816 mi^2.

WATER-DISCHARGE RECORDS

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

REVISED RECORD.--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 those for estimated daily discharges, which are poor. Flow regulated since November 1949 by Chautauqua Lake (station 03013946). Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1250	1400	3970	3330	e1080	1410	4050	964	4260	318	1880	488
2	1350	1350	3910	3580	e1050	3280	4570	928	3520	285	2100	398
3	1670	1350	3690	3690	e1020	4310	4740	1360	2840	258	1780	334
4	1940	1360	3220	3780	e982	4410	4680	1530	2210	242	1440	278
5	2620	1310	2630	3930	e982	4910	4550	1710	1720	293	1350	262
6	2740	1260	2200	3960	e956	5530	4340	1690	1410	352	1320	248
7	2490	1210	1880	3650	e990	6330	3980	1490	1260	328	1220	236
8	2000	1130	1580	3020	e999	7010	3550	1430	815	560	1120	276
9	1520	1030	1410	e2460	e999	6900	3190	4380	597	1040	677	4790
10	1280	969	1420	e2040	e1000	6390	2770	4680	579	694	464	5620
11	1120	937	3370	e1910	e1000	5720	2360	4620	531	466	453	5320
12	1050	992	3560	e1870	e992	5020	2020	4330	487	386	439	5340
13	1010	1280	3360	e1820	e973	4280	2490	3740	447	362	393	5330
14	968	1940	3080	e1730	e961	3470	3890	2930	418	338	366	5120
15	2050	2090	2570	e1650	e979	2990	3890	2410	449	575	375	4680
16	2920	2210	2200	e1570	e983	2690	3760	2460	475	1800	366	3870
17	2940	2290	2670	e1500	e932	2360	3530	2180	494	2720	337	4270
18	2800	2280	2750	e1450	e892	2120	3040	2090	512	3080	314	5750
19	2300	2860	2640	e1400	e851	2030	2500	2060	523	3210	304	5610
20	1750	3610	2430	e1360	e884	2160	2250	1810	486	3050	301	5360
21	1430	3210	2150	e1350	1620	3330	1970	2820	436	2430	351	5140
22	1330	2800	1970	e1340	2080	3230	1620	4360	395	1810	398	4680
23	1410	2380	2320	e1320	1920	3010	1850	4210	365	1630	370	3550
24	1540	2110	3490	e1290	1770	2880	1750	4600	341	1470	321	2400
25	1480	2190	3840	e1270	1530	3390	1590	5280	329	979	286	1970
26	1410	1940	3850	e1250	1360	3710	1770	5860	323	656	266	1640
27	2230	1710	3810	e1210	1270	4120	1670	6140	307	731	254	1440
28	2510	2760	3550	e1170	1200	4320	1470	6060	301	892	244	1330
29	2150	4040	3120	e1160	1200	4430	1300	5720	346	891	387	1260
30	1940	3980	3160	e1150	---	4430	1140	5290	346	685	480	1170
31	1620	---	3340	e1110	---	4240	---	4860	---	640	542	---
TOTAL	56818	59978	89140	63320	33455	124410	86280	103992	27522	33171	20898	88160
MEAN	1833	1999	2875	2043	1154	4013	2876	3355	917	1070	674	2939
MAX	2940	4040	3970	3960	2080	7010	4740	6140	4260	3210	2100	5750
MIN	968	937	1410	1110	851	1410	1140	928	301	242	244	236
CFSM	2.25	2.45	3.52	2.50	1.41	4.92	3.52	4.11	1.12	1.31	0.83	3.60
IN.	2.59	2.73	4.06	2.89	1.53	5.67	3.93	4.74	1.25	1.51	0.95	4.02

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	857	1591	2118	2015	2098	3146	2808	1416	888	488	423	621
MAX	3276	4070	4261	4986	5320	6715	6503	4016	2926	2142	2391	3891
(WY)	1991	1986	1978	1998	1976	1945	1947	1943	1986	1986	1977	1977
MIN	66.1	119	111	215	533	1344	353	296	177	108	82.4	79.9
(WY)	1964	1961	1961	1961	1963	1960	1946	1985	1949	1963	1954	1941

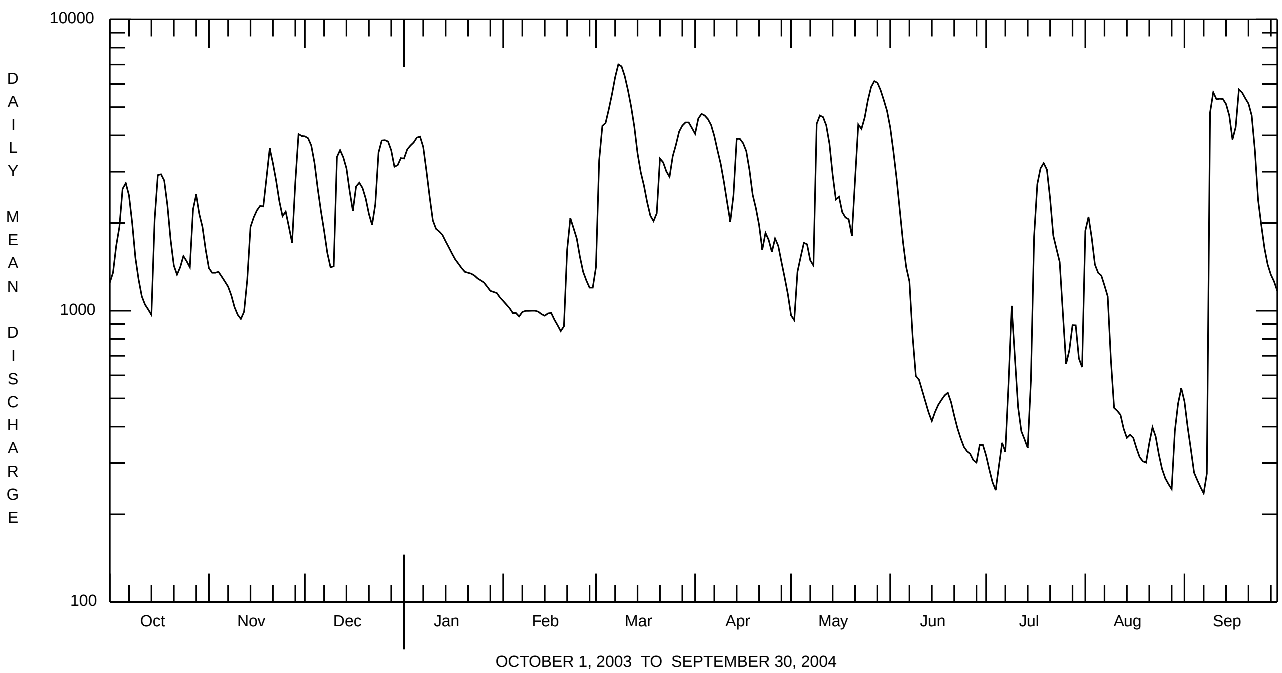
e Estimated.

CONEWANGO CREEK BASIN

03015000 CONEWANGO CREEK AT RUSSELL, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1940 - 2004	
ANNUAL TOTAL	650100		787144			
ANNUAL MEAN	1781		2151		1536	
HIGHEST ANNUAL MEAN					2151	2004
LOWEST ANNUAL MEAN					915	1999
HIGHEST DAILY MEAN	6600	Mar 24	7010	Mar 8	14700	Jan 10 1998
LOWEST DAILY MEAN	248	Jul 4	236	Sep 7	57	Oct 17 1960
ANNUAL SEVEN-DAY MINIMUM	280	Jun 28	290	Sep 2	59	Oct 12 1960
MAXIMUM PEAK FLOW			7090	Mar 8	**a**14900	Jan 10 1998
MAXIMUM PEAK STAGE			8.15	Mar 8	**b**10.88	Jan 10 1998
ANNUAL RUNOFF (CFSM)	2.18		2.64		1.88	
ANNUAL RUNOFF (INCHES)	29.64		35.88		25.57	
10 PERCENT EXCEEDS	3670		4420		3800	
50 PERCENT EXCEEDS	1380		1740		1010	
90 PERCENT EXCEEDS	396		374		163	

a From rating curve extended above 13,000 ft^3/s.
b From peak-stage indicator.



CONEWANGO CREEK BASIN

03015000 CONEWANGO CREEK AT RUSSELL, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 240-288.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unf lab, µS/cm 25 degC (90095)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water unfltrd recoverable, mg/L (00916)	Magnesium, water, unfltrd recoverable, mg/L (00927)
OCT 2003													
27...	1200	1028	9813	2340	10.3	7.4	7.3	233	224	8.3	91	27.5	5.5
DEC													
22...	1335	1028	9813	1950	12.9	7.4	7.7	241	258	.8	87	27.1	4.6
FEB 2004													
12...	1315	1028	9813	E992	12.5	7.2	7.5	290	284	.1	100	32.1	5.4
APR													
15...	0830	1028	9813	3910	11.2	7.3	7.3	176	181	5.5	65	20.1	3.7
JUN													
07...	1415	1028	9813	1280	7.8	7.4	7.4	254	260	18.9	97	30.1	5.3
AUG													
11...	1245	1028	9813	446	7.6	7.6	7.5	282	278	19.8	110	34.3	6.0

Date	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recoverable, µg/L (01105)	Copper, water, unfltrd recoverable, µg/L (01042)
OCT 2003													
27...	76	10.5	88	24	.060	.38	<.040	.04	.058	.84	5.3	580	<10
DEC													
22...	68	11.8	194	10	.030	.66	<.040	.02	.032	.66	3.5	<200	<10
FEB 2004													
12...	80	12.4	168	<2	.090	.85	<.040	.03	.040	1.2	3.2	<200	<10
APR													
15...	47	8.6	168	6	.030	.54	<.040	.07	.090	.88	4.6	870	<10
JUN													
07...	81	10.2	140	4	.070	.57	<.040	.04	.063	1.2	4.3	210	<10
AUG													
11...	91	10.4	212	8	.030	.61	<.040	.04	.069	.94	4.1	480	<10

Date	Iron, water, unfltrd recoverable, µg/L (01045)	Lead, water, unfltrd recoverable, µg/L (01051)	Manganese, water, unfltrd recoverable, µg/L (01055)	Nickel, water, unfltrd recoverable, µg/L (01067)	Zinc, water, unfltrd recoverable, µg/L (01092)
OCT 2003					
27...	1000	1.2	80	<50	80
DEC					
22...	400	<1.0	50	<50	<10
FEB 2004					
12...	380	<1.0	90	<50	<10
APR					
15...	1730	1.5	80	<50	<10
JUN					
07...	1010	1.1	160	<50	<10
AUG					
11...	960	1.5	170	<50	<10

CONEWANGO CREEK BASIN

03015000 CONEWANGO CREEK AT RUSSELL, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 animal (approximate) subsamples.

Date	10/27/03
Benthic Macroinvertebrate	Count
Platyhelminthes	
Turbellaria (FLATWORMS)	
Tricladida	
Planariidae	1
Nematoda (NEMATODES)	1
Nemertea (PROBOSCIS WORMS)	
Enopla	
Hoplonemertea	
Tetrastemmatidae	
Prostoma	1
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Ancylidae	
Ferrissia	2
Hydrobiidae	
Amnicola	24
Planorbidae	
Planorbella	3
Bivalvia (CLAMS)	
Veneroida	
Sphaeriidae	
Pisidium	15
Sphaerium	3
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Lumbricina	1
Tubificida	
Naididae	6
Tubificidae	8
Arthropoda	
Crustacea	
Amphipoda (SCUDS)	
Crangonyctidae	
Crangonyx	2
Gammaridae	
Gammarus	19
Talitridae	
Hyallela azteca	1
Isopoda (AQUATIC SOWBUGS)	
Asellidae	
Caecidotea	2
Insecta	
Ephemeroptera (MAYFLIES)	
Ephemerellidae	
Eurylophella	1
Heptageniidae	
Stenonema	3
Leptophlebiidae	
Paraleptophlebia	1
Plecoptera (STONEFLIES)	
Taeniopterygidae	
Taeniopteryx	11

CONEWANGO CREEK BASIN

03015000 CONEWANGO CREEK AT RUSSELL, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES--Continued

Date	10/27/03
Benthic Macroinvertebrate	Count
Trichoptera (CADDISFLIES)	
Hydropsychidae	
Cheumatopsyche	8
Hydropsyche	1
Limnephilidae	
Hydatophylax	3
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
Promoresia	2
Hydrophilidae	
Hydrochus	1
Diptera (TRUE FLIES)	
Ceratopogonidae (BITING MIDGES)	
Probezzia	1
Chironomidae (MIDGES)	25
Simuliidae (BLACK FLIES)	
Simulium	1
Total Organisms	147
Total Taxa	27

BROKENSTRAW CREEK BASIN

03015500 BROKENSTRAW CREEK AT YOUNGSVILLE, PA
(Pennsylvania Water-Quality Network Station)

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 mi^2, including that of Matthews Run.

WATER-DISCHARGE RECORDS

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 of 1929. 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 those for estimated daily discharges, which are poor. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 4,500 ft^3/s and maximum (*****):

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
Mar. 5	2300	5,060	7.75	Sept. 9	0900	*10,800	*11.12
May 22	1730	7,000	9.10	Sept. 18	0100	6,390	8.70
July 12	2145	5,560	8.12				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	666	405	1960	1330	e311	e695	1250	520	579	156	1470	171
2	444	398	1410	1580	e303	2980	2820	604	491	133	1520	140
3	498	421	e900	2200	e300	3980	2840	890	454	116	920	124
4	627	393	e750	2110	e266	4060	2080	733	377	108	477	115
5	1010	355	e650	1990	e253	4250	1310	600	319	148	498	109
6	880	340	e495	e1540	e309	4760	984	579	292	142	383	100
7	566	308	e430	e942	e522	3720	855	502	263	117	296	108
8	403	279	e405	e780	e517	2330	753	464	236	108	251	369
9	318	250	e440	e656	e491	1420	664	935	231	101	216	8360
10	270	229	e480	e589	e457	1030	580	1770	333	96	259	6130
11	235	245	3380	e557	e413	878	500	2200	294	91	293	3750
12	211	408	2880	e544	e385	805	464	1530	232	1320	221	1420
13	194	626	2010	e520	e356	698	1080	905	201	1680	201	545
14	237	802	1090	e495	e336	649	2520	668	201	1380	209	392
15	1620	751	824	e461	e313	e806	2120	776	259	2110	196	316
16	1900	948	732	433	e279	e708	1300	1040	230	2350	173	296
17	1500	913	1340	e420	e253	e638	809	739	299	1870	156	2640
18	723	799	1430	e395	e241	e638	658	950	431	1540	149	4730
19	503	1460	1040	e386	e243	e592	574	938	283	951	156	3460
20	415	2030	836	e370	301	1090	713	689	217	696	159	1720
21	357	1390	716	e360	e1070	2500	659	2520	179	466	274	695
22	330	855	687	e365	e1230	1920	818	5600	163	361	292	491
23	339	656	1220	e691	e1070	1350	1080	5420	153	572	211	396
24	324	627	3330	e619	e864	1150	996	4450	137	448	165	332
25	288	806	3200	e547	e672	2120	854	3690	140	312	145	298
26	333	696	2140	e486	e579	3010	1210	2610	145	506	131	265
27	1040	604	1190	e443	e510	3610	1140	1330	129	794	124	241
28	1090	2020	862	e386	e480	2810	822	1320	182	646	162	225
29	764	2850	775	e351	e543	1770	645	1060	345	444	236	209
30	561	2500	1570	e332	---	1070	537	714	211	363	227	198
31	454	---	1750	e319	---	1040	---	596	---	530	228	---
TOTAL	19100	25364	40922	23197	13867	59077	33635	47342	8006	20655	10398	38345
MEAN	616	845	1320	748	478	1906	1121	1527	267	666	335	1278
MAX	1900	2850	3380	2200	1230	4760	2840	5600	579	2350	1520	8360
MIN	194	229	405	319	241	592	464	464	129	91	124	100
CFSM	1.92	2.63	4.11	2.33	1.49	5.94	3.49	4.76	0.83	2.08	1.04	3.98
IN.	2.21	2.94	4.74	2.69	1.61	6.85	3.90	5.49	0.93	2.39	1.21	4.44

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1910 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	315	621	758	785	768	1244	1021	614	379	237	181	236
MAX	1413	1817	1724	2459	2248	2851	2715	1528	1535	1039	994	1428
(WY)	1991	1986	1978	1913	1976	1936	1947	1943	1928	1986	1956	1977
MIN	31.7	57.3	85.9	124	161	297	251	135	62.0	37.8	32.3	31.6
(WY)	1932	1931	1961	1918	1987	1915	1946	1934	1934	1934	1934	1936

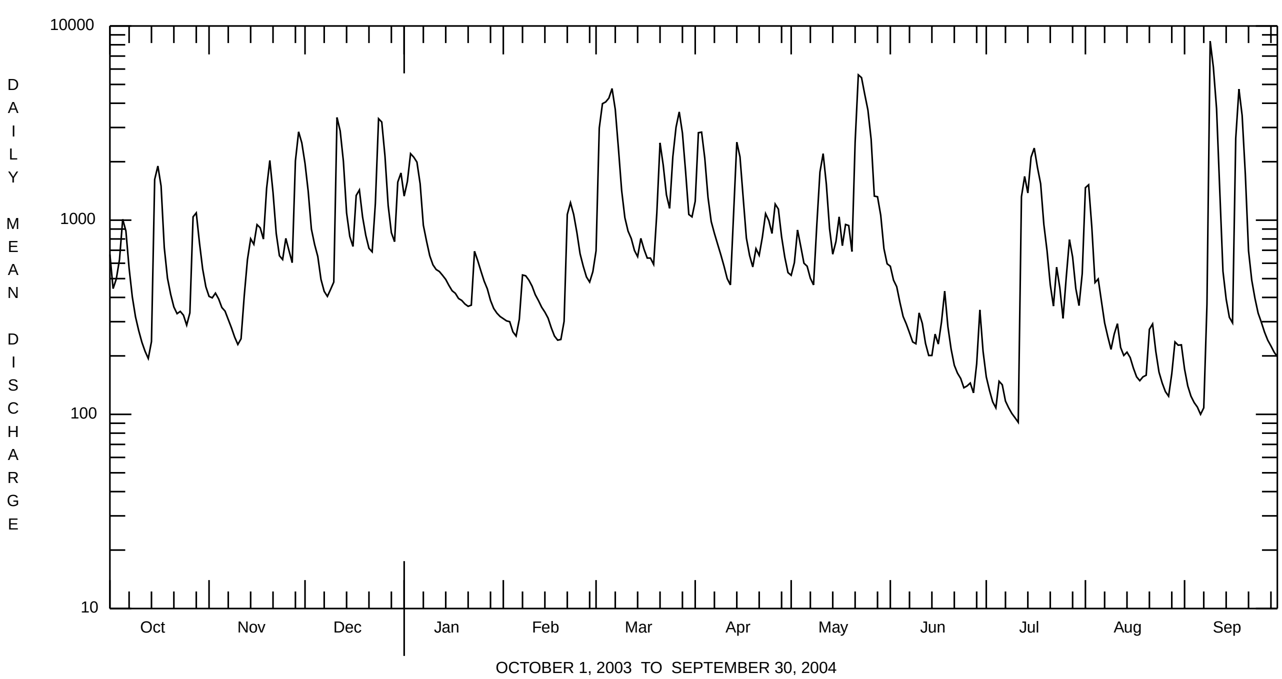
e Estimated.

BROKENSTRAW CREEK BASIN

03015500 BROKENSTRAW CREEK AT YOUNGSVILLE, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1910 - 2004	
ANNUAL TOTAL	286509		339908			
ANNUAL MEAN	785		929		596	
HIGHEST ANNUAL MEAN					929	2004
LOWEST ANNUAL MEAN					307	1931
HIGHEST DAILY MEAN	6310	Jul 22	8360	Sep 9	14000	Mar 25 1913
LOWEST DAILY MEAN	113	Jul 3	91	Jul 11	19	Oct 14 1934
ANNUAL SEVEN-DAY MINIMUM	130	Jun 28	115	Jul 5	24	Oct 11 1934
MAXIMUM PEAK FLOW			10800	Sep 9	**ab**18000	Mar 25 1913
MAXIMUM PEAK STAGE			11.12	Sep 9	14.20	Mar 25 1913
INSTANTANEOUS LOW FLOW			86	Jul 12	**c**19	Oct 14 1934
ANNUAL RUNOFF (CFSM)	2.45		2.89		1.86	
ANNUAL RUNOFF (INCHES)	33.20		39.39		25.22	
10 PERCENT EXCEEDS	1790		2130		1440	
50 PERCENT EXCEEDS	471		573		308	
90 PERCENT EXCEEDS	187		190		67	

a From rating curve extended above 9,400 ft^3/s.
b About.
c Minimum observed.



03015500 BROKENSTRAW CREEK AT YOUNGSVILLE, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 240-288.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unf lab, µS/cm 25 degC (90095)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water unfltrd recover -able, mg/L (00916)	Magnesium, water, unfltrd recover -able, mg/L (00927)
OCT 2003													
27...	1315	1028	9813	1250	11.1	7.6	7.2	147	139	8.5	60	17.6	3.9
DEC													
30...	1030	1028	9813	1810	12.0	6.7	7.4	113	109	3.2	46	13.4	3.0
FEB 2004													
18...	1345	1028	9813	E241	15.1	8.2	8.1	213	217	1.6	91	27.6	5.3
APR													
13...	1415	1028	9813	903	11.9	7.6	7.6	142	147	6.4	60	18.0	3.5
JUN													
08...	1330	1028	9813	234	12.1	8.8	8.5	223	214	19.9	92	27.9	5.3
AUG													
11...	1030	1028	9813	298	10.2	8.2	7.5	206	202	17.4	88	26.9	5.1

Date	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, sus-pended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recover -able, µg/L (01105)	Copper, water, unfltrd recover -able, µg/L (01042)
OCT 2003													
27...	49	8.6	192	26	.050	.48	<.040	.04	.042	.85	4.7	810	<10
DEC													
30...	32	9.1	136	<2	<.020	.60	<.040	--	--	.99	2.8	2400	<10
FEB 2004													
18...	72	11.1	146	20	<.020	1.06	<.040	.02	.024	1.2	2.0	<200	<10
APR													
13...	46	9.2	96	6	<.020	.65	<.040	.03	.027	1.1	2.9	460	<10
JUN													
08...	83	10.4	142	<2	<.020	.68	<.040	.01	.017	.97	3.1	<200	<10
AUG													
11...	75	9.2	158	<2	<.020	.87	<.040	.02	.036	.96	3.3	230	<10

Date	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, unfltrd recover -able, µg/L (01051)	Manganese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, unfltrd recover -able, µg/L (01092)
OCT 2003					
27...	1440	1.2	100	<50	50
DEC					
30...	2920	2.0	90	<50	<10
FEB 2004					
18...	340	<1.0	20	<50	<10
APR					
13...	720	<1.0	40	<50	<10
JUN					
08...	220	<1.0	10	<50	<10
AUG					
11...	510	<1.0	30	<50	<10

BROKENSTRAW CREEK BASIN

03015500 BROKENSTRAW CREEK AT YOUNGSVILLE, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 animal (approximate) subsamples.

Date	10/27/03
Benthic Macroinvertebrate	Count
Platyhelminthes	
Turbellaria (FLATWORMS)	
Tricladida	
Planariidae	1
Nematoda (NEMATODES)	1
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Ancylidae	
Ferrissia	5
Hydrobiidae	
Amnicola	5
Physidae	
Physa	1
Pleuroceridae	
Leptoxis carinata	1
Bivalvia (CLAMS)	
Veneroida	
Sphaeriidae	
Pisidium	6
Sphaerium	1
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Lumbriculida	
Lumbriculidae	6
Tubificida	
Naididae	1
Arthropoda	
Crustacea	
Amphipoda (SCUDS)	
Talitridae	
Hyallela azteca	4
Isopoda (AQUATIC SOWBUGS)	
Asellidae	
Caecidotea	2
Insecta	
Ephemeroptera (MAYFLIES)	
Caenidae	
Caenis	2
Ephemerellidae	
Ephemerella	10
Heptageniidae	
Leucrocuta	4
Stenacron	2
Stenonema	9
Leptophlebiidae	
Leptophlebia	1
Paraleptophlebia	6
Plecoptera (STONEFLIES)	
Capniidae	
Paracapnia	1
Taeniopterygidae	
Taeniopteryx	3

BROKENSTRAW CREEK BASIN

03015500 BROKENSTRAW CREEK AT YOUNGSVILLE, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES--Continued

Date	10/27/03
Benthic Macroinvertebrate	Count
Trichoptera (CADDISFLIES)	
Helicopsychidae	
Helicopsyche	1
Hydropsychidae	
Hydropsyche	2
Limnephilidae	
Hydatophylax	1
Pycnopsyche	1
Philopotamidae	
Chimarra	1
Uenoidae	
Neophylax	7
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
Optioservus	8
Promoresia	2
Stenelmis	1
Psephenidae (WATER PENNIES)	
Ectopria	1
Psephenus	13
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	32
Total Organisms	142
Total Taxa	33

OHIO RIVER MAIN STEM

03016000 ALLEGHENY RIVER AT WEST HICKORY, PA
(Pennsylvania Water-Quality Network Station)

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, at mile 158.9.

DRAINAGE AREA.--3,660 mi^2.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WDR PA-96-3: 1995(M).

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 those for estimated daily discharges, which are poor. Flow regulated since November 1949 by Chautauqua Lake (station 03013946), since October 1965 by Allegheny Reservoir (station 03012520) 39 mi upstream. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6870	9910	19800	14200	e4800	5470	14600	7300	14200	1680	10800	5290
2	6910	9700	18500	14800	e4470	9940	16400	7220	11600	1600	12600	7420
3	7110	9770	16300	16100	e4250	15000	17000	7680	9190	1540	12900	6960
4	7810	9700	15200	14500	e4250	17400	17000	7950	7140	1510	11600	4800
5	8660	9600	13000	14500	e4050	20200	15900	7670	5440	1680	8360	2990
6	6900	9150	12000	13600	e4010	22100	14800	6500	4880	1610	7640	2900
7	6250	7580	10400	15500	e3980	20600	13100	6250	4510	1600	6130	2860
8	5670	7360	9710	19200	e3900	22000	11500	6000	3450	1560	5040	3390
9	5000	7050	9480	18100	e3790	26000	9960	9290	2970	1920	4300	30100
10	4620	6890	9110	16900	e3740	25000	8650	13300	3130	2000	3950	21500
11	5870	6970	14900	15600	e3740	24100	8060	18300	3060	1740	4130	21900
12	7320	7240	16300	13100	e3630	22700	7040	22300	2860	2330	3810	22800
13	7220	7620	15900	10900	e3520	18900	7980	17800	2740	5100	3690	23200
14	7180	8500	15800	8520	e3350	14700	12700	18000	2510	3300	3610	23800
15	9880	8830	14700	7150	e3350	12500	15200	17200	2580	4030	3540	21800
16	12000	9310	13500	6870	e3350	10200	19200	17300	2240	5540	3420	18000
17	13300	9590	13100	5930	e3350	8060	17600	16200	2550	7880	2040	17400
18	12400	9420	13600	5270	e3190	6310	15400	15100	3290	9800	1770	21800
19	11500	13000	13100	4610	e3240	5550	13900	14400	2590	8540	1730	18300
20	10700	16500	12200	e4260	e3130	6160	9810	10400	2370	7420	1760	21500
21	9590	16800	10700	e4300	e3190	10800	8110	12900	2230	6570	2630	24800
22	7870	20500	10300	e4540	e3190	9490	7520	21400	2140	5570	2320	23900
23	7780	21300	10700	e4620	e3240	11200	7190	19200	2070	5400	2640	22800
24	7910	18400	14900	e4620	e3190	11300	7230	21600	1720	5060	3110	21000
25	7800	19300	15500	e4770	e3190	12600	6810	24000	1680	4160	3000	18300
26	7710	20600	15100	e4770	e3300	14900	7470	23000	1680	4390	2920	17100
27	9160	20100	14600	e4770	e3520	16900	8180	21500	1620	6380	2370	14900
28	10700	21500	13900	e4700	e3740	17600	8310	21100	1600	8640	2440	12800
29	11600	22500	13200	e4700	e4390	16300	7840	18100	2080	9420	2590	9200
30	10900	20600	14300	e4770	---	15200	7500	15400	1820	9240	2870	7170
31	10300	---	14600	e4990	---	14900	---	14700	---	9400	3080	---
TOTAL	264490	385290	424400	291160	106040	464080	341960	459060	111940	146610	142790	470680
MEAN	8532	12840	13690	9392	3657	14970	11400	14810	3731	4729	4606	15690
MAX	13300	22500	19800	19200	4800	26000	19200	24000	14200	9800	12900	30100
MIN	4620	6890	9110	4260	3130	5470	6810	6000	1600	1510	1730	2860
CFSM	2.33	3.51	3.74	2.57	1.00	4.09	3.11	4.05	1.02	1.29	1.26	4.29
IN.	2.69	3.92	4.31	2.96	1.08	4.72	3.48	4.67	1.14	1.49	1.45	4.78

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	4100	6531	8618	8454	8087	11920	11740	7668	4823	3140	2427	2941
MAX	15890	17070	17950	21260	18970	29740	25970	20020	14730	15430	10160	15690
(WY)	1991	1993	1978	1952	1990	1945	1947	1943	1989	1972	1977	2004
MIN	324	659	581	844	1725	3378	2255	1333	1430	597	490	449
(WY)	1964	1961	1961	1961	1963	1969	1946	1985	1949	1955	1954	1955

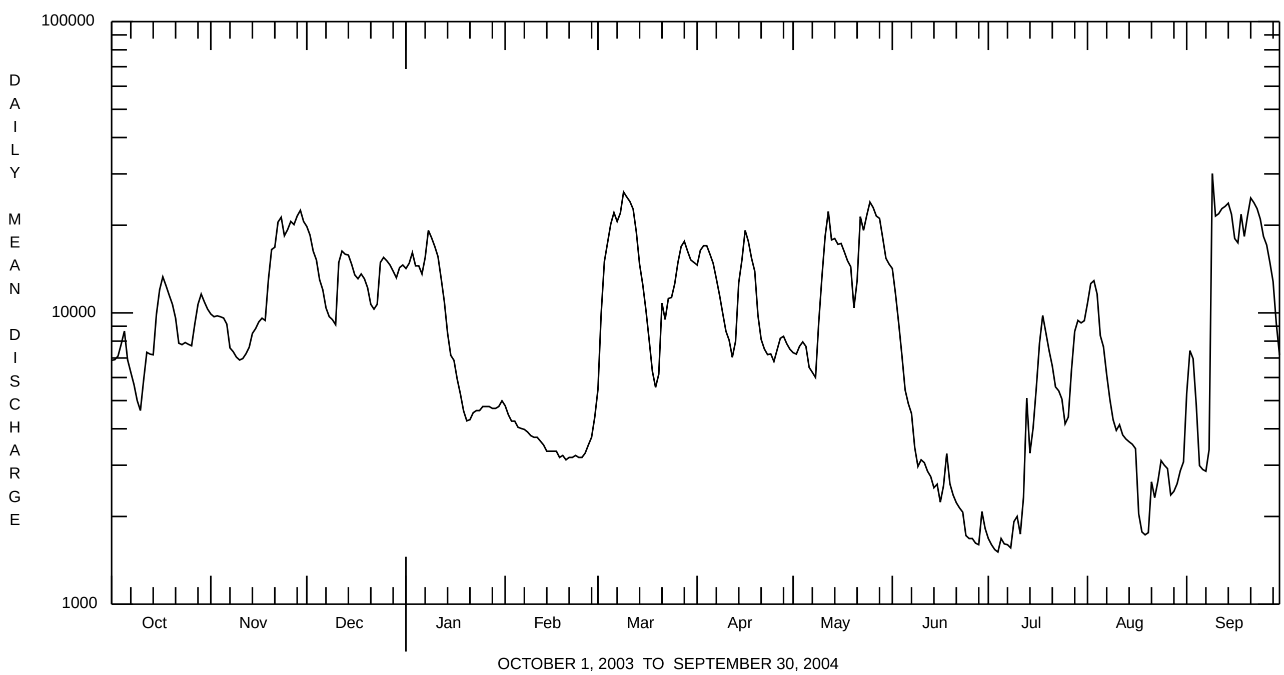
e Estimated.

OHIO RIVER MAIN STEM

03016000 ALLEGHENY RIVER AT WEST HICKORY, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1942 - 2004	
ANNUAL TOTAL	3232500		3608500			
ANNUAL MEAN	8856		9859		6696	
HIGHEST ANNUAL MEAN					9859	2004
LOWEST ANNUAL MEAN					3963	1999
HIGHEST DAILY MEAN	27600	Jul 28	30100	Sep 9	90800	Mar 8 1956
LOWEST DAILY MEAN	1640	Jul 9	1510	Jul 4	272	Oct 15 1963
ANNUAL SEVEN-DAY MINIMUM	1870	Jul 4	1590	Jul 2	276	Oct 14 1963
MAXIMUM PEAK FLOW			40600	Sep 9	**a**101000	Mar 8 1956
MAXIMUM PEAK STAGE			10.88	Sep 9	**b**17.20	Mar 8 1956
ANNUAL RUNOFF (CFSM)	2.42		2.69		1.83	
ANNUAL RUNOFF (INCHES)	32.85		36.68		24.86	
10 PERCENT EXCEEDS	19000		19400		15500	
50 PERCENT EXCEEDS	6960		8240		4360	
90 PERCENT EXCEEDS	2470		2620		1130	

a From rating curve extended above 99,300 ft^3/s.
b Maximum gage height, 17.83 ft., Jan. 25, 1964 (backwater from ice).



OHIO RIVER MAIN STEM

03016000 ALLEGHENY RIVER AT WEST HICKORY, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 240-288.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unf lab, µS/cm 25 degC (90095)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water unfltrd recoverable, mg/L (00916)	Magnesium, water, unfltrd recoverable, mg/L (00927)
OCT 2003													
29...	1030	1028	9813	11500	10.2	7.5	6.8	141	146	10.6	49	14.8	3.0
DEC													
30...	1030	1028	9813	14000	13.1	7.5	7.5	139	130	2.3	45	13.6	2.7
APR 2004													
13...	0830	1028	9813	7750	11.6	7.4	7.5	150	155	6.2	50	15.2	2.9
JUN													
09...	0820	1028	9813	2950	8.8	7.7	7.4	164	167	20.3	60	18.3	3.6
AUG													
10...	1130	1028	9813	3850	9.9	8.2	7.8	169	140	20.4	55	16.7	3.3

Date	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recoverable, µg/L (01105)	Copper, water, unfltrd recoverable, µg/L (01042)
OCT 2003													
29...	41	8.8	112	8	<.020	.33	<.040	.02	.026	.63	3.2	280	<10
DEC													
30...	33	9.5	78	12	<.020	.52	<.040	.02	.024	.78	2.2	290	<10
APR 2004													
13...	36	9.3	98	<2	<.020	.55	<.040	.02	.025	.99	2.2	<200	<10
JUN													
09...	45	9.4	100	<2	<.020	.41	<.040	.01	.018	.86	2.7	<200	<10
AUG													
10...	47	8.2	108	8	<.020	.30	<.040	.01	.026	.44	2.8	<200	10

Date	Iron, water, unfltrd recoverable, µg/L (01045)	Lead, water, unfltrd recoverable, µg/L (01051)	Manganese, water, unfltrd recoverable, µg/L (01055)	Nickel, water, unfltrd recoverable, µg/L (01067)	Zinc, water, unfltrd recoverable, µg/L (01092)
OCT 2003					
29...	590	<1.0	100	<50	<10
DEC					
30...	460	<1.0	30	<50	<10
APR 2004					
13...	340	<1.0	30	<50	<10
JUN					
09...	320	<1.0	40	<50	<10
AUG					
10...	220	<1.0	40	<50	30

OHIO RIVER MAIN STEM

03016000 ALLEGHENY RIVER AT WEST HICKORY, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 animal (approximate) subsamples.

Date	10/29/03
Benthic Macroinvertebrate	Count
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Hydrobiidae	
Amnicola	13
Physidae	
Physa	1
Planorbidae	
Gyraulus	1
Bivalvia (CLAMS)	
Veneroida	
Sphaeriidae	
Sphaerium	1
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Lumbriculida	
Lumbriculidae	1
Tubificida	
Naididae	16
Tubificidae	57
Arthropoda	
Crustacea	
Amphipoda (SCUDS)	
Gammaridae	
Gammarus	9
Isopoda (AQUATIC SOWBUGS)	
Asellidae	
Caecidotea	1
Insecta	
Ephemeroptera (MAYFLIES)	
Ephemerellidae	
Ephemerella	2
Eurylophella	7
Heptageniidae	
Stenonema	1
Odonata (DRAGONFLIES AND DAMSELFLIES)	
Gomphidae	
Dromogomphus	1
Ophiogomphus	1
Plecoptera (STONEFLIES)	
Capniidae	1
Taeniopterygidae	
Taeniopteryx	3
Trichoptera (CADDISFLIES)	
Hydroptilidae	
Hydroptila	3
Leptoceridae	
Oecetis	1
Limnephilidae	
Hydatophylax	11
Pycnopsyche	1
Uenoidae	
Neophylax	5

OHIO RIVER MAIN STEM

03016000 ALLEGHENY RIVER AT WEST HICKORY, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES--Continued

Date	10/29/03
Benthic Macroinvertebrate	Count
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
Dubiraphia	1
Macronychus	1
Hydrophilidae	
Berosus	3
Psephenidae (WATER PENNIES)	
Psephenus	3
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	52
Tipulidae (CRANE FLIES)	
Antocha	1
Total Organisms	198
Total Taxa	27

LAKES AND RESERVOIRS IN ALLEGHENY RIVER BASIN

03012520 ALLEGHENY RESERVOIR.--Lat 41°50'17", long 79°00'15", Warren County, Hydrologic Unit 05010001, in Allegheny National Forest, at control house at Kinzua Dam on Allegheny River, 3 mi upstream from Hemlock Run, and 7 mi east of Warren. DRAINAGE AREA, 2,180 mi^2. PERIOD OF RECORD, October 1965 to current year. Prior to October 1966 published as Allegheny River Reservoir. GAGE, water-stage recorder. Datum of gage is sea level. Reservoir is formed by a concrete gravity dam with a gated spillway and with an earthfill section, rockfaced, at right side. Storage began during construction and reservoir acted as retention basin from October 1965 to December 1966. Dam became operational in January 1967. Reservoir first reached minimum pool elevation during period of construction. Capacity, 1,180,000 acre-ft between elevations 1,205.0 ft (invert of low level sluices) and 1,365.0 ft (full pool). Dead storage is 128 acre-ft. Minimum pool elevation, 1,240 ft (capacity, 24,240 acre-ft). Winter low-water pool elevation, 1,292 ft (capacity, 239,780 acre-ft). Summer low-water pool elevation, 1,328 ft (capacity, 572,610 acre-ft). Storage to summer pool normally occurs during period April to May. Depletion of low-water storage for augmenting flow in Allegheny River normally occurs during period July to December. Figures given herein represent total contents. Reservoir is used for flood control, low-flow augmentation and water-quality control of Allegheny River and downstream rivers, power generation, and recreation. Records furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,121,120 acre-ft June 27,1972, elevation, 1,362.20 ft; minimum (after first filling), 113,310 acre-ft Jan. 26, 1968, elevation 1,268.68 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 696,300 acre-ft Sept. 20, elevation, 1,337.52 ft; minimum, 307,220 acre-ft Jan. 6, elevation 1,301.29 ft.

03013946 CHAUTAUQUA LAKE.--Lat 42°09'23", long 79°23'39", Chautauqua County, N.Y., Hydrologic Unit 05010002, 6 ft east of lake shore, 30 ft south of the intersection of Pauline Ave. and Lakeside Ave., 950 ft southeast of the ferry landing, at Bemus Point, N.Y. DRAINAGE AREA, 189 mi^2. PERIOD OF RECORD, November 1949 to current year. GAGE, water-stage recorder. Datum of gage is sea level. Prior to Dec. 21, 1956, non-recording gage at site near mouth of Big Inlet at datum 1,300.00 ft above National Geodetic Vertical Datum of 1929. Dec. 21, 1956 to Sept. 30, 1975, water-stage recorder at site at outlet of Muddy Creek at datum 1,300.00 ft above National Geodetic Vertical Datum of 1929. Lake is regulated at outlet by Warner Dam. Capacity of lake not determined; area of water surface, 20.98 mi^2. Figures of change in contents computed from surface area multiplied by change in stage.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 1,311.23 ft, Mar. 5, 1976; minimum, 1,306.20 ft, Dec. 16, 1998.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 1,309.74 ft, May 24; minimum, 1,306.81 ft, Feb. 20.

MONTHEND ELEVATION, IN FEET ABOVE SEA LEVEL, AND CONTENTS AT 2400 HRS, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (equivalent in ft^3/s)	Elevation (feet)	Contents acre-feet)	Change in contents (equivalent in ft^3/s)
	03012520 Allegheny Reservoir			03013946 Chautauqua Lake		
Sept. 30	1,325.51	543,480	---	1,308.53	--	--
Oct. 31	1,316.89	449,330	-1,530	1,308.36	--	-37
Nov. 30	1,309.60	378,650	-1,190	1,308.70	--	+76
Dec. 31	1,305.50	342,210	-593	1,308.63	--	-15
CAL YR 2003	--	--	+17	--	--	+10
Jan. 31	1,302.99	321,010	-345	1,307.40	--	-268
Feb. 29	1,303.67	326,650	+98	1,307.23	--	-40
Mar. 31	1,324.82	535,170	+3,390	1,308.67	--	+313
Apr. 30	1,329.36	589,240	+909	1,308.42	--	-56
May 31	1,329.50	590,970	+28	1,308.92	--	+109
June 30	1,328.80	582,350	-145	1,308.13	--	-178
July 31	1,330.40	602,180	+322	1,308.71	--	+126
Aug. 31	1,329.78	594,430	-126	1,308.30	--	-89
Sept. 30	1,325.59	544,080	-846	1,308.19	--	-25
WTR YR 2004	--	--	+1	--	--	-6

OIL CREEK BASIN

03020500 OIL CREEK AT ROUSEVILLE, PA
(Pennsylvania Water-Quality Network Station)

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.

WATER-DISCHARGE RECORDS

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 those for estimated daily discharges, which are poor. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a 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)
May 22	1900	7,820	8.62	Sept. 18	2400	10,200	9.66
Sept. 9	0900	*18,000	*11.51				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	363	383	1380	945	e248	e664	958	474	480	217	2840	308
2	293	380	1100	1470	e250	3020	2320	562	437	186	962	233
3	294	406	e769	2070	e255	3840	1960	805	401	166	565	192
4	550	368	e651	2050	e286	2530	1220	569	331	157	443	169
5	745	332	e544	2770	e338	2690	1000	509	291	208	470	154
6	450	327	e447	1800	e460	3010	828	477	279	192	350	140
7	346	315	e383	e913	e596	1730	734	419	260	153	287	131
8	294	288	e362	e702	e565	1510	656	367	238	143	248	453
9	259	252	e405	e587	e504	1120	601	355	228	132	220	12100
10	237	237	e497	e526	e459	900	522	401	614	123	265	6640
11	220	253	3780	e491	e421	802	463	1390	692	117	412	1460
12	204	461	2320	e482	e392	753	430	824	424	1120	258	766
13	191	580	1120	e455	e362	662	1080	515	294	1100	221	548
14	211	612	856	e429	e328	606	2600	415	396	567	217	434
15	1990	601	744	e403	e300	818	1410	436	564	1070	202	370
16	1550	772	661	e376	e279	808	893	700	389	1230	175	326
17	721	718	1400	e360	e265	675	712	464	826	664	162	5560
18	516	706	1110	e343	e260	627	612	927	1850	624	156	7070
19	427	1380	848	e326	e269	589	532	1400	705	733	157	2400
20	367	2200	747	e308	e297	1230	669	979	468	551	159	1070
21	321	1100	664	e300	e1050	3700	566	2270	358	371	467	761
22	317	816	627	e300	e1170	1700	731	6240	303	292	292	596
23	322	667	1160	e300	e984	1120	806	6200	276	264	201	498
24	291	602	3610	e300	e757	1100	765	3480	242	247	169	430
25	261	741	2400	e308	e615	1890	600	2190	236	213	152	387
26	313	583	1280	e317	e530	1980	921	1250	235	397	150	351
27	1150	526	935	e308	e469	2690	759	925	207	966	144	325
28	1010	1910	789	e312	e448	1700	619	827	190	603	298	303
29	643	2900	734	e298	e513	1130	525	739	433	399	623	284
30	518	1660	1580	e281	---	894	457	546	282	343	566	269
31	432	---	1440	e256	---	942	---	474	---	931	554	---
TOTAL	15806	23076	35343	21086	13670	47430	26949	38129	12929	14479	12385	44728
MEAN	510	769	1140	680	471	1530	898	1230	431	467	400	1491
MAX	1990	2900	3780	2770	1170	3840	2600	6240	1850	1230	2840	12100
MIN	191	237	362	256	248	589	430	355	190	117	144	131
CFSM	1.70	2.56	3.80	2.27	1.57	5.10	2.99	4.10	1.44	1.56	1.33	4.97
IN.	1.96	2.86	4.38	2.61	1.70	5.88	3.34	4.73	1.60	1.80	1.54	5.55

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1933 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	254	505	683	676	729	1089	928	600	385	237	175	216
MAX	1260	1560	1784	2385	2124	2574	1958	1706	1491	1118	786	1491
(WY)	1991	1986	1978	1937	1976	1936	1940	1953	1989	2003	1980	2004
MIN	34.5	65.0	80.9	108	158	400	266	129	75.2	38.3	38.8	34.5
(WY)	1964	1992	1961	1984	1987	2000	1935	1934	1934	1934	1934	1934

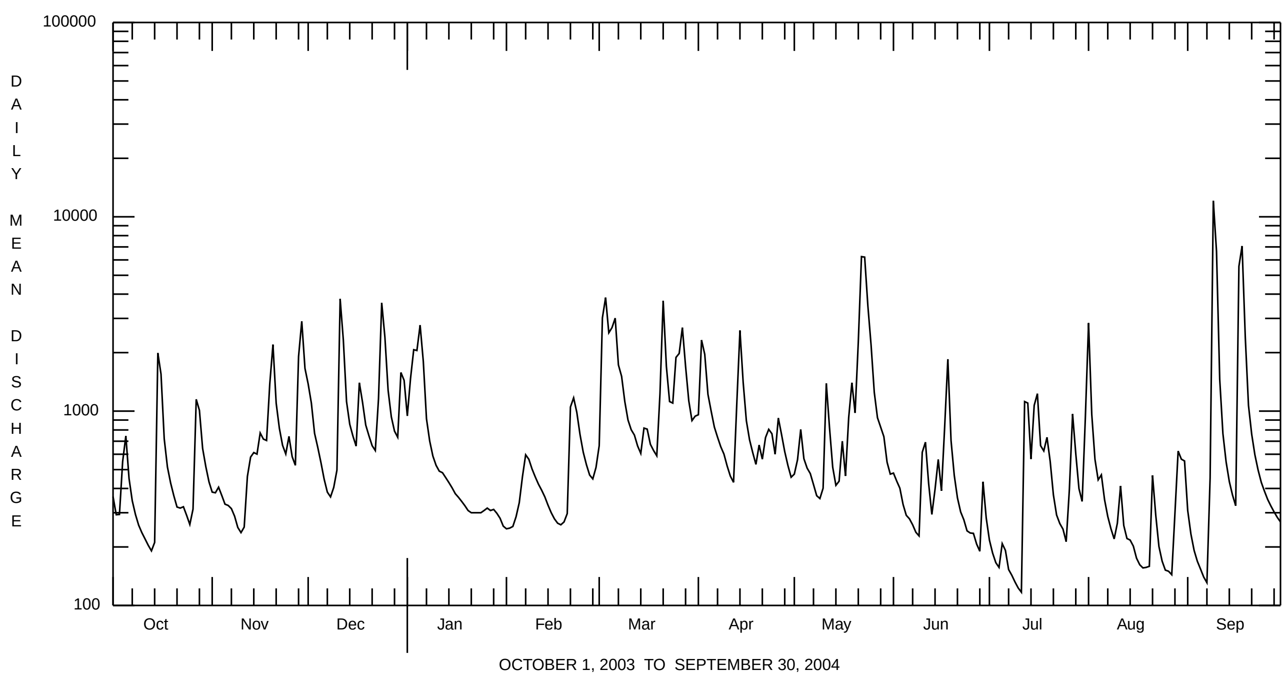
e Estimated.

OIL CREEK BASIN

03020500 OIL CREEK AT ROUSEVILLE, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1933 - 2004	
ANNUAL TOTAL	238724		306010			
ANNUAL MEAN	654		836		539	
HIGHEST ANNUAL MEAN					836	2004
LOWEST ANNUAL MEAN					303	1962
HIGHEST DAILY MEAN	13300	Jul 22	12100	Sep 9	16300	Jan 22 1959
LOWEST DAILY MEAN	113	Jul 4	117	Jul 11	23	Jul 26 1934
ANNUAL SEVEN-DAY MINIMUM	131	Jun 28	153	Jul 5	24	Sep 2 1934
MAXIMUM PEAK FLOW			**a**18000	Sep 9	**a**21000	Jan 22 1959
MAXIMUM PEAK STAGE			11.51	Sep 9	11.97	Jan 22 1959
INSTANTANEOUS LOW FLOW			111	Jul 11,12	**b**16	Oct 12 1993
ANNUAL RUNOFF (CFSM)	2.18		2.79		1.80	
ANNUAL RUNOFF (INCHES)	29.60		37.95		24.40	
10 PERCENT EXCEEDS	1290		1750		1220	
50 PERCENT EXCEEDS	398		517		295	
90 PERCENT EXCEEDS	173		221		62	

a From rating curve extended above 15,000 ft^3/s.
b Result of abnormal diversion.



03020500 OIL CREEK AT ROUSEVILLE, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 240-288.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unf lab, µS/cm 25 degC (90095)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water unfltrd recoverable, mg/L (00916)	Magnesium, water, unfltrd recoverable, mg/L (00927)
OCT 2003													
14...	1200	1028	9813	178	14.5	8.8	8.6	193	192	10.5	76	22.6	4.7
DEC													
17...	1125	1028	9813	1610	13.1	7.0	7.6	130	132	2.5	46	12.9	3.4
FEB 2004													
25...	1045	1028	9813	E615	13.7	6.8	7.5	152	155	.0	53	16.2	3.1
APR													
15...	1110	1028	9813	1370	12.3	7.5	7.3	98	101	7.0	34	10.0	2.2
JUN													
17...	1030	1028	9813	291	9.5	8.1	7.8	169	163	20.0	66	19.8	4.0
AUG													
19...	1015	1028	9813	159	9.1	8.0	8.1	209	204	20.0	79	23.8	4.8

Date	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Fluoride, water, unfltrd mg/L (00951)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recoverable, µg/L (01105)
OCT 2003													
14...	62	<.2	11.1	118	<2	<.020	<.04	<.040	<.01	.014	.27	2.6	<200
DEC													
17...	30	<.2	10.4	108	10	<.020	.65	<.040	.03	.034	.68	2.6	820
FEB 2004													
25...	35	<.2	10.7	92	18	<.020	.75	<.040	.01	.021	.91	2.0	<200
APR													
15...	26	<.2	9.0	74	16	<.020	.43	<.040	.02	.028	.62	3.0	380
JUN													
17...	53	<.2	9.3	126	4	.020	.29	<.040	.01	.026	.71	3.8	<200
AUG													
19...	66	<.2	10.2	98	4	<.020	.05	<.040	<.01	.015	.19	2.8	<200

Date	Copper, water, unfltrd recoverable, µg/L (01042)	Cyanide amenable to chlorination wat unf mg/L (00722)	Iron, water, unfltrd recoverable, µg/L (01045)	Lead, water, unfltrd recoverable, µg/L (01051)	Manganese, water, unfltrd recoverable, µg/L (01055)	Nickel, water, unfltrd recoverable, µg/L (01067)	Zinc, water, unfltrd recoverable, µg/L (01092)	Phenolic compounds, water, unfltrd µg/L (32730)
OCT 2003								
14...	<10	<1.00	220	<1.0	10	<50	<10	<5
DEC								
17...	<10	<1.00	980	1.0	50	<50	<10	<5
FEB 2004								
25...	<10	<1.00	320	<1.0	20	<50	<10	<5
APR								
15...	<10	<1.00	920	<1.0	40	<50	<10	<5
JUN								
17...	<10	<1.00	410	<1.0	20	<50	<10	<5
AUG								
19...	<10	<1.00	450	<1.0	20	<50	50	8

OIL CREEK BASIN

03020500 OIL CREEK AT ROUSEVILLE, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 animal (approximate) subsamples.

Date	10/20/03
Benthic Macroinvertebrate	Count
Nematoda (NEMATODES)	1
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Ancylidae	
Ferrissia	1
Arthropoda	
Acariformes	
Hydrachnidia (WATER MITES)	2
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	
Acentrella	3
Caenidae	
Caenis	2
Ephemerellidae	
Serratella	8
Heptageniidae	
Stenonema	9
Isonychiidae	
Isonychia	15
Plecoptera (STONEFLIES)	
Perlidae	
Acroneuria	1
Paragnetina	1
Taeniopterygidae	
Taeniopteryx	4
Trichoptera (CADDISFLIES)	
Helicopsychidae	
Helicopsyche	1
Hydropsychidae	
Cheumatopsyche	15
Hydropsyche	16
Hydroptilidae	
Hydroptila	1
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
Optioservus	4
Stenelmis	2
Psephenidae (WATER PENNIES)	
Psephenus	1
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	47
Empididae (DANCE FLIES)	
Chelifera	1
Hemerodromia	1
Tipulidae (CRANE FLIES)	
Antocha	10
Total Organisms	146
Total Taxa	22

FRENCH CREEK BASIN

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 northeast of Wattsburg, and 2.4 mi above confluence with West Branch French Creek.

DRAINAGE AREA.--92.0 mi^2.

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 (U.S. Army Corps of Engineers benchmark).

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a 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. 6	0400	2,970	8.39	July 31	2200	2,590	7.99
May 22	1230	2,570	7.97	Sept 9	2100	*4,790	***a**10.31
May 24	1300	2,990	8.42	Sept. 18	0700	2,940	8.36
July 16	0700	3,380	8.83				

a From peak-stage indicator.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	290	123	455	281	e96	e220	367	123	139	30	2120	55
2	498	131	341	510	e89	1530	1470	216	106	25	434	45
3	392	139	224	886	e88	1980	801	318	92	24	172	39
4	526	117	173	635	e94	1210	376	171	73	25	148	35
5	877	107	159	402	e94	2070	309	151	63	86	181	32
6	375	110	144	278	e107	2310	288	122	58	61	120	29
7	203	90	124	155	e149	646	331	113	54	146	93	27
8	147	77	105	e185	e188	447	259	114	49	315	77	49
9	117	68	102	e174	e168	301	211	1360	45	113	65	3900
10	98	64	226	e162	e156	246	162	606	47	63	78	2390
11	87	81	1850	e151	e141	244	129	779	44	45	119	311
12	73	178	732	e146	e131	206	115	354	41	857	79	150
13	67	660	278	e136	e122	179	447	186	37	903	66	100
14	110	387	204	e127	e113	173	1240	132	43	278	74	77
15	1670	305	185	e119	e108	323	510	168	72	1610	64	66
16	974	267	182	e116	e101	253	235	219	48	3140	56	61
17	246	268	815	e116	e94	175	175	135	77	1170	49	1070
18	162	239	381	e119	e88	179	149	168	108	314	51	2570
19	135	365	251	e108	e87	166	132	212	70	224	51	471
20	115	528	209	e102	e85	286	186	121	56	165	48	185
21	105	238	182	e96	e276	855	160	969	44	129	91	120
22	190	172	178	e94	e461	369	479	2070	38	115	76	93
23	264	139	818	e94	e343	259	284	941	35	102	54	75
24	147	154	2180	e94	e250	304	204	2600	31	89	45	65
25	115	262	893	e101	e183	1290	182	1200	30	71	39	57
26	181	179	364	e100	e148	1270	322	314	31	68	35	52
27	352	181	260	e94	e134	1530	220	209	28	277	33	48
28	238	1000	217	e88	e132	650	155	198	30	180	106	44
29	170	1430	237	e85	e146	318	126	157	45	109	157	42
30	136	595	918	e94	---	243	103	126	38	83	94	38
31	116	---	555	e101	---	337	---	117	---	941	72	---
TOTAL	9176	8654	13942	5949	4372	20569	10127	14669	1672	11758	4947	12296
MEAN	296	288	450	192	151	664	338	473	55.7	379	160	410
MAX	1670	1430	2180	886	461	2310	1470	2600	139	3140	2120	3900
MIN	67	64	102	85	85	166	103	113	28	24	33	27
CFSM	3.22	3.14	4.89	2.09	1.64	7.21	3.67	5.14	0.61	4.12	1.73	4.46
IN.	3.71	3.50	5.64	2.41	1.77	8.32	4.09	5.93	0.68	4.75	2.00	4.97

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	158	298	310	252	312	437	330	170	120	78.2	82.1	127
MAX	375	669	547	624	792	779	627	473	477	379	272	563
(WY)	1982	1986	1978	1998	1976	1979	1994	2004	1986	2004	1977	1977
MIN	13.3	31.0	81.2	79.3	75.9	139	157	38.2	14.6	6.58	5.93	4.84
(WY)	1992	1992	1990	1977	1987	2000	1976	1985	1991	1999	1991	1995

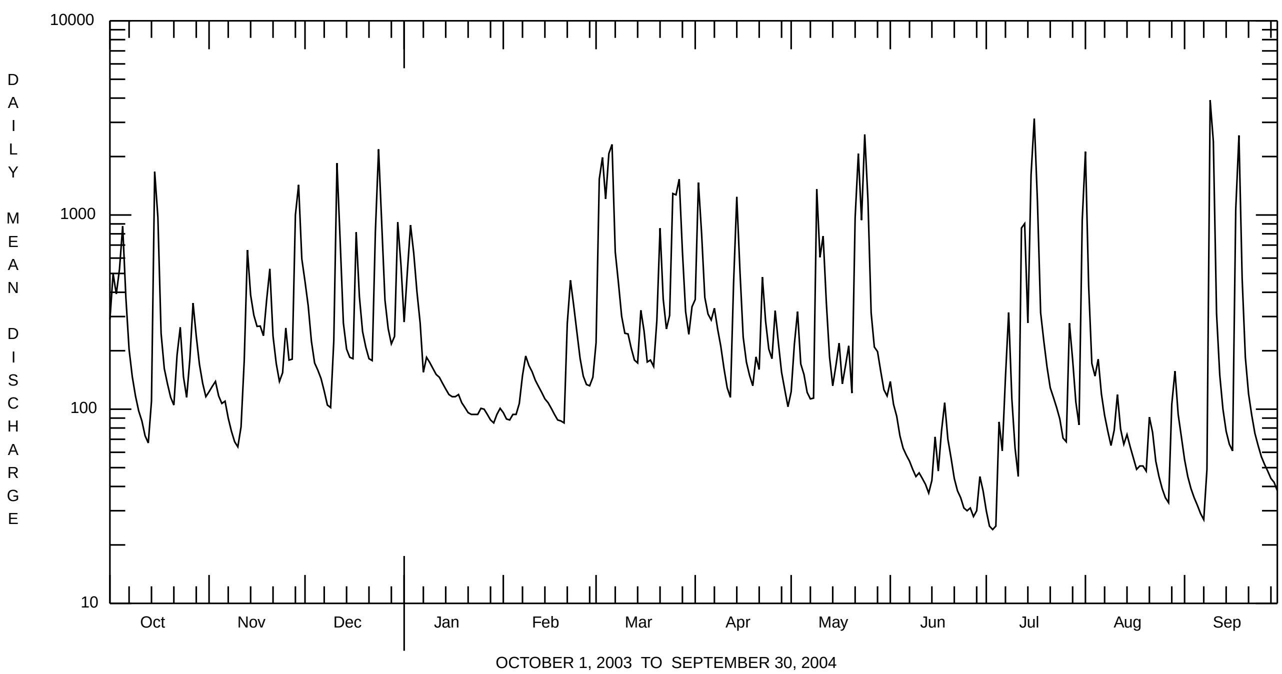
e Estimated.

FRENCH CREEK BASIN

03021350 FRENCH CREEK NEAR WATTSBURG, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1975 - 2004	
ANNUAL TOTAL	100517		118131			
ANNUAL MEAN	275		323		222	
HIGHEST ANNUAL MEAN					323	2004
LOWEST ANNUAL MEAN					136	1999
HIGHEST DAILY MEAN	2180	Dec 24	3900	Sep 9	**e**4900	Jan 19 1996
LOWEST DAILY MEAN	24	Jul 4,15	24	Jul 3	1.7	Aug 18 1999
ANNUAL SEVEN-DAY MINIMUM	28	Jun 28	31	Jun 28	2.4	Aug 14 1999
MAXIMUM PEAK FLOW			**b**4790	Sep 9	**b**6350	Sep 14 1979
MAXIMUM PEAK STAGE			**a**10.31	Sep 9	11.95	Sep 14 1979
INSTANTANEOUS LOW FLOW			21	Jul 4	1.5	Jul 31 1999**c**
ANNUAL RUNOFF (CFSM)	2.99		3.51		2.42	
ANNUAL RUNOFF (INCHES)	40.64		47.77		32.83	
10 PERCENT EXCEEDS	676		863		529	
50 PERCENT EXCEEDS	137		150		105	
90 PERCENT EXCEEDS	54		48		17	

a From peak-stage indicator.
b From rating curve extended above 4,500 ft^3/s.
c Also Aug. 18, 19, 1999.
e Estimated.



FRENCH CREEK BASIN

03023100 FRENCH CREEK AT MEADVILLE, PA
(Pennsylvania Water-Quality Network Station)

LOCATION.--Lat 41°37'57", long 80°09'35", Crawford County, Hydrologic Unit 05010004, on left bank 30 ft upstream from bridge on Mercer Street at Meadville, 300 ft downstream from Mill Run, 2,600 ft downstream from Cussewago Creek, at mile 30.5.

DRAINAGE AREA.--788 mi^2.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,058.83 ft above National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers benchmark). Prior to October 27, 1989, water-stage recorder at site 2,300 ft upstream at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated since October 1971 by Union City Reservoir 43 mi upstream, serving as a retarding basin, and since January 1974 by Woodcock Creek Lake (station 03022550) 9.0 mi upstream. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge 25,800 ft^3/s April 1947, gage height, 17.05 ft; maximum gage height 17.60 ft, January 1959 (backwater from ice), site and datum then in use.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3300	1580	5600	4020	e979	e2010	3360	1330	2150	490	4410	714
2	2850	1450	4830	4240	e994	e5090	5850	1950	2010	417	3830	551
3	2660	1430	3720	4980	e1030	e7340	6740	2920	1910	367	3310	447
4	2720	1380	2900	4750	e1040	e8160	5560	2810	1720	347	2540	364
5	3180	1290	2450	5030	e1040	7620	4450	2490	1550	358	2170	328
6	2740	1200	2280	4700	e1150	8080	3560	1910	1410	419	1840	300
7	2350	1130	2120	3560	e1340	7530	3210	1520	1200	418	1570	271
8	2100	1030	1940	2810	e1540	6250	3000	1340	871	391	1370	488
9	1900	927	1790	e2570	e1870	5000	2750	1210	691	669	1130	12500
10	1730	850	1770	e2320	e1730	4010	2490	1530	1630	659	866	16600
11	1600	864	3710	e2160	e1620	3370	2240	3600	1930	477	678	12200
12	1470	1340	5380	e2020	e1570	3030	2060	3800	1600	1180	613	7280
13	1300	2050	3980	e1970	e1370	2780	2560	2430	1040	1550	577	4320
14	1170	2550	2990	e1880	e1350	2570	4770	1960	1040	2190	607	3190
15	3850	2510	2520	e1710	e1260	2830	4670	1850	1540	2860	564	2650
16	5830	2340	2330	e1600	e1180	2980	3590	2130	1430	3950	495	2350
17	4550	2150	3140	e1430	e1100	2630	2710	1850	1660	4020	435	4050
18	3440	2020	3660	e1380	e1000	2450	2330	2390	2470	3630	394	8310
19	2580	2230	3000	e1320	e922	2350	2160	2370	2050	3750	424	8580
20	2040	3490	2590	e1230	e922	3170	2350	2020	1360	2960	431	5880
21	1800	3130	2370	e1210	e1810	6140	2260	4640	885	2290	461	3950
22	1850	2460	2280	e1180	e2640	5850	3000	10000	652	1910	576	2880
23	2060	2070	3500	e1130	e3380	4330	3300	13700	572	1760	518	2370
24	1980	1800	7990	e1090	e3010	3780	3100	10800	504	1740	421	1940
25	1790	1790	8910	e1090	e2670	4780	2430	7750	460	1600	364	1770
26	1690	1830	6610	e1120	e2350	5460	2480	5870	448	1520	326	1650
27	2310	1630	4620	e1100	e1940	5900	2390	4490	427	1620	315	1520
28	2670	2660	3510	e1120	e1710	5410	2060	3950	421	1680	661	1410
29	2460	5900	2970	e1100	e1710	3990	1780	4030	521	1420	1340	1260
30	2260	6130	4110	e1040	---	3120	1460	2680	625	1230	1320	994
31	1890	---	4910	e979	---	3190	---	2250	---	1700	1030	---
TOTAL	76120	63211	114480	67839	46227	141200	94670	113570	36777	49572	35586	111117
MEAN	2455	2107	3693	2188	1594	4555	3156	3664	1226	1599	1148	3704
MAX	5830	6130	8910	5030	3380	8160	6740	13700	2470	4020	4410	16600
MIN	1170	850	1770	979	922	2010	1460	1210	421	347	315	271
CFSM	3.12	2.67	4.69	2.78	2.02	5.78	4.00	4.65	1.56	2.03	1.46	4.70
IN.	3.59	2.98	5.40	3.20	2.18	6.67	4.47	5.36	1.74	2.34	1.68	5.25

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1060	1753	2070	2248	2121	2587	2497	1653	920	597	536	905
MAX	3181	3205	3693	4233	4190	4555	4023	3664	2659	1836	1771	3704
(WY)	1991	1997	2004	1998	1990	2004	1994	2004	1989	2003	2000	2004
MIN	104	154	510	815	757	1313	1556	451	155	134	81.3	52.6
(WY)	1992	1992	1999	2001	1993	2000	1995	1993	1991	1998	1998	1991

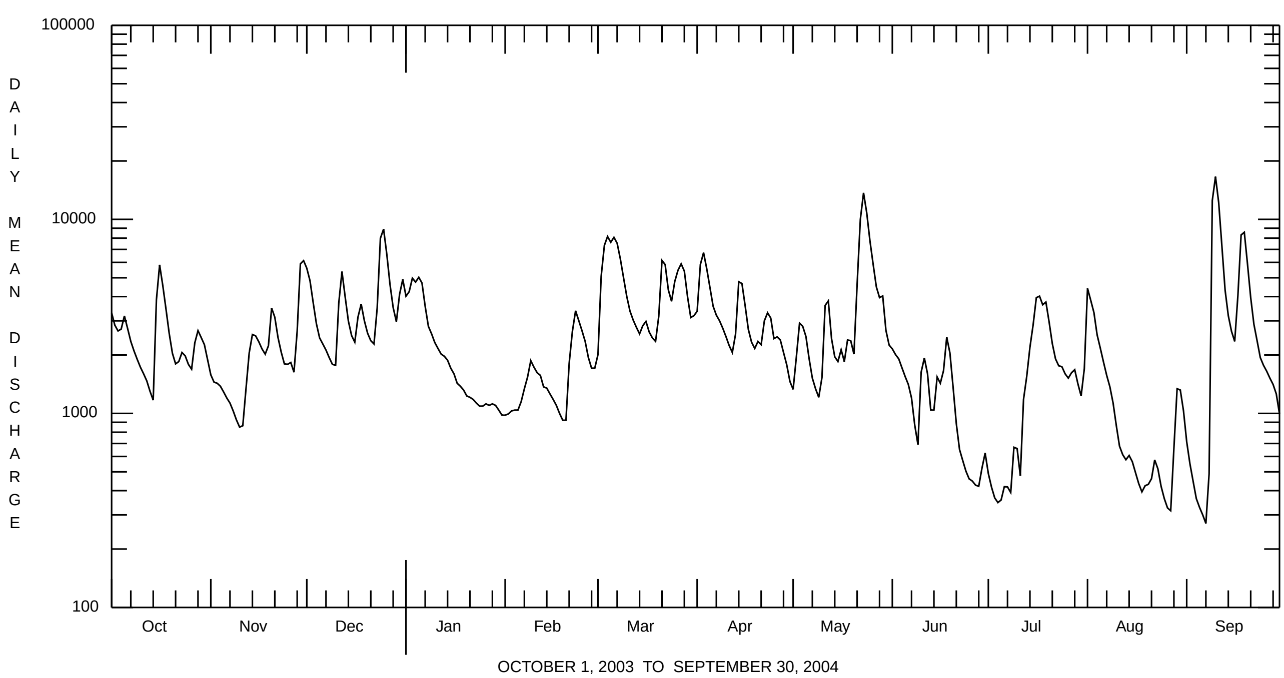
e Estimated.

FRENCH CREEK BASIN

03023100 FRENCH CREEK AT MEADVILLE, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1989 - 2004	
ANNUAL TOTAL	761450		950369			
ANNUAL MEAN	2086		2597		1575	
HIGHEST ANNUAL MEAN					2597	2004
LOWEST ANNUAL MEAN					824	1999
HIGHEST DAILY MEAN	8910	Dec 25	16600	Sep 10	16600	Sep 10 2004
LOWEST DAILY MEAN	285	Jul 4	271	Sep 7	37	Sep 22 1991
ANNUAL SEVEN-DAY MINIMUM	319	Jun 29	388	Jul 2	42	Sep 19 1991
MAXIMUM PEAK FLOW			**a**17400	Sep 10	**a**17400	Sep 10 2004
MAXIMUM PEAK STAGE			16.35	Sep 10	16.35	Sep 10 2004
INSTANTANEOUS LOW FLOW			257	Sep 7,8	37	Sep 22 1991
ANNUAL RUNOFF (CFSM)	2.65		3.30		2.00	
ANNUAL RUNOFF (INCHES)	35.95		44.87		27.17	
10 PERCENT EXCEEDS	4130		5010		3580	
50 PERCENT EXCEEDS	1730		2050		1100	
90 PERCENT EXCEEDS	563		577		135	

a From rating curve extended above 11,400 ft^3/s.



03023100 FRENCH CREEK AT MEADVILLE, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 240-288.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unf lab, µS/cm 25 degC (90095)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water unfltrd recoverable, mg/L (00916)	Magnesium, water, unfltrd recoverable, mg/L (00927)
OCT 2003													
21...	1435	1028	9813	1780	10.2	7.3	7.3	201	201	10.5	90	27.4	5.2
DEC													
15...	1530	1028	9813	2480	14.2	7.1	7.5	188	190	1.0	71	21.9	4.0
FEB 2004													
23...	1515	1028	9813	E3380	13.3	7.3	7.2	232	237	.3	74	22.3	4.3
APR													
13...	1500	1028	9813	2500	12.0	7.7	7.7	222	225	7.0	83	25.5	4.6
JUN													
15...	1445	1028	9813	1540	8.8	7.5	7.8	230	225	21.0	89	26.8	5.2
AUG													
17...	1455	1028	9813	432	10.4	8.2	8.1	300	293	20.0	120	37.3	6.9

Date	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recoverable, µg/L (01105)	Copper, water, unfltrd recoverable, µg/L (01042)
OCT 2003													
21...	69	9.5	136	14	<.020	.42	<.040	.02	.034	1.0	5.9	280	<10
DEC													
15...	56	10.3	138	4	.060	.72	<.040	.04	.040	1.0	3.7	460	<10
FEB 2004													
23...	55	10.6	144	46	.120	1.20	<.040	.04	.053	1.6	3.3	830	<10
APR													
13...	63	10.9	128	<2	.060	.73	<.040	.02	.032	1.2	3.0	300	<10
JUN													
15...	78	10.1	158	36	.060	.57	<.040	.01	.066	1.2	5.5	1300	10
AUG													
17...	104	--	212	10	<.020	.53	<.200	.01	.024	.75	3.5	<200	<10

Date	Iron, water, unfltrd recoverable, µg/L (01045)	Lead, water, unfltrd recoverable, µg/L (01051)	Manganese, water, unfltrd recoverable, µg/L (01055)	Nickel, water, unfltrd recoverable, µg/L (01067)	Zinc, water, unfltrd recoverable, µg/L (01092)
OCT 2003					
21...	720	<1.0	60	<50	90
DEC					
15...	750	30	50	<50	<10
FEB 2004					
23...	1500	1.4	100	<50	<10
APR					
13...	610	<1.0	50	<50	<10
JUN					
15...	1800	1.9	110	<50	70
AUG					
17...	370	<1.0	50	<50	70

FRENCH CREEK BASIN

03023100 FRENCH CREEK AT MEADVILLE, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 animal (approximate) subsamples.

Date	10/28/03
Benthic Macroinvertebrate	Count
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Ancylidae	
Ferrissia	2
Hydrobiidae	
Amnicola	1
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Lumbriculida	
Lumbriculidae	2
Arthropoda	
Crustacea	
Amphipoda (SCUDS)	
Gammaridae	
Gammarus	4
Isopoda (AQUATIC SOWBUGS)	
Asellidae	
Caecidotea	17
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	
Baetis	2
Caenidae	
Caenis	1
Ephemerellidae	
Serratella	6
Heptageniidae	
Stenonema	11
Isonychiidae	
Isonychia	7
Tricorythidae	
Tricorythodes	1
Odonata (DRAGONFLIES AND DAMSELFLIES)	
Coenagrionidae	
Argia	1
Plecoptera (STONEFLIES)	
Capniidae	1
Perlidae	1
Taeniopterygidae	
Taeniopteryx	3

FRENCH CREEK BASIN

03023100 FRENCH CREEK AT MEADVILLE, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES--Continued

Date	10/28/03
Benthic Macroinvertebrate	Count
Trichoptera (CADDISFLIES)	
Brachycentridae	
Brachycentrus	7
Micrasema	1
Glossosomatidae	
Protoptila	1
Hydropsychidae	
Cheumatopsyche	11
Hydropsyche	1
Leptoceridae	
Oecetis	3
Philopotamidae	
Chimarra	1
Polycentropodidae	
Neureclipsis	1
Uenoidae	
Neophylax	1
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
Dubiraphia	1
Optioservus	1
Stenelmis	3
Psephenidae (WATER PENNIES)	
Psephenus	1
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	13
Simuliidae (BLACK FLIES)	
Simulium	2
Total Organisms	108
Total Taxa	30

FRENCH CREEK BASIN

03024000 FRENCH CREEK AT UTICA, PA

LOCATION.--Lat 41°26'15", long 79°57'22", Venango County, Hydrologic Unit 05010004, on right bank at downstream side of bridge on SR 3017 at Utica and 2,000 ft upstream from Mill Creek.

DRAINAGE AREA.--1,028 mi^2.

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 those for estimated daily discharges, which are poor. Flow regulated since July 1970 by Union City Reservoir (station 03021518) 50 mi upstream, serving as a retarding basin, and since January 1974 by Woodcock Creek Lake (station 03022550), 25 mi upstream. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1912, 15.7 ft in March 1913, discharge about 36,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3820	1980	5920	4630	e1090	e2600	4160	1650	2800	779	5530	1010
2	3400	1780	5310	4890	e1100	5650	6100	2110	2600	653	4590	797
3	3110	1700	4390	5530	e1110	8220	7360	3220	2440	560	3900	676
4	3290	1640	3600	5630	e1140	9430	6700	3260	2170	499	3350	558
5	3620	1540	3020	6500	e1200	8740	5490	3000	1940	509	2820	487
6	3270	1460	2770	5600	e1280	8640	4490	2450	1740	507	2440	438
7	2790	1360	2570	4550	e1500	8440	3970	1950	1530	567	2030	406
8	2480	1260	2350	3740	e1730	7320	3680	1690	1220	514	1740	563
9	2220	1150	2150	e3100	e1950	5870	3410	1510	956	628	1490	11100
10	1990	1060	2200	e2860	e1790	4800	3090	1600	1570	813	1250	14900
11	1810	1050	4270	e2630	e1670	4090	2780	3010	2730	698	1020	15300
12	1650	1420	5300	e2430	e1630	3680	2550	4160	2260	3260	873	11500
13	1470	2140	4620	e2260	e1440	3390	3020	2930	1600	2790	804	6630
14	1410	2740	3650	e2100	e1400	3150	4980	2290	1420	2720	809	4690
15	3830	2770	3040	e1940	e1320	3300	5230	2100	2000	3250	787	3870
16	5510	2640	2790	e1740	e1220	3470	4350	2390	1980	4130	704	3340
17	4960	2430	3500	e1540	e1120	3220	3510	2160	1970	4390	619	6310
18	4020	2270	4050	e1540	e1060	2960	2940	2780	3530	4370	556	9450
19	3240	2690	3570	e1460	e979	2850	2660	2940	2930	4440	544	9050
20	2550	3860	3100	e1340	e987	3620	2760	2530	2170	3740	587	7570
21	2210	3670	2820	e1300	e2010	6580	2700	7010	1580	3020	798	5280
22	2120	2990	2710	e1290	e2830	6440	3140	9810	1230	2460	717	4020
23	2350	2540	3460	e1240	e3550	5340	3710	12700	1080	2170	723	3330
24	2280	2250	7400	e1180	e3230	4620	3610	14000	958	2040	602	2710
25	2090	2140	8820	e1190	e2930	5170	2960	10800	885	1860	507	2360
26	2020	2170	8090	e1240	e2570	5840	2950	7780	816	1930	452	2140
27	2850	1970	5620	e1230	e2200	6780	2900	5850	749	2010	427	1940
28	3130	3110	4420	e1220	e1870	6320	2530	4790	690	2010	1030	1770
29	2940	5660	3700	e1190	e1870	5020	2200	4890	764	1710	1430	1580
30	2730	6280	4570	e1130	---	4080	1850	3720	856	1560	1700	1360
31	2370	---	5220	e1100	---	3960	---	3040	---	2020	1350	---
TOTAL	87530	71720	129000	79320	49776	163590	111780	134120	51164	62607	46179	135135
MEAN	2824	2391	4161	2559	1716	5277	3726	4326	1705	2020	1490	4504
MAX	5510	6280	8820	6500	3550	9430	7360	14000	3530	4440	5530	15300
MIN	1410	1050	2150	1100	979	2600	1850	1510	690	499	427	406
CFSM	2.75	2.33	4.05	2.49	1.67	5.13	3.62	4.21	1.66	1.96	1.45	4.38
IN.	3.17	2.60	4.67	2.87	1.80	5.92	4.04	4.85	1.85	2.27	1.67	4.89

e Estimated.

03024000 FRENCH CREEK AT UTICA, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 2004, BY WATER YEAR (WY) (SINCE REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1284	2231	2773	2503	2867	3602	3103	1860	1281	871	748	1025
MAX	3954	6309	6029	5426	6394	5778	5101	4326	4659	2629	3297	4504
(WY)	1991	1986	1978	1993	1976	1977	1994	2004	1986	1987	1980	2004
MIN	121	176	583	869	629	1622	1655	452	209	192	112	71.7
(WY)	1992	1992	1999	1977	1987	2000	1976	1985	1991	1995	1991	1995

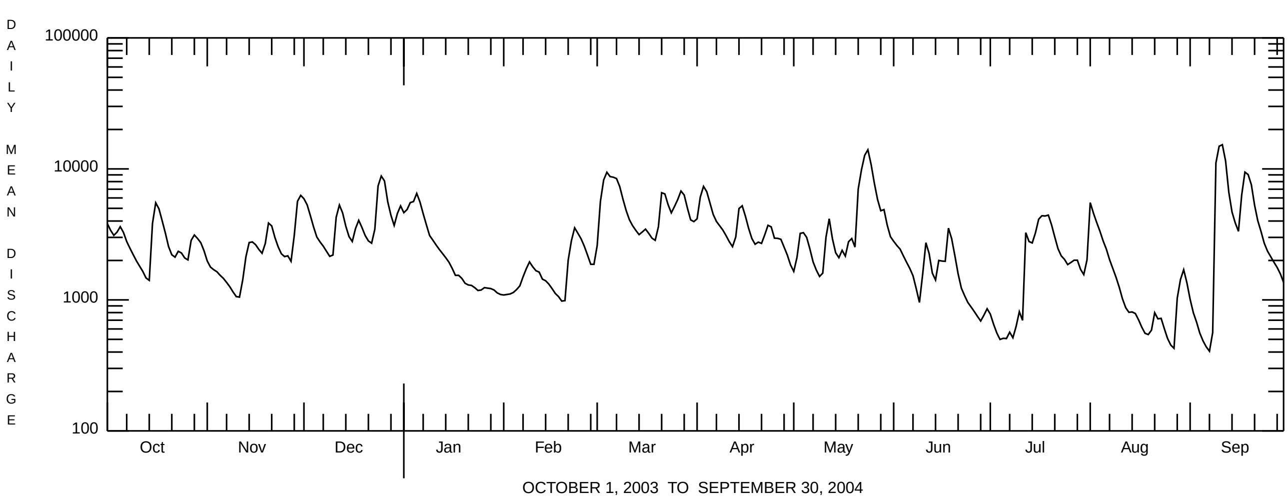
SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1974 - 2004	
ANNUAL TOTAL	914444		1121921			
ANNUAL MEAN	2505		3065		2007	
HIGHEST ANNUAL MEAN					3065	2004
LOWEST ANNUAL MEAN					1044	1999
HIGHEST DAILY MEAN	10900	Jul 22	15300	Sep 11	18100	Feb 21 1981
LOWEST DAILY MEAN	470	Sep 15	406	Sep 7	60	Sep 15 1991
ANNUAL SEVEN-DAY MINIMUM	533	Jun 30	541	Jul 3	67	Sep 7 1995
MAXIMUM PEAK FLOW			16200	Sep 11	18400	Feb 21 1981
MAXIMUM PEAK STAGE			10.96	Sep 11	11.64	Feb 21 1981
ANNUAL RUNOFF (CFSM)	2.44		2.98		1.95	
ANNUAL RUNOFF (INCHES)	33.09		40.60		26.53	
10 PERCENT EXCEEDS	4720		5840		4520	
50 PERCENT EXCEEDS	2150		2550		1370	
90 PERCENT EXCEEDS	796		815		238	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1933 - 1973, BY WATER YEAR (WY) (PRIOR TO REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	695	1506	2238	2590	2713	3915	3147	1684	953	555	408	440
MAX	3744	3983	4471	7284	5894	7359	6688	4160	3717	2015	1907	2148
(WY)	1946	1971	1951	1937	1938	1964	1947	1956	1947	1967	1956	1958
MIN	69.5	183	227	403	523	1768	575	349	124	77.1	77.8	80.4
(WY)	1964	1954	1961	1961	1934	1937	1946	1934	1934	1934	1954	1954

SUMMARY STATISTICS	WATER YEARS 1933 - 1973	
ANNUAL MEAN	1751	
HIGHEST ANNUAL MEAN	2539	1956
LOWEST ANNUAL MEAN	1146	1934
HIGHEST DAILY MEAN	23000	Mar 6 1964
LOWEST DAILY MEAN	45	Sep 1 1933
ANNUAL SEVEN-DAY MINIMUM	48	Aug 27 1933
MAXIMUM PEAK FLOW	**a**23800	Mar 7 1964
MAXIMUM PEAK STAGE	**b**13.2	Mar 7 1964
INSTANTANEOUS LOW FLOW	43	Jul 30 1934
ANNUAL RUNOFF (CFSM)	1.70	
ANNUAL RUNOFF (INCHES)	23.15	
10 PERCENT EXCEEDS	4370	
50 PERCENT EXCEEDS	940	
90 PERCENT EXCEEDS	147	

a From rating curve extended above 20,700 ft^3/s.
b From floodmark in gage well.



FRENCH CREEK BASIN

LAKES AND RESERVOIRS IN FRENCH CREEK BASIN

03021518 UNION CITY RESERVOIR.--Lat 41°55'13", long 79°53'59", Erie County, Hydrologic Unit 05010004, in tower at left center of Union City Dam on French Creek, 1.4 mi upstream from South Branch French Creek, and 3.2 mi northwest of Union City. DRAINAGE AREA, 220 mi^2. PERIOD OF RECORD, July 1970 to current year. GAGE, water-stage recorder. Datum of gage is sea level (U.S. Army Corps of Engineers bench mark). Reservoir is formed by earthfill dam with sidehill, concrete-lined spillway completed September 1971. Dam became operational in July 1970. Usable capacity 47,650 acre-ft between elevation 1,210.00 ft (invert of inlet of conduit) and 1,278.00 ft (crest of spillway). No dead storage. Figures given herein represent usable contents. Reservoir is used for flood control only. Records furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 34,840 acre-ft, Feb. 21, 1981, elevation, 1,271.80 ft; minimum, 0.0 acre-ft, Aug. 31, 1995, elevation, 1,211.08 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 20,000 acre-ft, Mar. 7, elevation, 1,262.77 ft; minimum, 26 acre-ft, Aug. 27, elevation, 1,214.94 ft.

03022550 WOODCOCK CREEK LAKE.--Lat 41°41'50", long 80°06'06",Crawford County, Hydrologic Unit 05010004, in tower on right center and 200 ft upstream from center line of Woodcock Creek Dam on Woodcock Creek, 2.8 mi southeast of Saegerstown and 3.5 mi upstream from mouth. DRAINAGE AREA, 45.6 mi^2. PERIOD OF RECORD, January 1974 to current year. GAGE, water-stage recorder. Datum of gage is sea level (U.S. Army Corps of Engineers benchmark). Lake is formed by a rolled earth embankment with an impervious core. Storage began in January 1974. Total storage 20,000 acre-ft between elevation 1,138 ft inlet invert and 1,209 ft crest of spillway. Figures given herein represent usable contents. Lake is used for flood control and recreation. Records furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 12,690 acre-ft, June 13, 1986, elevation, 1,198.18 ft; minimum (after first filling) 676 acre-ft, Nov. 1, 1984, elevation, 1,159.82 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 10,580 acre-ft, Sept. 11, elevation, 1,194.31 ft; minimum, 1,150 acre-ft, Feb. 12, elevation, 1,164.03 ft.

MONTHEND ELEVATION, IN FEET ABOVE SEA LEVEL, AND CONTENTS AT 2400 HRS, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (equivalent in ft^3/s)	Elevation (feet)	Contents (acre-feet)	Change in contents (equivalent in ft^3/s)
	03021518 Union City Reservoir			03022550 Woodcock Creek Lake		
Sept. 30	1,246.21	6,390	---	1,183.56	5,830	---
Oct. 31	1,223.76	502	-96	1,176.87	3,680	-35
Nov. 30	1,248.52	7,580	+119	1,174.33	3,020	-11
Dec. 31	1,251.80	9,490	+31	1,168.90	1,900	-18
CAL YR 2003	--	--	+8.2	--	--	+0.14
Jan. 31	1,219.24	157	-152	1,164.95	1,270	-10
Feb. 29	1,225.00	634	+8.3	1,165.77	1,390	+2.1
Mar. 31	1,253.79	10,820	+166	1,179.17	4,350	+48
Apr. 30	1,221.91	334	-176	1,181.59	5,130	-73
May 31	1,251.16	9,090	+142	1,181.60	5,140	+0.16
June 30	1,215.75	40	-152	1,181.68	5,160	+0.34
July 31	1,233.71	2,080	+33	1,182.83	5,560	+6.5
Aug. 31	1,217.16	73	-33	1,181.89	5,240	-5.2
Sept. 30	1,216.33	52	-0.35	1,181.24	5,020	-3.7
WTR YR 2004	--	--	-8.7	--	--	-1.1

OHIO RIVER MAIN STEM

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, at mile 124.4.

DRAINAGE AREA.--5,982 mi^2.

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 those for estimated daily discharges, which are poor. Flow regulated since December 1940 by Tionesta Lake, since November 1949 by Chautauqua Lake (station 03013946), since October 1965 by Allegheny Reservoir (station 03012520), since July 1970 by Union City Reservoir (station 03021518), and since January 1974 by Woodcock Creek Lake (station 03022550). Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

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, discharges about, 200,000 ft^3/s and 190,000 ft^3/s, respectively, from rating curve extended above 111,000 ft^3/s. Maximum discharge since at least 1864 is that of Mar. 17, 1865.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12400	14100	31600	23100	e5690	11400	24700	11500	19300	3740	25800	8000
2	11700	13600	29500	24500	e6210	20700	27900	11700	17500	3430	24100	10100
3	11300	13400	25500	28000	e5940	32300	29800	13400	14700	3220	22400	9340
4	12600	13000	22900	27800	e5940	34400	29400	13500	12200	3100	19100	7110
5	14400	12700	19500	30600	e6470	36700	26900	13100	9830	3100	14900	5150
6	12900	12400	17900	26400	e6580	39700	24500	11400	8590	3110	12000	4550
7	11300	10900	15900	25600	e6670	36600	21900	10300	7970	2910	10200	4360
8	10200	10100	14700	28900	e6670	37400	19100	9620	7040	2800	8610	5100
9	8870	9640	14100	28100	e6670	39600	16900	10500	5830	2710	7800	58300
10	7870	9240	14100	25200	e6670	37700	15100	15800	6640	3550	6990	54100
11	8050	9230	25200	24400	e6700	35200	13900	22100	8780	3240	7190	45100
12	9440	10300	28900	21100	e6730	32200	12500	29000	7640	8540	6280	40600
13	9650	11800	26100	18000	e6730	27600	14100	24900	6480	11000	5980	37500
14	9460	13400	24900	14600	e6510	22400	23100	23200	6430	9180	5980	33900
15	16000	14200	22700	e11500	e6150	20100	25300	22100	6960	11300	5850	32200
16	20400	14900	21000	e9600	e5850	18100	28700	22700	6480	13600	5650	26100
17	21100	14900	21000	e8000	e5610	15600	27300	20900	6260	15500	4770	33500
18	19100	14700	21700	e7340	e5410	13200	23600	20800	11400	17400	3230	54700
19	17300	18000	20300	e6700	e5290	11800	21100	21700	8360	17200	3010	37100
20	15400	29100	19100	e6300	e5390	12500	16400	17800	7020	13900	3010	37100
21	14200	25500	17000	e5850	8710	24300	13700	27900	6030	11500	5680	38900
22	11900	28900	16200	e5720	12400	22600	13400	41800	5360	9640	5100	35800
23	11600	30800	17400	e5560	12700	21500	13900	45400	4990	8400	5260	32500
24	11600	27700	27000	e5310	e11600	21300	13900	45100	4530	9270	6170	29100
25	11400	26400	29400	e5440	e10700	23500	12600	45200	4060	7990	6450	24400
26	11300	27700	28300	e5500	e9860	26900	13100	40000	3770	8570	6170	21500
27	14300	26000	25300	e5560	e9410	31200	13900	35000	3420	13100	5700	18900
28	16700	29700	22800	e5560	e9410	31500	13700	30900	3230	14800	4950	16600
29	16900	36700	21000	e5750	e9580	29000	12800	29100	3780	16000	6480	13200
30	16100	33300	23100	e5690	---	26100	12000	24600	3970	16500	7260	10500
31	15000	---	24800	e5690	---	25200	---	21000	---	18500	7660	---
TOTAL	410440	562310	688900	457370	218250	818300	575200	732020	228550	286800	269730	785310
MEAN	13240	18740	22220	14750	7526	26400	19170	23610	7618	9252	8701	26180
MAX	21100	36700	31600	30600	12700	39700	29800	45400	19300	18500	25800	58300
MIN	7870	9230	14100	5310	5290	11400	12000	9620	3230	2710	3010	4360
CFSM	2.21	3.13	3.71	2.47	1.26	4.41	3.21	3.95	1.27	1.55	1.45	4.38
IN.	2.55	3.50	4.28	2.84	1.36	5.09	3.58	4.55	1.42	1.78	1.68	4.88

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1915 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	5597	10000	13400	13770	13580	20810	19300	12280	7472	4579	3380	3843
MAX	22900	26030	33270	41420	32340	49850	49920	30070	24820	21440	13830	26180
(WY)	1991	1986	1928	1937	1976	1936	1940	1943	1989	1972	1977	2004
MIN	515	771	1125	1732	2929	6383	4203	2554	1106	555	414	435
(WY)	1931	1931	1961	1961	1963	1969	1946	1985	1934	1934	1930	1930

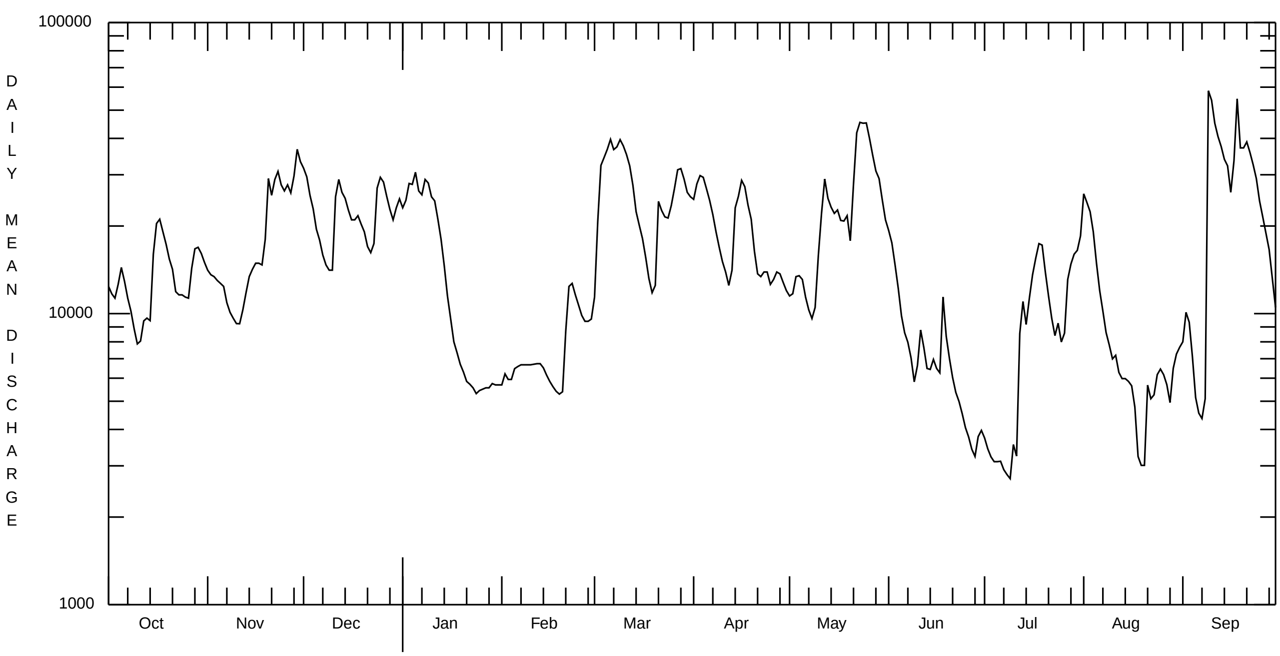
e Estimated.

OHIO RIVER MAIN STEM

03025500 ALLEGHENY RIVER AT FRANKLIN, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1915 - 2004	
ANNUAL TOTAL	5216770		6033180			
ANNUAL MEAN	14290		16480		10650	
HIGHEST ANNUAL MEAN					16480	2004
LOWEST ANNUAL MEAN					6482	1931
HIGHEST DAILY MEAN	63100	Jul 22	58300	Sep 9	130000	Mar 13 1920
LOWEST DAILY MEAN	2970	Jul 9	2710	Jul 9	335	Aug 21 1930
ANNUAL SEVEN-DAY MINIMUM	3150	Jul 3	2990	Jul 3	351	Aug 17 1930
MAXIMUM PEAK FLOW			79700	Sep 9	**a**138000	Mar 13 1920
MAXIMUM PEAK STAGE			15.64	Sep 9	**b**20.65	Mar 13 1920
ANNUAL RUNOFF (CFSM)	2.39		2.76		1.78	
ANNUAL RUNOFF (INCHES)	32.44		37.52		24.19	
10 PERCENT EXCEEDS	29300		30800		25200	
50 PERCENT EXCEEDS	11700		13700		6760	
90 PERCENT EXCEEDS	4540		5480		1450	

a From rating curve extended above 111,000 ft^3/s.
b Maximum gage height observed, 26.0 ft, Feb. 27, 1917 (backwater from ice), also Feb. 26, 1926 (backwater from ice).



OCTOBER 1, 2003 TO SEPTEMBER 30, 2004

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 those for estimated daily discharges, which are poor. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a 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. 19	1600	308	4.18	Sept. 9	0700	*360	*4.31
Mar. 6	0500	209	3.84	Sept. 17	2215	301	4.16

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	9.0	26	22	e4.2	8.9	28	15	27	2.5	30	6.3
2	11	9.0	23	36	e3.6	26	28	17	20	2.3	21	5.6
3	10	8.6	19	60	e3.8	44	26	17	18	2.2	17	5.1
4	18	8.0	17	61	e3.4	51	24	13	14	2.1	15	4.6
5	16	11	16	83	e3.4	107	20	14	13	3.4	14	4.1
6	12	12	14	57	e3.9	162	17	13	12	2.3	11	3.8
7	11	10	13	e28	e9.8	83	16	12	11	1.9	9.4	3.6
8	10	9.4	13	e14	e5.6	57	14	11	9.1	1.8	8.4	6.6
9	9.4	8.7	11	e12	e5.3	39	13	17	8.0	1.7	7.4	182
10	8.5	8.3	11	e11	e5.2	31	11	17	7.7	1.6	6.8	61
11	7.7	8.7	67	e11	e4.7	27	10	61	7.3	1.4	6.5	40
12	7.1	12	40	e11	e4.7	23	11	34	6.2	12	6.1	25
13	6.7	14	29	e11	e4.5	19	47	27	5.5	8.1	6.2	18
14	8.6	12	25	e13	e4.1	18	53	22	6.3	8.8	5.6	14
15	43	12	22	e13	e3.6	21	34	20	5.7	16	4.8	12
16	27	15	19	31	e4.2	18	27	17	4.7	16	4.3	10
17	21	16	20	e19	e4.3	16	22	14	11	10	3.8	90
18	17	15	18	e14	e4.4	14	19	29	12	9.4	3.5	143
19	15	126	15	e10	e4.3	13	17	40	7.0	17	3.5	53
20	13	99	14	e7.2	4.6	21	16	30	5.5	16	3.8	36
21	12	56	12	e6.3	14	38	14	37	4.7	11	46	26
22	11	39	12	e5.6	e8.7	27	14	95	4.7	8.8	20	20
23	10	29	20	e5.3	e7.7	24	18	59	4.2	9.2	13	15
24	9.2	26	49	e5.7	e7.1	22	15	50	3.7	7.9	11	13
25	8.2	24	40	e5.6	e6.7	34	13	36	3.5	6.4	9.1	11
26	8.4	19	31	e5.6	e6.6	40	29	31	3.4	47	8.2	9.7
27	14	17	25	e5.6	e6.6	65	23	25	3.1	52	7.8	8.6
28	12	32	21	e5.6	e6.6	43	21	34	3.1	41	7.6	8.0
29	11	37	19	e5.4	e6.9	32	18	24	3.7	31	8.1	7.2
30	10	28	33	e5.2	---	27	16	20	2.8	24	8.6	6.5
31	9.3	---	25	e4.7	---	26	---	25	---	37	8.1	---
TOTAL	399.1	730.7	719	584.8	162.5	1176.9	634	876	247.9	411.8	335.6	848.7
MEAN	12.9	24.4	23.2	18.9	5.60	38.0	21.1	28.3	8.26	13.3	10.8	28.3
MAX	43	126	67	83	14	162	53	95	27	52	46	182
MIN	6.7	8.0	11	4.7	3.4	8.9	10	11	2.8	1.4	3.5	3.6
CFSM	1.64	3.11	2.96	2.41	0.71	4.84	2.70	3.60	1.05	1.69	1.38	3.61
IN.	1.89	3.47	3.41	2.77	0.77	5.58	3.01	4.16	1.18	1.95	1.59	4.03

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 2004, BY WATER YEAR (WY)

MEAN	8.00	14.5	17.2	14.7	16.6	28.3	28.7	17.6	11.9	5.60	5.56	6.52
MAX	29.7	49.5	35.9	56.4	49.9	70.8	70.6	47.8	74.0	26.0	32.8	39.7
(WY)	1971	1986	1978	1952	1976	1964	1970	1953	1989	1992	1956	1987
MIN	0.32	0.66	0.94	1.55	2.22	9.85	11.2	4.05	1.14	0.50	0.52	0.28
(WY)	1965	1965	1961	1961	1987	1993	1976	1985	1991	1991	1966	1964

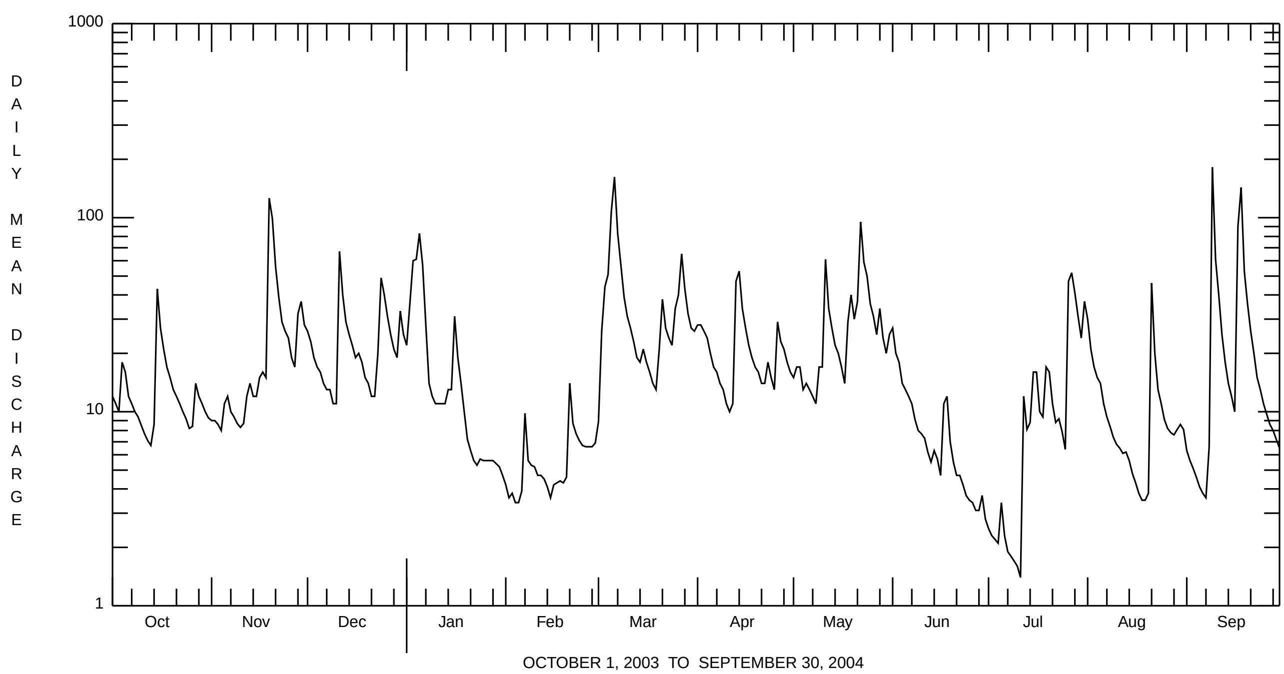
e Estimated.

CLARION RIVER BASIN

03026500 SEVENMILE RUN NEAR RASSELAS, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1952 - 2004	
ANNUAL TOTAL	6490.2		7127.0			
ANNUAL MEAN	17.8		19.5		14.5	
HIGHEST ANNUAL MEAN					21.1	1984
LOWEST ANNUAL MEAN					8.92	2001
HIGHEST DAILY MEAN	175	Mar 21	182	Sep 9	465	Jun 20 1989
LOWEST DAILY MEAN	1.5	Jul 20	1.4	Jul 11	0.07	Sep 21 1955
ANNUAL SEVEN-DAY MINIMUM	1.8	Jul 14	2.0	Jul 5	0.14	Sep 16 1955
MAXIMUM PEAK FLOW			360	Sep 9	**a**2300	Sep 13 1987
MAXIMUM PEAK STAGE			4.31	Sep 9	5.30	Sep 13 1987
INSTANTANEOUS LOW FLOW			1.3	Jul 11,12	0.07	Sep 21 1955
ANNUAL RUNOFF (CFSM)	2.27		2.48		1.85	
ANNUAL RUNOFF (INCHES)	30.80		33.82		25.16	
10 PERCENT EXCEEDS	37		40		32	
50 PERCENT EXCEEDS	12		13		8.2	
90 PERCENT EXCEEDS	4.2		4.3		1.0	

a From rating curve extended above 600 ft^3/s on basis of slope-area measurement at gage height 4.60 ft and contracted-opening measurement at gage height 5.02 ft.



CLARION RIVER BASIN

03027000 EAST BRANCH CLARION RIVER LAKE

LOCATION.--Lat 41°33'35", long 78°35'40", Elk County, Hydrologic Unit 05010005, at control tower at East Branch Clarion River Dam on East Branch Clarion River, 1.7 mi northeast of Glen Hazel, and 7.5 mi upstream from confluence with West Branch Clarion River.

DRAINAGE AREA.--72.4 mi^2 (figure from U.S. Army Corps of Engineers).

PERIOD OF RECORD.--June 1952 to current year. Prior to October 1970 published as "East Branch Clarion River Reservoir".

GAGE.--Water-stage recorder. Datum of gage is sea level (U.S. Army Corps of Engineers bench mark).

REMARKS.--Lake is formed by an earthfill dam rock-faced. Dam completed in 1952. Controlled storage began in June 1952. Capacity, 83,300 acre-ft between elevations 1,555 ft (sill of outlet gates) and 1,685 ft (full pool). Minimum pool elevation, 1,555 ft (capacity, 1,000 acre-ft). Winter low-water pool elevation, 1,651 ft (capacity, 45,600 acre-ft). Summer low-water pool elevation, 1,670 ft (capacity, 65,300 acre-ft). Storage to summer pool normally occurs during period Mar. 1 to Apr. 30. Depletion of low-water storage for augmenting flow in Clarion River occurs normally during period June to October. Figures given herein represent total contents. Lake is used for flood control, for low-flow augmentation of Clarion River and downstream rivers, and for recreation.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 85,010 acre-ft, June 24, 1972, elevation, 1,685.55 ft; minimum, 850 acre-ft, Nov. 9, 1957, elevation, 1,553.00 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 67,610 acre-ft, May 23, elevation, 1,671.96 ft; minimum, 44,170 acre-ft, Feb. 20, elevation, 1,649.48 ft.

MONTHEND ELEVATION, IN FEET ABOVE SEA LEVEL, AND CONTENTS AT 2400 HRS, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (equivalent in ft^3/s)
Sept. 30	1,656.75	51,060	---
Oct. 31	1,650.83	45,400	-92
Nov. 30	1,652.45	46,910	+25.4
Dec. 31	1,651.38	45,910	-16.3
CAL YR 2003	--	--	+1.26
Jan. 31	1,650.03	44,670	-20.2
Feb. 29	1,649.84	44,500	-3.06
Mar. 31	1,662.75	57,240	+207
Apr. 30	1,670.13	65,460	+138
May 31	1,670.52	65,920	+7.48
June 30	1,668.13	63,160	-46.4
July 31	1,668.14	63,170	+.16
Aug. 31	1,662.07	56,520	-108
Sept. 30	1,654.38	48,750	-131
WTR YR 2004	--	--	-3.19

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 bridge on Township Route 359 at Wilcox, 100 ft downstream from Wilson Run, and 0.1 mi upstream from Penn Central Railroad bridge.

DRAINAGE AREA.--63.0 mi^2.

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 those for estimated daily discharges, which are poor. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a 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)
Nov. 19	1745	2,580	6.44	July 26	1830	1,280	4.63
Mar. 6	0700	1,520	4.99	Sept. 9	1000	*2,920	*6.92
May 22	1430	1,430	4.86	Sept. 17	2315	2,760	6.70

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	111	90	235	193	e88	110	250	142	205	49	304	41
2	100	94	210	287	e88	211	228	160	163	48	240	36
3	98	95	178	418	e87	358	220	e116	e133	45	185	33
4	140	82	157	481	e85	417	203	e91	e121	43	165	31
5	e125	115	148	723	e85	754	174	e123	e116	85	140	29
6	e114	124	139	556	e83	1330	155	e114	e107	61	105	27
7	e103	112	125	411	e83	802	148	e105	e89	49	90	27
8	e87	107	121	326	e112	554	143	e87	e76	43	76	56
9	80	105	118	239	e78	386	134	e128	e69	38	66	1720
10	73	108	124	173	e70	298	133	e116	e71	34	59	694
11	66	116	523	174	e60	242	131	365	e74	31	62	409
12	61	128	361	166	e55	207	125	253	e67	227	52	285
13	58	147	293	135	e53	171	383	216	e64	173	51	209
14	76	130	249	e93	e50	155	477	181	e71	241	45	160
15	251	132	211	e104	e45	169	360	161	e46	241	39	133
16	166	142	175	e112	e75	148	288	138	e42	195	35	113
17	153	149	190	e163	e100	143	237	130	e83	135	32	787
18	142	143	161	e129	e50	132	193	188	e103	122	30	1650
19	129	1100	144	e113	e50	130	163	263	e69	112	30	651
20	115	1030	133	e105	e55	198	150	208	e64	95	32	404
21	109	595	121	e100	130	326	134	285	e59	77	298	287
22	101	400	118	e98	108	243	134	751	e52	68	112	215
23	98	294	166	e96	e80	215	144	620	e46	68	85	167
24	98	254	351	e94	e65	205	133	495	43	57	72	138
25	94	217	339	e93	e65	274	133	351	48	45	63	118
26	101	175	293	e93	e70	327	238	293	49	404	54	102
27	123	156	245	e92	e75	555	189	225	42	384	50	89
28	114	250	202	e92	e80	435	180	341	41	355	56	81
29	111	272	175	e90	e90	352	161	220	66	289	59	74
30	86	240	267	e89	---	291	145	183	55	245	59	67
31	84	---	205	e89	---	258	---	213	---	370	51	---
TOTAL	3367	7102	6477	6127	2215	10396	5886	7262	2334	4429	2797	8833
MEAN	109	237	209	198	76.4	335	196	234	77.8	143	90.2	294
MAX	251	1100	523	723	130	1330	477	751	205	404	304	1720
MIN	58	82	118	89	45	110	125	87	41	31	30	27
CFSM	1.72	3.76	3.32	3.14	1.21	5.32	3.11	3.72	1.23	2.27	1.43	4.67
IN.	1.99	4.19	3.82	3.62	1.31	6.14	3.48	4.29	1.38	2.62	1.65	5.22

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	70.4	126	153	128	143	242	246	146	96.6	58.8	51.9	59.4
MAX	236	390	311	319	448	494	483	369	417	252	249	294
(WY)	1982	1986	1978	1998	1976	1964	1970	2002	1972	1992	1956	2004
MIN	7.60	12.9	12.4	18.5	27.6	96.4	109	40.9	20.4	12.3	8.30	7.68
(WY)	1964	1965	1961	1961	1987	1969	1976	1985	1991	1955	1991	1955

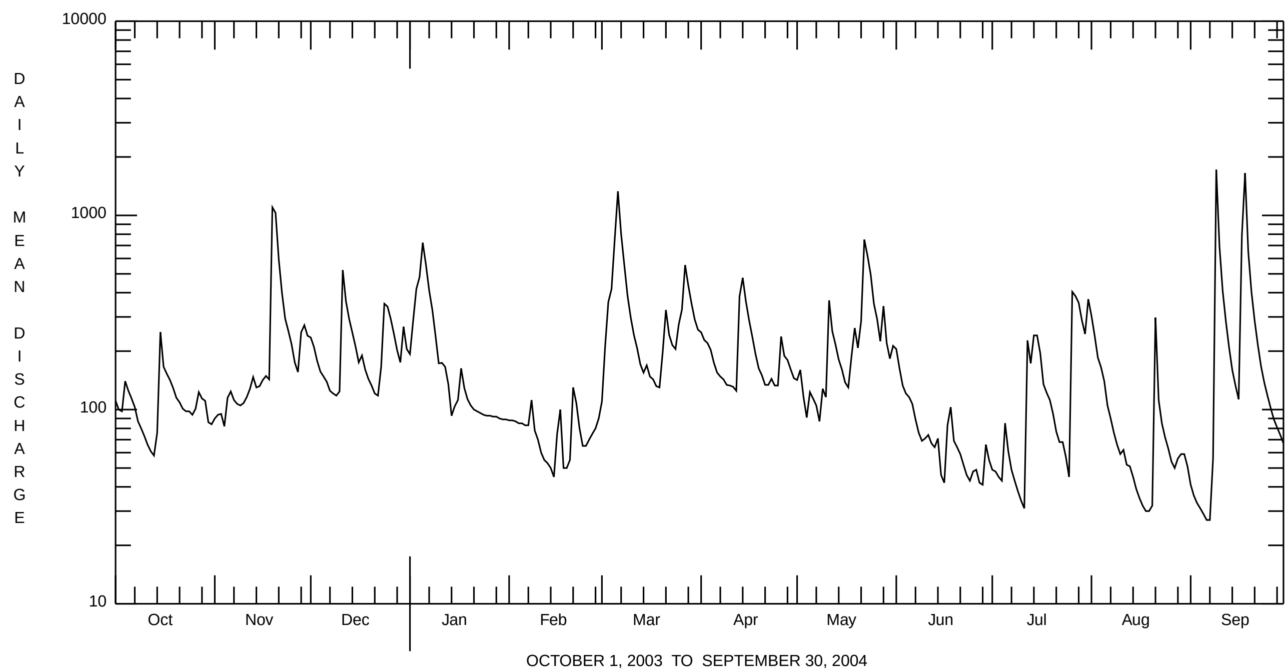
e Estimated.

CLARION RIVER BASIN

03028000 WEST BRANCH CLARION RIVER AT WILCOX, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1954 - 2004	
ANNUAL TOTAL	57547		67225			
ANNUAL MEAN	158		184		127	
HIGHEST ANNUAL MEAN					184	1956**a**
LOWEST ANNUAL MEAN					80.4	2001
HIGHEST DAILY MEAN	1350	Mar 21	1720	Sep 9	2870	Jun 23 1972
LOWEST DAILY MEAN	15	Jul 17	27	Sep 6,7	4.5	Sep 21 1955
ANNUAL SEVEN-DAY MINIMUM	20	Jul 12	32	Sep 1	5.2	Sep 16 1955
MAXIMUM PEAK FLOW			2920	Sep 9	**b**5590	Jan 19 1996
MAXIMUM PEAK STAGE			6.92	Sep 9	**c**10.23	Jan 19 1996
INSTANTANEOUS LOW FLOW			26	Sep 7,8	4.2	Sep 21 1955
ANNUAL RUNOFF (CFSM)	2.50		2.92		2.01	
ANNUAL RUNOFF (INCHES)	33.98		39.69		27.30	
10 PERCENT EXCEEDS	294		359		288	
50 PERCENT EXCEEDS	114		128		75	
90 PERCENT EXCEEDS	41		50		15	

a Also 2004.
b From rating curve extended above 3,000 ft^3/s.
c From peak-stage indicator.



CLARION RIVER BASIN

03029500 CLARION RIVER AT COOKSBURG, PA
(Pennsylvania Water-Quality Network Station)

LOCATION.--Lat 41°19'50", long 79°12'33", Clarion County, Hydrologic Unit 05010005, on right 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.

WATER-DISCHARGE RECORDS

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 those for estimated daily discharges, which are poor. Flow regulated since June 1952 by East Branch Clarion River Lake (station 03027000) and at low flow by industrial plants above station. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a 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. 20	0300	21,200	12.97	July 13	1100	12,700	10.45
Jan. 5	1400	13,100	10.61	Sept. 9	1800	22,900	13.40
Mar. 6	1500	16,600	11.72	Sept. 18	0900	*37,800	*16.46
May 22	1230	16,100	11.60				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1370	1160	2770	2490	e1000	e1750	2880	2000	2100	436	3850	939
2	1240	1200	2600	2940	e1020	e3030	3670	1890	1850	406	2810	805
3	1170	1210	2310	4650	e1020	e4630	3020	2020	1670	376	2280	726
4	1220	1150	2090	6620	e1020	e6170	2910	1800	1370	361	1960	669
5	1970	1120	1970	11300	e1020	e7720	2480	1660	1160	841	2260	626
6	1520	1670	1840	8620	e1050	15100	2130	1590	1170	827	1600	587
7	1330	1470	1640	5880	e1060	10100	1900	1370	1060	527	1410	549
8	1190	1310	1490	4630	e1060	7040	1690	1210	934	451	1330	622
9	1050	1210	1350	3830	e1060	5320	1580	1530	821	423	1200	13000
10	981	1130	1260	3070	e1030	4210	1380	1900	993	379	995	10500
11	913	1120	4800	e2680	e1000	3580	1230	1960	1420	365	897	5260
12	844	1280	5370	e2390	e979	3180	1130	2260	1180	1650	872	3880
13	801	1780	3940	e2050	e938	2650	2460	1920	927	7180	831	3030
14	787	1970	3300	e1570	e910	2150	7970	1690	955	2950	821	2500
15	2190	1720	2940	e1200	e905	2140	4870	1560	1160	4370	731	2170
16	2670	1840	2540	e1030	e916	1930	3640	1480	939	3100	658	1800
17	2060	1830	2440	e856	e927	1750	2940	1250	899	2190	608	3370
18	1850	1730	2410	e806	e949	1560	2470	1630	2540	1670	549	2230
19	1710	4960	2060	e783	e974	1440	2100	4800	1680	1640	496	10200
20	1570	15700	1840	e770	e1010	1510	1960	5360	1230	1870	553	5700
21	1380	7400	1680	e820	e1050	4340	1780	8460	1000	1490	3860	4360
22	1310	5240	1550	e856	e1060	3560	1610	12600	889	1220	4680	3510
23	1230	4070	1640	e906	e1060	2780	1790	10600	845	1070	2210	2920
24	1110	3410	3570	e956	e1040	2540	2040	6470	711	1020	1620	2540
25	1020	3280	4770	e948	e1000	2830	1600	4640	644	816	1320	2270
26	987	2760	3740	e952	e987	3710	3780	4180	589	1830	1110	1950
27	1320	2470	3120	e962	e1050	4830	4220	3760	534	6030	1010	1750
28	1940	2560	2680	e957	e1270	4530	3430	3100	487	4470	1020	1630
29	1520	3620	2370	e962	e1510	3610	2860	2560	500	3720	1070	1350
30	1340	2980	2680	e967	---	3000	2440	1970	511	2820	985	2080
31	1210	---	3110	e972	---	2870	---	1710	---	3470	1110	---
TOTAL	42803	84350	81870	78423	29875	125560	79960	100930	32768	59968	46706	93523
MEAN	1381	2812	2641	2530	1030	4050	2665	3256	1092	1934	1507	3117
MAX	2670	15700	5370	11300	1510	15100	7970	12600	2540	7180	4680	13000
MIN	787	1120	1260	770	905	1440	1130	1210	487	361	496	549
CFSM	1.71	3.48	3.27	3.13	1.28	5.02	3.30	4.03	1.35	2.40	1.87	3.86
IN.	1.97	3.89	3.77	3.62	1.38	5.79	3.69	4.65	1.51	2.76	2.15	4.31

e Estimated.

CLARION RIVER BASIN

03029500 CLARION RIVER AT COOKSBURG, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 2004, BY WATER YEAR (WY) (SINCE REGULATIOIN)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	777	1326	1780	1609	1755	2750	2580	1898	1207	804	655	686
MAX	2357	3906	3821	5654	4138	6185	4721	4314	5307	2565	2732	3117
(WY)	1991	1986	1978	1952	1976	1979	1994	2002	1972	1992	1994	2004
MIN	86.6	204	150	211	369	764	1217	566	325	139	117	109
(WY)	1952	1961	1961	1961	1987	1969	1976	1985	1999	1952	1952	1952

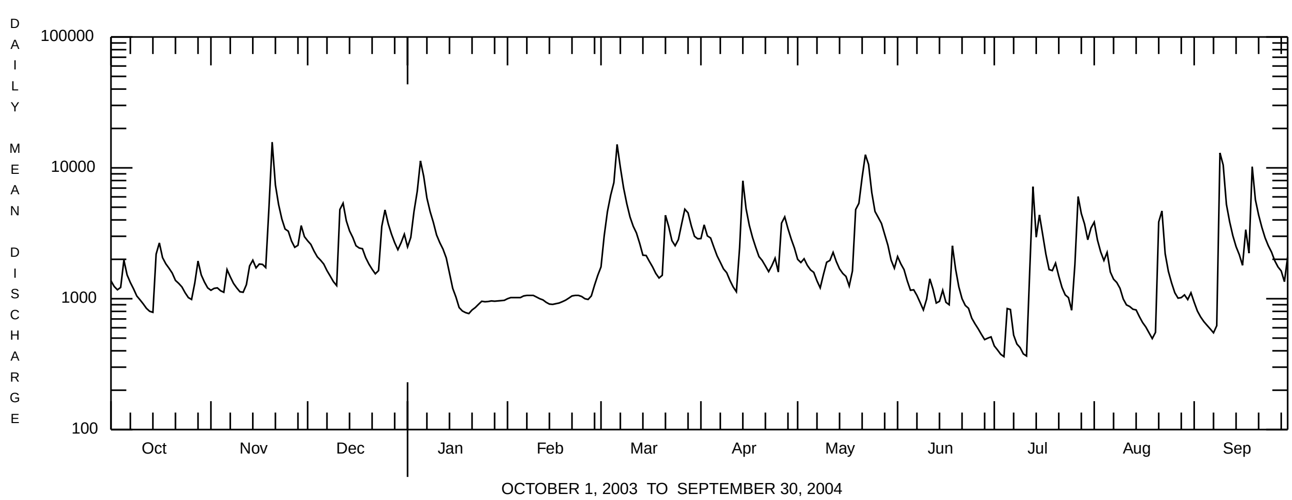
SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1952 - 2004	
ANNUAL TOTAL	734059		856736			
ANNUAL MEAN	2011		2341		1484	
HIGHEST ANNUAL MEAN					2341	2004
LOWEST ANNUAL MEAN					912	2001
HIGHEST DAILY MEAN	15700	Nov 20	15700	Nov 20	43200	Jun 23 1972
LOWEST DAILY MEAN	325	Jul 15	361	Jul 4	59	Sep 14 1952
ANNUAL SEVEN-DAY MINIMUM	365	Jul 13	440	Jun 28	67	Sep 8 1952
MAXIMUM PEAK FLOW			37800	Sep 18	**a**53300	Jun 23 1972
MAXIMUM PEAK STAGE			16.46	Sep 18	**b**18.84	Jun 23 1972
INSTANTANEOUS LOW FLOW			350	Jul 4,12	57	Sep 14 1952
ANNUAL RUNOFF (CFSM)	2.49		2.90		1.84	
ANNUAL RUNOFF (INCHES)	33.84		39.49		24.98	
10 PERCENT EXCEEDS	3770		4630		3230	
50 PERCENT EXCEEDS	1620		1670		918	
90 PERCENT EXCEEDS	668		821		297	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1951, BY WATER YEAR (WY) (PRIOR TO REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	590	1085	1475	1891	1961	3055	2969	1971	1154	579	288	348
MAX	2134	4241	3050	3962	3881	6815	6288	3965	2789	1765	580	1078
(WY)	1946	1951	1941	1950	1951	1945	1940	1943	1946	1942	1950	1945
MIN	113	170	337	417	764	1610	725	606	261	158	94.2	82.8
(WY)	1950	1950	1944	1944	1941	1949	1946	1941	1939	1949	1944	1943

SUMMARY STATISTICS	WATER YEARS 1939 - 1951	
ANNUAL MEAN	1444	
HIGHEST ANNUAL MEAN	2023	1951
LOWEST ANNUAL MEAN	953	1944
HIGHEST DAILY MEAN	24600	Dec 30 1942
LOWEST DAILY MEAN	43	Aug 30 1939
ANNUAL SEVEN-DAY MINIMUM	50	Aug 29 1939
MAXIMUM PEAK FLOW	32700	Jul 19 1942
MAXIMUM PEAK STAGE	14.96	Jul 19 1942
INSTANTANEOUS LOW FLOW	41	Aug 30 1939
ANNUAL RUNOFF (CFSM)	1.79	
ANNUAL RUNOFF (INCHES)	24.31	
10 PERCENT EXCEEDS	3350	
50 PERCENT EXCEEDS	793	
90 PERCENT EXCEEDS	140	

a From rating curve extended above 40,000 ft^3/s.
b From peak-stage indicator.



03029500 CLARION RIVER AT COOKSBURG, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Some values for "*dissolved*" parameters exceed values for the corresponding "*total*" parameter. These results are within the limits of analytical precision and methods. Other data for the Water-Quality Network can be found on pages 240-288.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unf lab, µS/cm 25 degC (90095)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water unfltrd recoverable, mg/L (00916)	Magnesium, water, unfltrd recoverable, mg/L (00927)
OCT 2003													
29...	1230	1028	9813	1500	11.6	7.5	6.4	154	161	8.3	39	10.0	3.4
DEC													
30...	1300	1028	9813	2590	12.8	7.1	6.9	137	129	3.3	35	9.0	3.1
APR 2004													
12...	1045	1028	9813	1110	11.9	7.3	7.0	199	198	6.8	55	14.4	4.5
JUN													
07...	1100	1028	9813	1060	11.0	7.6	6.7	193	196	15.7	59	15.7	4.9
AUG													
09...	1045	1028	9813	1200	10.7	7.7	7.5	186	161	17.9	46	12.2	3.9

Date	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recoverable, µg/L (01105)	Copper, water, unfltrd recoverable, µg/L (01042)
OCT 2003													
29...	15	41.4	108	10	<.020	.17	<.040	.01	.025	.37	3.0	<200	<10
DEC													
30...	11	37.4	80	<2	<.020	.31	<.040	.01	.018	.49	1.6	<200	<10
APR 2004													
12...	14	57.4	138	2	<.020	.28	<.040	<.01	.012	.39	2.4	<200	<10
JUN													
07...	20	57.3	110	<2	<.020	.22	<.040	<.01	.012	.55	2.8	<200	<10
AUG													
09...	18	48.2	132	10	<.020	.18	<.040	.01	.014	.29	2.5	<200	<10

Date	Iron, water, unfltrd recoverable, µg/L (01045)	Lead, water, unfltrd recoverable, µg/L (01051)	Manganese, water, unfltrd recoverable, µg/L (01055)	Nickel, water, unfltrd recoverable, µg/L (01067)	Zinc, water, unfltrd recoverable, µg/L (01092)
OCT 2003					
29...	420	<1.0	130	<50	<10
DEC					
30...	290	<1.0	150	<50	<10
APR 2004					
12...	320	<1.0	180	<50	<10
JUN					
07...	420	<1.0	110	<50	<10
AUG					
09...	580	<1.0	60	<50	<10

CLARION RIVER BASIN

03029500 CLARION RIVER AT COOKSBURG, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 animal (approximate) subsamples.

Date	10/29/03
Benthic Macroinvertebrate	Count
Platyhelminthes	
Turbellaria (FLATWORMS)	
Tricladida	
Planariidae	7
Mollusca	
Bivalvia (CLAMS)	
Veneroida	
Sphaeriidae	
Sphaerium	4
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Lumbricina	2
Arthropoda	
Acariformes	
Hydrachnidia (WATER MITES)	1
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	
Plauditus	1
Caenidae	
Caenis	3
Ephemerellidae	
Ephemerella	39
Eurylophella	8
Heptageniidae	
Stenacron	7
Stenonema	37
Isonychiidae	
Isonychia	3
Trichoptera (CADDISFLIES)	
Glossosomatidae	
Protoptila	1
Hydropsychidae	
Cheumatopsyche	2
Hydroptilidae	
Hydroptila	7
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
Optioservus	1
Psephenidae (WATER PENNIES)	
Psephenus	1
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	11
Empididae (DANCE FLIES)	
Hemerodromia	2
Tipulidae (CRANE FLIES)	
Antocha	1
Total Organisms	138
Total Taxa	19

CLARION RIVER BASIN

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 Reliant Energy, 2.3 mi northeast of Piney, 2.4 mi upstream from Piney Creek, and 3 mi southwest of Clarion.

DRAINAGE AREA.--951 mi^2.

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 (Reliant Energy bench mark). Prior to Dec. 23, 1947, records from hydroelectric plant 0.2 mi upstream.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated since 1924 by hydroelectric plant at Piney Dam 0.2 mi upstream, and since June 1952 by East Branch Clarion River Lake (station 03027000), combined capacity of reservoirs, 113,200 acre-ft. Several measurements of water temperature were made during the year. Satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--The flood of Mar. 18, 1936 reached a discharge of 50,000 ft^3/s, as determined by Reliant Energy, elevation, 1,028.5 ft, at lower pool of dam.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1390	1250	3290	2890	468	787	e3900	2830	2100	463	4340	1470
2	1350	1770	2990	3410	877	2540	4350	2300	2050	1050	3240	952
3	1310	1740	2750	6030	735	7710	3600	1780	2240	167	2390	1090
4	1410	1650	2220	8310	889	8100	3640	2400	1570	456	2420	649
5	2410	1800	2530	13300	624	9640	3070	2010	1580	1000	2560	683
6	1730	1640	1970	10200	1400	16100	2580	1930	1110	1030	2280	737
7	1440	1270	1890	6910	1120	11200	2360	1810	1470	807	1270	641
8	1360	1110	1750	5260	1230	8110	2240	1590	1280	438	1690	1310
9	1330	1600	1740	4400	1070	6020	2030	1380	1130	609	1190	14900
10	1070	1190	1740	3350	1160	4950	1840	2210	980	371	1300	12300
11	906	1710	5410	2700	1050	4090	1700	2120	2050	547	1000	6270
12	1080	1290	6440	3090	716	3540	2580	2760	1590	2070	1150	4610
13	1170	1590	4700	2710	1580	3270	2120	2100	1180	6270	823	3370
14	1410	2430	3780	2150	965	2460	8410	2130	1480	4110	979	3040
15	2090	1900	3600	1660	1220	2690	5950	1820	1830	3610	645	2490
16	2790	2160	3030	1590	1170	2350	4270	1640	1490	3230	532	2890
17	2990	2160	2860	1830	821	2220	3630	1520	1650	2430	719	5000
18	1880	2030	2780	1430	693	1840	3140	2210	2770	2320	631	29400
19	1780	6340	2410	1600	701	2010	2740	4730	2270	1580	884	11600
20	1790	16300	2090	1080	1320	1850	2930	6190	1330	1550	867	6480
21	1840	8390	1960	1090	1450	5280	2810	10400	1140	2200	5160	4940
22	1620	6040	1900	891	1750	4310	1820	14000	616	1290	5850	4010
23	1050	4540	1980	1130	1720	3550	2080	12400	1580	839	2940	3840
24	1160	3840	4210	599	1660	2970	2070	7470	e1400	1370	2240	2470
25	1500	3660	5510	357	1700	3460	2490	5260	e850	810	1720	2740
26	891	3250	4390	899	1780	4490	3210	4650	830	2430	1290	2380
27	1620	2790	3600	1010	1210	5600	5070	4370	511	6760	1240	2010
28	1460	3080	3160	871	2070	5490	3980	3650	846	5000	1360	1770
29	1890	4400	2730	690	774	4290	3340	2980	461	3890	1940	1530
30	1650	3600	3010	663	---	e3800	3170	2300	606	3180	1600	895
31	1660	---	3700	578	---	e3500	---	2480	---	3720	1310	---
TOTAL	49027	96520	96120	92678	33923	148217	97120	117420	41990	65597	57560	136467
MEAN	1582	3217	3101	2990	1170	4781	3237	3788	1400	2116	1857	4549
MAX	2990	16300	6440	13300	2070	16100	8410	14000	2770	6760	5850	29400
MIN	891	1110	1740	357	468	787	1700	1380	461	167	532	641
(†)	-91	+27	-16	-25	-7.8	+217	+137	+5.9	-45	+1.7	-110	-130

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	888	1578	2150	2064	2283	3297	3118	2253	1458	951	745	796
MAX	2743	5013	4611	6884	5775	6703	5186	5018	6354	3220	3096	4549
(WY)	1991	1986	1978	1952	1976	1964	1970	2002	1972	1992	1994	2004
MIN	40.2	82.5	184	244	527	881	1517	700	345	167	135	120
(WY)	1950	1950	1961	1961	1987	1969	1968	1985	1991	1952	1952	1951

† 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 Reliant Energy. Records of contents in East Branch Clarion River Lake furnished by U.S. Army Corps of Engineers.

e Estimated.

CLARION RIVER BASIN

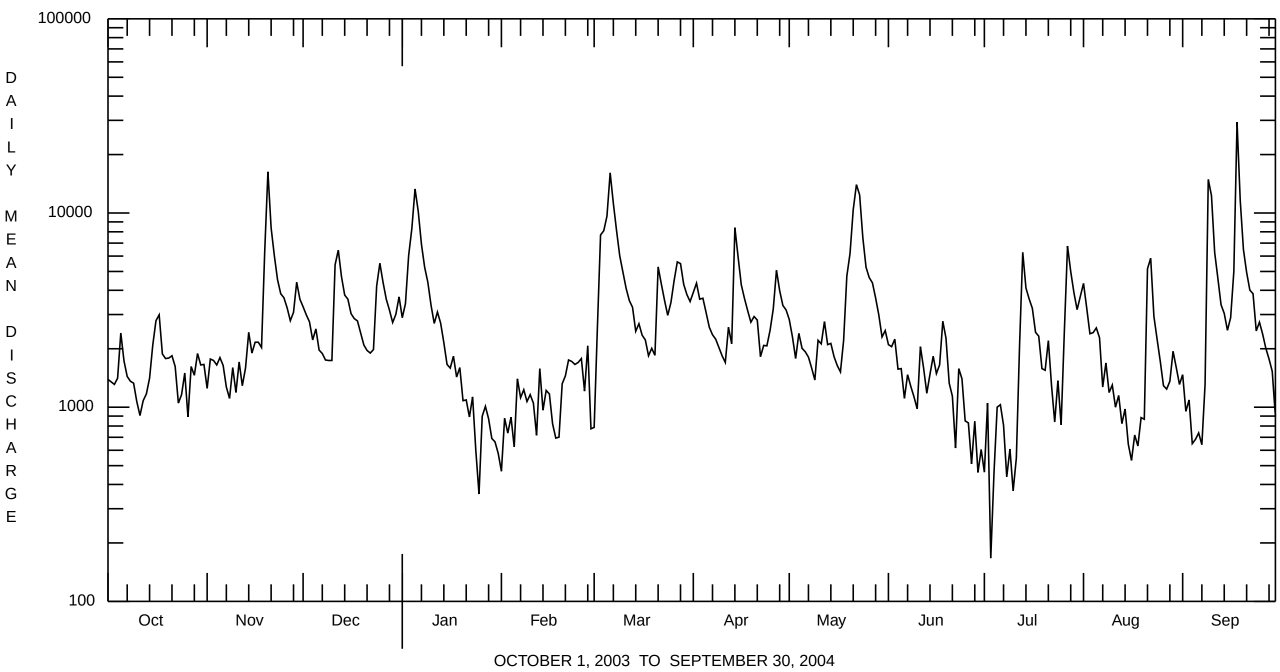
03030500 CLARION RIVER NEAR PINEY, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1948 - 2004	
ANNUAL TOTAL	836551		1032639			
ANNUAL MEAN	2292	† +1.5	2821	† -3.1	1795	
HIGHEST ANNUAL MEAN					2821	2004
LOWEST ANNUAL MEAN					1092	2001
HIGHEST DAILY MEAN	16300	Nov 20	29400	Sep 18	51600	Jun 23 1972
LOWEST DAILY MEAN	103	Aug 24	167	Jul 3	11	Oct 1 1966
ANNUAL SEVEN-DAY MINIMUM	388	Jul 12	578	Jun 28	26	Oct 16 1949
MAXIMUM PEAK FLOW			37300	Sep 18	**a**74500	Jun 23 1972
MAXIMUM PEAK STAGE			18.94	Sep 18	**b**28.24	Jun 23 1972
10 PERCENT EXCEEDS	4600		5430		4070	
50 PERCENT EXCEEDS	1760		2010		1140	
90 PERCENT EXCEEDS	587		828		138	

† 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 Reliant Energy. Records of contents in East Branch Clarion River Lake furnished by U.S. Army Corps of Engineers.

a From rating curve extended above 59,000 ft^3/s.

b From floodmark.



OHIO RIVER MAIN STEM

03031500 ALLEGHENY RIVER AT PARKER, PA
(Pennsylvania Water-Quality Network Station)

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, at mile 83.4.

DRAINAGE AREA.--7,671 mi^2.

WATER-DISCHARGE RECORDS

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 of 1929. 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 those for estimated daily discharges, which are poor. Flow regulated since 1924 by Piney Reservoir, since December 1940 by Tionesta Lake, since November 1949 by Chautauqua Lake (station 03013946), since June 1952 by East Branch Clarion River Lake (station 03027000), since October 1965 by Allegheny Reservoir (station 03012520), since July 1970 by Union City Reservoir (station 03021518), and since January 1974 by Woodcock Creek Lake (station 03022550). Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 17, 1865 reached a stage of 29.4 ft, present datum, discharge, about 250,000 ft^3/s, from rating curve extended above 137,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14900	16200	38400	28800	e7900	e17400	32100	15300	22800	4910	32600	9550
2	13400	15800	35700	29700	e8600	30400	34800	14500	21400	4730	30800	10700
3	13100	15800	31800	37700	e8480	45500	37000	15600	18900	4500	27200	11200
4	13600	15200	27600	43700	e8480	48000	36300	16700	15600	3730	24100	9430
5	17300	15100	24500	57000	e8600	50700	32900	15800	12400	4100	20700	6930
6	16500	15000	21700	45900	e8730	60500	29700	14800	10300	4570	15600	5510
7	13800	13400	19800	37100	e8730	55400	26400	13100	10100	4280	12600	5430
8	12200	11700	17600	37100	e8540	49400	23300	11800	8840	4110	11200	5870
9	10900	11600	16900	36100	e8620	48200	20600	11100	7700	3560	9650	77200
10	9830	10700	16700	31100	e8700	46000	18700	16600	7030	3960	8600	85600
11	8260	11300	33800	28800	e8700	42200	16600	21900	11800	4180	8360	59400
12	9900	11900	41700	27200	e8270	38700	15700	30900	11600	5900	7910	50900
13	10800	14300	34800	23200	e8330	33900	18300	30000	8860	20700	7020	46500
14	10900	16200	31700	19500	e8330	27900	33000	26100	9810	15600	6790	41000
15	17100	17300	28900	15800	e8210	24500	34800	24800	10200	14900	6830	37500
16	24700	17700	26600	13100	e7970	22400	34600	25100	9630	17200	6330	32600
17	25400	18200	25900	11300	e7850	19800	33900	23600	8460	18200	5990	40000
18	23200	17800	26900	10800	e7490	16900	30000	24800	16700	19700	4740	105000
19	20600	25900	25200	e9360	e7490	14900	26200	27300	14000	21600	4370	61900
20	18400	55100	23300	e9360	e8520	14900	22200	28800	10500	17600	5090	48400
21	17100	39700	21100	e9000	e11400	32400	18500	41900	8840	15400	19400	47100
22	14600	37100	19400	e8820	e14300	32200	16000	65000	7470	11900	16100	43500
23	13200	37900	19900	e8640	e14400	27600	17300	68100	6710	10500	9640	39100
24	12900	35000	30600	e9000	e14100	26700	17300	57500	6800	10800	8690	35200
25	12700	32800	40600	e8640	e13600	28500	16800	56000	5140	9750	8630	29600
26	12500	32200	36900	e9000	e12700	33900	16900	49700	5510	14100	8020	25900
27	14900	31000	32400	e8820	e12000	40200	20900	44000	4740	24400	7710	22200
28	19600	32800	28700	e8640	e11800	41900	19000	39100	4410	21800	9040	20100
29	19400	46000	26000	e8640	e12000	37400	17700	35900	4780	21600	10100	16800
30	19000	41400	27200	e8820	---	32900	16300	29900	5030	21100	9490	12700
31	17700	---	31500	e8820	---	30800	---	25200	---	23700	10500	---
TOTAL	478390	712100	863800	649460	282840	1072100	733800	920900	306060	383080	373800	1042820
MEAN	15430	23740	27860	20950	9753	34580	24460	29710	10200	12360	12060	34760
MAX	25400	55100	41700	57000	14400	60500	37000	68100	22800	24400	32600	105000
MIN	8260	10700	16700	8640	7490	14900	15700	11100	4410	3560	4370	5430
CFSM	2.01	3.09	3.63	2.73	1.27	4.51	3.19	3.87	1.33	1.61	1.57	4.53
IN.	2.32	3.45	4.19	3.15	1.37	5.20	3.56	4.47	1.48	1.86	1.81	5.06

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1933 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	7034	12380	17150	17510	17730	26400	24800	15770	9996	6282	4761	5446
MAX	28650	33760	38040	53560	40460	63020	58110	36220	35340	26090	16890	34760
(WY)	1991	1986	1978	1937	1976	1936	1940	1943	1989	1972	1994	2004
MIN	802	1655	1332	2111	3788	7746	5651	3610	1508	1069	1034	950
(WY)	1964	1961	1961	1961	1934	1969	1946	1934	1934	1934	1934	1936

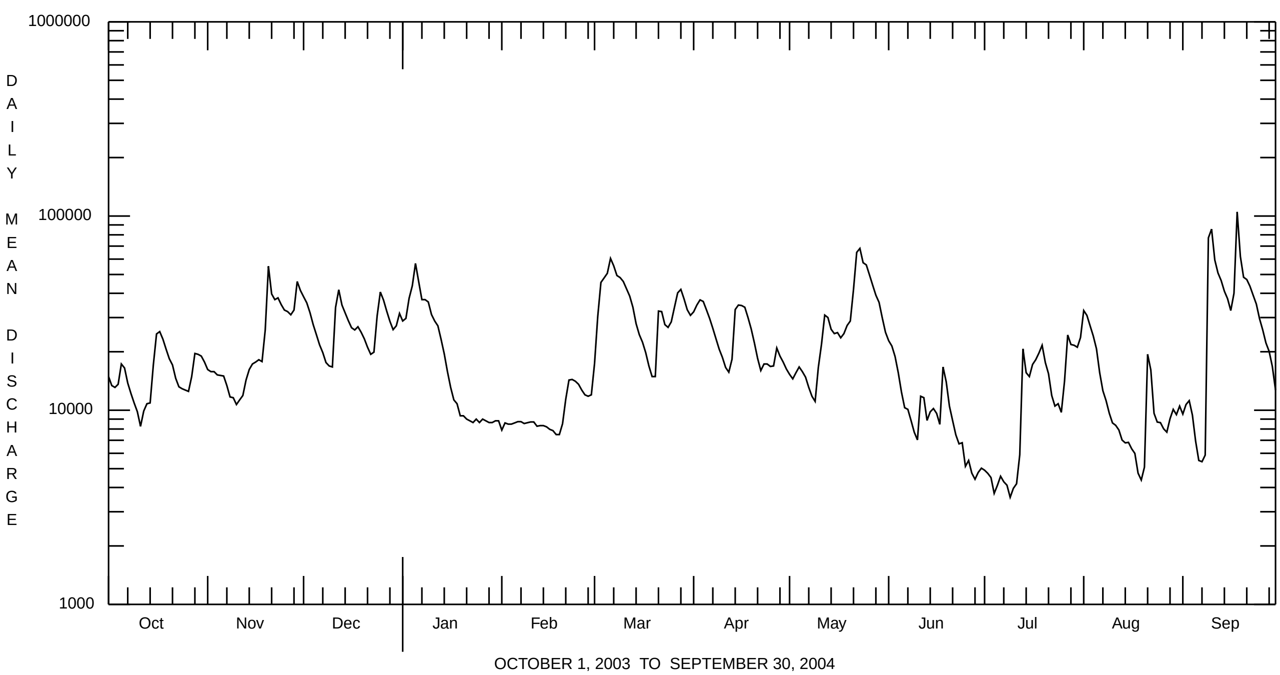
e Estimated.

OHIO RIVER MAIN STEM

03031500 ALLEGHENY RIVER AT PARKER, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1933 - 2004	
ANNUAL TOTAL	6650170		7819150			
ANNUAL MEAN	18220		21360		13750	
HIGHEST ANNUAL MEAN					21360	2004
LOWEST ANNUAL MEAN					8175	1934
HIGHEST DAILY MEAN	69300	Jul 22	105000	Sep 18	160000	Jan 22 1959
LOWEST DAILY MEAN	3770	Jul 5	3560	Jul 9	454	Jul 28 1934
ANNUAL SEVEN-DAY MINIMUM	4020	Jul 3	4040	Jul 4	508	Jul 25 1934
MAXIMUM PEAK FLOW			120000	Sep 18	**ab**175000	Jan 22 1959
MAXIMUM PEAK STAGE			19.18	Sep 18	**c**29.60	Jan 21 1959
INSTANTANEOUS LOW FLOW					409	Jul 30 1934
ANNUAL RUNOFF (CFSM)	2.38		2.79		1.79	
ANNUAL RUNOFF (INCHES)	32.25		37.92		24.35	
10 PERCENT EXCEEDS	36800		40300		31900	
50 PERCENT EXCEEDS	15200		17100		8950	
90 PERCENT EXCEEDS	5780		7640		2250	

a About.
b From rating curve extended above 137,000 ft^3/s.
c Backwater from ice.



03031500 ALLEGHENY RIVER AT PARKER, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Some values for "*dissolved*" parameters exceed values for the corresponding "*total*" parameter. These results are within the limits of analytical precision and methods. Other data for the Water-Quality Network can be found on pages 240-288.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Pressure, osmotic water, unfltrd mosm/kg (82550)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unf lab, µS/cm 25 degC (90095)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water unfltrd recoverable, mg/L (00916)
OCT 2003													
15...	1050	1028	9813	14800	4.0	10.0	7.1	7.3	171	171	12.5	60	17.5
NOV													
20...	0940	1028	9813	58200	<1.0	9.8	7.0	7.1	132	107	9.5	49	13.5
DEC													
17...	1400	1028	9813	25600	<1.0	13.2	6.9	7.1	142	141	3.0	50	14.8
FEB 2004													
26...	1000	1028	9813	E12700	6.0	13.5	6.1	7.1	254	254	.2	80	21.8
MAR													
09...	1345	1028	9813	49600	7.0	12.8	6.8	7.4	124	142	4.5	41	11.6
APR													
21...	1230	1028	9813	18100	6.0	11.5	7.8	7.7	157	162	13.0	51	14.8
MAY													
05...	1330	1028	9813	14400	6.0	10.8	7.9	7.7	162	158	12.0	53	14.9
JUN													
22...	1240	1028	9813	6740	3.0	10.7	8.0	7.5	180	187	22.0	70	19.8
JUL													
27...	1330	1028	9813	25900	1.0	8.0	7.3	7.4	167	158	20.0	55	15.1
AUG													
23...	1310	1028	9813	8750	<1.0	10.3	7.5	7.1	207	210	21.0	69	18.3
SEP													
27...	1235	1028	9813	20400	<1.0	9.0	7.3	7.1	131	128	17.5	46	13.3

Date	Magnesium, water, unfltrd recoverable, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, unfltrd mg/L (00951)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)
OCT 2003													
15...	3.9	43	15.2	<.2	14.8	126	30	<.020	.32	<.040	.02	.033	.75
NOV													
20...	3.7	25	10.4	<.2	19.2	130	96	<.020	.45	<.040	.05	.099	1.1
DEC													
17...	3.1	31	12.2	<.2	14.7	106	6	<.020	.52	<.040	.02	.021	.51
FEB 2004													
26...	6.3	32	27.0	<.2	44.8	200	<2	.050	.74	<.040	.01	.017	1.1
MAR													
09...	2.9	25	13.0	<.2	11.5	114	8	.030	.66	<.040	.03	.038	.87
APR													
21...	3.4	30	14.4	<.2	18.6	122	10	<.020	.46	<.040	.01	.015	.74
MAY													
05...	3.9	38	14.3	<.2	13.3	128	6	<.020	.42	<.040	.01	.017	.52
JUN													
22...	5.0	39	12.4	<.2	28.0	128	<2	<.020	.33	<.040	<.01	.024	.36
JUL													
27...	4.1	31	11.3	<.2	28.1	144	42	.040	.38	<.040	.01	.055	.82
AUG													
23...	5.6	27	12.1	<.2	47.6	166	6	.040	.25	<.040	.02	.018	.45
SEP													
27...	3.2	33	9.4	<.2	11.7	86	8	<.020	.35	<.040	.02	.037	.59

OHIO RIVER MAIN STEM

03031500 ALLEGHENY RIVER AT PARKER, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Fecal coli-form, M-FC 0.45uMF col/ 100 mL (31616)	Alum-inum, water, fltrd, µg/L (01106)	Alum-inum, water, unfltrd recover -able, µg/L (01105)	Arsenic water, fltrd, µg/L (01000)	Cadmium water, fltrd, µg/L (01025)	Copper, water, fltrd, µg/L (01040)	Copper, water, unfltrd recover -able, µg/L (01042)	Iron, water, fltrd, µg/L (01046)	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, fltrd, µg/L (01049)	Lead, water, unfltrd recover -able, µg/L (01051)	Mangan-ese, water, fltrd, µg/L (01056)
OCT 2003													
15...	1.1	980	70	400	<4.0	<.20	<4	<4	210	1210	<1.0	<1.0	40
NOV													
20...	2.4	1000	50	1900	<4.0	<.20	<4	4	130	4900	<1.0	4.4	130
DEC													
17...	1.4	320	20	200	<4.0	<.20	<4	<4	90	420	<1.0	<1.0	40
FEB 2004													
26...	1.0	40	90	400	<4.0	<.20	<4	<4	270	880	<1.0	<1.0	440
MAR													
09...	1.8	80	<10	<10	9.2	<.20	10	20	300	1160	1.1	1.5	2
APR													
21...	1.0	<20	20	200	<4.0	<.20	<4	<4	50	300	<1.0	<1.0	100
MAY													
05...	1.5	20	20	100	<4.0	<.20	<4	<4	100	470	<1.0	<1.0	40
JUN													
22...	1.2	140	50	200	<4.0	<.20	<4	<4	140	840	<1.0	<1.0	160
JUL													
27...	1.7	1300	150	1100	<4.0	<.20	<4	<4	350	2610	<1.0	2.2	240
AUG													
23...	.5	350	50	400	<4.0	<.20	<4	<4	60	840	<1.0	<1.0	460
SEP													
27...	1.4	80	20	200	<4.0	<.20	<4	<4	50	870	<1.0	<1.0	40

Date	Mangan-ese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, fltrd, µg/L (01065)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, fltrd, µg/L (01090)	Zinc, water, unfltrd recover -able, µg/L (01092)	Phen-olic com-pounds, water, unfltrd µg/L (32730)
OCT 2003						
15...	160	<4	<4	<5	7	<5
NOV						
20...	610	<4	10	<5	30	<5
DEC						
17...	70	<4	<4	<5	<5	<5
FEB 2004						
26...	440	9	9	20	20	<5
MAR						
09...	20	<4	<4	30	50	<5
APR						
21...	120	<4	<4	<5	6	<5
MAY						
05...	70	<4	<4	6	<5	<5
JUN						
22...	240	<4	5	<5	6	<5
JUL						
27...	430	5	8	5	20	<5
AUG						
23...	500	7	9	<5	10	<5
SEP						
27...	120	<4	<4	<5	<5	<5

03031500 ALLEGHENY RIVER AT PARKER, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 200 animal (approximate) subsamples.

Date	12/10/02
Benthic Macroinvertebrate	Count
Platyhelminthes	
Turbellaria (FLATWORMS)	
Tricladida	
Planariidae	2
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Ancylidae	
Ferrissia	4
Hydrobiidae	10
Amnicola	28
Lymnaeidae	
Fossaria	1
Planorbidae	
Gyraulus	1
Bivalvia (CLAMS)	
Veneroida	
Sphaeriidae	
Pisidium	3
Sphaerium	3
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Lumbriculida	
Lumbriculidae	3
Arthropoda	
Acariformes	
Hydrachnidia (WATER MITES)	4
Crustacea	
Amphipoda (SCUDS)	
Gammaridae	
Gammarus	10
Insecta	
Ephemeroptera (MAYFLIES)	
Caenidae	
Caenis	1
Ephemerellidae	
Ephemerella	3
Serratella	1
Heptageniidae	3
Stenonema	3
Isonychiidae	
Isonychia	2
Odonata (DRAGONFLIES AND DAMSELFLIES)	
Coenagrionidae	
Argia	10
Plecoptera (STONEFLIES)	
Taeniopterygidae	
Taenionema	1

OHIO RIVER MAIN STEM

03031500 ALLEGHENY RIVER AT PARKER, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES--Continued

Date	12/10/02
Benthic Macroinvertebrate	Count
Trichoptera (CADDISFLIES)	
Brachycentridae	5
Hydropsychidae	
Cheumatopsyche	5
Hydroptilidae	
Hydroptila	3
Polycentropodidae	
Neureclipsis	4
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
Optioservus	10
Stenelmis	10
Psephenidae (WATER PENNIES)	
Psephenus	1
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	79
Total Organisms	210
Total Taxa	27

03032500 REDBANK CREEK AT ST. CHARLES, PA
(Pennsylvania Water-Quality Network Station)

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 mi^2.

WATER-DISCHARGE RECORDS

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 1929. Prior to July 10, 1940, nonrecording gage at site 500 ft upstream at datum 3.10 ft higher.

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 7,000 ft^3/s and maximum (*):

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
Nov. 19	2300	15,200	12.77	May 21	1415	13,700	12.25
Dec. 11	1315	7,900	9.76	May 22	1445	12,200	11.67
Jan. 5	0730	16,300	13.15	Aug. 21	1530	12,200	11.69
Mar. 3	0200	8,850	10.22	Sept. 9	1530	10,600	11.02
Mar. 6	1145	11,400	11.35	Sept. 18	0430	*35,800	*18.52
Apr. 14	0230	9,670	10.60				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	686	631	1270	1480	e395	1340	1590	1240	976	419	1140	516
2	617	628	1120	2270	e371	4550	2190	1180	964	377	885	457
3	572	603	983	3880	e376	6920	1770	1150	1020	348	704	409
4	639	570	862	6480	e366	6490	1730	1000	793	341	692	373
5	1040	565	834	12800	e376	6850	1420	868	669	710	1230	344
6	834	712	850	7710	e646	9930	1180	798	654	679	935	314
7	670	716	728	4430	e2050	6950	1070	752	624	466	676	291
8	598	625	646	2960	e1570	4700	997	719	531	416	585	570
9	545	565	717	2190	e1210	3360	941	649	472	382	518	7640
10	499	525	783	1490	e984	2440	861	654	465	350	465	5280
11	464	544	5880	1230	e842	1910	776	647	899	310	436	3150
12	432	723	4480	1210	e710	1670	746	619	1150	382	428	1800
13	408	999	3000	1340	e642	1460	2920	570	822	790	424	1260
14	415	998	2110	1170	e589	1230	7100	517	1340	1040	426	1000
15	1740	874	1730	e608	e536	1230	4370	496	2390	732	397	849
16	1650	829	1420	e501	e494	1200	2720	479	1480	633	352	754
17	1060	812	1530	e490	e442	1130	2160	450	1280	559	318	6460
18	851	770	1490	e456	e431	1040	1790	697	3870	501	292	24700
19	743	4920	1250	e451	e426	1040	1510	1640	2540	503	348	10400
20	666	9160	1110	e445	e420	1620	1290	2040	1550	513	753	4370
21	607	5490	989	e451	e847	5490	1170	7210	1160	551	7710	2530
22	576	3190	912	e434	e1560	3740	1060	9800	1050	443	4140	1720
23	540	2190	1280	e411	e1180	2610	1760	6540	946	530	2020	1280
24	495	1740	3530	e411	e1020	2030	1770	3850	722	880	1210	1030
25	458	1650	3710	e406	e895	1980	1340	2330	637	687	917	877
26	440	1320	2720	e417	929	2190	4580	1650	586	1510	741	762
27	721	1120	2010	e395	886	2250	3680	1560	527	3070	663	679
28	1120	1300	1610	e376	864	2070	2660	1350	488	3440	722	618
29	898	2030	1370	e386	999	1800	1900	1170	512	2810	825	582
30	752	1550	1760	e419	---	1640	1480	886	478	1680	655	538
31	667	---	1960	e410	---	1440	---	809	---	1150	571	---
TOTAL	22403	48349	54644	58107	23056	94300	60531	54320	31595	27202	32178	81553
MEAN	723	1612	1763	1874	795	3042	2018	1752	1053	877	1038	2718
MAX	1740	9160	5880	12800	2050	9930	7100	9800	3870	3440	7710	24700
MIN	408	525	646	376	366	1040	746	450	465	310	292	291
CFSM	1.37	3.05	3.34	3.55	1.51	5.76	3.82	3.32	1.99	1.66	1.97	5.15
IN.	1.58	3.41	3.85	4.09	1.62	6.64	4.26	3.83	2.23	1.92	2.27	5.75

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1919 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	378	751	1079	1133	1203	1813	1505	1076	692	428	297	324
MAX	1385	2806	3151	4616	2707	5016	3337	2603	3887	2238	1498	2718
(WY)	1927	1922	1928	1937	1990	1936	1940	1919	1972	1996	1956	2004
MIN	40.3	50.9	75.9	96.8	179	358	367	180	123	61.1	33.5	29.2
(WY)	1931	1931	1961	1931	1934	1969	1925	1926	1936	1966	1930	1939

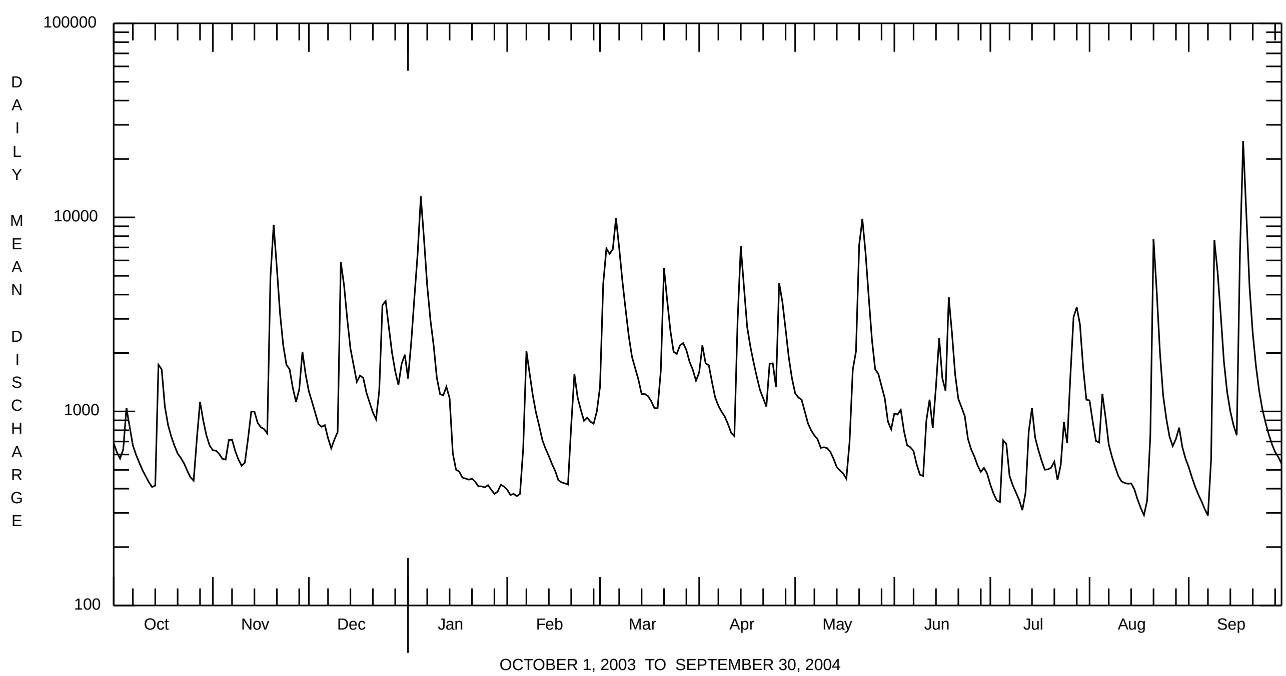
e Estimated.

REDBANK CREEK BASIN

03032500 REDBANK CREEK AT ST. CHARLES, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1919 - 2004	
ANNUAL TOTAL	432021		588238			
ANNUAL MEAN	1184		1607		888	
HIGHEST ANNUAL MEAN					1607	2004
LOWEST ANNUAL MEAN					430	1934
HIGHEST DAILY MEAN	11600	Jul 28	24700	Sep 18	28100	Jul 19 1996
LOWEST DAILY MEAN	175	Jul 18	291	Sep 7	20	Sep 28 1922
ANNUAL SEVEN-DAY MINIMUM	220	Jun 30	365	Aug 13	24	Aug 30 1939
MAXIMUM PEAK FLOW			**a**35800	Sep 18	**a**66300	Jul 19 1996
MAXIMUM PEAK STAGE			18.52	Sep 18	**b**23.90	Jul 19 1996
INSTANTANEOUS LOW FLOW			275	Sep 8	**c**19	Oct 1 1918
ANNUAL RUNOFF (CFSM)	2.24		3.04		1.68	
ANNUAL RUNOFF (INCHES)	30.44		41.44		22.84	
10 PERCENT EXCEEDS	2550		3690		2120	
50 PERCENT EXCEEDS	751		898		470	
90 PERCENT EXCEEDS	324		423		84	

a From rating curve extended above 35,000 ft^3/s on basis of slope-area measurement of peak flow.
b From floodmarks.
c Minimum observed.



REDBANK CREEK BASIN

03032500 REDBANK CREEK AT ST. CHARLES, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 240-288.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unf lab, µS/cm 25 degC (90095)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water unfltrd recoverable, mg/L (00916)	Magnesium, water, unfltrd recoverable, mg/L (00927)
OCT 2003													
16...	1025	1028	9813	1700	11.1	6.9	6.8	223	215	10.0	80	20.3	7.2
DEC													
23...	1410	1028	9813	1290	14.0	6.7	7.0	288	316	3.0	120	29.1	10.9
FEB 2004													
26...	1150	1028	9813	963	14.0	6.4	6.8	327	313	.2	120	27.9	10.9
APR													
22...	0835	1028	9813	1070	9.3	7.4	7.0	295	298	15.0	120	28.5	10.8
JUN													
24...	0950	1028	9813	712	8.9	7.3	6.9	273	269	20.0	100	25.2	9.3
AUG													
24...	1215	1028	9813	1180	--	6.8	6.8	206	202	18.5	74	18.2	6.9

Date	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recoverable, µg/L (01105)	Copper, water, unfltrd recoverable, µg/L (01042)
OCT 2003													
16...	21	59.9	222	12	<.020	.45	<.040	.04	.043	.96	4.8	740	<10
DEC													
23...	18	96.4	216	2	<.020	.72	<.040	.01	.011	.90	1.1	370	<10
FEB 2004													
26...	18	85.0	188	14	.040	.79	<.040	.01	.015	1.0	1.1	330	<10
APR													
22...	16	96.5	238	<2	<.020	.44	<.040	<.01	.019	.63	1.3	<200	<10
JUN													
24...	26	80.0	222	<2	.040	.52	<.040	<.01	.021	.47	1.8	230	<10
AUG													
24...	23	55.0	188	<2	<.020	.56	<.040	.01	.021	.67	2.4	<200	<10

Date	Iron, water, unfltrd recoverable, µg/L (01045)	Lead, water, unfltrd recoverable, µg/L (01051)	Manganese, water, unfltrd recoverable, µg/L (01055)	Nickel, water, unfltrd recoverable, µg/L (01067)	Zinc, water, unfltrd recoverable, µg/L (01092)
OCT 2003					
16...	1630	1.2	380	<50	<10
DEC					
23...	790	<1.0	600	<50	20
FEB 2004					
26...	910	<1.0	440	<50	20
APR					
22...	500	<1.0	280	<50	10
JUN					
24...	660	<1.0	180	<50	50
AUG					
24...	730	<1.0	180	<50	<10

REDBANK CREEK BASIN

03032500 REDBANK CREEK AT ST. CHARLES, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 animal (approximate) subsamples.

Date	10/20/03
Benthic Macroinvertebrate	Count
Nemertea (PROBOSCIS WORMS)	
Enopla	
Hoplonemertea	
Tetrastemmatidae	
Prostoma	1
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Ancylidae	
Ferrissia	1
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Tubificida	
Naididae	2
Arthropoda	
Crustacea	
Copepoda	1
Amphipoda (SCUDS)	
Crangonyctidae	
Crangonyx	2
Isopoda (AQUATIC SOWBUGS)	
Asellidae	
Caecidotea	1
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	
Acentrella	2
Ephemerellidae	
Dannella	4
Heptageniidae	
Heptagenia	1
Stenonema	27
Isonychiidae	
Isonychia	19
Plecoptera (STONEFLIES)	
Perlidae	
Acroneuria	3
Taeniopterygidae	
Taeniopteryx	2
Trichoptera (CADDISFLIES)	
Hydropsychidae	
Cheumatopsyche	6
Hydropsyche	15
Limnephilidae	1
Philopotamidae	
Chimarra	5
Polycentropodidae	
Neureclipsis	1

03032500 REDBANK CREEK AT ST. CHARLES, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES--Continued

Date	10/20/03
Benthic Macroinvertebrate	Count
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
Optioservus	1
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	6
Tipulidae (CRANE FLIES)	
Antocha	3
Total Organisms	104
Total Taxa	21

MAHONING CREEK BASIN

03034000 MAHONING CREEK AT PUNXSUTAWNEY, PA
(Pennsylvania Water-Quality Network Station)

LOCATION.--Lat 40°56'21", long 79°00'31", Jefferson County, Hydrologic Unit 05010006, on right bank 75 ft downstream from Williams Run, 1.8 mi upstream from bridge on Diamond Road at Sportsburg, 1.9 mi downstream from Sawmill Run, and 2 mi west of Punxsutawney.

DRAINAGE AREA.--158 mi^2.

WATER-DISCHARGE RECORDS

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 (U.S. Army Corps of Engineers benchmark). Prior to Oct. 1, 1946, at site 2.9 mi upstream at datum 13.30 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Diurnal fluctuations at low flow by mine pumpage into stream upstream of station. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

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 ft^3/s, from rating curve extended above 5,500 ft^3/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a 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. 19	2045	5,530	8.94	Apr. 13	2345	3,460	6.96
Jan. 5	0845	7,260	10.33	May 21	1100	12,100	13.72
Mar. 2	2315	2,990	6.44	July 12	2215	2,530	5.92
Mar. 6	0845	3,620	7.12	Sept. 18	0530	*15,100	*15.60

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	247	259	300	430	e115	344	460	419	260	139	380	149
2	222	248	277	725	e117	1410	532	408	242	129	290	131
3	197	235	251	933	e120	2240	500	377	212	120	244	120
4	242	222	232	1620	e118	1790	490	317	178	116	223	112
5	281	286	236	5490	e132	2160	426	295	174	137	254	104
6	221	473	244	2340	e141	3050	378	271	173	117	190	97
7	202	404	201	1300	e350	1730	351	260	153	123	167	94
8	186	368	193	880	e330	1210	333	255	138	162	150	208
9	174	331	195	670	e288	853	323	231	127	113	137	1850
10	163	306	194	e449	254	662	281	244	132	99	130	1080
11	153	306	1450	e314	229	543	257	210	224	94	140	598
12	146	360	1310	e275	220	488	253	191	225	728	134	412
13	142	396	835	e250	189	415	1280	174	156	950	158	319
14	153	370	642	e232	e175	369	2330	161	313	386	136	267
15	548	356	527	e218	e146	375	1190	152	584	333	119	242
16	410	349	430	e212	e141	338	786	149	393	295	108	220
17	346	343	432	e209	e138	325	593	137	759	234	101	2190
18	305	328	399	e196	e132	301	479	193	972	232	95	10900
19	266	2070	353	e181	e125	311	405	182	540	197	133	2390
20	233	2910	328	e172	e138	485	355	163	373	173	243	1200
21	213	1320	303	e166	e353	1850	322	5300	300	160	1120	768
22	202	830	289	e157	e310	1050	298	2210	556	139	676	554
23	184	604	412	e146	e255	724	614	1570	424	180	401	432
24	165	483	1070	e155	e230	587	525	945	304	200	297	358
25	152	435	1070	e157	e217	555	539	612	257	138	237	315
26	151	359	784	e142	247	515	1120	503	226	212	196	282
27	310	318	598	e135	235	494	964	424	193	1210	175	252
28	375	324	478	e133	234	439	746	340	181	1100	187	239
29	327	381	418	e128	262	388	577	286	186	605	196	244
30	307	319	578	e124	---	355	470	248	156	415	169	208
31	280	---	509	e118	---	383	---	246	---	431	209	---
TOTAL	7503	16293	15538	18657	5941	26739	18177	17473	9111	9667	7395	26335
MEAN	242	543	501	602	205	863	606	564	304	312	239	878
MAX	548	2910	1450	5490	353	3050	2330	5300	972	1210	1120	10900
MIN	142	222	193	118	115	301	253	137	127	94	95	94
CFSM	1.53	3.44	3.17	3.81	1.30	5.46	3.83	3.57	1.92	1.97	1.51	5.56
IN.	1.77	3.84	3.66	4.39	1.40	6.30	4.28	4.11	2.15	2.28	1.74	6.20

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	118	223	326	339	403	563	468	333	214	155	111	111
MAX	394	715	769	1025	1013	1249	909	722	1210	855	670	878
(WY)	1987	1986	1973	1952	1975	1964	1994	1953	1972	1977	1956	2004
MIN	18.1	23.0	27.2	61.0	96.6	132	112	79.9	48.9	26.4	23.0	16.9
(WY)	1965	1999	1961	1961	1993	1969	1946	1941	1991	1988	1949	1964

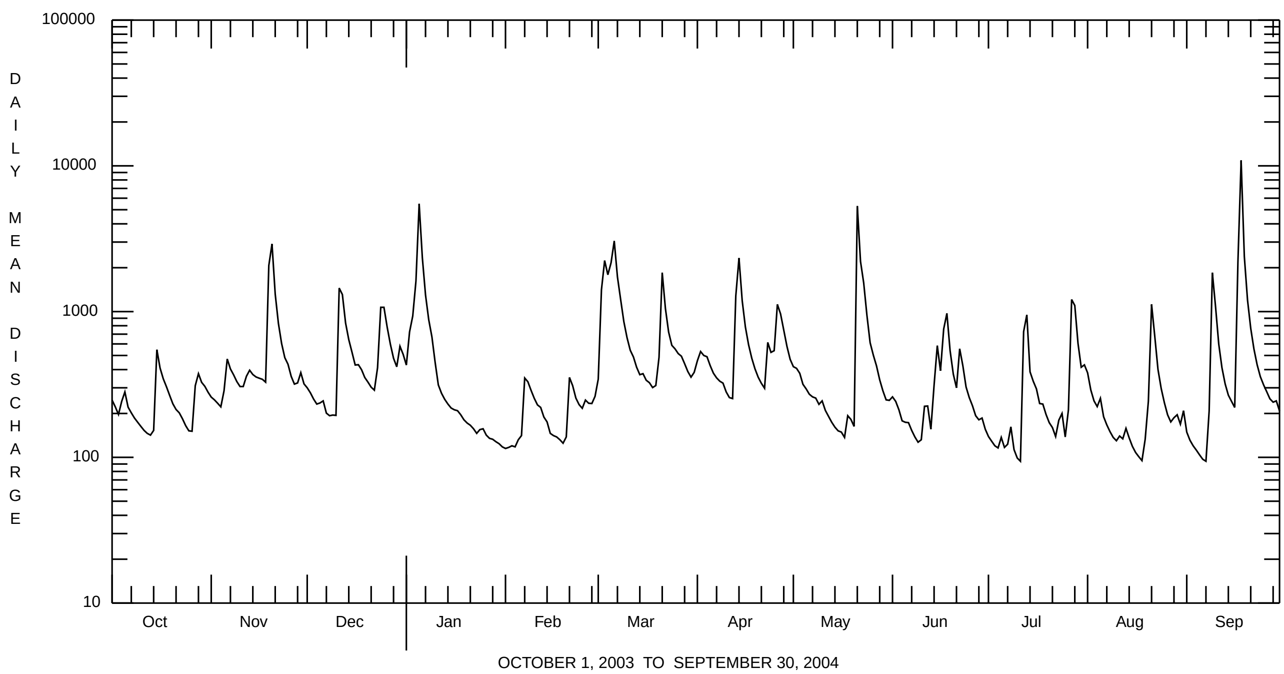
e Estimated.

MAHONING CREEK BASIN

03034000 MAHONING CREEK AT PUNXSUTAWNEY, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1939 - 2004	
ANNUAL TOTAL	138960		178829			
ANNUAL MEAN	381		489		280	
HIGHEST ANNUAL MEAN					489	2004
LOWEST ANNUAL MEAN					177	1963
HIGHEST DAILY MEAN	3200	Sep 4	10900	Sep 18	13200	Jun 23 1972
LOWEST DAILY MEAN	86	Jul 4	94	Jul 11**a**	12	Oct 19 1939
ANNUAL SEVEN-DAY MINIMUM	93	Jun 30	115	Sep 1	13	Oct 14 1939
MAXIMUM PEAK FLOW			**b**15100	Sep 18	**b**20400	Jul 19 1996
MAXIMUM PEAK STAGE			15.60	Sep 18	**c**18.38	Jul 19 1996
INSTANTANEOUS LOW FLOW			90	Sep 8	2.6	Sep 26 1939
ANNUAL RUNOFF (CFSM)	2.41		3.09		1.77	
ANNUAL RUNOFF (INCHES)	32.72		42.10		24.06	
10 PERCENT EXCEEDS	761		995		624	
50 PERCENT EXCEEDS	278		287		157	
90 PERCENT EXCEEDS	126		137		34	

a Also Sept. 7.
b From rating curve extended above 5,500 ft^3/s on basis of slope-area measurement at gage height 13.01 ft.
c From floodmark in gage well.



03034000 MAHONING CREEK AT PUNXSUTAWNEY, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 240-288.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unf lab, µS/cm 25 degC (90095)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water unfltrd recoverable, mg/L (00916)	Magnesium, water, unfltrd recoverable, mg/L (00927)
OCT 2003													
16...	0845	1028	9813	416	11.1	7.0	7.0	271	275	9.5	110	29.0	8.3
DEC													
23...	1115	1028	9813	349	13.0	6.8	7.3	321	348	4.0	130	34.9	9.8
FEB 2004													
26...	1350	1028	9813	E247	13.8	6.5	7.1	352	344	2.0	120	33.7	9.8
APR													
22...	1045	1028	9813	294	9.7	7.3	7.3	349	350	14.0	130	36.2	10.5
JUN													
24...	1215	1028	9813	303	10.4	7.4	7.2	293	286	17.0	110	30.8	8.3
AUG													
24...	0910	1028	9813	304	8.7	6.8	7.1	270	265	15.5	100	27.3	7.7

Date	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recoverable, µg/L (01105)	Copper, water, unfltrd recoverable, µg/L (01042)
OCT 2003													
16...	37	71.7	228	30	<.020	.55	<.040	.02	.021	.89	3.4	245	<10
DEC													
23...	38	90.9	228	12	.050	.79	<.040	.01	.016	1.2	1.0	230	<10
FEB 2004													
26...	38	80.2	256	4	.070	1.00	<.040	.02	.025	1.2	1.0	<200	<10
APR													
22...	40	99.6	270	6	.040	.61	<.040	<.01	.013	.84	1.2	<200	<10
JUN													
24...	42	69.8	228	<2	.070	.88	<.040	.01	.024	1.0	1.6	250	<10
AUG													
24...	42	61.0	210	10	<.020	.89	<.040	.01	.020	.97	1.6	<200	<10

Date	Iron, water, unfltrd recoverable, µg/L (01045)	Lead, water, unfltrd recoverable, µg/L (01051)	Manganese, water, unfltrd recoverable, µg/L (01055)	Nickel, water, unfltrd recoverable, µg/L (01067)	Zinc, water, unfltrd recoverable, µg/L (01092)
OCT 2003					
16...	1050	<1.0	180	<50	20
DEC					
23...	900	<1.0	250	<50	20
FEB 2004					
26...	630	<1.0	220	<50	30
APR					
22...	640	<1.0	170	<50	10
JUN					
24...	830	<1.0	130	<50	60
AUG					
24...	660	<1.0	100	<50	<10

MAHONING CREEK BASIN

03034000 MAHONING CREEK AT PUNXSUTAWNEY, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 animal (approximate) subsamples.

Date	10/21/03
Benthic Macroinvertebrate	Count
Arthropoda	
Acariformes	
Hydrachnidia (WATER MITES)	1
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	
Acentrella	1
Baetiscidae	
Baetisca	1
Heptageniidae	
Stenacron	1
Stenonema	5
Isonychiidae	
Isonychia	2
Plecoptera (STONEFLIES)	
Taeniopterygidae	
Taeniopteryx	69
Trichoptera (CADDISFLIES)	
Brachycentridae	
Micrasema	1
Hydropsychidae	
Cheumatopsyche	8
Hydropsyche	6
Psychomyiidae	
Psychomyia	2
Elmidae (RIFFLE BEETLES)	
Optioservus	1
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	10
Empididae (DANCE FLIES)	
Hemerodromia	2
Simuliidae (BLACK FLIES)	
Simulium	1
Tipulidae (CRANE FLIES)	
Antocha	1
Total Organisms	112
Total Taxa	16

MAHONING CREEK BASIN

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 bridge on SR 4018 at McCormick, 1 mi west of Georgeville, 1.7 mi upstream from Ross Run, and 4 mi southeast of Smicksburg.

DRAINAGE AREA.--87.4 mi^2.

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 (U.S. Army Corps of Engineers benchmark). Prior to May 10, 1940, nonrecording gage at site 200 ft upstream at same datum.

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

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

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
Nov. 19	2300	3,490	10.26	Apr. 14	0100	2,520	9.01
Jan. 5	1000	4,300	11.15	Sept. 18	0430	*10,100	*14.35

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	120	96	173	221	e72	295	230	168	81	47	203	61
2	108	90	156	406	e84	1060	299	164	72	44	131	51
3	93	84	138	439	e70	1230	256	148	64	40	99	46
4	130	78	127	1030	e74	974	287	116	54	37	103	42
5	160	178	128	3070	e98	1120	237	103	51	91	158	38
6	116	321	135	1060	e112	1420	195	92	52	137	89	35
7	100	194	116	562	e356	772	175	87	47	84	72	33
8	87	159	142	373	e283	585	164	96	41	109	62	107
9	77	133	114	280	e228	394	170	79	37	63	53	1110
10	70	117	134	199	e189	293	134	72	84	51	53	463
11	63	125	1350	184	e135	233	118	66	441	45	61	240
12	58	197	696	e150	e117	210	120	59	317	135	54	165
13	55	192	401	e119	e119	172	1030	53	157	208	70	120
14	61	159	302	e105	e98	150	1450	49	493	93	58	93
15	606	141	246	e96	e105	153	608	47	1090	102	48	84
16	268	130	201	e96	e112	135	373	46	508	118	42	76
17	196	128	224	e189	e119	129	262	43	346	80	38	941
18	159	114	209	e111	e105	119	204	275	396	91	35	5910
19	135	1350	183	e96	e98	140	168	165	237	80	47	1000
20	115	1570	167	e93	e112	281	143	128	168	65	156	467
21	104	617	150	e90	e299	1010	126	558	126	56	988	291
22	98	385	144	e87	e227	482	114	779	241	49	422	209
23	88	277	261	e82	e198	316	355	497	184	92	216	164
24	76	227	727	e86	e177	244	257	291	119	119	143	136
25	68	212	567	e99	e155	217	239	191	94	61	102	115
26	68	173	379	e86	e148	199	709	149	81	127	80	100
27	151	154	278	e83	e148	196	473	173	67	1040	69	88
28	172	166	224	e80	e155	172	337	120	62	629	85	85
29	136	223	197	e79	e184	146	242	92	68	304	113	93
30	122	180	337	e76	---	133	193	75	54	207	72	75
31	105	---	271	e75	---	153	---	74	---	233	84	---
TOTAL	3965	8170	8877	9802	4377	13133	9668	5055	5832	4637	4006	12438
MEAN	128	272	286	316	151	424	322	163	194	150	129	415
MAX	606	1570	1350	3070	356	1420	1450	779	1090	1040	988	5910
MIN	55	78	114	75	70	119	114	43	37	37	35	33
CFSM	1.46	3.12	3.28	3.62	1.73	4.85	3.69	1.87	2.22	1.71	1.48	4.74
IN.	1.69	3.48	3.78	4.17	1.86	5.59	4.11	2.15	2.48	1.97	1.71	5.29

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2004, BY WATER YEAR (WY)

MEAN	66.1	133	194	203	236	305	238	166	97.0	73.1	56.9	56.1
MAX	251	378	436	569	715	756	525	358	458	445	294	415
(WY)	1955	1986	1991	1952	1975	1963	1948	1956	1972	1977	1958	2004
MIN	3.39	9.36	21.8	26.2	42.7	59.0	48.7	20.5	9.10	4.71	3.85	2.33
(WY)	1964	1999	1961	1940	1993	1969	1946	1941	1949	1966	1957	1952

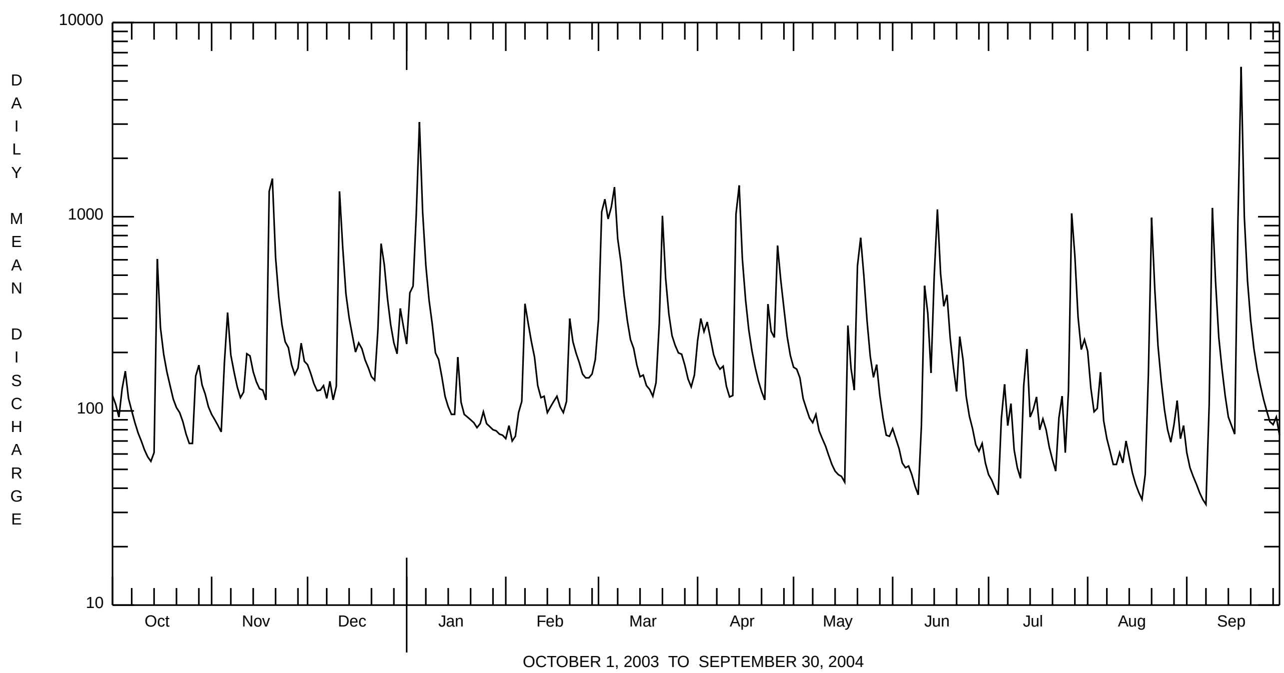
e Estimated.

MAHONING CREEK BASIN

03034500 LITTLE MAHONING CREEK AT McCORMICK, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1940 - 2004	
ANNUAL TOTAL	71749		89960			
ANNUAL MEAN	197		246		152	
HIGHEST ANNUAL MEAN					246	2004
LOWEST ANNUAL MEAN					92.2	1999
HIGHEST DAILY MEAN	**e**1960	Jan 2	5910	Sep 18	5910	Sep 18 2004
LOWEST DAILY MEAN	24	Aug 25	33	Sep 7	0.40	Sep 28 1959
ANNUAL SEVEN-DAY MINIMUM	29	Jun 30	44	Sep 1	0.69	Sep 23 1959
MAXIMUM PEAK FLOW			**a**10100	Sep 18	**a**10600	Jul 19 1996
MAXIMUM PEAK STAGE			14.35	Sep 18	**b**14.46	Jul 19 1996
INSTANTANEOUS LOW FLOW			33	Sep 7,8	0.30	Sep 28 1959
ANNUAL RUNOFF (CFSM)	2.25		2.81		1.73	
ANNUAL RUNOFF (INCHES)	30.54		38.29		23.56	
10 PERCENT EXCEEDS	394		494		357	
50 PERCENT EXCEEDS	127		135		75	
90 PERCENT EXCEEDS	44		58		9.4	

a From rating curve extended above 8,500 ft^3/s.
b From peak-stage indicator.
e Estimated.



OHIO RIVER MAIN STEM

03036500 ALLEGHENY RIVER AT KITTANNING, PA
(Pennsylvania Water-Quality Network Station)

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, 3,000 ft upstream from bridge on SR 1038 at Kittanning, 5.7 mi upstream from Crooked Creek, and 9.7 mi downstream from Mahoning Creek, at mile 45.8.

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

WATER-DISCHARGE RECORDS

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 773.40 ft above National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers bench mark). 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, Apr. 20, 1939 to Sept. 27, 1990, water-stage recorder at present site at different datum.

REMARKS.--No estimated daily discharges. Records good except those below 2,000 ft^3/s, which are poor. Sharp rises and drops in discharge during periods of low flow may be caused by hydroelectric power production. Flow regulated since 1924 by Piney Reservoir, since December 1940 by Tionesta Lake, since June 1941 by Mahoning Creek Lake, since November 1949 by Chautauqua Lake (station 03013946), since June 1952 by East Branch Clarion River Lake (station 03027000), since October 1965 by Allegheny Reservoir (station 03012520), since July 1970 by Union City Reservoir (station 03021518), and since January 1974 by Woodcock Creek Lake (station 03022550). Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16900	18000	41400	32700	6310	16400	34500	18800	23400	5700	32100	11000
2	15000	17300	38600	32600	6480	26600	37400	17600	22500	5190	34000	11500
3	14500	17300	34900	41000	7900	56000	40500	17900	20300	5300	28800	12300
4	14700	16800	29900	52800	7780	59300	39900	18600	17200	4180	25700	11400
5	17600	16400	26900	73600	7760	61700	36900	17900	13600	4750	23600	8170
6	18900	16700	24300	61500	9880	71400	33300	16800	11300	5660	18500	6400
7	15800	15500	22100	47100	16900	68000	29700	15000	10500	5430	15300	6160
8	13800	13300	19600	44100	16800	59300	26400	13700	9510	4970	12700	6980
9	12500	13700	18300	44000	15300	56100	23800	12800	7510	4200	11200	67600
10	11500	12400	18100	37700	14900	53300	21600	16100	6790	4330	10100	100000
11	9950	12900	37600	30900	13900	48600	19000	20100	11800	4790	9620	65800
12	10500	13800	49300	31200	12100	44300	17800	30100	15100	6150	8420	56600
13	11900	16400	42200	26900	11400	40000	21700	32100	10900	18200	8950	50600
14	12100	17600	37600	23000	11400	32600	39400	26400	12500	21500	7890	44800
15	17300	19200	34200	17500	10500	27200	44200	26000	17200	16500	7880	40000
16	25700	19200	30500	13400	9700	25600	40600	25300	15000	18400	6800	35400
17	27100	20000	28800	10400	8640	23300	40000	24800	13000	19100	7180	42600
18	25800	19700	29700	10200	7700	20300	35700	26400	20700	20200	6100	144000
19	23000	26900	28100	11500	7670	17800	30500	29200	21400	22900	5160	80900
20	20900	65500	25700	9880	8220	18000	26300	33800	15100	19800	7010	58500
21	18800	50200	24000	9300	12700	35700	22100	41600	11900	16700	26500	55300
22	16800	42600	21600	7990	17200	41500	18900	72600	10600	14400	26800	51800
23	14800	43000	21600	7340	18900	34400	20200	79200	8800	12200	16300	46400
24	14200	40900	30700	6790	19100	32300	21500	66700	9230	12100	13100	43000
25	13800	37800	45700	5620	17600	31900	21100	63700	8000	12200	12300	36100
26	14000	36600	42400	5710	16400	37100	22900	57400	6710	13900	11200	30300
27	15500	35000	37500	6110	14700	41700	27100	49400	6090	29400	9870	25500
28	20500	34500	33100	7030	14800	46100	25100	41700	5330	28100	10000	23100
29	21400	47900	29700	6980	15200	41200	22700	37300	5270	27800	12400	19900
30	21100	45600	29000	7230	---	36400	21000	31200	6100	25300	11000	15300
31	19800	---	34800	6290	---	33500	---	25500	---	24800	12000	---
TOTAL	526150	802700	967900	728370	357840	1237600	861800	1005700	373340	434150	448480	1207410
MEAN	16970	26760	31220	23500	12340	39920	28730	32440	12440	14000	14470	40250
MAX	27100	65500	49300	73600	19100	71400	44200	79200	23400	29400	34000	144000
MIN	9950	12400	18100	5620	6310	16400	17800	12800	5270	4180	5160	6160
CFSM	1.89	2.98	3.48	2.62	1.38	4.45	3.20	3.62	1.39	1.56	1.61	4.49
IN.	2.18	3.33	4.01	3.02	1.48	5.13	3.57	4.17	1.55	1.80	1.86	5.01

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1904 - 2004, BY WATER YEAR (WY)

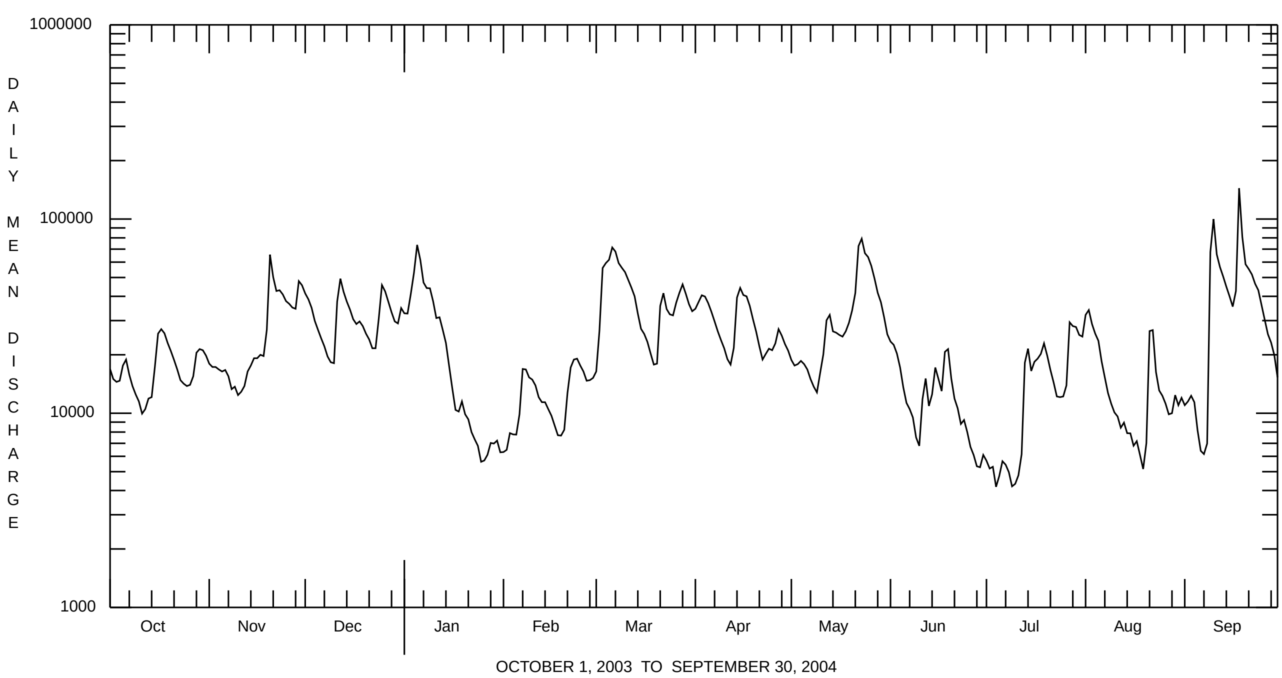
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	8367	14110	19030	20830	20850	31930	27700	18560	11420	7136	5324	5972
MAX	31750	37830	55850	62840	45020	74110	66140	43650	40230	28200	19250	40250
(WY)	1991	1986	1928	1937	1990	1936	1940	1919	1989	1972	1977	2004
MIN	848	1155	1636	2752	4688	8342	6585	4860	2893	1511	1274	930
(WY)	1924	1909	1961	1961	1963	1969	1946	1941	1936	1966	1910	1909

OHIO RIVER MAIN STEM

03036500 ALLEGHENY RIVER AT KITTANNING, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1904 - 2004	
ANNUAL TOTAL	7516440		8951440			
ANNUAL MEAN	20590		24460		15910	
HIGHEST ANNUAL MEAN					24460	2004
LOWEST ANNUAL MEAN					10080	1999
HIGHEST DAILY MEAN	67200	Jul 23	144000	Sep 18	253000	Mar 26 1913
LOWEST DAILY MEAN	4060	Jul 5	4180	Jul 4	570	Sep 15 1913**a**
ANNUAL SEVEN-DAY MINIMUM	4580	Jun 30	4790	Jul 4	610	Sep 11 1913
MAXIMUM PEAK FLOW			166000	Sep 18	269000	Mar 26 1913
MAXIMUM PEAK STAGE			22.25	Sep 18	**b**30.70	Mar 26 1913
ANNUAL RUNOFF (CFSM)	2.29		2.73		1.77	
ANNUAL RUNOFF (INCHES)	31.16		37.11		24.10	
10 PERCENT EXCEEDS	41100		45600		37100	
50 PERCENT EXCEEDS	17500		19600		10100	
90 PERCENT EXCEEDS	6060		7310		2290	

a Also Sept. 16, 17, 1913.
b From Floodmark, site and datum then in use.



OHIO RIVER MAIN STEM

03036500 ALLEGHENY RIVER AT KITTANNING, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 240-288.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unf lab, µS/cm 25 degC (90095)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water unfltrd recover -able, mg/L (00916)	Magnesium, water, unfltrd recover -able, mg/L (00927)
OCT 2003													
23...	1140	1028	9813	14500	10.8	7.1	7.5	168	168	12.0	60	17.2	4.2
DEC													
11...	1245	1028	9813	41000	12.6	7.0	7.1	168	175	3.5	65	17.4	5.2
FEB 2004													
25...	0935	1028	9813	18000	13.0	7.4	7.4	244	252	2.2	74	20.1	5.9
APR													
19...	1250	1028	9813	30200	10.8	7.6	7.3	152	152	12.5	51	14.0	3.8
JUN													
21...	1000	1028	9813	12800	8.7	7.5	7.3	191	191	21.0	67	18.0	5.3
AUG													
12...	1020	1028	9813	6960	8.4	7.4	6.8	187	193	21.5	69	19.2	5.1

Date	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Fluoride, water, unfltrd mg/L (00951)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recover -able, µg/L (01105)
OCT 2003													
23...	39	<.2	19.9	166	4	<.020	.34	<.040	.02	.017	.67	3.6	285
DEC													
11...	34	<.2	28.9	158	58	.020	.56	<.040	.04	.039	.83	2.6	1200
FEB 2004													
25...	35	<.2	36.8	126	26	.070	.81	<.040	.02	.017	1.0	1.9	210
APR													
19...	23	<.2	24.4	108	20	<.020	.53	<.040	.02	.026	.76	2.0	370
JUN													
21...	30	<.2	38.8	158	<2	.050	.55	<.040	.02	.028	.93	3.3	480
AUG													
12...	42	<.2	28.6	126	10	<.020	.35	<.040	.02	.030	.59	2.9	540

Date	Copper, water, unfltrd recover -able, µg/L (01042)	Cyanide amenable to chlorination wat unf mg/L (00722)	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, unfltrd recover -able, µg/L (01051)	Manganese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, unfltrd recover -able, µg/L (01092)	Phenolic compounds, water, unfltrd µg/L (32730)
OCT 2003								
23...	<10	<1.00	580	<1.0	80	<50	<10	<5
DEC								
11...	<10	<1.00	1810	1.1	250	<50	<10	<5
FEB 2004								
25...	<10	<1.00	430	<1.0	230	<50	<10	<5
APR								
19...	<10	<1.00	570	<1.0	130	<50	<10	<5
JUN								
21...	<10	<1.00	820	<1.0	180	<50	30	<5
AUG								
12...	<10	<1.00	900	<1.0	220	<50	<10	7

OHIO RIVER MAIN STEM

03036500 ALLEGHENY RIVER AT KITTANNING, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 animal (approximate) subsamples.

Date	10/15/03
Benthic Macroinvertebrate	Count
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Physidae	
Physa	11
Planorbidae	
Menetus dilatatus	6
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Tubificida	
Naididae	3
Arthropoda	
Acariformes	
Hydrachnidia (WATER MITES)	1
Insecta	
Trichoptera (CADDISFLIES)	
Polycentropodidae	
Neureclipsis	1
Polycentropus	4
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	47
Total Organisms	73
Total Taxa	7

CROOKED CREEK BASIN

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, 1.8 mi upstream of bridge on SR 210, 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 those for estimated daily discharges, which are poor. 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 measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of March 1936 reached a stage of 18.6 ft, from floodmark, discharge, about 19,000 ft^3/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a 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. 20	0330	5,380	10.02	June 18	0445	2,600	6.55
Dec. 11	1230	4,090	8.41	July 27	2045	2,550	6.49
Jan. 5	1530	7,950	12.66	Aug. 21	1200	4,260	8.63
Mar. 3	0330	3,560	7.75	Sept. 9	0915	2,540	6.48
Apr. 14	0430	5,060	9.63	Sept. 18	0715	*26,400	*19.29
June 15	1345	2,640	6.60				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	137	155	375	373	70	795	425	343	157	73	295	89
2	125	145	322	665	65	2340	575	312	139	61	211	73
3	104	133	277	705	105	2720	483	277	114	55	161	61
4	138	121	247	2460	178	1700	557	221	86	46	245	54
5	191	255	246	6820	138	1480	485	191	86	136	452	48
6	134	473	261	3170	748	1800	400	166	87	162	252	42
7	115	334	222	1170	1750	1170	356	190	68	116	200	45
8	100	283	184	690	857	930	349	244	55	261	148	390
9	88	235	177	511	535	659	357	173	43	134	113	2230
10	77	199	298	350	440	505	285	145	79	97	108	918
11	71	210	3680	323	362	416	253	129	341	74	225	466
12	65	304	1810	299	304	382	285	112	403	71	158	318
13	60	315	853	271	278	318	2240	97	216	157	193	237
14	88	264	597	230	249	276	e1640	85	796	124	150	184
15	1050	238	480	222	228	265	e1150	89	2030	196	120	151
16	468	225	387	141	170	245	e840	88	1370	129	96	127
17	377	219	484	158	190	241	560	72	1590	97	80	2440
18	311	196	462	207	169	234	444	413	2080	174	68	17900
19	257	2320	401	185	184	309	355	462	967	213	262	3420
20	216	4140	356	147	265	465	303	339	538	134	646	923
21	187	1380	306	122	1180	1800	260	660	378	114	3680	522
22	171	749	285	122	833	927	227	1500	484	76	1810	368
23	144	524	421	104	573	598	440	915	354	323	674	282
24	130	448	1060	109	522	466	422	524	255	451	416	231
25	113	436	1010	93	423	391	415	348	201	210	314	194
26	106	348	675	94	371	329	997	294	172	278	228	166
27	234	301	509	100	340	307	839	395	124	1950	184	143
28	273	344	417	100	374	274	680	257	110	1600	162	143
29	230	489	361	89	506	236	505	186	137	616	155	156
30	199	414	491	83	---	220	412	142	93	386	131	123
31	170	---	431	74	---	237	---	135	---	324	121	---
TOTAL	6129	16197	18085	20187	12407	23035	17539	9504	13553	8838	12058	32444
MEAN	198	540	583	651	428	743	585	307	452	285	389	1081
MAX	1050	4140	3680	6820	1750	2720	2240	1500	2080	1950	3680	17900
MIN	60	121	177	74	65	220	227	72	43	46	68	42
CFSM	1.04	2.83	3.05	3.41	2.24	3.89	3.06	1.61	2.37	1.49	2.04	5.66
IN.	1.19	3.15	3.52	3.93	2.42	4.49	3.42	1.85	2.64	1.72	2.35	6.32

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2004, BY WATER YEAR (WY)

MEAN	122	222	355	379	484	587	466	305	201	135	104	107
MAX	839	820	827	1000	1260	1340	1052	746	1072	987	549	1081
(WY)	1955	1986	1991	1952	1956	1994	1940	1989	1972	1956	1984	2004
MIN	7.15	23.8	33.5	59.7	120	83.9	85.1	38.0	25.3	13.9	11.3	6.07
(WY)	1953	1954	1961	1977	1980	1969	1946	1941	1949	1962	1942	1952

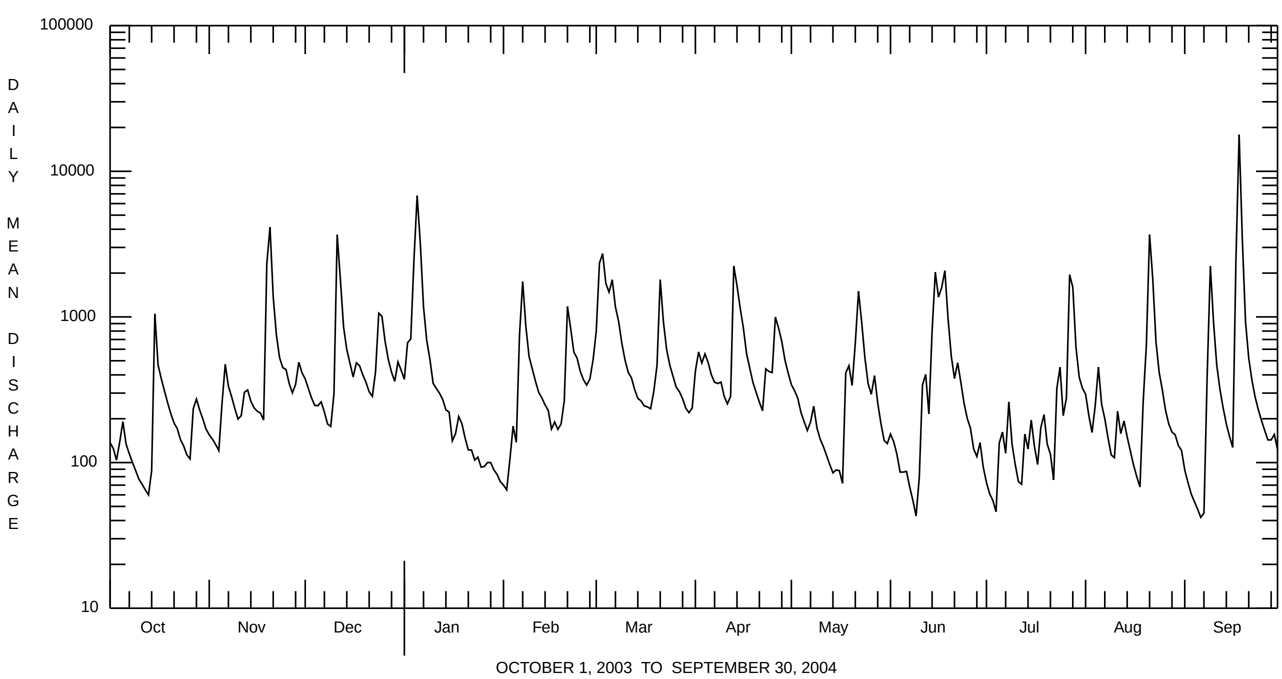
e Estimated.

CROOKED CREEK BASIN

03038000 CROOKED CREEK AT IDAHO, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1938 - 2004	
ANNUAL TOTAL	131895		189976			
ANNUAL MEAN	361		519		288	
HIGHEST ANNUAL MEAN					519	2004
LOWEST ANNUAL MEAN					148	1992
HIGHEST DAILY MEAN	4140	Nov 20	17900	Sep 18	17900	Sep 18 2004
LOWEST DAILY MEAN	24	Aug 22	42	Sep 6	**a**2.8	Oct 8 1939
ANNUAL SEVEN-DAY MINIMUM	31	Aug 19	59	Sep 1	4.1	Sep 19 1939
MAXIMUM PEAK FLOW			**b**26400	Sep 18	**b**26400	Sep 18 2004
MAXIMUM PEAK STAGE			19.29	Sep 18	19.29	Sep 18 2004
INSTANTANEOUS LOW FLOW			37	Jun 9	2.4	Oct 8 1939
ANNUAL RUNOFF (CFSM)	1.89		2.72		1.51	
ANNUAL RUNOFF (INCHES)	25.69		37.00		20.49	
10 PERCENT EXCEEDS	701		1020		686	
50 PERCENT EXCEEDS	225		264		129	
90 PERCENT EXCEEDS	55		89		24	

a 1.0 ft^3/s Oct. 22, 1966. Result of upstream pumping.
b From rating curve extended above 18,700 ft^3/s.



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 those for estimated daily discharges, which are poor. 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 Stonycreek 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 measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	872	661	892	979	e375	805	2170	980	523	238	718	224
2	801	620	802	1140	e365	2810	4940	949	451	200	521	176
3	700	576	719	1610	e370	5330	4530	1090	444	180	390	153
4	677	540	661	3490	e365	4570	3450	900	397	191	334	139
5	691	618	647	8680	e400	5150	2630	781	411	249	330	131
6	628	970	655	4840	e530	10100	2090	713	397	213	263	119
7	560	912	605	2640	1150	5600	1750	691	365	209	231	125
8	494	735	558	1890	1120	3750	1630	723	332	236	204	903
9	466	631	534	1510	881	2740	1850	644	305	182	188	4860
10	439	578	559	e1120	718	2190	1510	579	296	150	188	2370
11	418	576	4060	e980	622	1830	1280	525	431	151	177	1300
12	403	1070	2640	e900	e525	1650	1520	500	665	188	173	901
13	381	1250	1650	e830	e455	1370	7140	538	477	250	265	701
14	387	965	1340	e750	e395	1190	7250	501	566	218	242	578
15	937	810	1190	e680	e370	1140	3340	449	689	192	198	504
16	840	749	1010	e600	e355	1090	2290	473	696	168	174	476
17	947	707	962	e560	e335	1020	1790	434	812	147	159	1080
18	1330	647	872	e530	e340	944	1490	837	1010	181	153	11600
19	1000	3520	799	e495	e350	1110	e1300	1770	713	358	268	4180
20	822	6240	745	e475	e400	1360	e1100	1430	548	296	282	2030
21	732	2960	668	e440	1040	3870	1000	1600	458	211	510	1400
22	693	2010	660	e420	1060	2440	916	2090	461	173	606	1120
23	722	1530	1050	e395	857	1700	947	1460	413	164	386	940
24	650	1300	2390	e385	819	1410	936	1050	368	158	273	792
25	573	1210	2250	e380	730	1310	900	847	331	140	219	649
26	524	1040	1540	e370	648	1220	2420	932	320	248	188	555
27	827	938	1210	e365	612	1180	2230	780	271	1100	170	467
28	1170	913	1050	e380	600	1110	1610	672	243	977	158	600
29	962	1060	970	e375	660	978	1280	583	305	603	258	799
30	839	958	1150	e380	---	894	1090	514	265	548	310	607
31	725	---	1150	e370	---	943	---	492	---	848	321	---
TOTAL	22210	37294	35988	38959	17447	72804	68379	26527	13963	9367	8857	40479
MEAN	716	1243	1161	1257	602	2349	2279	856	465	302	286	1349
MAX	1330	6240	4060	8680	1150	10100	7250	2090	1010	1100	718	11600
MIN	381	540	534	365	335	805	900	434	243	140	153	119
CFSM	1.59	2.76	2.57	2.79	1.33	5.21	5.05	1.90	1.03	0.67	0.63	2.99
IN.	1.83	3.08	2.97	3.21	1.44	6.01	5.64	2.19	1.15	0.77	0.73	3.34

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	247	427	673	764	1020	1613	1369	846	520	260	183	212
MAX	1514	2099	2162	1929	2575	3581	3426	1792	1773	874	1098	1449
(WY)	1977	1986	1973	1952	1986	1994	1993	1978	1972	1977	1979	1996
MIN	13.6	20.4	48.4	137	262	367	336	186	77.4	28.4	26.3	18.9
(WY)	1964	1954	1954	1977	1963	1990	1946	1941	1965	1965	1957	1943

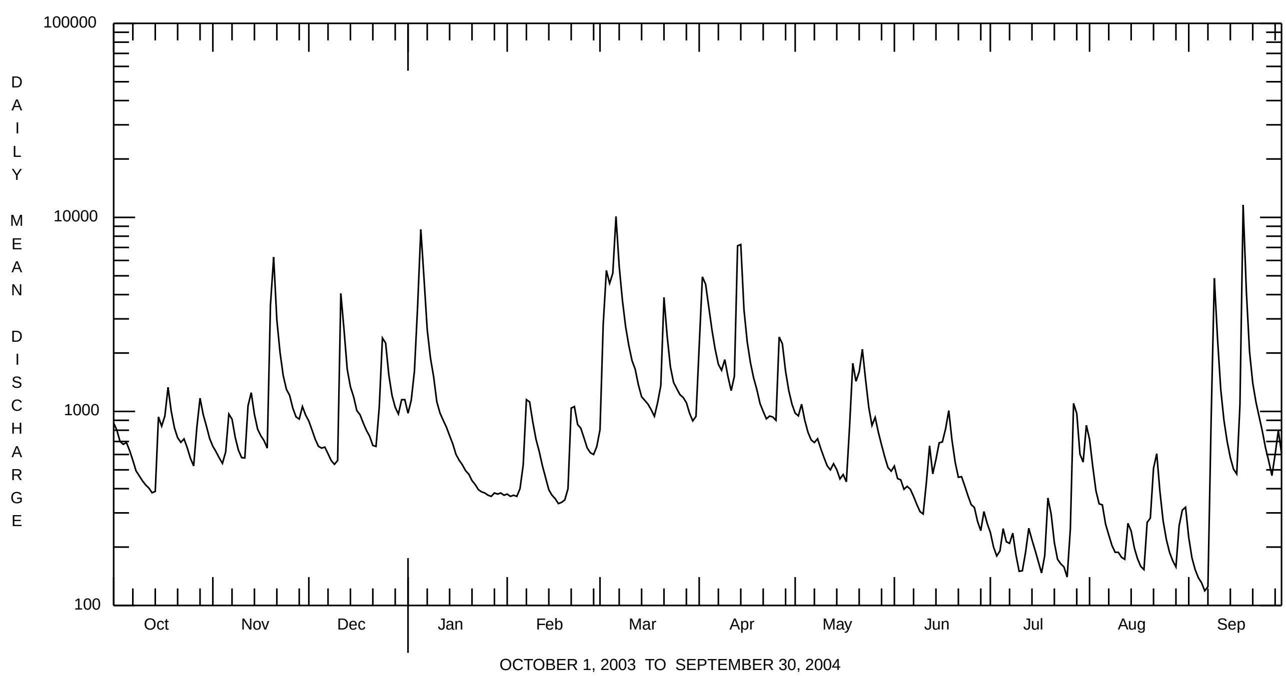
e Estimated.

KISKIMINETAS RIVER BASIN

03040000 STONYCREEK RIVER AT FERNDALE, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1939 - 2004	
ANNUAL TOTAL	399213		392274			
ANNUAL MEAN	1094		1072		678	
HIGHEST ANNUAL MEAN					1072	2004
LOWEST ANNUAL MEAN					280	1954
HIGHEST DAILY MEAN	8140	Jun 4	11600	Sep 18	15900	Jun 23 1972
LOWEST DAILY MEAN	162	Aug 25	119	Sep 6	11	Sep 26 1959
ANNUAL SEVEN-DAY MINIMUM	192	Aug 19	152	Sep 1	12	Oct 5 1963
MAXIMUM PEAK FLOW			**a**15900	Sep 18	**ab**59000	Mar 18 1936
MAXIMUM PEAK STAGE			11.62	Sep 18	**c**30.26	Mar 18 1936
INSTANTANEOUS LOW FLOW			116	Sep 6-8	**d**5.0	Sep 8 1929
ANNUAL RUNOFF (CFSM)	2.43		2.38		1.50	
ANNUAL RUNOFF (INCHES)	32.93		32.36		20.43	
10 PERCENT EXCEEDS	2340		2180		1610	
50 PERCENT EXCEEDS	749		694		340	
90 PERCENT EXCEEDS	299		216		61	

a From rating curve extended above 13,000 ft^3/s on the basis of slope-area and contracted-opening measurement of peak flow.
b About.
c From highwater mark, site and datum then in use.
d Minimum observed.



KISKIMINETAS RIVER BASIN

03041029 CONEMAUGH RIVER AT MINERSVILLE, PA

LOCATION.--Lat 40°20'29", long 78°55'34", Cambria County, Hydrologic Unit 05010007, on right bank at upstream side of Fourth Avenue bridge at Minersville, 4,000 ft downstream from confluence of Little Conemaugh River and Stonycreek River.

DRAINAGE AREA.--678 mi^2.

PERIOD OF RECORD.--December 2001 to current year.

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

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated by steel mills and reservoirs above station; the eight most effective reservoirs have a combined capacity of 51,850 acre-ft. Several measurements of water temperature were made during the year. Satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1490	1050	1380	1560	e600	1210	3550	1580	982	441	1740	485
2	1320	991	1250	1820	e600	4220	7550	1530	862	399	1170	399
3	1110	918	1110	2500	e610	7870	6790	1760	839	375	860	353
4	1100	852	1030	6200	e685	6910	5340	1430	711	403	834	326
5	1120	1000	1030	14500	e650	8190	4030	1260	755	554	1360	305
6	946	1550	1070	7750	e760	15500	3200	1160	716	486	832	285
7	829	1440	968	4300	e1550	8630	2730	1150	648	445	673	288
8	756	1180	890	3130	e1460	5910	2560	1210	590	540	571	1180
9	699	1020	846	2560	e1150	4250	2790	1050	545	387	497	7760
10	646	935	889	1960	e970	3400	2310	935	529	321	497	3520
11	603	929	7080	1680	e860	2900	1970	841	897	391	482	2100
12	576	1620	4310	1620	e740	2650	2240	796	1290	437	451	1520
13	549	1900	2780	1480	e670	2200	10800	843	863	650	644	1200
14	577	1490	2280	1300	e600	1930	10600	796	1100	568	553	980
15	1460	1270	2010	1260	e570	1860	5060	730	1340	464	456	850
16	1200	1180	1680	e890	e530	1760	3490	741	1560	411	398	789
17	1370	1120	1580	e860	e520	1650	2770	685	2040	354	359	1800
18	2000	1020	1440	e850	e525	1520	2340	1340	2640	380	341	17400
19	1540	8180	1300	e780	e580	1760	2020	2570	1660	618	548	6010
20	1260	9660	1210	e740	737	2160	1790	2180	1260	511	626	3080
21	1120	4520	1080	e680	1540	6210	1610	3230	1010	401	1270	2150
22	1050	3110	1060	e660	1580	3780	1460	3760	1020	340	1220	1660
23	1070	2430	1650	e610	1260	2730	1500	2630	931	341	767	1340
24	956	2070	3770	e600	1200	2290	1440	1920	726	370	585	1130
25	842	1920	3500	e580	1080	2130	1460	1530	625	299	487	981
26	770	1600	2520	e590	957	2010	3660	1720	603	444	426	864
27	1300	1420	2010	e600	902	1950	3280	1520	531	2470	389	760
28	1860	1400	1720	e620	876	1830	2510	1260	497	1970	366	993
29	1520	1680	1570	e610	989	1590	2050	1070	583	1150	523	1300
30	1330	1460	1900	e605	---	1460	1760	923	502	1320	718	966
31	1160	---	1830	e585	---	1550	---	892	---	2590	694	---
TOTAL	34129	60915	58743	64480	25751	114010	104660	45042	28855	20830	21337	62774
MEAN	1101	2030	1895	2080	888	3678	3489	1453	962	672	688	2092
MAX	2000	9660	7080	14500	1580	15500	10800	3760	2640	2590	1740	17400
MIN	549	852	846	580	520	1210	1440	685	497	299	341	285

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	708	1430	1443	1439	849	2922	2259	2026	1458	483	508	1198
MAX	1101	2030	1895	2080	888	3678	3489	2486	2605	672	688	2092
(WY)	2004	2004	2004	2004	2004	2004	2004	2002	2003	2004	2004	2004
MIN	315	829	991	615	828	1842	1513	1453	806	252	181	210
(WY)	2003	2003	2003	2002	2003	2002	2002	2004	2002	2002	2002	2002

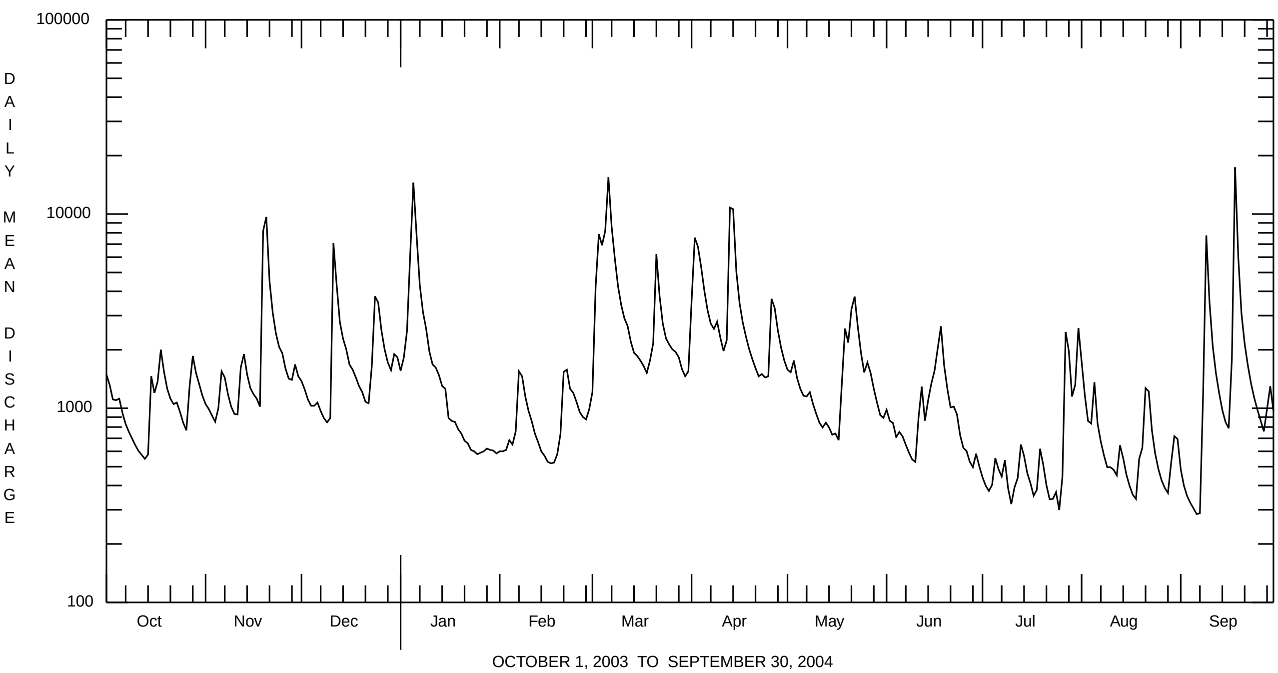
e Estimated.

KISKIMINETAS RIVER BASIN

03041029 CONEMAUGH RIVER AT MINERSVILLE, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 2001 - 2004	
ANNUAL TOTAL	600987		641526			
ANNUAL MEAN	1647		1753		1579	
HIGHEST ANNUAL MEAN					1753	2004
LOWEST ANNUAL MEAN					1404	2003
HIGHEST DAILY MEAN	10500	Jun 4	17400	Sep 18	17400	Sep 18 2004
LOWEST DAILY MEAN	266	Aug 25	285	Sep 6	127	Sep 9 2002
ANNUAL SEVEN-DAY MINIMUM	309	Aug 19	349	Sep 1	128	Sep 7 2002
MAXIMUM PEAK FLOW			**a**25700	Sep 18	**a**25700	Sep 18 2004
MAXIMUM PEAK STAGE			12.35	Sep 18	12.35	Sep 18 2004
INSTANTANEOUS LOW FLOW			274	Sep 8	127	Sep 9 2002
10 PERCENT EXCEEDS	3450		3430		3220	
50 PERCENT EXCEEDS	1160		1160		1010	
90 PERCENT EXCEEDS	420		487		398	

a From rating curve extended above 22,700 ft^3/s.



KISKIMINETAS RIVER BASIN

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 mi^2.

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 those for estimated daily discharges, which are poor. Flow regulated by steel mills and reservoirs above station; the eight most effective reservoirs have a combined capacity of 51,850 acre-ft. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 18, 1936 reached a stage of 26.4 ft, from floodmarks, discharge, about 75,000 ft^3/s, by contracted-opening measurement at site 6.7 mi downstream, adjusted for inflow.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1470	1080	1430	1670	e630	1280	3380	1620	982	467	1990	525
2	1320	1020	1300	1910	e635	4140	7780	1530	882	430	1290	437
3	1120	953	1160	2640	e640	8590	7180	1790	858	407	955	392
4	1110	891	1070	6730	e720	7490	5690	1440	727	416	909	366
5	1140	1000	1080	15000	e680	8540	4350	1250	765	594	1730	345
6	982	1560	1110	8600	e800	15600	3440	1150	727	508	1030	326
7	879	1460	1010	4790	e1630	9620	2910	1130	652	460	806	327
8	804	1210	942	3440	e1530	6530	2690	1210	583	578	664	881
9	739	1050	899	2760	e1200	4660	2930	1050	535	434	571	7200
10	681	969	920	2130	e1020	3670	2440	948	518	370	559	3930
11	631	963	e6910	1820	e900	3080	2070	860	833	396	550	2300
12	599	1560	4820	1730	e780	2810	2250	810	1300	460	498	1600
13	579	1960	3070	1560	e700	2350	10700	827	899	611	683	1240
14	598	1540	2480	1360	e630	2040	11800	824	1110	621	609	1020
15	1470	1300	2190	1310	e600	1970	5700	731	1430	492	501	890
16	1280	1200	1810	e940	e550	1860	3880	730	1530	438	441	832
17	1400	1150	1700	e910	e555	1740	3030	684	2360	391	404	1440
18	2150	1060	1540	e900	e610	1580	2510	1240	3310	393	389	14100
19	1650	e7650	1370	e820	695	1830	2140	2550	1980	612	552	7040
20	1330	9320	1270	e770	811	2210	1870	2340	1400	529	716	3530
21	1170	5030	1140	e710	1640	6680	1650	3200	1100	434	1320	2440
22	1090	3410	1110	e690	1760	4210	1470	4180	1090	380	1370	1840
23	1100	2630	1640	e640	1370	2980	1500	2940	1030	370	878	1450
24	999	2220	4010	e645	1300	2480	1410	2080	790	403	658	1210
25	889	2050	3910	e610	1160	2270	1440	1610	674	341	545	1050
26	813	1690	2780	e620	1050	2130	3730	1770	628	421	478	932
27	1220	1480	2180	e630	998	2070	3590	1580	559	2540	440	833
28	1950	1440	1870	e650	971	1930	2710	1280	521	2260	412	1000
29	1550	1760	1680	e640	1070	1670	2180	1090	601	1230	467	1370
30	1370	1520	2000	e635	---	1500	1840	942	530	1270	770	1030
31	1180	---	1980	e615	---	1600	---	905	---	2880	755	---
TOTAL	35263	62126	62381	68875	27635	121110	110260	46291	30904	22136	23940	61876
MEAN	1138	2071	2012	2222	953	3907	3675	1493	1030	714	772	2063
MAX	2150	9320	6910	15000	1760	15600	11800	4180	3310	2880	1990	14100
MIN	579	891	899	610	550	1280	1410	684	518	341	389	326
CFSM	1.59	2.90	2.81	3.11	1.33	5.46	5.14	2.09	1.44	1.00	1.08	2.88
IN.	1.83	3.23	3.25	3.58	1.44	6.30	5.74	2.41	1.61	1.15	1.25	3.22

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	566	877	1295	1442	1832	2797	2407	1560	1053	657	491	520
MAX	2746	3076	3620	3625	3816	5524	5288	2871	3594	2527	1690	2475
(WY)	1977	1986	1973	1952	1971	1994	1993	1960	1972	1977	1979	1996
MIN	169	189	212	389	493	779	739	512	325	242	204	169
(WY)	1964	1939	1999	2000	1993	1990	1946	1941	1999	1965	2002	1959

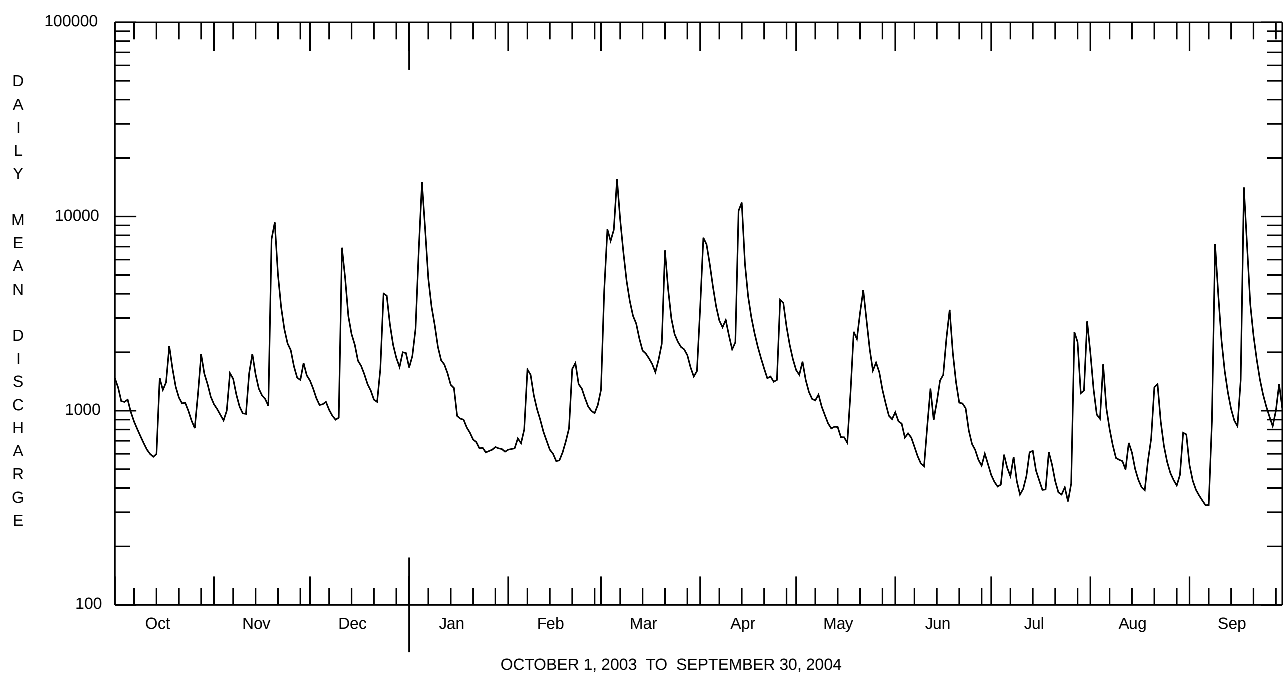
e Estimated.

KISKIMINETAS RIVER BASIN

03041500 CONEMAUGH RIVER AT SEWARD, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1939 - 2004	
ANNUAL TOTAL	651740		672797			
ANNUAL MEAN	1786		1838		1288	
HIGHEST ANNUAL MEAN					1838	2004
LOWEST ANNUAL MEAN					687	1954
HIGHEST DAILY MEAN	12400	Jun 4	15600	Mar 6	40900	Jul 20 1977
LOWEST DAILY MEAN	308	Aug 25	326	Sep 6	105	Dec 28 1938**a**
ANNUAL SEVEN-DAY MINIMUM	371	Aug 19	388	Sep 1	111	Dec 26 1938
MAXIMUM PEAK FLOW			21400	Sep 18	**b**115000	Jul 20 1977
MAXIMUM PEAK STAGE			12.14	Sep 18	**c**27.06	Jul 20 1977
INSTANTANEOUS LOW FLOW			316	Jul 26**d**	104	Sep 10 2002
ANNUAL RUNOFF (CFSM)	2.50		2.57		1.80	
ANNUAL RUNOFF (INCHES)	33.91		35.00		24.48	
10 PERCENT EXCEEDS	3830		3610		2860	
50 PERCENT EXCEEDS	1270		1200		735	
90 PERCENT EXCEEDS	460		520		256	

a Also Dec. 29, 31, 1938.
b From rating curve extended above 23,000 ft^3/s on basis of slope-area measurement of peak flow.
c From highwater mark.
d Also Sept. 7.



KISKIMINETAS RIVER BASIN

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 mi^2.

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 1929. Prior to Aug. 25, 1953, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Some regulation at low flow by mine pumpage above station. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 2,700 ft^3/s and maximum (*****):

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
Nov. 19	2000	*9,560	*8.93	Mar. 21	0400	4,260	6.59
Dec. 11	1200	3,440	6.16	Apr. 13	2300	8,380	8.49
Jan. 5	0800	9,140	8.78	June 18	0330	2,780	5.78
Mar. 3	0100	3,720	6.31	July 27	1930	4,000	6.45
Mar. 6	1100	5,650	7.31	Sept. 18	0545	8,900	8.69

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	341	286	435	476	e170	526	902	426	261	136	1040	137
2	318	263	388	635	e165	1720	1350	443	297	e115	638	e110
3	262	243	343	861	e170	2570	1190	463	260	e110	443	e90
4	299	224	314	3570	e190	1940	1220	372	200	e120	408	e80
5	430	358	304	7140	e180	2410	998	326	193	204	1060	e75
6	309	683	299	2640	403	4570	804	303	201	250	580	e70
7	254	473	289	1370	1270	2330	682	313	172	181	405	e60
8	224	384	280	1000	948	1620	625	432	146	156	323	e175
9	202	326	270	794	695	1130	744	325	130	127	261	1340
10	180	291	281	572	525	897	553	272	130	e100	236	742
11	162	285	2550	e420	414	745	476	238	301	e110	604	402
12	153	381	1450	e360	350	667	515	214	599	134	340	293
13	149	405	893	e320	316	551	3550	194	308	e105	414	232
14	158	336	692	e280	e275	477	4270	177	470	238	361	193
15	634	285	591	e260	e240	483	1620	164	600	148	272	177
16	412	260	458	e210	e230	447	1080	152	583	135	221	151
17	419	253	475	e205	e220	418	e860	141	840	123	189	964
18	559	234	452	e200	e200	382	e680	296	1940	148	169	6600
19	443	4440	380	e195	e195	436	e570	932	953	150	260	1750
20	364	3870	346	e195	e225	741	e520	643	636	125	364	953
21	322	1510	319	e190	739	2960	e440	1130	454	e115	1100	648
22	298	993	316	e190	597	1280	e430	1730	543	e100	867	467
23	269	723	474	e180	460	895	e475	1110	533	e140	497	365
24	231	586	1370	e180	435	727	e410	721	339	262	359	300
25	206	555	1200	e175	374	646	e480	520	269	141	275	256
26	191	424	826	e170	333	603	e650	433	234	e135	223	219
27	380	361	624	e175	307	569	e860	526	198	2060	193	194
28	552	378	499	e190	302	511	770	388	179	1480	176	235
29	421	588	434	e185	363	422	599	309	201	718	158	289
30	378	460	668	e180	---	383	489	248	170	534	180	215
31	323	---	629	e170	---	403	---	226	---	1530	172	---
TOTAL	9843	20858	18849	23688	11291	34459	28812	14167	12340	10130	12788	17782
MEAN	318	695	608	764	389	1112	960	457	411	327	413	593
MAX	634	4440	2550	7140	1270	4570	4270	1730	1940	2060	1100	6600
MIN	149	224	270	170	165	382	410	141	130	100	158	60
CFSM	1.65	3.62	3.17	3.98	2.03	5.79	5.00	2.38	2.14	1.70	2.15	3.09
IN.	1.91	4.04	3.65	4.59	2.19	6.68	5.58	2.74	2.39	1.96	2.48	3.45

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	172	304	423	429	546	763	606	420	261	203	158	154
MAX	812	1113	1025	905	1202	1615	1086	1009	1376	1114	581	595
(WY)	1977	1998	1973	1975	1956	1967	1993	1978	1972	1977	1958	1996
MIN	30.8	33.5	68.4	135	124	219	236	84.8	65.6	43.5	37.1	28.7
(WY)	1953	1954	1961	1956	1987	1969	1997	1986	1965	1965	1962	1998

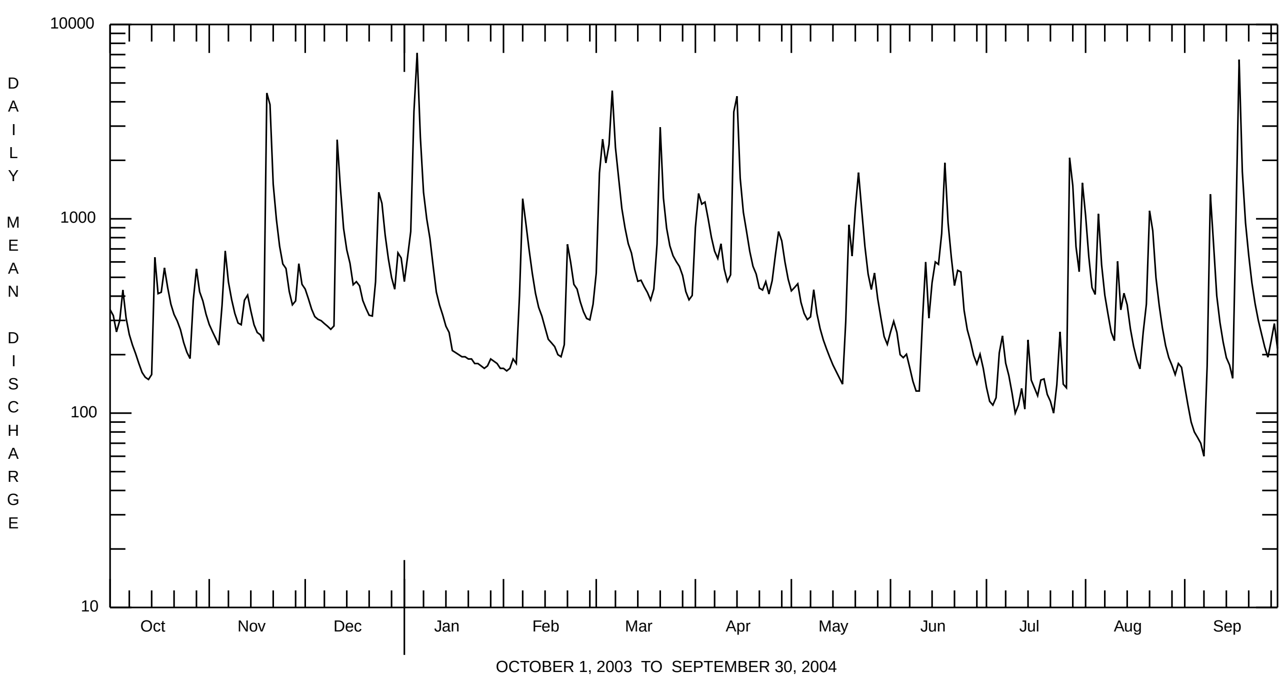
e Estimated.

KISKIMINETAS RIVER BASIN

03042000 BLACKLICK CREEK AT JOSEPHINE, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1953 - 2004	
ANNUAL TOTAL	179737		215007			
ANNUAL MEAN	492		587		369	
HIGHEST ANNUAL MEAN					587	2004
LOWEST ANNUAL MEAN					242	1954
HIGHEST DAILY MEAN	4440	Nov 19	7140	Jan 5	22800	Jul 20 1977
LOWEST DAILY MEAN	93	Jul 4	**e**60	Sep 7	**e**15	Oct 13 1995
ANNUAL SEVEN-DAY MINIMUM	103	Jun 30	**a**89	Sep 1	23	Sep 9 2002
MAXIMUM PEAK FLOW			9560	Nov 19	**b**45700	Jul 20 1977
MAXIMUM PEAK STAGE			8.93	Nov 19	**c**19.89	Jul 20 1977
ANNUAL RUNOFF (CFSM)	2.56		3.06		1.92	
ANNUAL RUNOFF (INCHES)	34.82		41.66		26.11	
10 PERCENT EXCEEDS	1010		1130		800	
50 PERCENT EXCEEDS	360		364		211	
90 PERCENT EXCEEDS	144		157		53	

a Computed using estimated daily discharges.
b From rating curve extended above 16,000 ft^3/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.
c From floodmark in gage well.
e Estimated.



KISKIMINETAS RIVER BASIN

03042260 YELLOW CREEK LAKE

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, and 3 mi southwest of Penn Run.

DRAINAGE AREA.--52.5 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is sea level (Pennsylvania Department of Environmental Protection 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.

COOPERATION.--Dam built by Pennsylvania Department of Forests and Waters and now maintained by Pennsylvania Department of Conservation and Natural 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, 16,870 acre-ft, Sept. 18, elevation, 1,283.41 ft; minimum, 13,250 acre-ft, Sept. 7, 8 elevation, 1,279.39 ft.

MONTHEND ELEVATION, IN FEET ABOVE SEA LEVEL, AND CONTENTS AT 2400 HRS, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (equivalent in ft^3/s)
Sept. 30	1,279.96	13,760	---
Oct. 31	1,279.96	13,760	0
Nov. 30	1,280.18	13,960	+3.4
Dec. 31	1,280.43	14,190	+3.7
CAL YR 2003	--	--	+.44
Jan. 31	1,279.55	13,400	-13
Feb. 29	1,280.01	13,810	+7.1
Mar. 31	1,279.97	13,770	-.65
Apr. 30	1,280.32	14,090	+5.4
May 31	1,279.82	13,640	-7.3
June 30	1,279.60	13,440	-3.4
July 31	1,281.17	14,850	+23
Aug. 31	1,279.67	13,500	-22
Sept. 30	1,279.68	13,510	+.17
WTR YR 2004	--	--	-.34

KISKIMINETAS RIVER BASIN

03042280 YELLOW CREEK NEAR HOMER CITY, PA

LOCATION.--Lat 40°34'21", long 79°06'13", Indiana County, Hydrologic Unit 05010007, 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.--Records good except those for estimated daily discharges, which are poor. Flow regulated since July 1971 by Yellow Creek Lake (station 03042260) 4.2 mi upstream. Several measurements of water temperature were made during the year. Satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	103	92	134	177	e43	120	136	156	71	41	444	48
2	96	86	126	193	e43	312	236	143	70	36	302	40
3	87	80	115	230	e46	673	282	141	64	32	210	34
4	86	73	105	616	43	583	321	128	56	32	178	30
5	96	76	100	2310	42	581	308	112	52	49	296	26
6	94	110	98	1150	62	793	256	101	47	65	238	23
7	86	115	90	548	126	621	211	96	43	64	182	20
8	78	112	81	361	156	448	186	108	38	58	147	38
9	70	103	74	265	155	334	190	104	34	49	119	165
10	62	94	77	191	143	258	171	96	39	42	103	199
11	56	89	408	148	130	207	153	86	65	37	116	171
12	49	92	482	131	114	182	148	77	98	35	108	140
13	44	94	349	118	104	159	566	68	95	36	108	112
14	47	92	268	101	94	139	1240	59	115	39	104	91
15	104	86	213	93	85	127	648	51	157	43	94	76
16	111	82	173	e80	78	119	398	44	184	43	81	64
17	113	80	162	e75	67	110	282	39	185	42	71	223
18	119	76	154	e65	61	101	213	55	278	41	62	2320
19	115	771	138	e60	57	102	171	102	246	39	70	999
20	105	1440	124	e55	59	132	148	116	187	48	98	462
21	96	665	111	e55	115	497	129	174	151	47	169	283
22	89	405	100	e45	150	441	110	318	139	40	228	201
23	80	281	106	e55	151	316	105	313	132	49	196	e160
24	70	212	212	e49	147	239	99	231	108	66	161	e135
25	61	183	317	e47	136	196	97	178	90	59	132	e105
26	54	157	282	e46	123	171	195	152	73	61	105	e80
27	71	136	224	e45	110	154	269	145	60	232	86	e70
28	100	126	184	e47	102	139	259	125	53	382	75	e55
29	106	144	161	e46	101	123	213	103	51	281	64	e50
30	106	140	174	e46	---	107	179	86	47	210	61	e45
31	99	---	193	e44	---	101	---	74	---	512	56	---
TOTAL	2653	6292	5535	7492	2843	8585	7919	3781	3028	2810	4464	6465
MEAN	85.6	210	179	242	98.0	277	264	122	101	90.6	144	216
MAX	119	1440	482	2310	156	793	1240	318	278	512	444	2320
MIN	44	73	74	44	42	101	97	39	34	32	56	20
CFSM	1.49	3.65	3.11	4.21	1.71	4.82	4.60	2.12	1.76	1.58	2.51	3.75
IN.	1.72	4.08	3.59	4.86	1.84	5.56	5.13	2.45	1.96	1.82	2.89	4.19

e Estimated.

KISKIMINETAS RIVER BASIN

03042280 YELLOW CREEK NEAR HOMER CITY, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 2004, BY WATER YEAR (WY) (SINCE REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	52.9	96.6	134	125	158	204	160	118	78.6	61.3	35.0	44.0
MAX	186	303	254	314	374	447	264	358	324	443	144	216
(WY)	1978	1998	1973	1996	1981	1994	2004	1978	1972	1977	2004	2004
MIN	6.10	6.85	21.1	32.1	44.4	70.8	68.8	28.5	12.2	5.95	5.46	8.02
(WY)	1992	1999	1999	2000	1993	1990	1997	2001	1999	1971	1971	2002

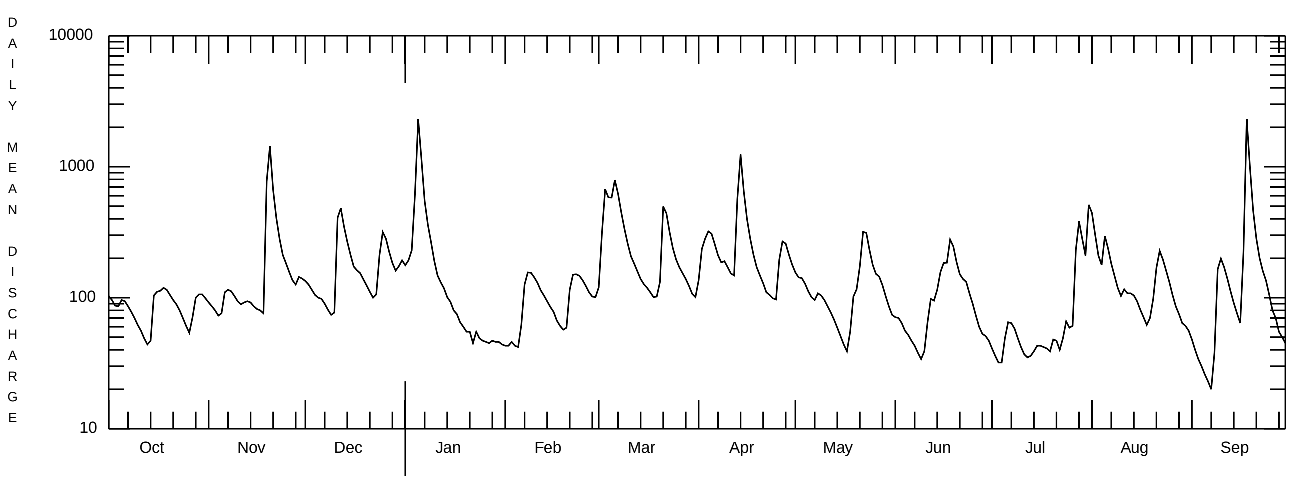
SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1971 - 2004	
ANNUAL TOTAL	47901		61867			
ANNUAL MEAN	131		169		105	
HIGHEST ANNUAL MEAN					169	2004
LOWEST ANNUAL MEAN					64.2	1999
HIGHEST DAILY MEAN	1440	Nov 20	2320	Sep 18	7630	Jul 20 1977
LOWEST DAILY MEAN	**e**17	Feb 2,3	20	Sep 7	3.4	Jul 8 1971
ANNUAL SEVEN-DAY MINIMUM	**a**19	Jan 28	30	Sep 2	3.6	Jul 22 1971
MAXIMUM PEAK FLOW			2870	Sep 18	**b**15000	Jul 20 1977
MAXIMUM PEAK STAGE			6.65	Sep 18	12.60	Jul 20 1977
ANNUAL RUNOFF (CFSM)	2.29		2.94		1.84	
ANNUAL RUNOFF (INCHES)	31.04		40.09		24.96	
10 PERCENT EXCEEDS	247		312		236	
50 PERCENT EXCEEDS	100		106		61	
90 PERCENT EXCEEDS	33		45		11	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1970, BY WATER YEAR (WY) (PRIOR TO REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	24.6	72.0	119	113	146	136	160	148	51.0	39.6	39.9	26.9
MAX	51.8	105	142	148	210	199	243	212	74.7	75.4	63.0	66.6
(WY)	1968	1968	1969	1969	1970	1970	1970	1968	1970	1969	1969	1970
MIN	7.87	43.9	102	90.8	112	46.4	62.7	103	25.5	7.11	13.0	5.34
(WY)	1969	1970	1968	1970	1969	1969	1968	1969	1969	1968	1968	1969

SUMMARY STATISTICS	WATER YEARS 1968 - 1970	
ANNUAL MEAN	89.4	
HIGHEST ANNUAL MEAN	104	1970
LOWEST ANNUAL MEAN	80.7	1969
HIGHEST DAILY MEAN	1100	Jan 31 1968
LOWEST DAILY MEAN	3.0	Jul 31 1968
ANNUAL SEVEN-DAY MINIMUM	3.3	Sep 18 1969
MAXIMUM PEAK FLOW	**c**1300	Jan 30 1968
MAXIMUM PEAK STAGE	**d**7.83	Jan 29 1970
INSTANTANEOUS LOW FLOW	1.4	Jul 19 1969
ANNUAL RUNOFF (CFSM)	1.56	
ANNUAL RUNOFF (INCHES)	21.16	
10 PERCENT EXCEEDS	213	
50 PERCENT EXCEEDS	50	
90 PERCENT EXCEEDS	8.0	

a Computed using estimated daily discharges.
b From rating curve extended above 4,100 ft^3/s on basis of computation of peak flow over dam, gage height 7.46 ft.
c About.
d Backwater from ice.
e Estimated.



OCTOBER 1, 2003 TO SEPTEMBER 30, 2004

KISKIMINETAS RIVER BASIN

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.--Records good except those for estimated daily discharges, which are poor. 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 measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	248	210	329	476	686	466	417	409	210	103	865	139
2	e250	201	306	588	646	1060	608	398	197	107	540	118
3	e220	195	262	641	711	2170	620	372	192	120	398	95
4	e240	175	229	2120	560	1470	685	322	167	175	347	87
5	e320	218	242	6910	294	1460	698	261	243	393	710	81
6	e260	397	258	2380	415	2300	624	242	148	331	392	78
7	e210	401	305	1280	572	1780	477	274	120	232	317	92
8	e190	297	292	788	543	1070	478	375	110	191	261	434
9	152	247	225	658	507	741	514	281	103	132	238	1420
10	143	236	287	556	453	633	450	258	313	102	269	696
11	136	260	1370	508	372	584	398	248	328	93	318	429
12	129	281	1300	490	321	646	465	236	367	128	241	350
13	100	333	794	469	309	498	2340	201	258	216	271	252
14	161	318	603	445	273	471	3270	170	538	185	234	189
15	580	283	532	380	233	431	1500	157	1120	210	219	170
16	379	252	484	311	217	384	846	150	884	152	175	150
17	317	250	529	290	212	346	729	144	867	142	146	1620
18	315	243	482	273	196	337	563	433	1120	462	133	9610
19	294	2500	425	252	202	362	431	501	818	224	285	1970
20	261	3370	335	240	252	517	389	393	509	472	743	1050
21	221	1410	313	232	629	1510	362	687	352	382	1450	655
22	199	899	336	185	568	887	332	986	587	191	730	461
23	183	600	409	179	449	706	374	835	396	317	473	387
24	168	534	627	175	435	607	307	610	273	306	413	319
25	158	485	679	324	402	643	368	488	207	193	344	243
26	156	422	610	1230	378	511	540	394	184	283	251	220
27	236	393	537	1060	365	460	722	368	155	2110	207	243
28	315	383	487	969	353	350	594	339	153	1260	214	259
29	256	454	456	870	382	298	473	299	208	820	164	181
30	233	437	536	781	---	266	434	246	116	477	317	164
31	224	---	506	712	---	263	---	239	---	889	165	---
TOTAL	7254	16684	15085	26772	11935	24227	21008	11316	11243	11398	11830	22162
MEAN	234	556	487	864	412	782	700	365	375	368	382	739
MAX	580	3370	1370	6910	711	2300	3270	986	1120	2110	1450	9610
MIN	100	175	225	175	196	263	307	144	103	93	133	78
(†)	-1.0	-15	+11	-26	+8.8	+4.8	+22	-8.3	+.30	+22	-23	-1.1

† Change in contents, equivalent in cubic feet per second, in Yellow Creek Lake and Two Lick Creek Reservoir. Records of contents in Two Lick Creek Reservoir furnished by Midwest Generation.

e Estimated.

03042500 TWO LICK CREEK AT GRACETON, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 2004, BY WATER YEAR (WY) (SINCE REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	148	261	360	362	428	531	434	314	232	188	127	155
MAX	466	689	722	864	925	1230	832	695	1091	1161	450	739
(WY)	1977	1998	1973	2004	1986	1994	1984	2002	1972	1977	2003	2004
MIN	21.0	53.2	87.0	106	116	93.9	179	86.2	53.6	52.1	48.9	41.9
(WY)	1969	1992	1999	1983	1993	1969	1997	1986	1992	1993	1988	1995

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1969 - 2004	
ANNUAL TOTAL	134947		190914			
ANNUAL MEAN	370	† +1.6	522	† -.54	294	
HIGHEST ANNUAL MEAN					522	2004
LOWEST ANNUAL MEAN					178	1969
HIGHEST DAILY MEAN	3370	Nov 20	9610	Sep 18	21900	Jul 20 1977
LOWEST DAILY MEAN	64	Jul 4	78	Sep 6	12	Oct 1 1968
ANNUAL SEVEN-DAY MINIMUM	76	Jun 29	99	Sep 1	15	Oct 12 1968
MAXIMUM PEAK FLOW			**a**14600	Sep 18	**a**32000	Jul 20 1977
MAXIMUM PEAK STAGE			14.04	Sep 18	**b**18.65	Jul 20 1977
INSTANTANEOUS LOW FLOW			70	Aug 26	12	Oct 1 1968
10 PERCENT EXCEEDS	680		888		610	
50 PERCENT EXCEEDS	281		350		181	
90 PERCENT EXCEEDS	114		160		59	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 1968, BY WATER YEAR (WY) (PRIOR TO REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	101	139	256	367	444	604	472	346	130	100	90.6	61.1
MAX	628	305	635	811	1093	1097	786	634	271	644	377	199
(WY)	1955	1960	1955	1952	1956	1963	1957	1966	1960	1956	1956	1962
MIN	14.2	23.6	50.1	118	176	234	167	99.7	42.3	25.2	16.9	15.9
(WY)	1964	1954	1961	1956	1963	1957	1968	1955	1965	1962	1957	1952

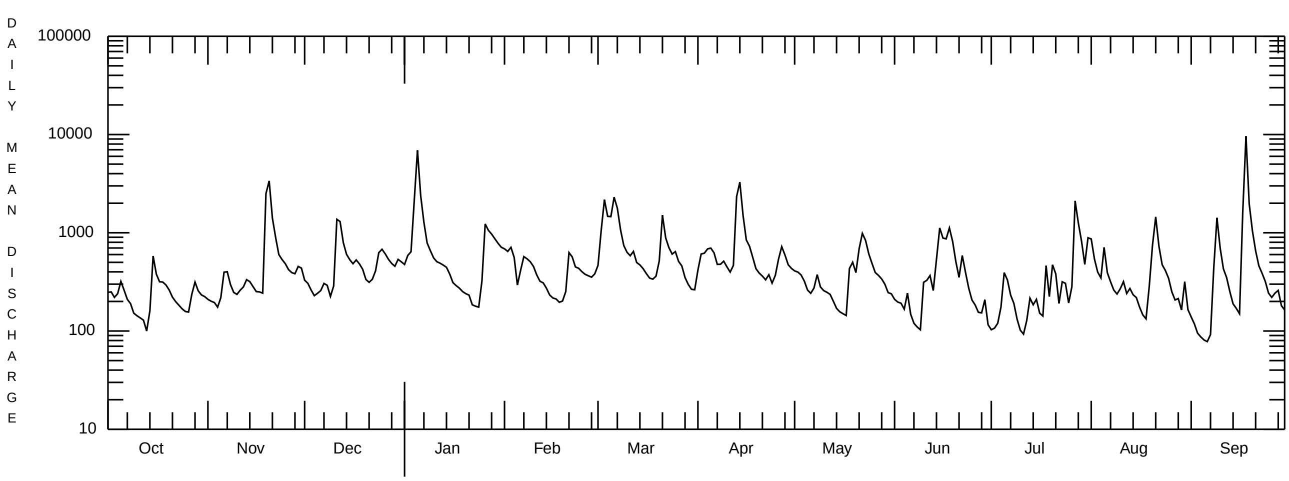
SUMMARY STATISTICS	WATER YEARS 1952 - 1968	
ANNUAL MEAN	259	
HIGHEST ANNUAL MEAN	415	1956
LOWEST ANNUAL MEAN	185	1954
HIGHEST DAILY MEAN	6800	Oct 16 1954
LOWEST DAILY MEAN	8.7	Sep 14 1952
ANNUAL SEVEN-DAY MINIMUM	12	Sep 6 1957
MAXIMUM PEAK FLOW	**c**12900	Oct 16 1954
MAXIMUM PEAK STAGE	12.71	Oct 16 1954
INSTANTANEOUS LOW FLOW	11	Sep 30 1968
ANNUAL RUNOFF (CFSM)	1.52	
ANNUAL RUNOFF (INCHES)	20.67	
10 PERCENT EXCEEDS	640	
50 PERCENT EXCEEDS	118	
90 PERCENT EXCEEDS	21	

† Change in contents, equivalent in cubic feet per second, in Yellow Creek Lake and Two Lick Creek Reservoir. Records of contents in Two Lick Creek Reservoir furnished by Midwest Generation.

a From rating curve extended above 7,800 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 upstream from gage, adjusted to gage site.

b From highwater mark.

c From rating curve extended above 4,500 ft^3/s on basis of contracted-opening measurement of peak flow at site 1.6 mi upstream from gage, adjusted to gage site.



OCTOBER 1, 2003 TO SEPTEMBER 30, 2004

KISKIMINETAS RIVER BASIN

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 mi^2.

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 (U.S. Army Corps of Engineers bench mark). Prior to Oct. 1, 1969, at datum 1.00 ft higher.

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

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, about 21,000 ft^3/s, from rating curve extended above 8,700 ft^3/s.

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

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
Nov. 19	2000	9,860	10.56	Apr. 13	2000	11,000	11.00
Jan. 5	1200	8,830	10.15	July 27	1545	5,880	8.74
Mar. 6	0800	3,980	7.58	Sept. 18	0430	*17,600	*13.17

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	406	e270	e440	413	e130	511	1060	333	145	76	377	96
2	337	e250	353	579	e150	1310	1450	430	117	68	246	78
3	275	e220	313	736	e210	1320	1220	360	164	64	186	68
4	318	221	286	3360	e280	1180	1150	295	106	77	195	61
5	316	314	282	6310	e250	1160	887	269	108	134	278	55
6	245	438	284	2230	e600	2970	684	238	99	79	166	50
7	209	366	251	1140	1250	1680	566	223	84	64	133	47
8	182	319	224	777	673	1220	595	225	74	83	110	371
9	158	283	207	588	489	888	618	185	68	58	93	1410
10	141	261	229	428	430	683	490	161	68	49	90	722
11	125	274	1550	366	385	553	436	141	119	49	111	442
12	115	612	942	e300	332	494	748	131	202	47	95	318
13	105	550	654	e270	316	403	5220	199	103	74	126	238
14	106	452	547	e240	e270	355	3400	128	612	57	94	187
15	443	392	468	e210	e240	331	1400	111	644	66	76	156
16	247	348	385	e180	e190	322	901	117	565	50	66	131
17	541	318	408	e175	e210	304	653	98	1380	42	60	1440
18	717	275	378	e165	e185	309	537	554	1200	129	55	9690
19	491	4320	335	e160	e165	488	432	738	637	363	118	1640
20	386	3390	305	e155	e280	655	380	485	428	147	345	834
21	328	1370	267	e150	890	1840	328	745	315	89	802	539
22	301	872	270	e145	592	973	291	1210	309	67	466	395
23	274	627	591	e135	468	670	285	757	242	84	267	307
24	223	522	1190	e130	462	523	247	505	175	98	189	246
25	189	471	949	e130	390	444	258	369	143	59	142	203
26	e180	e420	679	e135	340	385	739	304	128	144	114	169
27	e320	e380	526	e140	310	377	590	251	107	2430	100	142
28	e460	e430	439	e150	320	341	506	222	98	1110	87	159
29	e380	e640	390	e145	375	296	414	182	150	539	81	162
30	e340	e510	578	e140	---	278	358	146	90	363	283	140
31	e310	---	474	e135	---	282	---	141	---	437	147	---
TOTAL	9168	20115	15194	20317	11182	23545	26843	10253	8680	7196	5698	20496
MEAN	296	670	490	655	386	760	895	331	289	232	184	683
MAX	717	4320	1550	6310	1250	2970	5220	1210	1380	2430	802	9690
MIN	105	220	207	130	130	278	247	98	68	42	55	47
(†)	5.6	8.1	5.6	6.2	7.1	6.9	6.6	2.9	7.5	7.0	3.1	15

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	107	214	347	377	465	611	528	371	233	122	102	98.6
MAX	689	785	834	850	1210	1305	1007	779	997	344	667	683
(WY)	1955	1986	1973	1952	1986	1963	1940	1952	1972	1990	1979	2004
MIN	2.76	5.09	29.4	79.0	137	175	178	83.4	38.3	7.76	7.04	4.20
(WY)	1954	1954	1999	1940	1978	1969	1997	2001	1999	1966	1957	1957

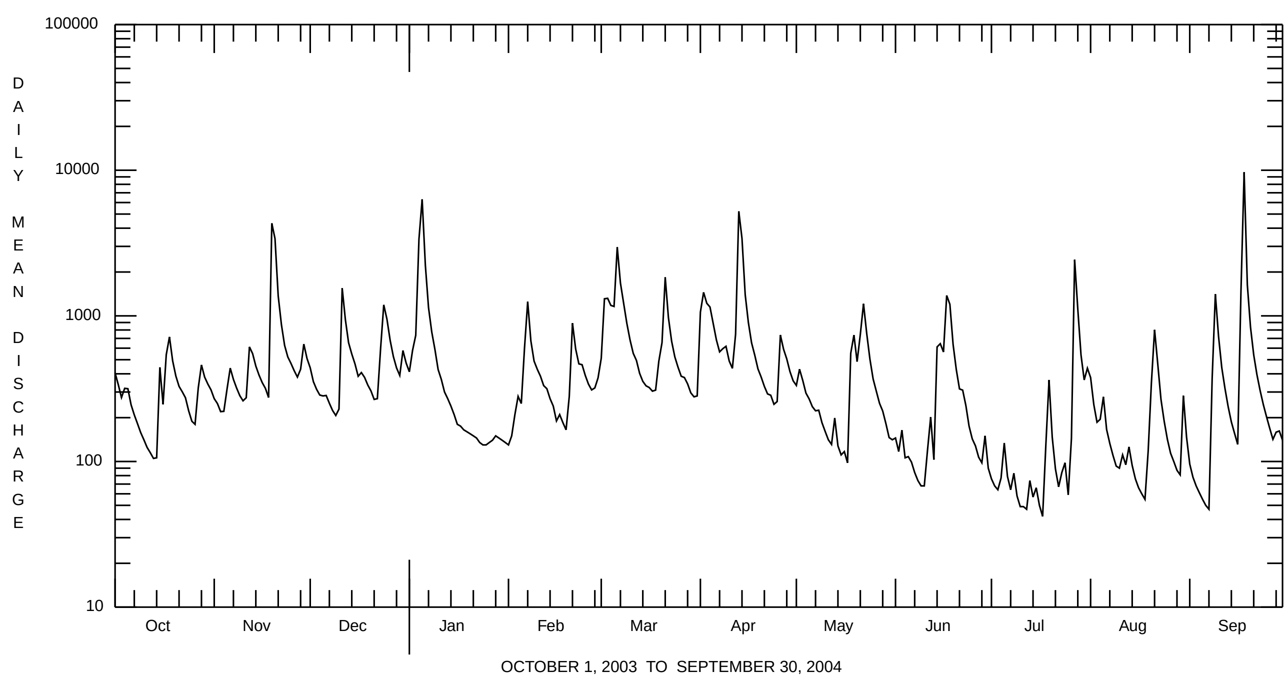
† Diversion from and change in contents in Latrobe Reservoir and diversion from Kingston intake, equivalent in cubic feet per second, furnished by Latrobe Municipal Authority.
e Estimated.

KISKIMINETAS RIVER BASIN

03045000 LOYALHANNA CREEK AT KINGSTON, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1940 - 2004	
ANNUAL TOTAL	150027	† 7.4	178687	† 6.8		
ANNUAL MEAN	411		488		297	
HIGHEST ANNUAL MEAN					488	2004
LOWEST ANNUAL MEAN					160	1954
HIGHEST DAILY MEAN	4320	Nov 19	9690	Sep 18	14200	Jun 23 1972
LOWEST DAILY MEAN	50	Jan 31**a**	42	Jul 17	0.20	Oct 23 1953
ANNUAL SEVEN-DAY MINIMUM	**b**55	Jan 27	55	Jul 11	0.63	Oct 19 1953
MAXIMUM PEAK FLOW			**c**17600	Sep 18	**c**29700	Oct 15 1954
MAXIMUM PEAK STAGE			13.17	Sep 18	**d**15.80	Oct 15 1954
INSTANTANEOUS LOW FLOW			40	Jul 17	0.10	Sep 4 1953
10 PERCENT EXCEEDS	800		944		695	
50 PERCENT EXCEEDS	309		304		159	
90 PERCENT EXCEEDS	88		90		21	

† 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.
a Also Feb. 1.
b Computed using estimated daily discharges.
c From rating curve extended above 8,700 ft^3/s on basis of slope-area measurement at gage height 13.37 ft.
d Present datum, from floodmarks.



KISKIMINETAS RIVER BASIN

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 mi^2.

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 Forests and Waters.

GAGE.--Water-stage recorder. Datum of gage is 769.40 ft above National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers benchmark). 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.--No estimated daily discharges. Records good. Flow regulated since June 1942 by Loyalhanna Lake, 20 mi upstream, since November 1951 by Conemaugh River Lake, 23 mi upstream, since July 1971 by Yellow Creek Lake (station 03042260), and by other reservoirs upstream of 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 ft^3/s. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of March 18, 1936 reached a stage of 41.64 ft, from floodmark at present site, discharge, about 185,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2230	3110	7080	5370	1780	3480	3250	5830	1910	1430	5020	1360
2	2800	2710	4780	5340	1680	4840	4400	4400	1840	1340	6330	1340
3	3490	2400	3740	5930	1620	7240	8880	3380	1840	986	3790	1260
4	4930	1990	3180	8460	1820	10900	12900	3420	1830	974	3290	851
5	4860	2100	2870	9580	2040	11800	13300	3140	1770	1070	3390	845
6	4420	2360	2830	6640	3670	10800	12100	2280	1290	1080	4330	837
7	3280	3090	2890	13400	4330	5610	9730	2370	1330	1430	2170	820
8	2360	3040	2880	19100	5330	11000	7720	2710	1210	1460	2110	1160
9	1440	2940	2820	22200	5680	16200	6570	2670	1190	1380	1950	2150
10	1400	2990	2760	21600	6620	19300	6420	2600	1190	1190	1540	3490
11	1390	2700	5030	20000	6000	18500	6170	2490	1280	842	1400	7640
12	1390	2110	5880	17000	5290	17000	5230	1920	1520	845	1570	8140
13	1380	2160	8930	13700	3990	15000	6020	1370	2330	867	1660	7370
14	1440	2810	10600	8980	3280	11800	6080	1450	2680	812	1660	5950
15	2190	3590	11000	5590	3220	9070	5940	1890	2510	828	1650	3640
16	3220	3550	9110	3580	2850	7110	11600	1710	3890	807	1480	2550
17	3550	3490	6830	2650	2110	5670	16500	1350	4590	885	799	5370
18	3640	3420	4920	2150	1660	4930	16200	1870	7680	1290	747	10200
19	3800	5350	4330	2370	1660	4080	15600	2800	9700	1090	852	5100
20	3750	4460	4280	2860	1930	4060	14500	4870	8460	1270	1420	14600
21	3580	4480	4060	2690	3700	5540	13300	5010	5750	1250	2720	19200
22	3370	10100	3520	2130	5230	7950	11000	5730	4650	1540	3030	20400
23	2810	8970	3040	2010	5770	11500	7320	6670	2920	1750	6050	21800
24	2160	8740	3910	1820	5440	10800	5380	8960	2760	1720	5220	17800
25	2170	10300	5720	1450	4590	9680	3850	7620	2490	1690	3400	11000
26	2150	14500	7650	1440	4170	7900	4290	5650	1870	1750	1940	5420
27	2190	15400	8270	1460	3710	6080	4910	3960	1720	1920	1330	3860
28	2420	12800	7290	1030	3080	4850	6280	3050	1340	5170	1210	2790
29	3660	9000	5880	1260	3110	4360	6890	3150	1340	8960	1190	2670
30	3630	7750	5230	1790	---	3940	6490	2740	1340	8170	1200	2630
31	3360	---	4660	1780	---	3610	---	1910	---	4430	1220	---
TOTAL	88460	162410	165970	215360	105360	274600	258820	108970	86220	60226	75668	192243
MEAN	2854	5414	5354	6947	3633	8858	8627	3515	2874	1943	2441	6408
MAX	4930	15400	11000	22200	6620	19300	16500	8960	9700	8960	6330	21800
MIN	1380	1990	2760	1030	1620	3480	3250	1350	1190	807	747	820
CFSM	1.56	2.97	2.93	3.81	1.99	4.85	4.73	1.93	1.57	1.06	1.34	3.51
IN.	1.80	3.31	3.38	4.39	2.15	5.60	5.28	2.22	1.76	1.23	1.54	3.92

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2004, BY WATER YEAR (WY)

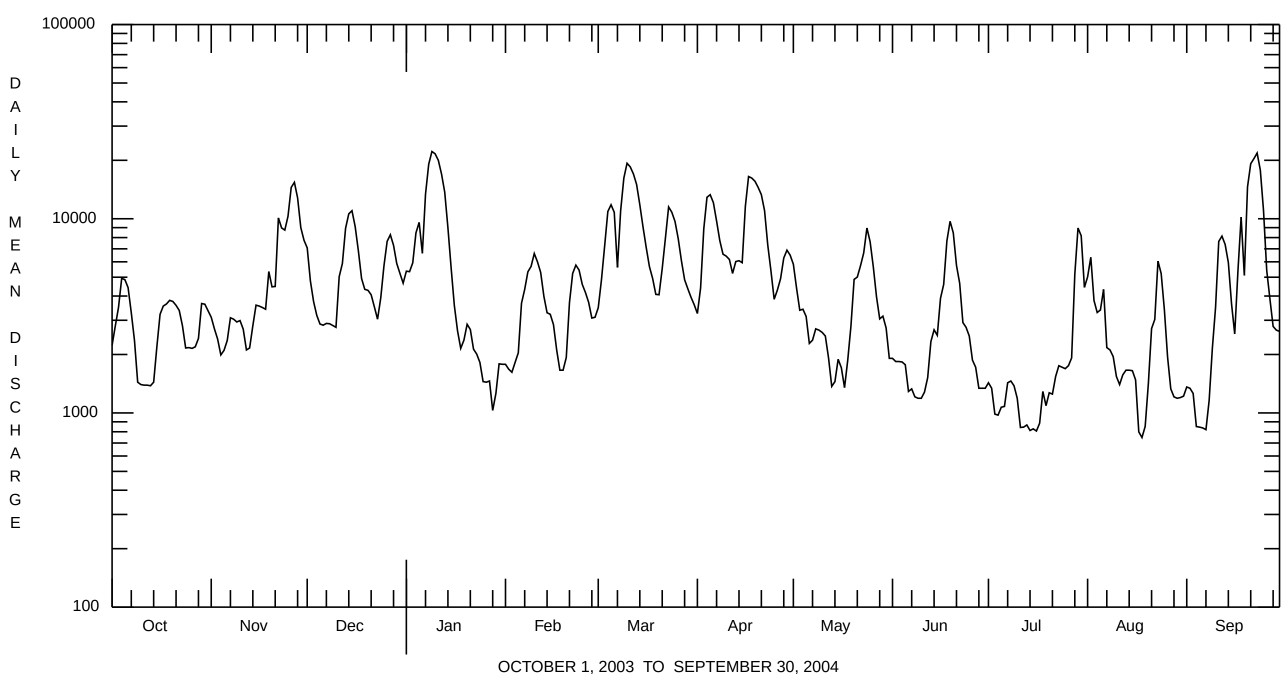
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1305	2002	3356	3726	4643	6461	5683	3725	2498	1511	1169	1119
MAX	6429	7570	9057	8454	10140	12400	12550	7245	8262	5469	4138	6408
(WY)	1955	1998	1973	1991	1956	1945	1993	1978	1972	1977	1958	2004
MIN	255	307	426	847	1724	1802	1727	1127	568	378	363	297
(WY)	1964	1954	1999	1956	1958	1969	1946	1941	1999	1965	1939	1939

KISKIMINETAS RIVER BASIN

03048500 KISKIMINETAS RIVER AT VANDERGRIFT, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1938 - 2004	
ANNUAL TOTAL	1473885		1794307			
ANNUAL MEAN	4038		4902		3091	
HIGHEST ANNUAL MEAN					4902	2004
LOWEST ANNUAL MEAN					1777	1954
HIGHEST DAILY MEAN	15400	Nov 27	22200	Jan 9	60400	Mar 31 1940
LOWEST DAILY MEAN	620	Apr 30	747	Aug 18	60	Oct 15 1952
ANNUAL SEVEN-DAY MINIMUM	783	Aug 21	841	Jul 11	145	Nov 1 1952
MAXIMUM PEAK FLOW			22600	Sep 22	**a**71900	Mar 31 1940
MAXIMUM PEAK STAGE			14.47	Sep 22	25.70	Mar 31 1940
INSTANTANEOUS LOW FLOW					60	Oct 15 1952
ANNUAL RUNOFF (CFSM)	2.21		2.69		1.69	
ANNUAL RUNOFF (INCHES)	30.04		36.57		23.01	
10 PERCENT EXCEEDS	8340		10900		7140	
50 PERCENT EXCEEDS	3370		3480		1830	
90 PERCENT EXCEEDS	1210		1320		492	

a From rating curve extended above 61,000 ft^3/s.



BUFFALO CREEK BASIN

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, 1.6 mi downstream of bridge on SR 3023, and 3 mi north of Freeport.

DRAINAGE AREA.--137 mi^2.

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 above National Geodetic Vertical Datum of 1929, by barometer. Prior to July 19, 1962, nonrecording gage at same site and datum.

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

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

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
Nov. 19	1915	3,170	6.08	Apr. 13	2015	2,060	4.92
Dec. 11	0445	2,510	5.35	June 15	0730	2,540	5.41
Jan. 5	0500	4,210	7.15	Aug. 21	1045	3,910	6.74
Feb. 6	----	--	Ice jam	Sept. 9	1215	4,800	7.48
Mar. 21	0045	2,080	4.94	Sept. 17	Unknown	*16,700	***a**15.28

a From floodmarks.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	107	103	407	313	e60	528	401	239	123	67	193	88
2	94	98	326	562	e80	1220	496	212	108	58	134	74
3	85	90	271	604	e160	963	411	188	83	53	107	65
4	117	82	237	1420	e250	753	375	159	68	55	130	56
5	139	107	235	3130	e200	625	297	144	64	110	180	51
6	93	123	229	1190	e1050	699	253	128	66	77	106	44
7	80	96	198	662	1310	569	230	140	56	70	82	42
8	73	81	190	468	595	511	220	153	49	165	69	343
9	70	70	165	362	422	403	212	118	45	72	59	3690
10	66	65	256	e310	325	327	174	106	60	53	86	1190
11	61	79	1970	e250	272	283	156	118	155	46	84	544
12	55	171	1060	e205	230	267	175	120	159	57	63	345
13	53	208	664	e180	209	221	1060	100	87	94	62	249
14	77	172	507	e160	187	198	1280	85	411	61	53	194
15	395	152	403	e145	e160	193	690	84	1410	63	46	158
16	206	143	327	e130	e145	180	474	79	705	48	39	133
17	154	135	411	e120	e140	177	362	69	593	41	36	e5360
18	125	118	356	e115	e145	168	290	158	1360	47	33	7580
19	108	1500	307	e110	147	220	244	195	666	116	128	1350
20	92	1640	273	e105	199	583	214	163	399	155	571	652
21	85	832	236	e105	757	1410	189	332	276	80	3040	434
22	82	553	224	e100	492	702	169	1030	409	57	998	320
23	73	409	346	e88	366	480	433	590	246	52	473	250
24	62	371	650	e84	358	375	284	358	181	48	304	206
25	54	361	611	e82	292	327	291	246	149	37	217	176
26	53	279	482	e80	265	288	651	216	127	766	165	151
27	213	245	384	e78	242	284	523	228	103	982	147	134
28	207	413	322	e75	275	248	420	169	97	529	149	129
29	156	604	288	e70	371	219	321	135	112	328	168	117
30	132	480	450	e65	---	207	268	113	81	226	130	101
31	111	---	359	e65	---	223	---	119	---	200	114	---
TOTAL	3478	9780	13144	11433	9704	13851	11563	6294	8448	4813	8166	24226
MEAN	112	326	424	369	335	447	385	203	282	155	263	808
MAX	395	1640	1970	3130	1310	1410	1280	1030	1410	982	3040	7580
MIN	53	65	165	65	60	168	156	69	45	37	33	42
CFSM	0.82	2.38	3.09	2.69	2.44	3.26	2.81	1.48	2.06	1.13	1.92	5.89
IN.	0.94	2.66	3.57	3.10	2.63	3.76	3.14	1.71	2.29	1.31	2.22	6.58

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	69.2	136	241	256	313	398	315	218	137	83.1	67.4	69.5
MAX	571	720	625	821	861	964	704	525	732	522	511	808
(WY)	1955	1986	1991	1952	1956	1945	1957	1952	1972	1990	1984	2004
MIN	3.63	5.61	7.15	29.3	70.7	49.2	84.9	44.7	20.8	7.75	4.92	5.82
(WY)	1961	1961	1961	1977	1993	1969	1946	1941	1991	1966	1957	1946

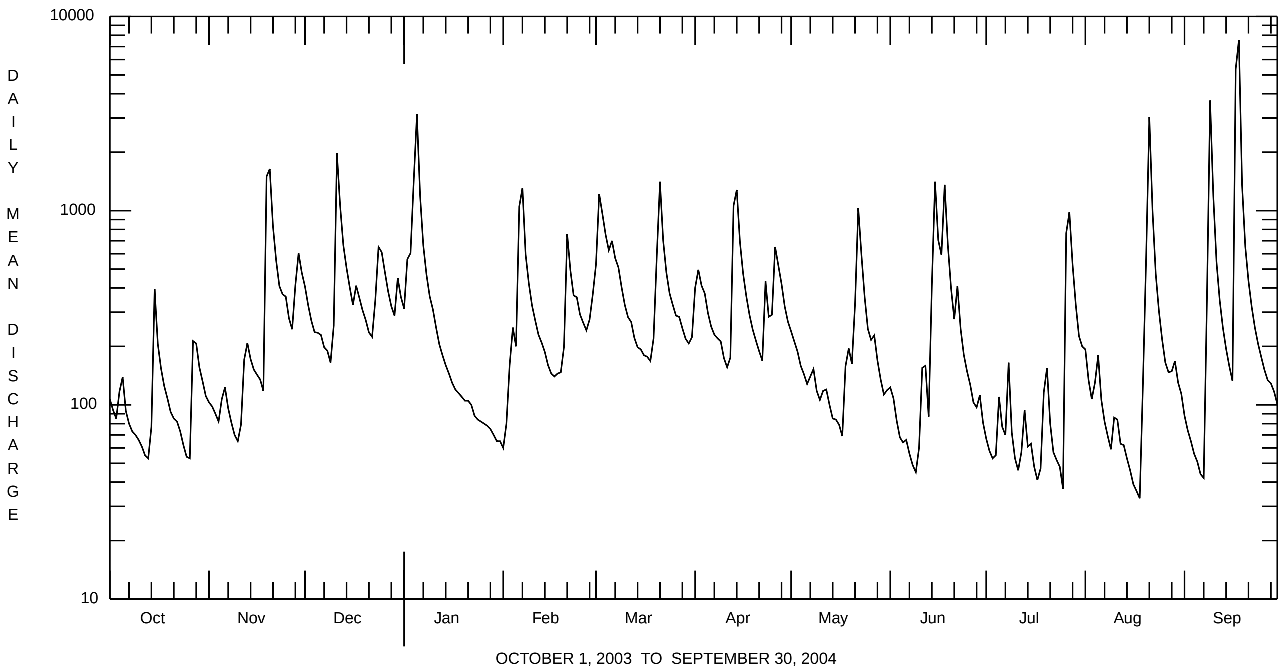
e Estimated.

BUFFALO CREEK BASIN

03049000 BUFFALO CREEK NEAR FREEPORT, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1941 - 2004	
ANNUAL TOTAL	87114		124900			
ANNUAL MEAN	239		341		191	
HIGHEST ANNUAL MEAN					341	2004
LOWEST ANNUAL MEAN					122	1999
HIGHEST DAILY MEAN	1970	Dec 11	7580	Sep 18	7710	Jun 23 1972
LOWEST DAILY MEAN	13	Aug 25	33	Aug 18	1.3	Oct 16 1960
ANNUAL SEVEN-DAY MINIMUM	17	Aug 19	47	Aug 12	1.7	Oct 13 1960
MAXIMUM PEAK FLOW			**b**16700	Sep 17	**b**16700	Sep 17 2004
MAXIMUM PEAK STAGE			**a**15.28	Sep 17	**a**15.28	Sep 17 2004
INSTANTANEOUS LOW FLOW					1.3	Oct 16 1960**c**
ANNUAL RUNOFF (CFSM)	1.74		2.49		1.40	
ANNUAL RUNOFF (INCHES)	23.65		33.91		18.98	
10 PERCENT EXCEEDS	486		655		455	
50 PERCENT EXCEEDS	154		184		95	
90 PERCENT EXCEEDS	55		63		12	

a From floodmarks.
b From rating curve extended above 7,800 ft^3/s on basis of slope-area measurement at gage height 13.60 ft.
c Also Sept. 15, 2002, minimum observed.



OHIO RIVER MAIN STEM

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, at mile 24.3.

DRAINAGE AREA.--11,410 mi^2, 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 736.36 ft above National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers bench mark). Prior to Apr. 14, 1940, nonrecording gage and Apr. 15, 1940 to Oct. 22, 1990, water-stage recorder at same site at datum 0.75 ft higher.

REMARKS.--No estimated daily discharges. Records good except those below 2,000 ft^3/s, which are poor. Sharp rises and drops in discharge during periods of low flow may be caused by hydroelectric power production. Flow regulated since 1924 by Piney Reservoir, since May 1940 by Crooked Creek Lake, since December 1940 by Tionesta Lake, since June 1941 by Mahoning Creek Lake, since June 1942 by Loyalhanna Lake, since November 1949 by Chautauqua Lake (station 03013946), since November 1951 by Conemaugh River Lake, since June 1952 by East Branch Clarion River Lake (station 03027000), since October 1965 by Allegheny Reservoir (station 03012520), since July 1970 by Union City Reservoir (station 03021518), since January 1974 by Woodcock Creek Lake (station 03022550). Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 18, 1936 reached a stage of 32.06 ft, discharge, 365,000 ft^3/s, determined by U.S. Army Corps of Engineers.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20400	22100	49000	38900	7890	21200	37500	26300	27700	7640	34600	12800
2	18800	20600	44000	38300	8480	30100	41100	23600	26300	6780	40800	13100
3	18100	20400	39500	45400	9930	60100	48500	22000	24400	6470	33900	14000
4	19900	19500	34200	61500	10400	68100	51600	22400	21400	5390	29800	13100
5	22200	19100	31200	84300	10400	70700	49800	22000	17800	6170	27700	9380
6	23800	19700	28300	71100	15400	78000	45200	20200	14600	6790	24500	7440
7	20200	19800	25900	61200	23700	72700	40300	18500	13000	7050	19300	7040
8	17500	16700	23800	61400	24100	68100	35400	17700	12300	6870	16000	8780
9	14900	18400	22200	64400	23000	69400	31400	16500	9680	6130	13800	56800
10	13600	16600	21900	58500	24200	70100	28700	18000	8990	6050	12400	109000
11	12200	16400	41500	50500	22400	65300	26200	22800	12700	5940	11000	72500
12	11900	16600	55700	48500	19800	59900	24200	29700	18800	6350	10500	64500
13	13500	18800	52700	42900	16600	54200	29000	33700	15400	17000	11000	58400
14	13900	20600	49500	35000	16000	45200	45600	28600	16800	22900	10400	51100
15	18900	23100	46900	26300	14600	37000	50800	28500	22800	18000	10000	43700
16	28100	23200	41900	18700	13500	33500	51600	27200	22600	19400	8910	38400
17	31500	23900	38000	14500	12000	29900	56300	26500	21100	20300	7960	52500
18	30600	23600	36500	13500	10100	26300	52200	28200	31700	21500	7390	164000
19	27900	32200	34200	14500	10400	23400	47100	32000	35400	24400	6890	94300
20	25500	67900	31500	14100	11200	23100	42300	38500	27700	22300	9100	71300
21	23400	57200	29400	12500	17700	39300	36500	41100	21500	18800	31500	71600
22	21200	52600	26500	10800	24000	50300	31700	74700	19000	17300	34500	69100
23	18500	52700	25700	9730	26500	47000	29300	84000	13800	14800	26100	65400
24	17000	50600	33000	9470	26700	44100	28300	73900	14200	14200	21700	60000
25	16800	48100	50600	7320	24400	41900	26600	68900	11800	14900	19200	48800
26	16900	50700	50900	7440	22500	44100	28700	62000	9110	15900	16600	38700
27	17500	50500	47200	8180	20400	46400	33300	55000	8310	31100	13700	32700
28	22600	47400	42000	8090	19200	50200	33500	47200	6920	34200	12800	28700
29	25600	55100	37100	8110	20200	45600	31400	42500	6610	37800	14800	25600
30	25400	54200	35300	8780	---	40500	29200	36900	7690	35500	13100	21300
31	24000	---	38500	7940	---	37300	---	30200	---	29700	13500	---
TOTAL	632300	978300	1164600	961860	505700	1493000	1143300	1119300	520110	507630	563450	1424040
MEAN	20400	32610	37570	31030	17440	48160	38110	36110	17340	16380	18180	47470
MAX	31500	67900	55700	84300	26700	78000	56300	84000	35400	37800	40800	164000
MIN	11900	16400	21900	7320	7890	21200	24200	16500	6610	5390	6890	7040
CFSM	1.79	2.86	3.29	2.72	1.53	4.22	3.34	3.16	1.52	1.44	1.59	4.16
IN.	2.06	3.19	3.80	3.14	1.65	4.87	3.73	3.65	1.70	1.66	1.84	4.64

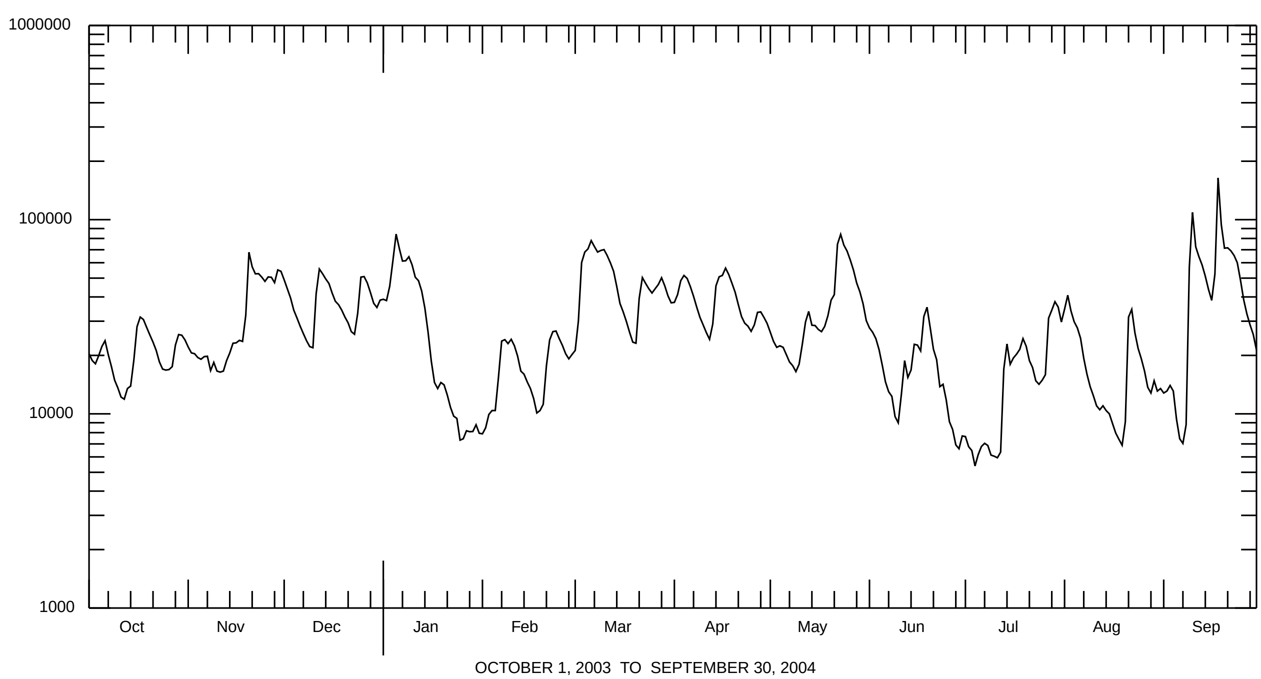
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	9716	16460	23940	24390	27030	38170	35460	23070	14840	9214	6985	7585
MAX	34470	45220	48690	68600	53390	87030	83780	48400	45820	34630	23020	47470
(WY)	1991	1986	1978	1952	1976	1945	1940	1943	1989	1972	1956	2004
MIN	1227	2686	2316	4520	7167	10410	9000	6129	3759	1944	1786	1444
(WY)	1964	1954	1961	1961	1963	1969	1946	1941	1991	1966	1962	1939

03049500 ALLEGHENY RIVER AT NATRONA, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1939 - 2004	
ANNUAL TOTAL	9204740		11013590			
ANNUAL MEAN	25220		30090		19700	
HIGHEST ANNUAL MEAN					30090	2004
LOWEST ANNUAL MEAN					12680	1999
HIGHEST DAILY MEAN	72500	Jul 23	164000	Sep 18	206000	Dec 31 1942
LOWEST DAILY MEAN	5280	Jul 6	5390	Jul 4	949	Oct 26 1963
ANNUAL SEVEN-DAY MINIMUM	5810	Jul 1	6350	Jul 4	1030	Oct 25 1963
MAXIMUM PEAK FLOW			**a**185000	Sep 18	**a**238000	Dec 30 1942
MAXIMUM PEAK STAGE			24.39	Sep 18	**b**27.46	Dec 30 1942
INSTANTANEOUS LOW FLOW					985	Oct 22 1963
ANNUAL RUNOFF (CFSM)	2.21		2.64		1.73	
ANNUAL RUNOFF (INCHES)	30.01		35.91		23.46	
10 PERCENT EXCEEDS	48800		56400		44900	
50 PERCENT EXCEEDS	22600		24400		13200	
90 PERCENT EXCEEDS	7920		9440		3210	

a From rating curve extended above 172,000 ft^3/s.
b Datum then in use.



PINE CREEK BASIN

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 774.26 ft above National Geodetic Vertical Datum of 1929. Prior ot Oct. 1, 1986 at datum 3.00 ft higher. Sept. 30, 1987 datum lowered 1.00 ft.

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a 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)
Nov. 19	1415	167	3.64	May 22	0545	268	3.92
Dec. 10	2215	314	4.06	Aug. 21	0645	475	4.39
Jan. 4	1045	340	4.09	Aug. 28	1300	153	3.58
Apr. 13	1400	268	3.92	Sept. 8	2030	525	4.50
May 18	1545	498	4.44	Sept. 9	0445	435	4.30
May 21	0700	309	4.02	Sept. 17	1800	*3,700	*8.26

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	1.7	8.5	8.5	e2.6	11	27	7.9	4.1	1.5	2.9	3.4
2	1.0	1.7	6.4	22	e2.8	18	22	7.0	2.9	1.5	2.2	2.9
3	1.1	1.6	5.7	27	e35	13	16	5.4	2.7	1.5	3.0	2.6
4	2.0	1.7	5.7	140	e20	15	13	5.0	2.1	1.6	3.9	3.0
5	1.3	3.5	6.5	99	e15	13	9.7	4.8	2.8	12	3.3	2.5
6	1.2	2.1	6.2	32	e70	17	8.7	4.4	2.3	2.2	2.0	2.2
7	1.1	1.6	5.3	19	e30	13	8.4	4.8	2.0	3.3	1.8	16
8	0.94	1.5	5.3	13	18	11	9.5	4.3	1.8	3.9	1.7	157
9	0.89	1.5	5.5	11	15	9.5	8.4	3.9	1.7	1.8	1.6	172
10	0.83	1.4	43	e8.7	12	8.3	7.0	3.5	1.9	1.7	2.5	35
11	0.77	2.0	68	e7.5	10	8.0	6.4	3.5	4.5	1.7	1.8	21
12	0.73	2.5	22	e6.6	9.9	6.8	19	3.3	2.6	2.9	1.8	15
13	0.71	2.1	15	e6.2	9.5	5.8	79	2.8	2.0	2.0	1.6	11
14	5.7	2.2	14	e5.8	8.9	6.2	40	2.6	8.6	1.9	1.4	9.9
15	4.0	2.1	12	e5.6	7.2	5.9	21	3.0	3.9	1.5	1.4	9.0
16	2.2	2.1	12	e5.6	e7.0	6.3	15	2.8	2.5	1.4	1.3	8.8
17	2.1	2.1	18	e5.8	e6.8	6.1	12	2.5	8.0	1.4	1.2	e769
18	1.8	2.0	14	e5.8	e6.6	8.2	10	77	10	1.7	1.3	352
19	1.6	67	12	e5.7	e6.8	13	8.9	43	3.4	1.8	19	55
20	1.5	26	10	e5.6	19	28	8.4	21	2.5	1.6	37	25
21	1.7	13	9.3	e5.8	34	31	7.3	74	2.2	1.3	104	14
22	1.4	9.2	10	e6.0	17	17	7.1	85	13	1.3	17	8.9
23	1.1	7.4	15	e6.1	14	12	17	30	3.5	1.2	7.6	6.4
24	1.1	9.0	20	e5.9	13	11	9.5	17	2.5	0.97	4.7	5.2
25	1.2	7.5	15	e5.6	11	10	15	10	2.0	0.94	3.5	5.1
26	1.7	6.6	12	e5.0	9.2	8.7	18	8.3	1.9	25	3.2	4.5
27	5.3	6.2	9.9	e4.4	8.6	8.4	13	6.7	1.6	14	4.7	4.9
28	2.8	11	9.1	e3.8	8.5	7.4	11	5.2	2.2	5.8	22	6.2
29	2.3	12	8.9	e3.3	8.9	6.7	9.3	3.8	1.9	3.4	9.1	4.5
30	1.9	10	13	e2.9	---	6.8	8.3	3.3	1.6	2.9	6.2	4.2
31	1.8	---	9.4	e2.5	---	8.3	---	4.9	---	4.3	4.2	---
TOTAL	54.87	220.3	426.7	491.7	436.3	350.4	464.9	460.7	104.7	110.01	278.9	1736.2
MEAN	1.77	7.34	13.8	15.9	15.0	11.3	15.5	14.9	3.49	3.55	9.00	57.9
MAX	5.7	67	68	140	70	31	79	85	13	25	104	769
MIN	0.71	1.4	5.3	2.5	2.6	5.8	6.4	2.5	1.6	0.94	1.2	2.2
CFSM	0.31	1.27	2.38	2.74	2.60	1.96	2.68	2.57	0.60	0.61	1.56	10.0
IN.	0.35	1.42	2.75	3.16	2.81	2.26	2.99	2.97	0.67	0.71	1.79	11.17

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1.91	4.77	7.69	7.49	9.58	12.9	10.5	8.23	4.20	3.20	1.79	2.86
MAX	8.55	25.4	26.4	22.4	21.0	32.4	23.8	26.1	17.8	26.4	9.00	57.9
(WY)	1980	1986	1987	1965	1966	1994	1987	1968	1972	1990	2004	2004
MIN	0.01	0.51	0.69	0.82	2.17	1.30	2.33	1.74	0.42	0.02	0.10	0.04
(WY)	1964	1964	1964	1977	1980	1969	1971	1965	1965	1965	1965	1963

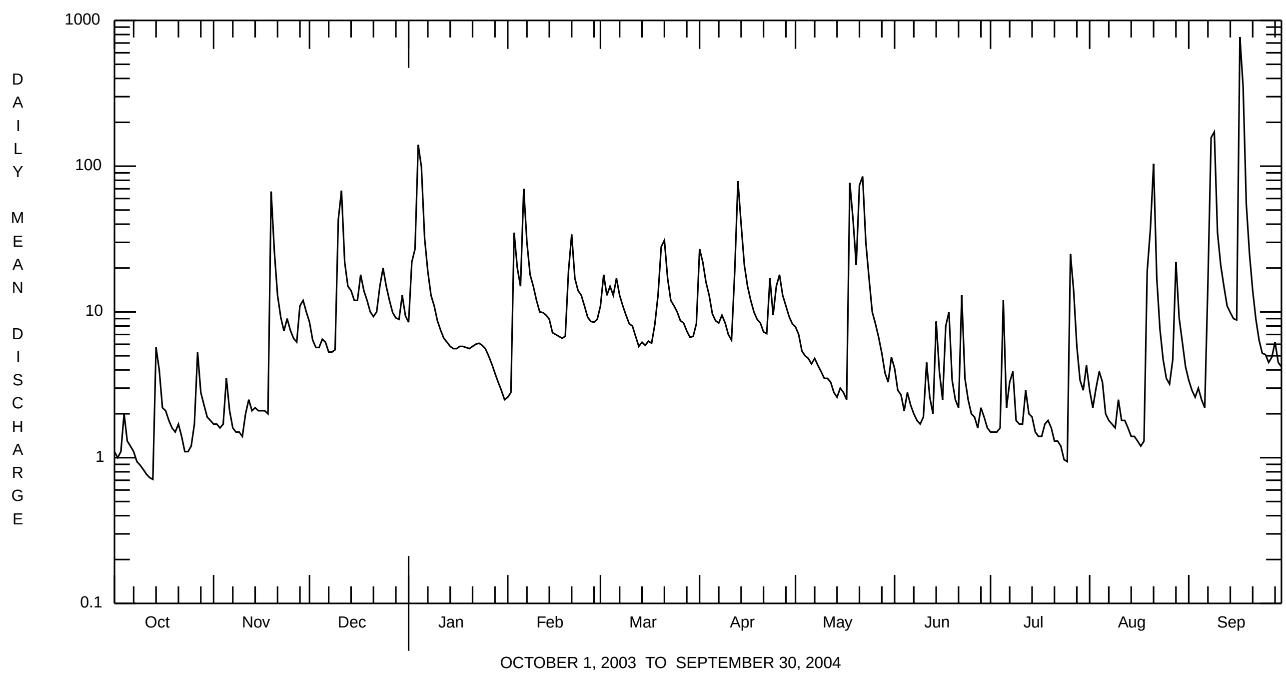
e Estimated.

PINE CREEK BASIN

03049800 LITTLE PINE CREEK NEAR ETNA, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1963 - 2004	
ANNUAL TOTAL	2296.82		5135.68			
ANNUAL MEAN	6.29		14.0		6.24	
HIGHEST ANNUAL MEAN					14.0	2004
LOWEST ANNUAL MEAN					2.68	1969
HIGHEST DAILY MEAN	68	Dec 11	**e**769	Sep 17	**e**769	Sep 17 2004
LOWEST DAILY MEAN	0.62	Aug 25	0.71	Oct 13	0.00	Many days
ANNUAL SEVEN-DAY MINIMUM	0.70	Aug 19	0.85	Oct 7	0.00	Aug 26 1963
MAXIMUM PEAK FLOW			**a**3700	Sep 17	**a**7190	May 30 1986
MAXIMUM PEAK STAGE			8.26	Sep 17	**b**10.28	May 30 1986
ANNUAL RUNOFF (CFSM)	1.09		2.43		1.08	
ANNUAL RUNOFF (INCHES)	14.78		33.05		14.68	
10 PERCENT EXCEEDS	14		21		15	
50 PERCENT EXCEEDS	3.5		6.1		2.7	
90 PERCENT EXCEEDS	1.2		1.6		0.33	

a From rating curve extended above 2,000 ft^3/s on basis of slope-area measurement at gage height 8.26 ft, and slope-area measurement of peak flow at site 0.6 mi downstream.
b Gage height 10.41 ft, from outside floodmark, datum then in use.
e Estimated.



MONONGAHELA RIVER BASIN

03072000 DUNKARD CREEK AT SHANNOPIN, PA
(Pennsylvania Water-Quality Network Station)

LOCATION.--Lat 39°45'33", long 79°58'15", Greene County, Hydrologic Unit 05020005, on left bank 1,300 ft upstream from highway bridge at mine buildings at Shannopin, 1.2 mi north of Dunkard, 3.5 mi upstream from mouth, and 4 mi southwest of Greensboro.

DRAINAGE AREA.--229 mi^2.

WATER-DISCHARGE RECORDS

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 U.S. Army Corps of Engineers).

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Some regulation at low flow by mine pumpage above station. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a 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)
Nov. 12	1700	7,620	10.36	Mar. 6	1600	4,950	9.03
Nov. 19	2300	*15,600	*13.59	Apr. 13	2400	7,410	10.27
Jan. 5	1700	5,370	9.27	Sept. 18	0900	12,000	12.23
Feb. 6	1800	8,310	10.66				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	76	166	456	279	e105	e165	e550	169	149	39	71	27
2	79	145	364	307	e100	e175	2070	161	125	33	75	23
3	77	129	290	406	e790	e200	1520	159	127	30	56	24
4	70	115	242	1370	e1680	e220	e1060	138	129	36	46	22
5	74	161	222	4080	e1060	e350	e777	123	160	33	48	19
6	75	804	225	e2400	4830	2940	e560	115	180	44	41	16
7	66	585	194	e1000	e3730	e2270	e444	107	133	40	35	13
8	60	383	167	e540	e2550	e1600	e363	109	103	34	29	140
9	56	280	154	e380	e1700	e1020	378	105	88	34	25	1320
10	52	221	191	e300	e1200	e700	317	87	77	35	25	505
11	48	193	1710	e250	e830	e500	268	75	119	28	66	211
12	46	4180	983	e260	e580	e390	269	68	610	42	54	120
13	44	2390	557	e240	e450	e240	2790	62	335	77	68	87
14	52	1120	432	e210	e400	e220	3930	60	193	60	69	72
15	625	e620	367	e190	e350	e210	1730	57	132	69	51	61
16	389	e410	292	e150	e300	278	1000	61	102	43	39	54
17	227	e330	437	e140	e260	588	666	59	123	31	32	597
18	241	e300	567	e170	e230	528	509	77	118	27	27	7830
19	227	e4400	446	e160	e220	651	396	662	103	24	109	881
20	175	6600	362	e140	e230	644	331	571	80	27	246	365
21	140	1220	284	e130	e270	1090	292	557	68	32	414	220
22	120	657	264	e120	e250	961	259	2630	70	26	428	153
23	105	458	411	e115	e190	e640	251	1600	84	23	173	114
24	92	361	874	e115	e185	e475	220	990	76	21	103	88
25	81	348	816	e115	e270	e375	189	654	59	19	70	73
26	75	278	533	e110	e250	e300	259	466	53	28	54	62
27	130	235	399	e120	e210	e275	340	341	47	499	47	55
28	503	269	322	e140	e190	e265	265	288	44	557	45	51
29	352	568	278	e130	e175	e255	214	275	46	211	41	47
30	272	510	303	e110	---	e245	187	218	43	102	36	44
31	203	---	334	e105	---	e260	---	172	---	71	29	---
TOTAL	4832	28436	13476	14282	23585	19030	22404	11216	3776	2375	2652	13294
MEAN	156	948	435	461	813	614	747	362	126	76.6	85.5	443
MAX	625	6600	1710	4080	4830	2940	3930	2630	610	557	428	7830
MIN	44	115	154	105	100	165	187	57	43	19	25	13
CFSM	0.68	4.14	1.90	2.01	3.55	2.68	3.26	1.58	0.55	0.33	0.37	1.94
IN.	0.78	4.62	2.19	2.32	3.83	3.09	3.64	1.82	0.61	0.39	0.43	2.16

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	69.1	168	326	419	513	627	468	336	188	91.6	78.5	79.5
MAX	381	1149	1071	1050	1100	1475	1033	903	877	461	890	573
(WY)	1955	1986	1991	1994	1956	1994	1948	1968	1981	1996	1980	1975
MIN	1.73	2.44	7.46	26.5	63.5	112	80.9	57.4	10.2	4.62	2.45	2.38
(WY)	1952	1954	1954	1967	1954	1987	1971	1986	1966	1962	1962	1999

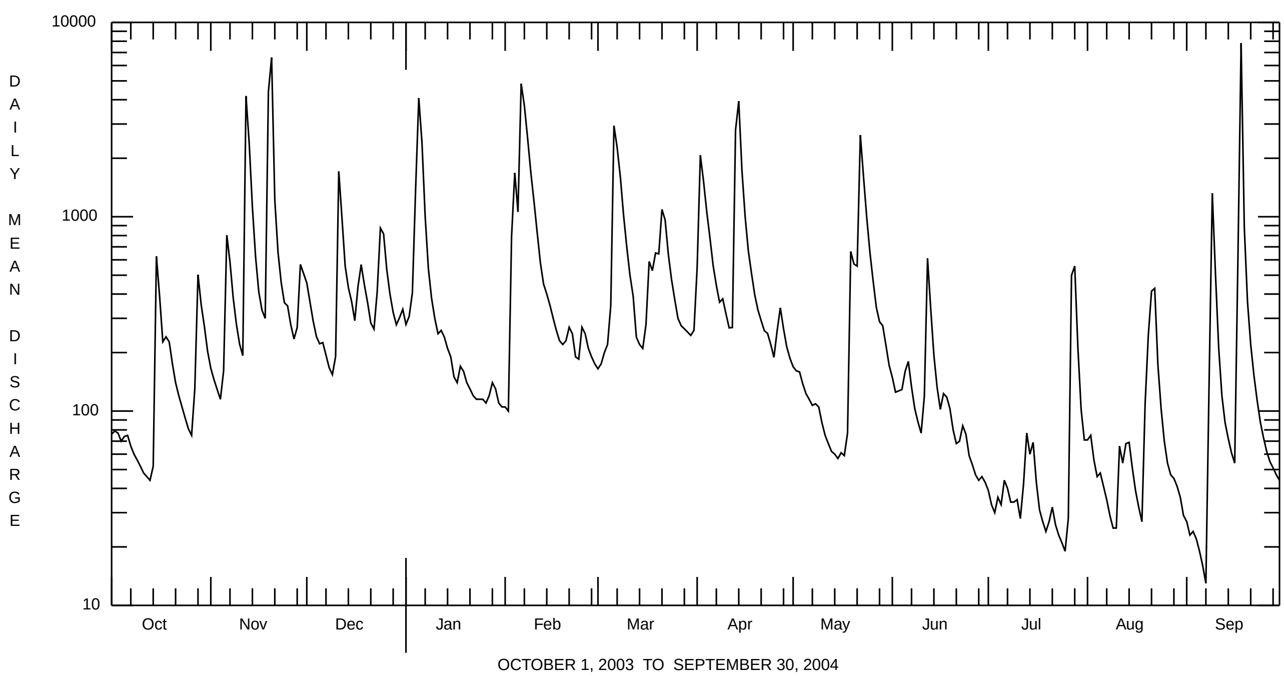
e Estimated.

MONONGAHELA RIVER BASIN

03072000 DUNKARD CREEK AT SHANNOPIN, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1941 - 2004	
ANNUAL TOTAL	182961		159358			
ANNUAL MEAN	501		435		280	
HIGHEST ANNUAL MEAN					462	1994
LOWEST ANNUAL MEAN					104	1954
HIGHEST DAILY MEAN	6600	Nov 20	7830	Sep 18	11200	Mar 5 1963
LOWEST DAILY MEAN	23	Aug 26	13	Sep 7	0.50	Aug 27 1944
ANNUAL SEVEN-DAY MINIMUM	32	Aug 20	21	Sep 1	0.73	Aug 25 1944
MAXIMUM PEAK FLOW			15600	Nov 19	**a**17600	Aug 18 1980
MAXIMUM PEAK STAGE			13.59	Nov 19	14.27	Aug 18 1980
INSTANTANEOUS LOW FLOW			12	Sep 6,7	0.40	Aug 28 1944
ANNUAL RUNOFF (CFSM)	2.19		1.90		1.22	
ANNUAL RUNOFF (INCHES)	29.72		25.89		16.60	
10 PERCENT EXCEEDS	1220		968		686	
50 PERCENT EXCEEDS	235		194		99	
90 PERCENT EXCEEDS	67		41		8.1	

a From rating curve extended above 16,000 ft^3/s.



03072000 DUNKARD CREEK AT SHANNOPIN, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 240-288.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unf lab, µS/cm 25 degC (90095)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water unfltrd recover -able, mg/L (00916)	Magnesium, water, unfltrd recover -able, mg/L (00927)
OCT 2003 07...	0950	1028	9813	65.9	11.7	7.2	7.7	762	739	10.5	220	58.7	17.9
DEC 09...	1000	1028	9813	153	11.4	7.3	7.5	517	519	2.5	160	44.8	12.3
FEB 2004 17...	0930	1028	9813	E260	11.5	7.1	7.6	420	426	.5	150	41.8	11.5
APR 07...	0925	1028	9813	E444	11.4	7.5	7.7	351	358	7.5	120	33.1	8.8
JUN 09...	0915	1028	9813	89.7	8.2	7.4	7.6	796	797	20.5	270	76.7	19.3
AUG 11...	0945	1028	9813	74.3	7.9	7.5	7.3	1260	1220	20.0	450	133	29.2

Date	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recover -able, µg/L (01105)	Copper, water, unfltrd recover -able, µg/L (01042)
OCT 2003 07...	101	203	518	14	<.020	.15	<.040	<.01	.011	.44	2.2	1200	<10
DEC 09...	82	141	360	16	.030	.51	<.040	<.01	.016	.71	1.5	870	<10
FEB 2004 17...	77	108	328	2	.030	.68	<.040	.01	.010	.80	1.2	780	<10
APR 07...	70	87.1	274	8	<.020	.56	<.040	.01	.014	.70	1.4	450	<10
JUN 09...	93	284	220	4	.030	.21	<.040	<.01	<.010	.60	2.1	850	<10
AUG 11...	94	520	1020	18	.060	.21	<.040	.02	.023	.60	2.6	1000	<10

Date	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, unfltrd recover -able, µg/L (01051)	Manganese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, unfltrd recover -able, µg/L (01092)
OCT 2003 07...	1360	<1.0	260	<50	20
DEC 09...	1090	<1.0	180	<50	20
FEB 2004 17...	980	<1.0	170	<50	30
APR 07...	540	<1.0	100	<50	90
JUN 09...	740	<1.0	210	<50	10
AUG 11...	800	<1.0	170	<50	<10

MONONGAHELA RIVER BASIN

03072000 DUNKARD CREEK AT SHANNOPIN, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 animal (approximate) subsamples.

Date	10/08/03
Benthic Macroinvertebrate	Count
Arthropoda	
Acariformes	
Hydrachnidia (WATER MITES)	3
Insecta	
Ephemeroptera (MAYFLIES)	
Heptageniidae	2
Tricorythidae	
Tricorythodes	6
Odonata (DRAGONFLIES AND DAMSELFLIES)	
Coenagrionidae	
Argia	1
Plecoptera (STONEFLIES)	
Taeniopterygidae	
Taeniopteryx	4
Megaloptera	
Corydalidae (FISHFLIES AND DOBSONFLIES)	
Nigronia	1
Trichoptera (CADDISFLIES)	
Hydropsychidae	
Cheumatopsyche	5
Hydropsyche	78
Hydroptilidae	
Hydroptila	8
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
Optioservus	3
Stenelmis	7
Diptera (TRUE FLIES)	
Ceratopogonidae (BITING MIDGES)	
Bezzia	1
Chironomidae (MIDGES)	2
Tipulidae (CRANE FLIES)	
Antocha	1
Total Organisms	122
Total Taxa	14

MONONGAHELA RIVER BASIN

03072655 MONONGAHELA RIVER NEAR MASONTOWN, PA

LOCATION.--Lat 39°49'30", long 79°55'23", Greene County, Hydrologic Unit 05020005, on left bank, 84 ft upstream from Lock and Dam at Grays Landing, 0.9 mi upstream from Masontown, 1.2 mi upstream from Whitley Creek, 5.3 mi downstream from Dunkard Creek, 7.6 mi downstream from Cheat River, at mile 81.9.

DRAINAGE AREA.--4,440 mi^2.

PERIOD OF RECORD.--October 1938 to current year. Published as "*at Greensboro*" (Station 03072500) October 1938 to September 1995. 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 769.00 ft above National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers bench mark). Prior to Nov. 9, 1990, at datum 1.45 ft lower.

REMARKS.--Records good above 5,000 ft^3/s, fair below, except those below 1,000 ft^3/s, and those for estimated daily discharges, which are poor. Flow regulated since 1926 by Lake Lynn 11 mi upstream, since May 1938 by Tygart Lake (station 03055500) 69 mi upstream, and since April 1989 by Stonewall Jackson Lake 120.6 mi upstream, combined capacity, 432,000 acre-ft. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 1888 reached a stage of about 36 ft, from high-water profile by U.S. Army Corps of Engineers. Flood of Mar. 18, 1936, reached a stage of 28.4 ft, discharge, 130,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8100	9330	15500	9790	4390	5830	8690	e6400	17100	2840	7250	2730
2	8170	8720	14700	13500	5700	8510	24100	e5860	9730	1840	8280	2390
3	7570	7260	11700	19600	13700	10800	22200	7020	9160	1430	6180	1600
4	7720	7440	9590	30400	23800	13900	18500	7020	8080	1840	6140	1310
5	7130	6850	11100	42000	18700	26400	20100	6330	8170	2420	3840	1380
6	8450	16600	10300	33900	41300	53700	15900	5790	5980	2360	3410	1310
7	6670	16000	8740	24000	48700	48600	14700	5500	7880	2750	2260	2520
8	5970	16200	8770	22200	36800	32700	18100	5800	7450	2390	1750	5930
9	5860	12200	8060	18700	33200	32500	17000	4940	5930	1970	2440	24100
10	4730	11900	7730	19600	29800	28400	13200	4150	3640	1810	2190	15700
11	4000	11700	22800	11100	25800	22700	8030	3480	6210	2010	1970	8310
12	3810	44600	22900	9260	21900	19200	11600	3320	29300	3830	2160	4980
13	3870	49700	19100	6200	18900	15700	36400	4580	21800	6410	3250	3810
14	4130	31900	16200	5540	16200	10800	58500	3920	17700	5340	1810	3190
15	7720	29900	15900	5720	12900	8950	36200	4120	11300	9090	1850	3280
16	10100	23300	16700	5240	12300	10700	30400	4310	11000	6650	1010	3600
17	9280	14300	14900	2700	8380	14700	26000	4340	12200	3000	2120	6070
18	9770	16700	13200	5660	6600	17000	19100	4390	18100	2150	1270	36200
19	8480	39500	13500	8260	5610	17300	14100	19600	27200	3440	3080	18700
20	7960	59300	12700	7360	5400	18300	12600	20700	18800	2010	3030	10900
21	8490	34700	10600	11700	8100	25800	13700	18500	11800	1530	14400	9090
22	5820	30100	9190	7320	8320	28500	11100	37300	6450	1550	12200	6750
23	5830	25800	9800	8580	8470	24200	9490	25700	6570	1450	5130	6620
24	4590	18400	19700	6290	8410	17600	4820	20800	6130	2040	3040	4580
25	4040	17200	26200	4770	8870	11600	4160	15600	4620	1870	2950	4110
26	4440	16100	21100	5040	8470	9550	11400	9180	4900	2360	2730	3700
27	5260	8710	21400	5440	8390	8020	16600	7770	3880	8500	1660	4320
28	8940	10200	15700	5930	6290	6120	15300	19800	3820	12700	1890	3680
29	11900	16000	13900	6700	5830	8670	11200	35400	3480	10100	1350	6530
30	10600	16300	11600	5620	---	8620	10200	29200	2610	7560	1930	6240
31	10600	---	14300	5580	---	9880	---	21700	---	4900	3510	---
TOTAL	220000	626910	447580	373700	461230	575250	533390	372520	310990	120140	116080	213630
MEAN	7097	20900	14440	12050	15900	18560	17780	12020	10370	3875	3745	7121
MAX	11900	59300	26200	42000	48700	53700	58500	37300	29300	12700	14400	36200
MIN	3810	6850	7730	2700	4390	5830	4160	3320	2610	1430	1010	1310
(†)	-518	-276	-50	-97	+119	-74	+1440	+249	-222	+127	-287	+188

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3433	6768	10920	11790	14200	16060	12010	9257	6043	4136	3839	2951
MAX	15260	29580	26520	24690	30880	37830	23180	29230	22100	13240	15120	12870
(WY)	1980	1986	1973	1952	1994	1963	1940	1996	1981	1958	1956	2003
MIN	439	369	1648	1840	3781	6192	3781	1836	926	676	592	482
(WY)	1954	1954	1966	1977	1941	1987	1946	1982	1965	1966	1965	1946

† Change in contents, equivalent in cubic feet per second, in Tygart Lake, Stonewall Jackson Lake and Lake Lynn. Records of contents in Lake Lynn furnished by Allegheny Energy Supply. Records of contents in Tygart Lake and Stonewall Jackson Lake furnished by U.S. Army Corps of Engineers.

e Estimated.

MONONGAHELA RIVER BASIN

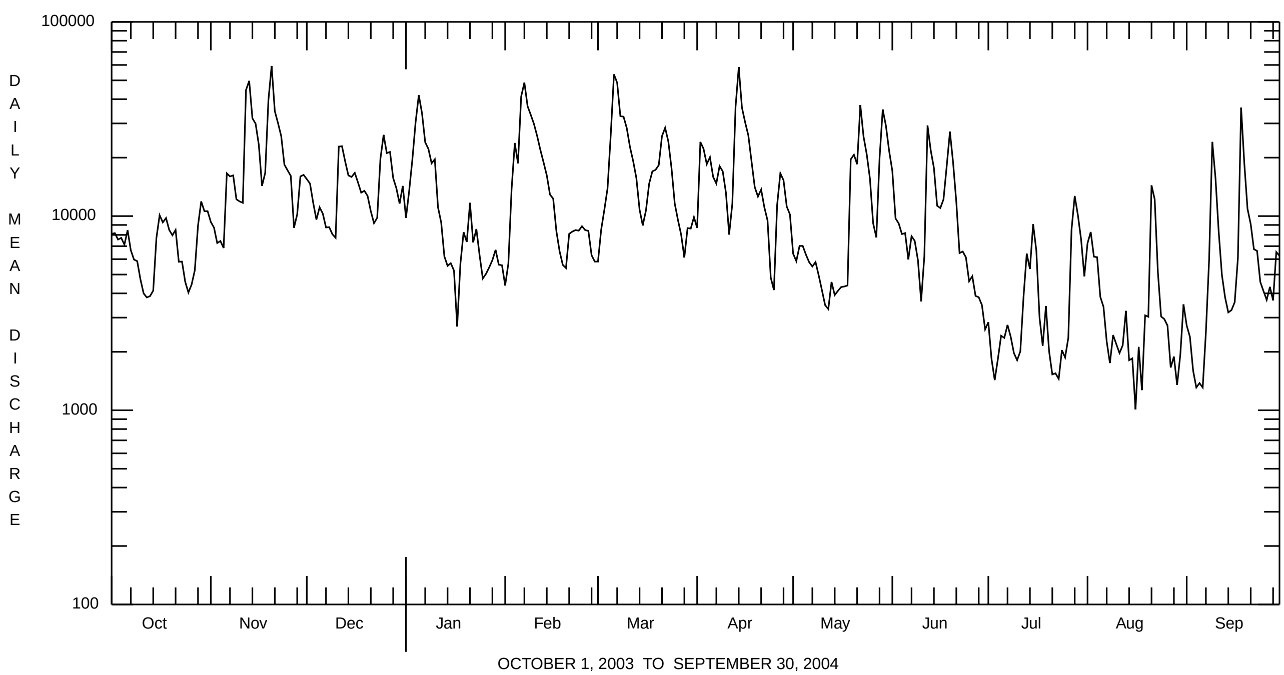
03072655 MONONGAHELA RIVER NEAR MASONTOWN, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR			FOR 2004 WATER YEAR			WATER YEARS 1939 - 2004	
ANNUAL TOTAL	4689550			4371420				
ANNUAL MEAN	12850	†	+12	11940	†	+3.8	8416	
HIGHEST ANNUAL MEAN							13010	1994
LOWEST ANNUAL MEAN							4995	1966
HIGHEST DAILY MEAN	59300		Nov 20	59300		Nov 20	154000	Nov 5 1985
LOWEST DAILY MEAN	1440		Jul 27	1010		Aug 16	177	Sep 11 1988
ANNUAL SEVEN-DAY MINIMUM	2640		Jun 29	1830		Jul 20	267	Nov 4 1953
MAXIMUM PEAK FLOW				72600		Apr 14	**a**220000	Nov 5 1985
MAXIMUM PEAK STAGE				19.58		Apr 14	**b**39.39	Nov 5 1985
10 PERCENT EXCEEDS	25900			25800			21000	
50 PERCENT EXCEEDS	9770			8500			4840	
90 PERCENT EXCEEDS	3530			2430			1050	

† Change in contents, equivalent in cubic feet per second, in Tygart Lake, Stonewall Jackson Lake and Lake Lynn. Records of contents in Lake Lynn furnished by Allegheny Energy Supply. Records of contents in Tygart Lake and Stonewall Jackson Lake furnished by U.S. Army Corps of Engineers.

a From rating curve extended above 131,000 ft^3/s.

b From outside floodmarks, datum then in use.



MONONGAHELA RIVER BASIN

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 mi^2.

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 882.28 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 15, 1973, nonrecording gage 15 ft downstream and Nov. 15, 1973 to Sept. 30, 1997, at present site at datum 1.00 ft. higher.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Some regulation at low flow by mine pumpage into stream above station. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a 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)
Nov. 12	0830	1,490	6.08	Apr. 13	1530	3,290	9.41
Nov. 19	1500	*4,600	*11.13	May 22	0130	1,730	6.57
Dec. 24	1100	1,090	5.17	June 17	2200	1,840	6.78
Jan. 5	0930	2,180	7.47	July 26	1845	1,090	5.19
Feb. 6	1100	2,010	7.13	July 27	1315	3,580	9.83
Mar. 6	0630	1,850	6.81	Sept. 18	0115	2,220	7.55

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	113	103	145	128	62	84	270	99	58	52	96	47
2	94	97	127	190	60	111	347	100	59	48	74	42
3	83	91	115	168	442	131	304	103	94	46	60	38
4	95	86	107	441	250	188	283	85	66	56	73	36
5	85	191	110	1260	174	e313	228	84	114	54	76	34
6	73	203	104	514	1290	1190	186	75	73	43	54	31
7	66	167	92	318	700	525	162	116	63	66	48	30
8	62	141	84	242	326	391	167	109	57	61	43	228
9	58	125	81	213	245	292	176	79	54	42	39	327
10	55	114	87	162	220	236	136	71	57	38	47	188
11	52	115	376	133	194	199	125	66	180	35	65	114
12	49	738	236	e154	169	174	218	61	224	47	55	84
13	48	359	181	e135	146	147	1440	56	171	71	55	69
14	131	227	167	104	126	133	707	53	115	42	45	59
15	255	179	149	98	114	122	381	54	99	39	39	55
16	120	152	140	81	98	158	285	56	140	34	35	56
17	160	134	205	74	93	147	236	43	431	32	33	395
18	174	119	176	e105	87	136	211	240	433	45	31	1100
19	131	2390	152	e92	86	186	e194	449	198	46	49	278
20	114	964	137	e86	88	181	e166	209	143	36	53	170
21	104	408	121	e83	121	321	e141	401	113	32	208	128
22	99	281	133	e79	113	240	e118	794	221	31	95	101
23	90	218	245	89	103	195	110	290	151	41	64	85
24	79	197	550	88	117	167	95	189	99	38	54	75
25	72	166	336	78	107	151	106	138	83	29	48	68
26	73	140	241	77	98	132	250	112	80	268	43	61
27	238	124	191	91	92	134	175	94	67	1260	41	57
28	171	205	162	92	86	118	144	98	63	348	41	60
29	150	200	144	73	83	104	123	82	71	183	39	58
30	128	163	176	70	---	104	108	64	56	124	56	53
31	112	---	141	63	---	106	---	64	---	121	65	---
TOTAL	3334	8797	5411	5581	5890	6816	7592	4534	3833	3408	1824	4127
MEAN	108	293	175	180	203	220	253	146	128	110	58.8	138
MAX	255	2390	550	1260	1290	1190	1440	794	433	1260	208	1100
MIN	48	86	81	63	60	84	95	43	54	29	31	30
CFSM	1.46	3.98	2.37	2.44	2.76	2.98	3.43	1.98	1.73	1.49	0.80	1.87
IN.	1.68	4.44	2.73	2.82	2.97	3.44	3.83	2.29	1.93	1.72	0.92	2.08

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	49.2	71.7	112	131	159	192	162	126	82.5	56.1	49.4	49.4
MAX	225	459	308	284	376	470	310	274	413	187	172	161
(WY)	1980	1986	1973	1994	1986	1994	1948	1996	1972	1990	1980	1987
MIN	11.2	19.0	14.2	23.1	33.0	45.5	49.2	27.3	15.4	9.59	12.4	8.92
(WY)	1964	1967	1961	1967	1954	1969	1971	1963	1962	1962	1962	1991

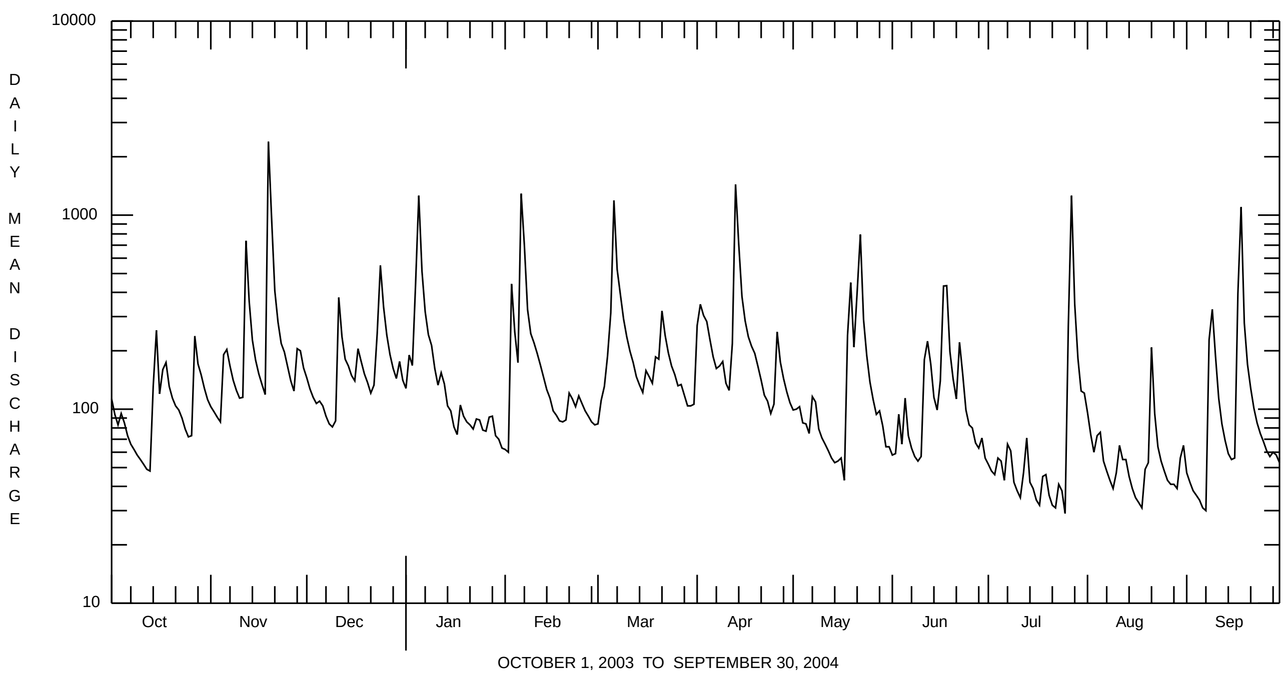
e Estimated.

MONONGAHELA RIVER BASIN

03074500 REDSTONE CREEK AT WALTERSBURG, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1943 - 2004	
ANNUAL TOTAL	52115		61147			
ANNUAL MEAN	143		167		103	
HIGHEST ANNUAL MEAN					167	2004
LOWEST ANNUAL MEAN					44.2	1954
HIGHEST DAILY MEAN	2390	Nov 19	2390	Nov 19	6620	Jun 23 1972
LOWEST DAILY MEAN	30	Aug 25,26	29	Jul 25	4.8	Sep 22 1991
ANNUAL SEVEN-DAY MINIMUM	35	Aug 20	36	Jul 19	5.3	Sep 28 1991
MAXIMUM PEAK FLOW			4600	Nov 19	**a**8660	Jun 23 1972
MAXIMUM PEAK STAGE			11.13	Nov 19	**b**14.83	Jun 23 1972
INSTANTANEOUS LOW FLOW			27	Jul 22,25**c**	4.2	Aug 2 1962
ANNUAL RUNOFF (CFSM)	1.94		2.27		1.40	
ANNUAL RUNOFF (INCHES)	26.30		30.86		19.00	
10 PERCENT EXCEEDS	250		296		210	
50 PERCENT EXCEEDS	100		112		62	
90 PERCENT EXCEEDS	47		47		21	

a From rating curve extended above 8,200 ft^3/s.
b From peak-stage indicator.
c Also Sept. 7.



MONONGAHELA RIVER BASIN

03075070 MONONGAHELA RIVER AT ELIZABETH, PA
(Pennsylvania Water-Quality Network Station)

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, at mile 24.0.

DRAINAGE AREA.--5,340 mi^2.

WATER-DISCHARGE RECORDS

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 183, 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 control. Datum of gage is 717.90 ft above National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers bench mark). From Oct. 1, 1967 to Sept. 30, 1976, at site 17.5 mi upstream at datum 15.70 ft higher. Prior to Oct. 1, 1967, water-stage recorder at site 17.9 mi upstream at datum 17.43 ft higher. Oct. 1, 1965 to Sept. 30, 1967, auxiliary staff gage, Apr. 14, 1966 to Sept. 30, 1967, auxiliary water-stage recorder and Oct. 1, 1967 to Nov. 4, 1990, water-stage recorder at present site at datum 7.60 ft higher.

REMARKS.--No estimated daily discharges. Records good, except those below 2,500 ft^3/s, which are poor. Flow regulated by locks above station, since 1938 by Tygart Lake (station 03055500), since May 1926 by Lake Lynn, and since April 1989 by Stonewall Jackson Lake, combined capacity, 432,000 acre-ft. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8180	8610	15800	12700	4500	5750	10900	8290	17200	2710	6440	3080
2	7240	8650	15700	12300	5670	7800	25400	6620	11100	2650	7070	2470
3	8670	8120	13100	20800	11400	11700	27100	7460	9550	1830	6240	2210
4	6560	6980	9900	34100	30300	13400	20400	6770	8930	1740	6240	1440
5	6780	6250	11000	59900	21300	24100	22500	7000	7840	2620	4520	1570
6	8480	15200	11100	50900	46000	51800	17000	5960	6290	2410	3050	1200
7	6270	17400	10400	29700	86400	70200	15700	5660	7830	3230	2800	2230
8	6260	15200	8320	24600	53400	41100	18200	5670	7050	2950	1690	4940
9	5670	13200	7830	20300	37700	37300	18400	5510	6740	1680	2110	28000
10	4570	11900	8500	21000	33000	33300	15000	4360	3560	1920	2040	19600
11	4110	10900	23600	14700	29500	25800	9610	3700	6960	2090	3150	9440
12	3910	35000	28200	10300	24200	20900	9500	4690	26600	3340	2320	5630
13	3700	65300	19800	7580	20900	17400	36600	4310	26000	5990	3470	4270
14	3080	40200	19000	6460	17500	12900	79100	3960	23200	4980	2390	3460
15	8500	31800	16200	5610	14200	9110	50600	4330	14300	7990	1860	2950
16	9870	25700	17400	5840	13000	9950	36600	4490	11800	7450	1580	4070
17	9090	16200	16000	4120	9680	14900	30000	3970	13600	3760	1420	9840
18	10700	16600	15000	5060	7440	17000	21400	5330	16300	2110	2270	65800
19	8990	42000	14800	8950	5960	17900	15800	18400	31100	2520	2210	30900
20	7680	109000	13400	8520	5560	19000	13600	24400	19900	2820	4050	12300
21	8890	52800	12300	10500	7680	26300	14900	20300	13200	1690	11700	9790
22	6360	34700	9770	8650	9000	31500	10900	44300	7540	1630	16700	7960
23	6230	29600	10400	8750	8750	26900	11500	33600	6900	1620	5770	6940
24	4670	20200	18900	7050	9140	19400	5970	21700	6080	1650	4070	5370
25	4000	17900	29200	4750	9610	12900	5580	17700	4970	2060	2510	4150
26	4270	17900	24700	5870	9100	10900	9820	11100	5670	1990	4020	4190
27	5370	11500	21500	5770	8740	9410	16500	6940	3690	10100	1220	3540
28	8460	9140	18100	6080	6860	6990	17100	15500	3930	12400	2370	4820
29	12100	15400	15500	6830	6530	7980	11500	38500	4230	9530	1660	5220
30	11900	17500	11700	5240	---	9590	10100	31400	2770	8850	1640	6490
31	10400	---	14000	7050	---	9910	---	23000	---	5800	3060	---
TOTAL	220960	730850	481120	439980	553020	633090	607280	404920	334830	124110	121640	273870
MEAN	7128	24360	15520	14190	19070	20420	20240	13060	11160	4004	3924	9129
MAX	12100	109000	29200	59900	86400	70200	79100	44300	31100	12400	16700	65800
MIN	3080	6250	7830	4120	4500	5750	5580	3700	2770	1620	1220	1200
(†)	-518	-276	-50	-97	+119	-74	+1440	+249	-222	+127	-287	+188

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1934 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3616	6906	11540	13450	15510	18110	13560	10390	6572	4439	4140	3163
MAX	16770	33750	29760	37480	33170	41930	26500	33610	24840	13570	17890	13300
(WY)	1980	1986	1973	1937	1994	1963	1940	1996	1981	1958	1956	1945
MIN	475	400	1991	2249	3210	6636	4478	2128	1009	915	812	581
(WY)	1954	1954	1966	1977	1934	1987	1971	1982	1936	1966	1957	1936

† Change in contents, equivalent in cubic feet per second, in Tygart Lake, Stonewall Jackson Lake and Lake Lynn. Records of contents in Lake Lynn furnished by Allegheny Energy Supply. Records of contents in Tygart Lake and Stonewall Jackson Lake furnished by U.S. Army Corps of Engineers.

MONONGAHELA RIVER BASIN

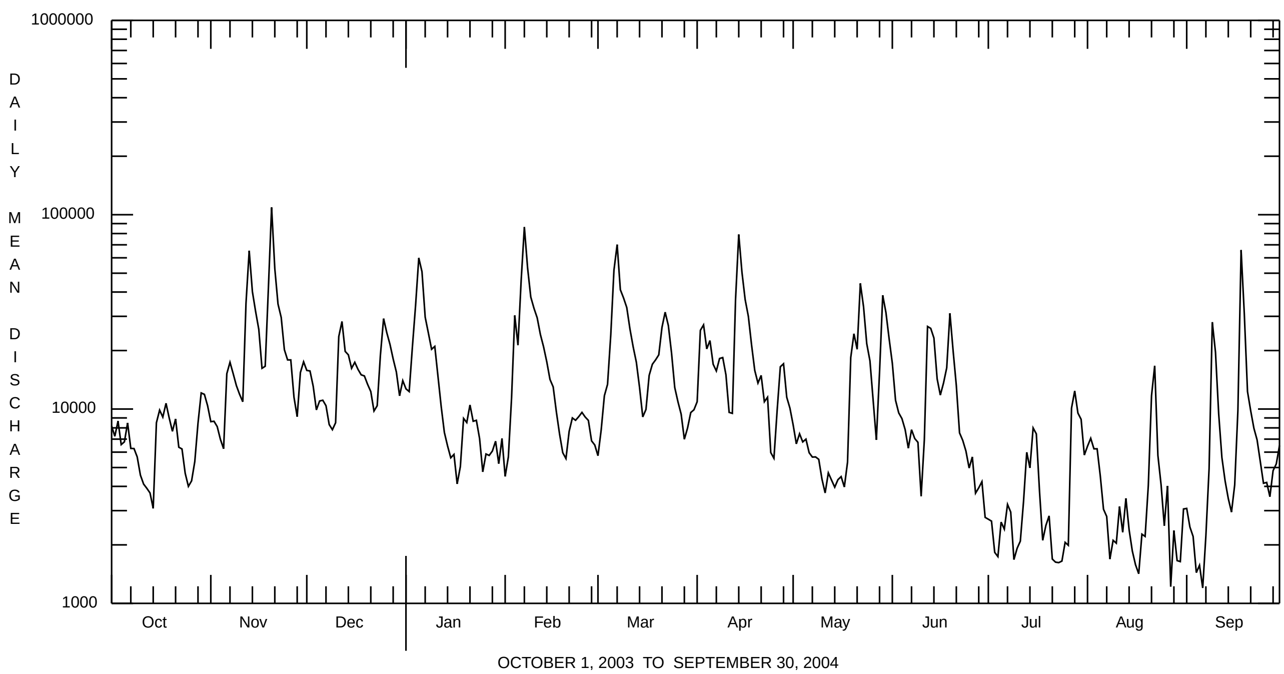
03075070 MONONGAHELA RIVER AT ELIZABETH, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1934 - 2004	
ANNUAL TOTAL	5120310		4925670			
ANNUAL MEAN	14030	† +12	13460	† +3.8	9255	
HIGHEST ANNUAL MEAN					14400	1996
LOWEST ANNUAL MEAN					5282	1954
HIGHEST DAILY MEAN	109000	Nov 20	109000	Nov 20	158000	Jan 20 1996
LOWEST DAILY MEAN	1430	Jul 28	1200	Sep 6	206	Jun 29 1936
ANNUAL SEVEN-DAY MINIMUM	2820	Jun 30	1920	Jul 20	301	Oct 1 1936
MAXIMUM PEAK FLOW			**a**121000	Nov 20	**a**178000	Nov 6 1985
MAXIMUM PEAK STAGE			24.69	Nov 20	**b**30.39	Jan 20 1996
10 PERCENT EXCEEDS	29300		29600		22400	
50 PERCENT EXCEEDS	9900		9040		5260	
90 PERCENT EXCEEDS	3410		2640		1160	

† Change in contents, equivalent in cubic feet per second, in Tygart Lake, Stonewall Jackson Lake and Lake Lynn. Records of contents in Lake Lynn furnished by Allegheny Energy Supply. Records of contents in Tygart Lake and Stonewall Jackson Lake furnished by U.S. Army Corps of Engineers.

a From rating curve extended above 110,000 ft^3/s.

b Gage height 23.60 ft, datum then in use.



03075070 MONONGAHELA RIVER AT ELIZABETH, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 240-288.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unf lab, µS/cm 25 degC (90095)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water unfltrd recoverable, mg/L (00916)	Magnesium, water, unfltrd recoverable, mg/L (00927)
OCT 2003													
20...	1130	1028	9813	7000	11.1	6.4	7.0	282	283	14.5	95	27.6	6.4
DEC													
03...	1015	1028	9813	13200	10.3	7.1	7.5	262	273	6.5	100	29.2	7.3
FEB 2004													
10...	0950	1028	9813	33900	16.0	6.6	7.3	200	203	2.5	74	21.2	5.1
APR													
05...	1035	1028	9813	23400	--	7.3	7.6	284	279	7.5	110	30.3	7.8
JUN													
02...	0945	1028	9813	7760	8.7	7.4	7.3	181	175	19.5	66	18.9	4.5
AUG													
03...	1030	1028	9813	5280	8.3	7.5	7.3	436	456	25.5	150	42.8	10.8

Date	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Fluoride, water, unfltrd mg/L (00951)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recoverable, µg/L (01105)
OCT 2003													
20...	42	<.2	78.0	122	6	.060	.53	<.040	.02	.027	.82	2.0	270
DEC													
03...	39	<.2	80.8	194	8	.090	.57	<.040	.02	.017	.74	1.5	530
FEB 2004													
10...	26	<.2	50.3	164	68	.060	.87	<.040	.10	.046	1.2	5.4	2500
APR													
05...	40	<.2	77.7	226	28	.090	.64	<.040	.03	.027	.87	1.6	1000
JUN													
02...	29	<.2	43.8	82	54	.040	.46	<.040	.04	.035	.54	2.4	650
AUG													
03...	54	<.2	134	302	10	.030	.55	.040	.01	.020	.77	2.2	210

Date	Copper, water, unfltrd recoverable, µg/L (01042)	Cyanide amenable to chlorination wat unf mg/L (00722)	Iron, water, unfltrd recoverable, µg/L (01045)	Lead, water, unfltrd recoverable, µg/L (01051)	Manganese, water, unfltrd recoverable, µg/L (01055)	Nickel, water, unfltrd recoverable, µg/L (01067)	Zinc, water, unfltrd recoverable, µg/L (01092)	Phenolic compounds, water, unfltrd µg/L (32730)
OCT 2003								
20...	<10	<1.00	530	<1.0	120	<50	30	<5
DEC								
03...	<10	<1.00	760	<1.0	180	<50	20	<5
FEB 2004								
10...	<10	<1.00	3170	2.4	200	<50	30	<5
APR								
05...	<10	<1.00	1440	<1.0	160	<50	20	<5
JUN								
02...	<10	<1.00	1290	1.6	60	<50	20	<5
AUG								
03...	<10	<1.00	370	<1.0	60	<50	<10	<5

MONONGAHELA RIVER BASIN

03076500 YOUGHIOGHENY RIVER AT FRIENDSVILLE, MD

LOCATION.--Lat 39°39'13.0", long 79°24'29.9", 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, 1923-3l, 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 data collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,070 ft^3/s, Mar. 6, gage height, 6.65 ft; minimum discharge, 51 ft^3/s, Jan. 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,280	448	e720	947	106	603	694	581	595	137	262	363
2	1,020	445	e650	1,460	e105	1,900	1,530	408	454	182	404	310
3	612	528	e580	2,850	e99	3,180	1,760	638	441	174	345	394
4	655	567	e540	3,030	160	4,470	2,380	396	524	113	199	288
5	672	600	e500	3,520	451	4,710	1,680	346	435	168	127	166
6	605	1,200	e470	3,170	1,570	7,450	1,120	341	353	105	195	216
7	478	1,090	e450	2,130	4,850	5,240	1,140	475	389	158	171	210
8	635	797	e430	1,690	2,230	3,470	1,100	370	394	95	89	315
9	501	656	e410	e1,400	1,160	2,590	1,000	271	347	142	139	1,580
10	437	599	541	1,190	860	2,100	782	452	199	81	76	1,230
11	299	567	1,830	1,020	e750	1,850	641	228	390	100	184	862
12	323	4,650	1,630	e860	e690	1,510	715	314	3,950	236	87	677
13	345	4,460	949	e710	e640	884	3,840	725	1,510	330	220	579
14	261	2,670	e760	e610	e590	792	4,040	415	1,210	199	150	453
15	692	2,010	e640	e530	e550	866	2,220	299	1,070	213	106	392
16	565	1,670	549	e460	e530	756	1,370	306	790	188	176	386
17	435	1,480	510	e400	e515	858	1,020	418	472	161	127	491
18	496	1,350	e480	e350	e505	718	794	460	888	124	93	1,790
19	553	2,610	e460	e310	e497	1,250	714	1,850	779	301	169	924
20	535	4,020	e450	e270	567	1,360	638	1,340	481	238	348	546
21	541	2,480	493	e238	1,240	3,620	491	1,140	448	212	514	441
22	550	1,920	525	e215	1,080	2,710	605	2,020	337	187	674	398
23	619	1,050	611	e195	830	1,640	566	1,260	357	145	561	368
24	521	959	1,450	e180	846	1,560	399	1,230	424	82	271	369
25	289	1,020	1,700	e167	698	1,090	377	695	303	78	186	348
26	331	760	1,220	e154	665	812	962	554	210	173	158	301
27	781	496	879	e142	557	681	1,030	626	204	271	360	357
28	841	525	806	e132	513	584	728	650	241	350	207	309
29	634	1,320	772	e126	523	533	572	698	170	199	248	406
30	571	817	962	e118	---	558	573	434	156	248	446	382
31	491	---	1,110	110	---	554	---	481	---	285	814	---
TOTAL	17,568	43,764	24,077	28,684	24,377	60,899	35,481	20,421	18,521	5,675	8,106	15,851
MEAN	567	1,459	777	925	841	1,964	1,183	659	617	183	261	528
MAX	1,280	4,650	1,830	3,520	4,850	7,450	4,040	2,020	3,950	350	814	1,790
MIN	261	445	410	110	99	533	377	228	156	78	76	166
(†)	-58.5	-47.0	17.9	-74.6	53.9	135	117	13.0	-13.5	-42.3	-47.1	-18.5
MEAN‡	508	1,412	795	850	895	2,099	1,300	672	604	141	214	510
CFSM‡	1.72	4.79	2.69	2.88	3.03	7.12	4.41	2.28	2.05	0.48	0.73	1.73
IN‡	1.98	5.34	3.10	3.32	3.27	8.21	4.92	2.63	2.29	0.55	0.84	1.93

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1898 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	278	508	831	865	985	1,230	944	700	496	378	298	259
MAX	1,103	2,190	2,147	1,886	2,277	2,644	2,231	1,888	1,823	1,335	1,319	1,648
(WY)	(1955)	(1986)	(1903)	(1996)	(1903)	(1963)	(1901)	(1996)	(1903)	(1990)	(1956)	(2003)
MIN	50.2	55.7	145	140	337	285	327	176	84.2	64.6	51.0	49.8
(WY)	(1992)	(1905)	(1944)	(1981)	(1954)	(1990)	(1995)	(1982)	(1969)	(1991)	(1991)	(1991)

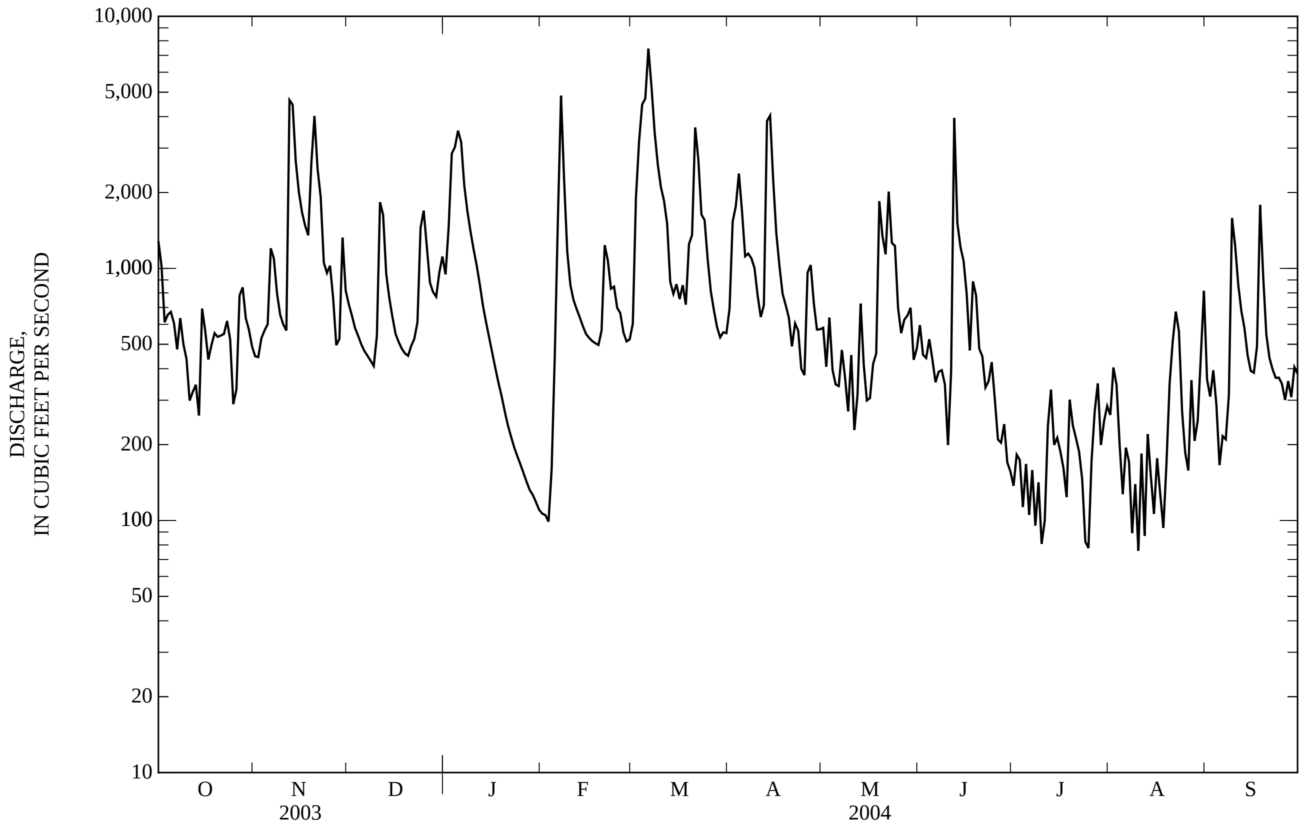
† Change in contents in Deep Creek Reservoir, equivalent in cubic feet per second, provided by Pennsylvania Electric Company.
‡ Adjusted for change in reservoir contents.

MONONGAHELA RIVER BASIN

03076500 YOUGHIOGHENY RIVER AT FRIENDSVILLE, MD--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1898 - 2004	
ANNUAL TOTAL	390,531		303,424			
ANNUAL MEAN	1,070		829		645	
HIGHEST ANNUAL MEAN					1,052	1903
LOWEST ANNUAL MEAN					375	1954
HIGHEST DAILY MEAN	7,380	Sep 19	7,450	Mar 6	11,200	Jan 19, 1996
LOWEST DAILY MEAN	100	Jan 26	76	Aug 10	8.2	Sep 11, 1966
ANNUAL SEVEN-DAY MINIMUM	126	Jan 21	114	Jan 28	29	Sep 21, 1972
MAXIMUM PEAK FLOW			8,070	Mar 6	(a)16,100	Jan 19, 1996
MAXIMUM PEAK STAGE			6.65	Mar 6	(b)14.20	Mar 29, 1924
INSTANTANEOUS LOW FLOW			72	(c)	UNKNOWN	
ANNUAL RUNOFF (CFSM)	3.63		2.81		2.18	
ANNUAL RUNOFF (INCHES)	49.25		38.26		29.69	
10 PERCENT EXCEEDS	2,480		1,770		1,430	
50 PERCENT EXCEEDS	634		540		405	
90 PERCENT EXCEEDS	241		168		105	

‡ Adjusted for change in reservoir contents since October 1940.
a From rating curve extended above 5,800 ft^3/s on basis of slope-area measurement of peak flow.
b From floodmarks.
c July 25, 26, Aug. 10, 11.



DAILY MEAN DISCHARGE - 2004 WATER YEAR

MONONGAHELA RIVER BASIN

03078000 CASSELMAN RIVER AT GRANTSVILLE, MD

LOCATION.--Lat 39°42'07.9", long 79°08'11.0", 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 discharges (ice effect), which are poor. U.S. Army Corps of Engineers satellite data collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES 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)
Nov. 12	0930	2,220	4.97	Mar. 6	0630	2,180	4.98
Nov. 19	1700	2,080	4.80	Mar. 21	0300	1,700	4.36
Jan. 5	1415	1,080	3.45	Apr. 13	1930	1,060	3.41
Feb. 7	2200	1,580	4.21	Aug. 30	1815	1,170	3.58
Feb. 21	1500	1,940	4.68	Sept. 8	2315	*2,530	*5.40
Mar. 2	2200	1,340	3.86				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	174	94	157	138	e39	141	256	117	147	19	30	84
2	148	88	127	304	e38	677	329	123	99	17	18	53
3	119	82	108	502	e37	848	388	136	146	16	13	40
4	125	76	98	628	e70	948	401	106	96	50	11	35
5	118	139	e92	830	e150	1,040	283	98	92	56	14	30
6	95	247	e88	514	e200	1,770	246	89	83	25	13	24
7	83	211	e81	314	e400	860	253	94	69	19	10	25
8	74	145	e79	e240	e600	599	223	150	58	17	9.3	713
9	67	116	75	e195	e200	394	230	97	50	14	8.4	1,290
10	61	104	97	141	e140	299	171	82	46	12	7.9	402
11	56	103	567	e122	e120	257	146	73	139	12	7.6	215
12	52	1,390	246	e105	e103	251	343	88	303	29	28	149
13	49	611	161	e95	e94	188	837	99	192	44	50	115
14	59	349	135	e86	e87	164	616	123	119	23	24	94
15	200	269	e127	e80	e80	175	366	86	89	16	14	83
16	108	225	e120	70	e76	160	273	97	75	13	31	72
17	87	187	e116	e67	e72	139	222	70	84	12	25	162
18	117	159	e110	e63	e80	131	184	170	87	12	14	665
19	90	983	e105	e60	e100	179	158	555	67	13	17	234
20	76	753	e100	e57	e150	338	139	248	58	14	21	147
21	71	350	e96	e55	e240	1,090	125	330	48	11	119	116
22	77	252	e93	e53	e215	403	118	609	47	9.4	70	95
23	81	199	192	e51	e180	266	126	276	50	9.7	30	81
24	71	179	422	e49	e132	219	125	193	39	11	19	70
25	61	167	290	e47	e117	213	132	155	33	9.1	14	64
26	58	133	196	e45	e110	184	342	259	31	13	12	57
27	140	115	157	e44	e105	165	238	160	26	82	11	51
28	160	162	136	e43	e99	145	177	141	24	64	11	85
29	140	225	130	e42	107	120	147	141	27	24	45	99
30	128	161	209	e41	---	109	129	101	23	15	543	69
31	103	---	170	e40	---	124	---	104	---	20	212	---
TOTAL	3,048	8,274	4,880	5,121	4,141	12,596	7,723	5,170	2,447	701.2	1,452.2	5,419
MEAN	98.3	276	157	165	143	406	257	167	81.6	22.6	46.8	181
MAX	200	1,390	567	830	600	1,770	837	609	303	82	543	1,290
MIN	49	76	75	40	37	109	118	70	23	9.1	7.6	24
CFSM	1.57	4.41	2.52	2.64	2.28	6.50	4.12	2.67	1.31	0.36	0.75	2.89
IN.	1.81	4.92	2.90	3.05	2.46	7.50	4.60	3.08	1.46	0.42	0.86	3.23

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 2004, BY WATER YEAR (WY)

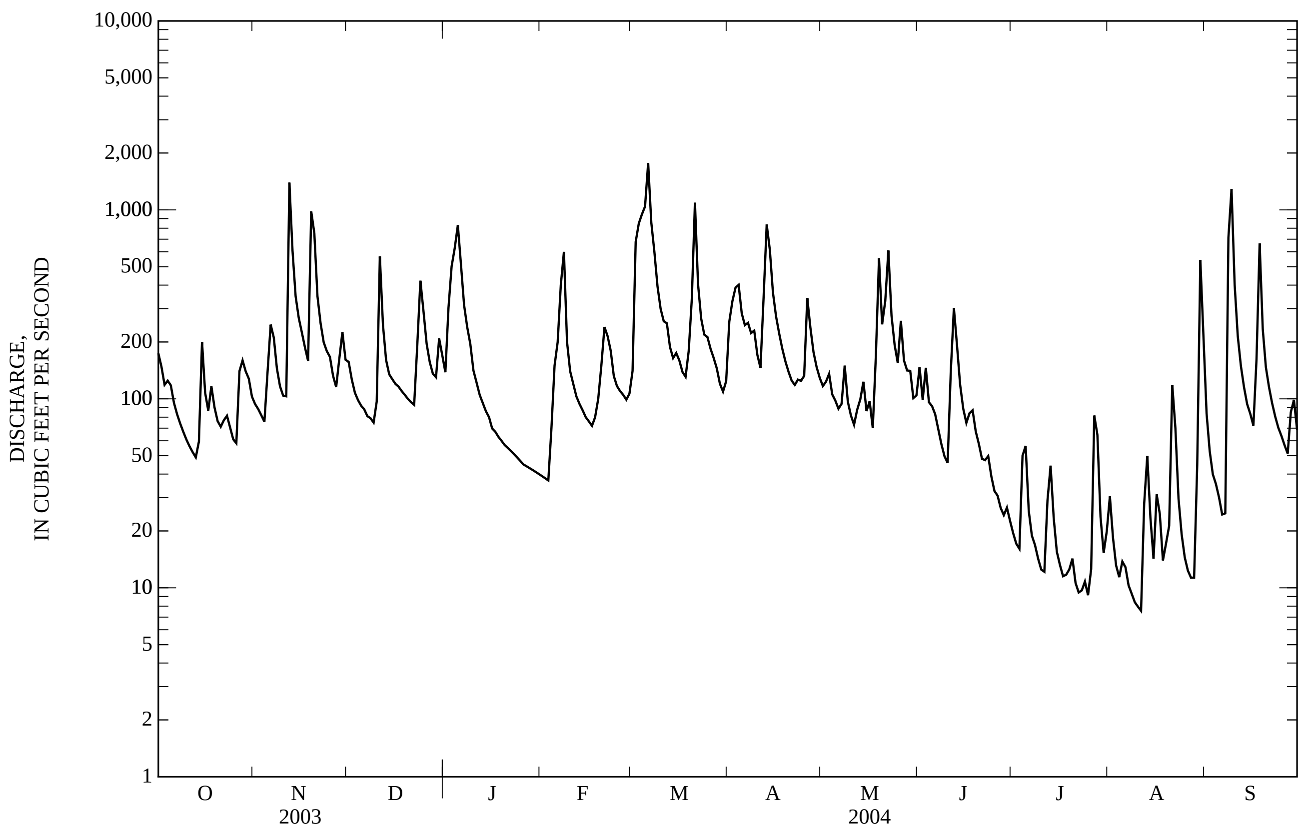
MEAN	45.8	90.4	144	161	195	267	212	140	79.0	48.6	38.5	39.4
MAX	288	449	341	376	414	582	468	312	298	175	202	290
(WY)	(1955)	(1986)	(1973)	(1996)	(1956)	(1963)	(1970)	(1996)	(2003)	(1996)	(1956)	(1996)
MIN	1.65	3.38	13.8	26.4	60.3	57.0	77.1	40.1	10.0	4.30	2.87	1.58
(WY)	(1954)	(1954)	(1999)	(1977)	(1964)	(1990)	(1968)	(1976)	(1965)	(1965)	(1991)	(1991)

MONONGAHELA RIVER BASIN

03078000 CASSELMAN RIVER AT GRANTSVILLE, MD--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1947 - 2004	
ANNUAL TOTAL	75,244.7		60,972.4			
ANNUAL MEAN	206		167		121	
HIGHEST ANNUAL MEAN					203	1996
LOWEST ANNUAL MEAN					64.2	1954
HIGHEST DAILY MEAN	2,110	Sep 19	1,770	Mar 6	(e)3,600	Jan 19, 1996
LOWEST DAILY MEAN	8.8	Aug 26	7.6	Aug 11	(a)0.00	Aug 31, 1962
ANNUAL SEVEN-DAY MINIMUM	11	Aug 20	10	Aug 5	0.89	Aug 27, 1962
MAXIMUM PEAK FLOW			2,530	Sep 8	(b)8,400	Oct 15, 1954
MAXIMUM PEAK STAGE			5.40	Sep 8	10.70	Oct 15, 1954
INSTANTANEOUS LOW FLOW			7.2	(c)	(a)0.00	(d)
ANNUAL RUNOFF (CFSM)	3.30		2.67		1.94	
ANNUAL RUNOFF (INCHES)	44.79		36.29		26.38	
10 PERCENT EXCEEDS	487		345		282	
50 PERCENT EXCEEDS	127		105		68	
90 PERCENT EXCEEDS	33		19		8.4	

a Result of regulation from unknown source.
b From rating curve extended above 1,600 ft^3/s on basis of contracted-opening measurement at gage height of 8.13 ft.
c Aug. 11, 12.
d Aug. 31, Sept. 1, 1962.
e Estimated.



DAILY MEAN DISCHARGE - 2004 WATER YEAR

YOUGHIOGHENY RIVER BASIN

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 mi^2.

PERIOD OF RECORD.--August to September 1913 (gage heights and discharge measurements 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 of 1929. Prior to Nov. 19, 1940, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Slight diversion upstream of station to city of Frostburg, MD, in the Potomac River Basin. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 8,000 ft^3/s and maximum (*****):

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
Nov. 19	2100	12,300	8.00	Apr. 13	1800	10,400	7.48
Mar. 2	2300	9,470	7.16	Sept. 9	0400	11,500	7.79
Mar. 6	0800	10,900	7.63	Sept. 18	0500	*23,900	*10.35

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	826	505	803	844	e397	e565	1360	631	437	148	290	309
2	743	475	703	1230	e380	3760	2610	595	389	134	209	202
3	591	427	598	1930	e344	5480	2960	783	405	125	163	164
4	552	396	549	2710	e335	5190	2750	593	375	122	137	142
5	563	521	538	5630	e334	5200	1940	524	324	255	140	126
6	461	1020	548	3300	e702	9650	1480	483	310	185	132	115
7	398	895	497	1870	e1500	4760	1290	430	277	143	116	107
8	355	705	439	1360	e1200	3230	1160	504	242	140	104	745
9	319	585	431	1170	e879	2170	1460	439	217	119	92	7860
10	299	522	455	878	e751	1680	1070	373	199	101	84	2070
11	279	505	3610	705	e629	1360	917	338	276	92	80	1020
12	263	4030	1880	824	e559	1230	1260	321	1220	117	80	696
13	248	2930	1200	729	e478	1010	7140	437	730	289	229	528
14	248	1610	998	e592	e424	867	4890	416	593	200	195	424
15	1010	1220	922	e493	e374	838	2300	359	509	161	143	377
16	706	1030	750	e299	e324	782	1540	371	408	130	121	341
17	544	886	e676	e276	e315	739	1210	318	505	108	125	694
18	786	750	e615	e307	e306	677	1010	763	949	132	119	12800
19	594	5070	e554	e307	e342	951	854	3670	506	376	106	2690
20	479	5530	e501	e297	e478	1250	733	1460	379	178	108	1430
21	416	2190	e448	e234	e1360	4590	655	1410	312	133	386	1040
22	421	1480	e433	e272	e1060	2140	603	2990	306	112	508	803
23	456	1170	e927	e297	e820	1380	616	1550	306	104	233	629
24	392	1000	2480	e297	e617	1130	556	1040	253	98	165	516
25	344	939	2000	e297	e515	1030	526	782	214	88	135	441
26	316	775	1320	e297	e497	921	2050	857	209	105	114	387
27	589	679	1050	e327	e465	837	1440	777	191	645	102	339
28	957	681	896	e366	e434	757	1060	602	170	519	95	447
29	726	991	825	e395	e416	652	851	545	186	280	111	675
30	691	813	1080	e425	---	583	709	437	167	188	334	456
31	565	---	1010	e443	---	626	---	386	---	258	764	---
TOTAL	16137	40330	29736	29401	17235	66035	49000	25184	11564	5785	5720	38573
MEAN	521	1344	959	948	594	2130	1633	812	385	187	185	1286
MAX	1010	5530	3610	5630	1500	9650	7140	3670	1220	645	764	12800
MIN	248	396	431	234	306	565	526	318	167	88	80	107
CFSM	1.36	3.52	2.51	2.48	1.56	5.58	4.28	2.13	1.01	0.49	0.48	3.37
IN.	1.57	3.93	2.90	2.86	1.68	6.43	4.77	2.45	1.13	0.56	0.56	3.76

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1921 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	275	475	754	855	1036	1491	1164	801	454	259	219	216
MAX	1769	2975	2217	2709	2324	3860	2437	2147	1499	920	842	1756
(WY)	1955	1986	1973	1937	1956	1936	1970	1924	1941	1924	1956	1996
MIN	14.9	22.6	55.3	133	153	307	316	126	60.6	35.6	24.5	19.9
(WY)	1954	1954	1999	1925	1934	1990	1921	1926	1965	1965	1957	1943

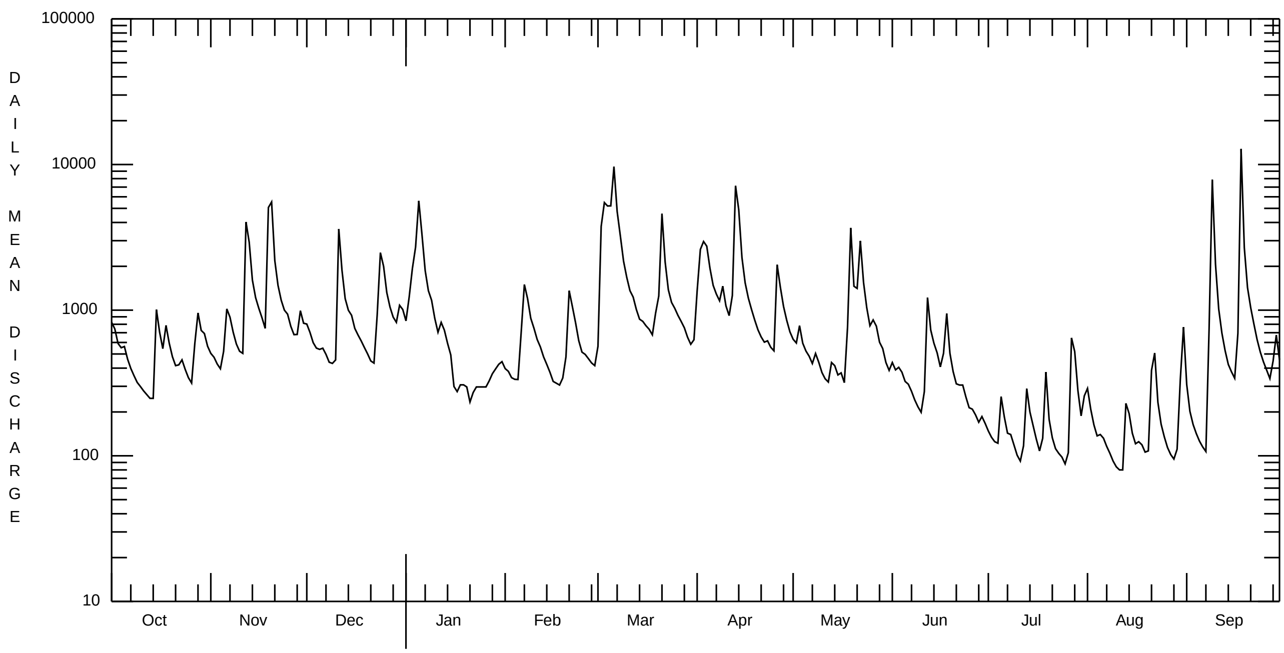
e Estimated.

YOUGHIOGHENY RIVER BASIN

03079000 CASSELMAN RIVER AT MARKLETON, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1921 - 2004	
ANNUAL TOTAL	370834		334700			
ANNUAL MEAN	1016		914		665	
HIGHEST ANNUAL MEAN					1151	1996
LOWEST ANNUAL MEAN					336	1954
HIGHEST DAILY MEAN	6600	Sep 19	12800	Sep 18	**e**25000	Jan 19 1996
LOWEST DAILY MEAN	47	Aug 25	80	Aug 11,12	11	Jul 23 1936**a**
ANNUAL SEVEN-DAY MINIMUM	63	Aug 19	98	Aug 6	12	Sep 4 1957
MAXIMUM PEAK FLOW			23900	Sep 18	**b**50000	Oct 15 1954
MAXIMUM PEAK STAGE			10.35	Sep 18	14.06	Oct 15 1954
INSTANTANEOUS LOW FLOW			75	Aug 12	10	Sep 9 1957
ANNUAL RUNOFF (CFSM)	2.66		2.39		1.74	
ANNUAL RUNOFF (INCHES)	36.11		32.59		23.64	
10 PERCENT EXCEEDS	2380		1900		1540	
50 PERCENT EXCEEDS	675		527		343	
90 PERCENT EXCEEDS	176		136		57	

a Also Sept. 7-9, 1957.
b Estimated on basis of summation of peak flows at nearby stations.
e Estimated.



OCTOBER 1, 2003 TO SEPTEMBER 30, 2004

YOUGHIOGHENY RIVER BASIN

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 measurements 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. Prior to July 18, 1939, nonrecording gage at bridge 0.5 mi downstream at datum 6.20 ft lower.

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a 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)
Nov. 19	1500	5,750	6.33	Apr. 13	1800	*5,820	*6.64
Jan. 5	1200	3,810	4.86	May 19	0200	3,150	4.28
Mar. 6	0700	4,360	5.34	Sept. 18	0245	4,130	5.14

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	307	238	274	359	e201	e212	376	305	128	73	220	85
2	275	224	252	484	e180	e1050	723	280	101	63	146	60
3	222	203	224	799	e161	e1820	700	265	118	56	110	49
4	220	182	210	1220	e147	e1490	724	214	93	55	92	42
5	242	272	207	e2800	e122	e1820	605	196	89	60	101	38
6	194	498	207	e1950	e299	4010	528	176	87	59	80	34
7	165	382	177	988	e742	2320	479	158	76	49	65	32
8	146	323	175	661	e612	1450	437	175	64	74	58	169
9	130	279	143	464	e539	922	590	141	56	59	51	1520
10	120	246	153	389	e355	645	443	122	52	39	45	894
11	108	238	1180	292	e299	519	383	110	180	34	45	400
12	96	1190	895	e241	e255	445	560	102	551	53	44	274
13	90	920	517	e199	e206	361	e3400	186	275	156	63	201
14	92	586	e364	e162	e200	313	e2540	131	190	68	57	153
15	452	448	e308	e131	e178	298	1310	110	271	54	44	126
16	327	381	e258	e111	e172	282	762	164	276	44	39	106
17	295	333	e221	e106	e158	260	529	116	598	35	33	329
18	498	283	e197	e106	e129	243	403	554	1120	48	28	3530
19	384	2330	e156	e106	e145	312	329	1870	475	136	31	1520
20	318	e2400	e128	e106	e199	395	280	841	316	82	36	592
21	273	1180	e114	e90	e497	e1550	243	951	235	53	207	362
22	259	696	e101	e102	e371	e880	218	1590	212	40	193	264
23	272	494	e249	e118	e298	571	216	822	186	36	88	203
24	227	398	829	e128	e225	440	187	489	130	38	61	163
25	195	340	798	e136	e196	e360	190	340	106	37	49	133
26	179	285	520	e153	e180	e310	e1330	298	105	184	41	116
27	251	246	396	e182	e178	e280	e1000	234	95	1060	39	99
28	343	249	334	e198	e166	e260	627	203	98	654	36	113
29	310	334	297	e198	e160	e245	455	175	122	325	35	133
30	300	279	437	e204	---	240	357	132	94	216	37	98
31	260	---	442	e204	---	242	---	122	---	230	133	---
TOTAL	7550	16457	10763	13387	7570	24545	20924	11572	6499	4170	2307	11838
MEAN	244	549	347	432	261	792	697	373	217	135	74.4	395
MAX	498	2400	1180	2800	742	4010	3400	1870	1120	1060	220	3530
MIN	90	182	101	90	122	212	187	102	52	34	28	32
CFSM	2.01	4.53	2.87	3.57	2.16	6.54	5.76	3.09	1.79	1.11	0.62	3.26
IN.	2.32	5.06	3.31	4.12	2.33	7.55	6.43	3.56	2.00	1.28	0.71	3.64

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1919 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	116	223	326	350	401	559	445	319	188	104	97.3	86.1
MAX	564	1011	815	1141	1000	1331	879	689	700	388	416	608
(WY)	1955	1986	1973	1937	1956	1936	1970	1924	1941	1985	1935	1971
MIN	6.15	8.91	25.8	57.0	89.3	155	114	52.0	21.2	9.20	8.90	5.73
(WY)	1931	1931	1999	1925	1934	1990	1921	1926	1999	1966	1983	1959

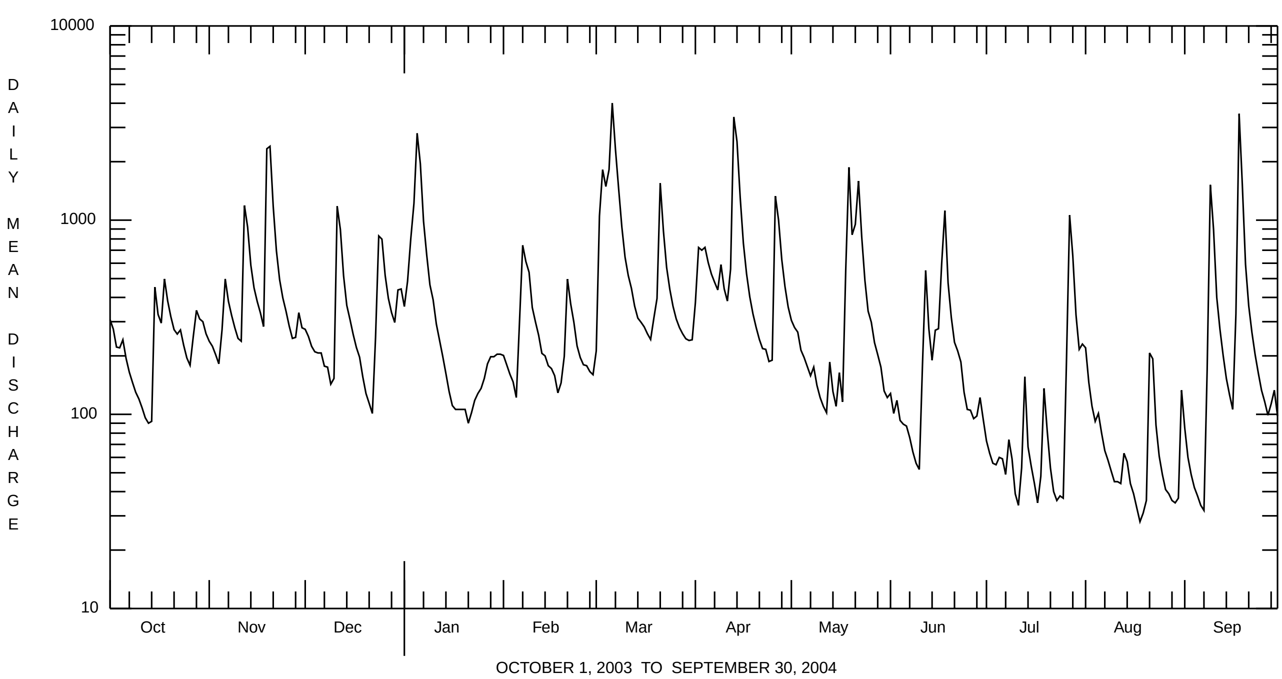
e Estimated.

YOUGHIOGHENY RIVER BASIN

03080000 LAUREL HILL CREEK AT URSINA, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1919 - 2004	
ANNUAL TOTAL	138097		137582			
ANNUAL MEAN	378		376		267	
HIGHEST ANNUAL MEAN					395	1996
LOWEST ANNUAL MEAN					164	1931
HIGHEST DAILY MEAN	2520	Jun 4	4010	Mar 6	6980	Mar 17 1936
LOWEST DAILY MEAN	26	Aug 26	28	Aug 18	2.3	Sep 3 1999
ANNUAL SEVEN-DAY MINIMUM	30	Aug 20	38	Aug 14	3.4	Sep 5 1957
MAXIMUM PEAK FLOW			5820	Apr 13	**a**10900	Oct 15 1954
MAXIMUM PEAK STAGE			**b**6.64	Apr 13	10.63	Oct 15 1954
INSTANTANEOUS LOW FLOW			26	Aug 18	2.2	Sep 26 1932**c**
ANNUAL RUNOFF (CFSM)	3.13		3.11		2.21	
ANNUAL RUNOFF (INCHES)	42.46		42.30		30.02	
10 PERCENT EXCEEDS	905		833		639	
50 PERCENT EXCEEDS	251		219		148	
90 PERCENT EXCEEDS	67		56		20	

a From rating curve extended above 6,100 ft^3/s on basis of slope-area measurement of peak flow.
b Maximum gage height, 7.18 ft., Feb. 7 (backwater from ice).
c Also Sept. 4, 1999.



YOUGHIOGHENY RIVER BASIN

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, at mile 72.0.

DRAINAGE AREA.--1,029 mi^2.

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.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated since January 1925 by Deep Creek Reservoir (station 03076000) 28 mi upstream and since December 1942 by Youghiogheny River Lake (03077000) 1.7 mi upstream. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 17, or 18, 1936 reached a stage of 21.6 ft, from floodmarks, discharge, 85,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3540	1000	4010	3190	1010	1870	2490	2100	1300	750	1190	1050
2	3380	947	3860	3530	999	5240	4790	1690	1240	782	973	963
3	2860	873	3620	4930	1010	9760	5570	1890	1250	892	894	918
4	2350	806	3320	6360	1020	9920	6070	1630	1220	888	867	905
5	2390	979	3070	11000	1010	9370	5820	1510	1130	931	875	1070
6	2350	2000	3070	8300	1510	16200	5590	1450	1100	813	939	1210
7	2320	1960	2940	6170	3870	9980	4830	1200	1070	735	1090	1020
8	2500	2710	2630	5430	3570	9220	3950	1340	907	734	953	996
9	2600	2600	2430	4920	3410	8190	4230	1360	775	780	895	10300
10	2550	2490	2240	4330	3330	6840	3600	1150	750	868	852	4350
11	2510	2420	6680	3980	3070	6730	3080	1020	938	811	840	2470
12	2460	8190	5490	3640	2570	6410	3010	945	3520	754	839	1860
13	2420	e7700	4210	3050	2290	5970	14000	1100	3860	957	988	1530
14	2410	e6700	3800	2420	2010	5180	12500	1240	3970	785	1110	1390
15	3580	e6600	3580	2160	1830	4060	8720	1240	3680	690	995	1400
16	3330	e6150	3260	1500	1450	3110	8060	1270	2750	772	909	1370
17	2650	e5900	2940	1140	1160	2350	6740	1190	2300	928	891	1460
18	3010	e5250	2260	1430	1050	1740	5870	2010	3190	941	919	17000
19	2670	9610	1870	1470	1070	2000	4620	7580	1630	1280	942	5800
20	2460	12300	1830	1280	1210	2340	2980	5070	1370	765	946	3420
21	2340	7320	1660	1140	2580	8200	2040	6120	1250	648	1500	2540
22	2300	6870	1710	1180	2570	5930	1690	8760	1210	662	1680	2110
23	2270	6370	2210	1120	2140	5380	1690	6070	1210	770	1110	1620
24	1890	5360	4840	1080	2270	5160	1580	4990	1080	920	939	1490
25	1850	4340	4950	1070	2050	4450	1510	4060	997	835	801	1520
26	1370	4280	4170	1050	1890	3360	4440	3390	975	740	824	1490
27	1040	4200	3800	1080	1830	2540	4410	2410	882	2420	905	1410
28	1690	3520	3470	1080	1780	2200	3660	1650	723	1800	920	1460
29	1330	4040	3300	1060	1920	2010	3160	1530	787	1090	909	1800
30	1290	4070	3710	1060	---	1900	2790	1340	794	908	1080	1450
31	1110	---	3760	1030	---	1940	---	1250	---	1130	1600	---
TOTAL	72820	137555	104690	92180	57479	169550	143490	79555	47858	28779	31175	77372
MEAN	2349	4585	3377	2974	1982	5469	4783	2566	1595	928	1006	2579
MAX	3580	12300	6680	11000	3870	16200	14000	8760	3970	2420	1680	17000
MIN	1040	806	1660	1030	999	1740	1510	945	723	648	801	905
(†)	-700	-75	-491	-3	+577	+921	+204	+2	-65	-363	-416	+38

† 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 Reliant Energy. Records of contents in Youghiogheny River Lake furnished by U.S. Army Corps of Engineers.

e Estimated.

YOUGHIOGHENY RIVER BASIN

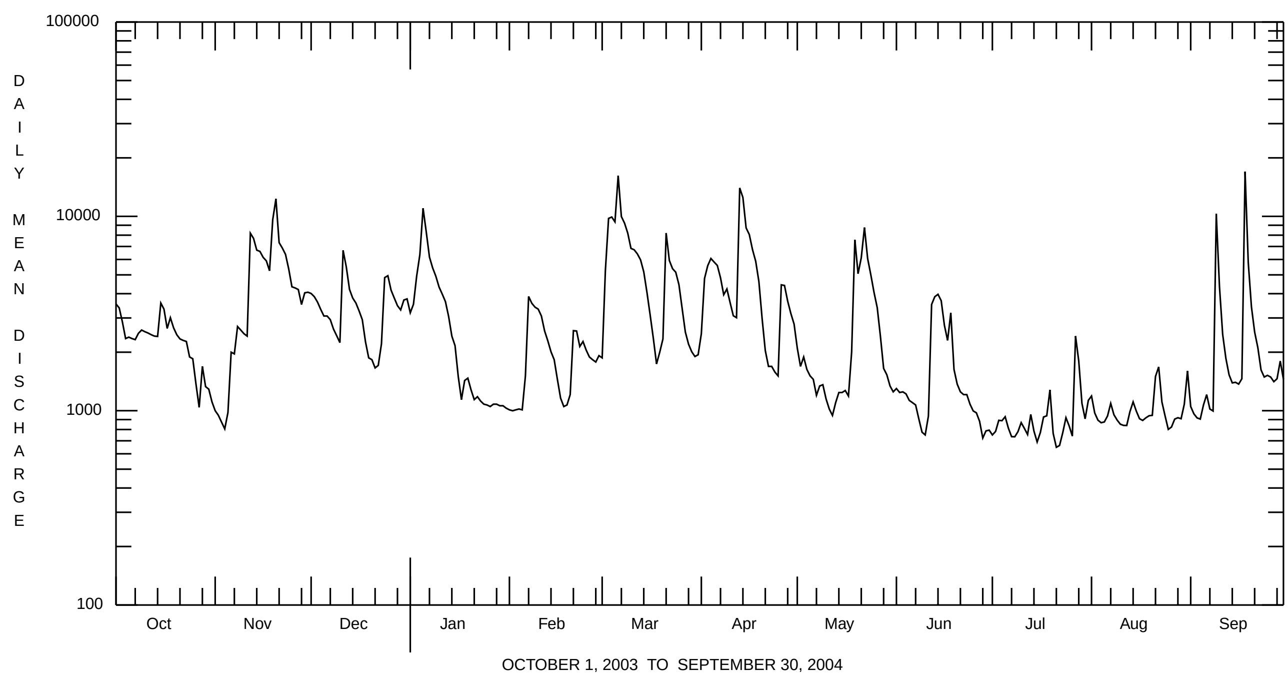
03081000 YOUGHIOGHENY RIVER BELOW CONFLUENCE, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2004, BY WATER YEAR (WY) (SINCE REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1186	1562	2312	2458	2819	3652	3092	2382	1558	1114	1077	1141
MAX	4699	5065	6171	5441	5204	7868	6984	5052	4634	2950	3565	3882
(WY)	1980	1986	1973	1974	1956	1963	1993	1996	2003	1985	1956	1971
MIN	287	433	246	496	903	778	1157	602	491	384	290	214
(WY)	1948	1954	1999	1981	1954	1990	1963	1982	1965	1942	1944	1946

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1941 - 2004	
ANNUAL TOTAL	1178301		1042503			
ANNUAL MEAN	3228	† -24	2848	† -36	2026	
HIGHEST ANNUAL MEAN					2910	1996
LOWEST ANNUAL MEAN					1074	1954
HIGHEST DAILY MEAN	12800	Jun 4	17000	Sep 18	34600	Oct 16 1954
LOWEST DAILY MEAN	669	Feb 17	648	Jul 21	121	Sep 27 1943
ANNUAL SEVEN-DAY MINIMUM	750	Apr 28	763	Jul 20	175	Sep 16 1946
MAXIMUM PEAK FLOW			24700	Sep 18	**a**69500	Oct 15 1954
MAXIMUM PEAK STAGE			11.99	Sep 18	19.92	Oct 15 1954
10 PERCENT EXCEEDS	7010		6080		4500	
50 PERCENT EXCEEDS	2350		1950		1270	
90 PERCENT EXCEEDS	1000		893		614	

† 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 Reliant Energy. Records of contents in Youghiogheny River Lake furnished by U.S. Army Corps of Engineers.
a From rating curve extended above 25,000 ft^3/s on basis of slope-area measurement of peak flow.



YOUGHIOGHENY RIVER BASIN

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, at mile 44.0.

DRAINAGE AREA.--1,326 mi^2.

PERIOD OF RECORD.--July 1908 to current year. Monthly discharge only for some 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 those for estimated daily discharges, which are poor. Flow regulated since January 1925 by Deep Creek Reservoir (station 03076000), since December 1942 by Youghiogheny River Lake (station 03077000) 29.4 mi upstream, and by several smaller reservoirs above station. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3990	1470	4410	4110	e1300	2450	2380	3330	1570	934	1830	1510
2	3820	1370	4210	4220	e1340	4310	5720	2680	1510	887	1400	1160
3	3390	1270	3960	5670	e1340	12300	6150	2460	1480	890	1190	1020
4	2720	1160	3780	7680	e1370	11600	6830	2370	1460	940	1140	992
5	2820	1410	3380	16700	e1460	11400	6680	2120	1400	985	1190	987
6	2630	3030	3360	12400	e3830	21300	6270	1970	1330	1010	1120	1270
7	2600	2660	3210	7950	7340	14700	5590	1840	1270	953	1330	1230
8	2610	3340	3000	6620	6700	11400	4720	1690	1200	919	1160	1150
9	2800	3210	2720	5850	6190	10200	4420	1770	1040	859	1080	10500
10	2720	3000	2720	5010	5880	7780	4220	1670	916	956	1040	6780
11	2660	2890	7110	4480	4390	7530	3720	1430	993	957	1080	3810
12	2600	9460	7190	4320	3890	7050	3260	1290	3810	891	1000	2590
13	2550	9800	5220	3700	3330	6520	17500	1350	4270	1170	1040	2050
14	2580	7590	4580	3070	2960	5810	19200	1500	4420	1040	1280	1730
15	4140	7230	4250	2660	2610	4820	10400	1520	4400	834	1200	1640
16	3990	6560	3830	2180	2330	3880	8890	1550	3950	768	1060	1620
17	3370	6140	3630	1410	2060	3260	8110	1520	4410	1000	1000	2430
18	3860	5620	3050	e1860	1720	2550	6590	2420	6040	1080	965	24800
19	3450	14900	2450	e1970	1440	2850	5940	12000	4030	1500	1030	9000
20	3050	19100	2380	e1720	1420	3230	4540	7800	2770	1060	1110	4830
21	2810	9380	2170	e1480	2970	9020	3380	6960	2220	787	1900	3450
22	2700	7790	2150	e1440	3960	7740	2640	13800	1910	688	2520	2790
23	2710	6980	2870	e1460	3110	6180	2360	9010	1790	782	1700	2260
24	2240	6030	6530	e1390	2910	5620	2230	6410	1620	996	1220	1900
25	2130	4860	7060	e1330	2820	5080	2050	5370	1420	1010	1050	1860
26	1930	4520	5400	e1340	2570	4200	4820	4430	1300	1310	890	1830
27	1590	4410	4720	e1330	2380	3270	6540	3740	1220	4690	958	1700
28	2450	4150	4230	e1350	2280	2720	5290	2680	1100	3830	1000	1690
29	2100	4420	3930	e1340	2280	2410	4430	2240	995	2100	1000	2050
30	1960	4560	4500	e1300	---	2200	3800	1930	967	1400	1020	1890
31	1670	---	4760	e1280	---	2100	---	1690	---	1570	1950	---
TOTAL	86640	168310	126760	118620	88180	205480	178670	112540	66811	38796	38453	102519
MEAN	2795	5610	4089	3826	3041	6628	5956	3630	2227	1251	1240	3417
MAX	4140	19100	7190	16700	7340	21300	19200	13800	6040	4690	2520	24800
MIN	1590	1160	2150	1280	1300	2100	2050	1290	916	688	890	987
(†)	-700	-75	-491	-3	+577	+921	+204	+2	-65	-363	-416	+38

† 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 Reliant Energy. Records of contents in Youghiogheny River Lake furnished by U.S. Army Corps of Engineers.
e Estimated.

YOUGHIOGHENY RIVER BASIN

03082500 YOUGHIOGHENY RIVER AT CONNELLSVILLE, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 2004, BY WATER YEAR (WY) (SINCE REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1425	1954	2940	3268	3790	4905	4166	3131	1936	1332	1274	1250
MAX	5938	7518	8050	9737	7916	11370	8463	7142	5805	4143	4772	5400
(WY)	1955	1986	1973	1937	1939	1936	1993	1996	1941	1985	1956	1971
MIN	139	84.5	295	465	630	1189	1321	662	504	279	155	146
(WY)	1931	1931	1999	1925	1934	1990	1925	1926	1925	1930	1930	1925

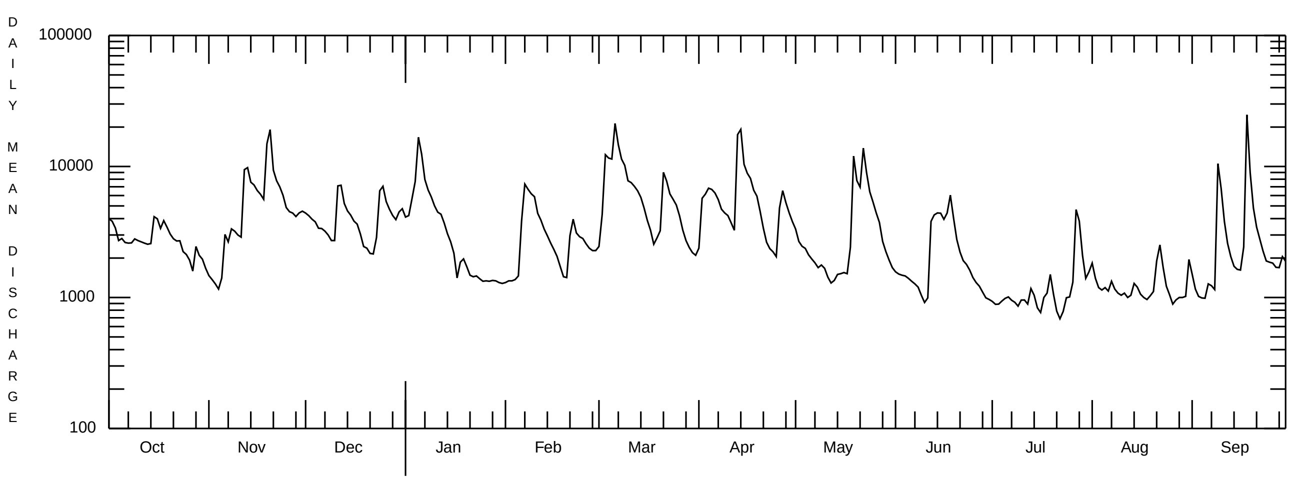
SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1925 - 2004	
ANNUAL TOTAL	1418834		1331779			
ANNUAL MEAN	3887	† -24	3639	† -36	2609	
HIGHEST ANNUAL MEAN					3944	1996
LOWEST ANNUAL MEAN					1223	1925
HIGHEST DAILY MEAN	19100	Nov 20	24800	Sep 18	58100	Mar 18 1936
LOWEST DAILY MEAN	803	Feb 17	688	Jul 22	39	Nov 16 1930
ANNUAL SEVEN-DAY MINIMUM	1000	Jun 29	935	Jul 6	62	Nov 14 1930
MAXIMUM PEAK FLOW			36600	Sep 18	**a**103000	Oct 16 1954
MAXIMUM PEAK STAGE			13.96	Sep 18	21.96	Oct 16 1954
10 PERCENT EXCEEDS	7930		7200		5820	
50 PERCENT EXCEEDS	2810		2610		1620	
90 PERCENT EXCEEDS	1260		1040		604	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1909 - 1924, BY WATER YEAR (WY) (PRIOR TO REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1126	1653	2574	4697	4098	5490	3830	2696	2379	1110	764	1100
MAX	5117	4937	5795	8679	9354	9777	6572	6675	5224	5102	1904	5158
(WY)	1912	1914	1922	1913	1918	1912	1914	1924	1910	1912	1912	1911
MIN	36.4	68.4	342	503	1589	1913	1335	1125	938	221	99.5	132
(WY)	1909	1909	1909	1918	1924	1915	1921	1911	1922	1918	1910	1922

SUMMARY STATISTICS	WATER YEARS 1909 - 1924	
ANNUAL MEAN	2620	
HIGHEST ANNUAL MEAN	3976	1912
LOWEST ANNUAL MEAN	1879	1923
HIGHEST DAILY MEAN	59200	Mar 21 1912
LOWEST DAILY MEAN	11	Oct 18 1910
ANNUAL SEVEN-DAY MINIMUM	14	Oct 15 1910
MAXIMUM PEAK FLOW	**b**65900	Mar 29 1924
MAXIMUM PEAK STAGE	**c**20.5	Mar 29 1924
INSTANTANEOUS LOW FLOW	11	Sep 23 1908**d**
ANNUAL RUNOFF (CFSM)	1.98	
ANNUAL RUNOFF (INCHES)	26.84	
10 PERCENT EXCEEDS	6200	
50 PERCENT EXCEEDS	1370	
90 PERCENT EXCEEDS	195	

† 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 Reliant Energy. Records of contents in Youghiogheny River Lake furnished by U.S. Army Corps of Engineers.
a From rating curve extended above 55,000 ft^3/s.
b Estimated from hydrograph.
c From graph based on gage readings.
d Also Sept. 26, 27, 1908 and Oct. 18, 1910.



OCTOBER 1, 2003 TO SEPTEMBER 30, 2004

YOUGHIOGHENY RIVER BASIN

03083500 YOUGHIOGHENY RIVER AT SUTERSVILLE, PA
(Pennsylvania Water-Quality Network Station)

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, at mile 15.2.

DRAINAGE AREA.--1,715 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1920 to current year. Monthly discharge for 1926, 1930, part of 1931, 1937, 1938, and part of 1939, published in WSP 1305.

REVISED RECORDS.--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 those for estimated daily discharges, which are poor. Flow regulated since January 1925 by Deep Creek Reservoir (station 03076000), since December 1942 by Youghiogheny River Lake (station 03077000) 58 mi upstream, and by several smaller reservoirs above station. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4350	1940	5320	e5210	e2370	3150	4040	3850	2070	1310	2410	2090
2	4310	1770	5060	e4960	e2550	4000	7900	3050	2040	1220	2120	1510
3	3840	1650	4720	e6810	e2880	12200	8400	2990	2110	1210	1740	1360
4	3260	1520	4510	e10000	e2880	11800	9120	2940	2000	1350	1620	1280
5	3180	1520	4050	e21400	e3080	13100	8600	2630	2000	1480	1810	1240
6	2980	3170	4050	e16400	e8870	20800	7960	2490	1860	1430	1560	1420
7	2890	3390	3900	e11000	15800	19100	7100	2390	1720	1260	1530	1560
8	2770	3430	3690	e8100	9530	13200	6110	2260	1610	1310	1580	1800
9	3010	3700	3310	e7150	6060	12200	5930	2330	1370	1180	1410	9240
10	2960	3430	3410	e6100	5530	9460	5540	2200	1200	1150	1330	9390
11	2880	3300	8630	e5450	5100	8750	4800	1900	1350	1250	1580	4550
12	2810	7360	10500	e5250	4540	8250	4370	1710	3630	1200	1450	3170
13	2760	12600	7110	e4500	3900	7670	17400	1720	4710	1420	1490	2590
14	2870	8850	5930	e3740	3560	7050	31100	1940	6850	1510	1560	2220
15	4710	8330	5430	e3220	3110	6080	15100	1980	6800	1240	1580	2060
16	4900	7470	4860	e2940	2780	4960	12200	2060	5120	1070	1420	2020
17	4260	6910	5060	e2040	2330	4530	9990	2040	6580	1100	1300	4390
18	4680	6450	4550	e2520	2050	3620	7990	2890	8710	1300	1260	33600
19	4360	15800	3580	e2830	1930	3580	7170	11300	5010	1660	1390	16600
20	3690	30700	3280	e2310	2140	4130	5230	8910	3330	1760	2150	7630
21	3330	13500	3020	e2180	3410	9430	3810	8320	2770	1190	2770	5090
22	3130	10400	2870	e2210	5110	10200	3090	14300	2510	996	3770	3840
23	3080	8810	3570	e2290	3840	7820	2960	10400	2510	962	2610	3230
24	2800	7690	7430	e2250	3750	7250	2830	7470	2140	1120	1880	2550
25	2420	6350	9860	e2370	3620	6480	2720	6010	1860	1280	1560	2400
26	2350	5270	7240	e2400	3260	5360	4450	4830	1730	1310	1310	2330
27	2130	5290	6170	e2330	3000	4250	7830	4160	1630	5910	1290	2210
28	2920	5250	5360	e2440	2880	3600	5990	2920	1470	7340	1350	2090
29	2830	5240	4890	e2330	2890	3260	4920	2640	1420	3460	1400	2310
30	2490	5750	e5290	e2370	---	3020	4270	2350	1380	2280	1370	2420
31	2230	---	e5610	e2370	---	2990	---	2130	---	2060	1820	---
TOTAL	101180	206840	162260	157470	122750	241290	228920	129110	89490	54318	53420	138190
MEAN	3264	6895	5234	5080	4233	7784	7631	4165	2983	1752	1723	4606
MAX	4900	30700	10500	21400	15800	20800	31100	14300	8710	7340	3770	33600
MIN	2130	1520	2870	2040	1930	2990	2720	1710	1200	962	1260	1240
(†)	-700	-75	-491	-3	+577	+921	+204	+2	-65	-363	-416	+38

† 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 Reliant Energy. Records of contents in Youghiogheny River Lake furnished by U.S. Army Corps of Engineers.

e Estimated.

YOUGHIOGHENY RIVER BASIN

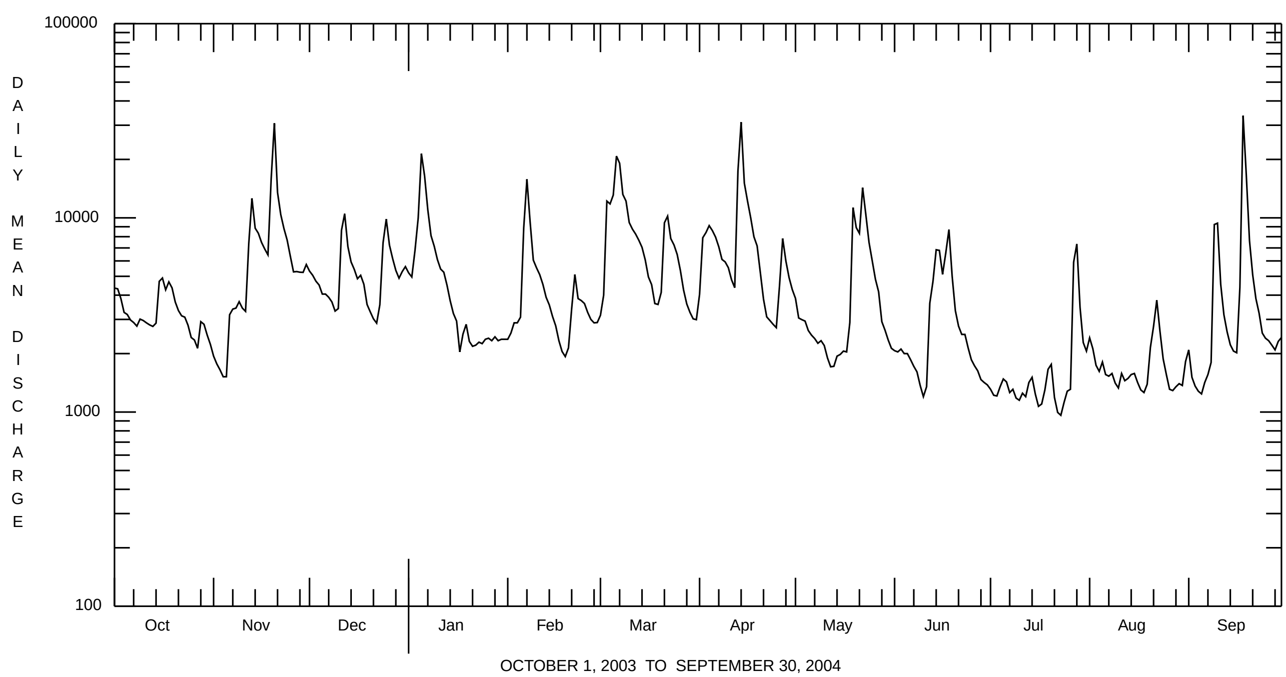
03083500 YOUGHIOGHENY RIVER AT SUTERSVILLE, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1921 - 2004, BY WATER YEAR (WY) (SINCE REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1524	2165	3569	3949	4544	5930	4958	3708	2333	1574	1465	1429
MAX	7006	6895	9373	8488	9630	13720	10230	8012	7318	4853	5707	6382
(WY)	1955	2004	1973	1974	1939	1936	1940	1996	1941	1985	1956	1971
MIN	107	209	412	611	716	1539	1637	1012	585	614	309	185
(WY)	1924	1923	1999	1925	1934	1990	1921	1982	1925	1942	1922	1922

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1921 - 2004	
ANNUAL TOTAL	1664220		1685238			
ANNUAL MEAN	4560	† -24	4604	† -36	3092	
HIGHEST ANNUAL MEAN					4604	2004
LOWEST ANNUAL MEAN					1496	1925
HIGHEST DAILY MEAN	30700	Nov 20	33600	Sep 18	79000	Mar 18 1936
LOWEST DAILY MEAN	1010	Jul 3	962	Jul 23	57	Sep 30 1922
ANNUAL SEVEN-DAY MINIMUM	1170	Jun 29	1230	Jul 20	64	Sep 24 1922
MAXIMUM PEAK FLOW			46400	Sep 18	**a**108000	Oct 16 1954
MAXIMUM PEAK STAGE			20.72	Sep 18	**b**32.50	Oct 16 1954
INSTANTANEOUS LOW FLOW					**c**57	Sep 29 1922
10 PERCENT EXCEEDS	9750		8970		6840	
50 PERCENT EXCEEDS	3300		3170		1950	
90 PERCENT EXCEEDS	1450		1410		701	

† 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 Reliant Energy. Records of contents in Youghiogheny River Lake furnished by U.S. Army Corps of Engineers.
a From rating curve extended above 100,000 ft^3/s.
b From floodmark.
c Minimum observed.



YOUGHIOGHENY RIVER BASIN

03083500 YOUGHIOGHENY RIVER AT SUTERSVILLE, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 240-288.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unf lab, µS/cm 25 degC (90095)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water unfltrd recover -able, mg/L (00916)	Magnesium, water, unfltrd recover -able, mg/L (00927)
OCT 2003													
02...	1015	1028	9813	4360	9.2	7.1	7.4	192	196	14.0	59	16.3	4.3
DEC													
03...	1235	1028	9813	4710	12.6	7.2	7.5	188	195	4.0	62	17.4	4.5
FEB 2004													
10...	1215	1028	9813	E5530	15.5	6.7	7.4	339	343	2.0	80	22.8	5.6
APR													
05...	1355	1028	9813	8480	12.3	7.5	7.4	212	212	5.0	61	16.8	4.7
JUN													
02...	1315	1028	9813	1990	10.5	7.9	7.4	320	307	19.5	100	27.4	7.8
AUG													
03...	1340	1028	9813	1670	8.4	7.7	7.2	316	328	25.0	100	28.1	7.7

Date	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Fluoride, water, unfltrd mg/L (00951)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recover -able, µg/L (01105)
OCT 2003													
02...	25	<.2	40.9	168	2	<.020	.79	<.040	.01	.020	.99	2.5	270
DEC													
03...	25	<.2	39.8	174	2	.030	.85	<.040	.01	.015	.97	1.8	<200
FEB 2004													
10...	26	<.2	49.6	260	2	.070	1.17	<.040	.02	.022	1.5	1.6	450
APR													
05...	21	<.2	36.3	174	22	<.020	1.15	<.040	.03	.027	1.3	1.8	570
JUN													
02...	33	<.2	79.2	222	12	<.020	.85	<.040	<.01	.021	.73	1.6	<200
AUG													
03...	39	<.2	78.6	208	12	.030	.70	<.040	<.01	.022	.83	2.1	<200

Date	Copper, water, unfltrd recover -able, µg/L (01042)	Cyanide amenable to chlorination wat unf mg/L (00722)	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, unfltrd recover -able, µg/L (01051)	Manganese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, unfltrd recover -able, µg/L (01092)	Phenolic compounds, water, unfltrd µg/L (32730)
OCT 2003								
02...	<10	<1.00	620	<1.0	90	<50	20	<5
DEC								
03...	<10	<1.00	400	<1.0	90	<50	<10	<5
FEB 2004								
10...	<10	<1.00	870	1.5	170	<50	20	<5
APR								
05...	<10	<1.00	960	<1.0	150	<50	10	<5
JUN								
02...	<10	<1.00	420	<1.0	50	<50	<10	<5
AUG								
03...	<10	<1.00	490	<1.0	60	<50	<10	<5

YOUGHIOGHENY RIVER BASIN

03083500 YOUGHIOGHENY RIVER AT SUTERSVILLE, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 animal (approximate) subsamples.

Date	10/07/03
Benthic Macroinvertebrate	Count
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Ancylidae	
Ferrissia	1
Bivalvia (CLAMS)	
Veneroida	
Corbiculidae	
Corbicula fluminea	7
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Lumbriculida	
Lumbriculidae	2
Arthropoda	
Acariformes	
Hydrachnidia (WATER MITES)	1
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	
Acentrella	6
Heptageniidae	
Stenonema	18
Isonychiidae	
Isonychia	1
Tricorythidae	
Tricorythodes	24
Trichoptera (CADDISFLIES)	
Hydropsychidae	
Cheumatopsyche	25
Hydropsyche	15
Hydroptilidae	
Hydroptila	1
Polycentropodidae	
Neureclipsis	1
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
Stenelmis	1
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	7
Simuliidae (BLACK FLIES)	
Simulium	1
Total Organisms	111
Total Taxa	15

MONONGAHELA RIVER BASIN

03085000 MONONGAHELA RIVER AT BRADDOCK, PA
(Pennsylvania Water-Quality Network Station)

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 of confluence with Allegheny River.

DRAINAGE AREA.--7,337 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1938 to September 2004 (discontinued). 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 709.66 ft above National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers benchmark). Prior to Aug. 13, 1951, at site 700 ft upstream, and Aug. 13, 1951 to Nov. 8, 1990 at present site at datum 2.50 ft lower.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Mean daily discharges only for period Mar. 31 to Sept. 30 based on river summation due to removal of control structure. Flow regulated by locks and hydroelectric plants, since January 1925 by Deep Creek Reservoir (station 03076000), since 1926 by Lake Lynn, since May 1938 by Tygart Lake (station 03055500), since December 1942 by Youghiogheny River Lake (station 03077000), and since April 1989 by Stonewall Jackson Lake, combined capacity, 779,000 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. U.S. Army Corps of Engineers satellite telemetry at station.

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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12900	11200	22000	19600	6590	9110	e16000	e12400	e19500	e4200	e9100	e5300
2	11800	10800	22200	17500	6990	11000	e34400	e10000	e13400	e4000	e9100	e4100
3	12900	10100	19000	29200	12300	22800	e36200	e10800	e12000	e3200	e7900	e3700
4	10200	8530	15200	52800	36000	25800	e30200	e10000	e11200	e3200	e7800	e2800
5	10100	8230	15100	72300	26300	38600	e31600	e9900	e10100	e4200	e6300	e2900
6	11100	16500	15800	70600	e54900	69800	e25400	e10100	e8400	e4000	e4600	e2700
7	9810	22900	15200	47100	e91500	96600	e23300	e8300	e9700	e4600	e4300	e3900
8	9080	19300	12400	37300	e69900	59000	e24800	e8200	e8800	e4400	e3200	e8400
9	8390	18400	11800	30200	46700	51500	e24800	e8000	e8300	e3000	e3500	e41600
10	7870	15700	12500	29500	42000	e43300	e20900	e6700	e4900	e3200	e3400	e29800
11	7230	14800	31800	22500	38100	38000	e14800	e5800	e8900	e3500	e4700	e14500
12	6750	36100	43700	16300	31200	31900	e14400	e6600	e31200	e4700	e3800	e9200
13	6580	82000	29900	13400	27400	27700	e58500	e6200	e31100	e7600	e5000	e7200
14	6370	54200	26500	11000	22800	21400	e116000	e6100	e32400	e6600	e3900	e5900
15	13400	42700	23100	9320	18800	15800	e66900	e6500	e23100	e9400	e3400	e5200
16	15000	35900	23600	9130	16500	15500	e49600	e6700	e17800	e8600	e3000	e6300
17	14300	e23300	22200	6580	13300	20000	e40600	e6100	e20900	e5000	e2700	e22300
18	15700	e22800	21400	6860	9830	22400	e30000	e8800	e25900	e3600	e3500	e117000
19	14400	53100	19200	12100	8100	22800	e23500	e30900	e36600	e4400	e3800	e49500
20	12100	131000	17600	11400	8110	25500	e19300	e33900	e23700	e4700	e6600	e20700
21	12400	77000	16200	11800	10500	36400	e19200	e30600	e16400	e3000	e15600	e15500
22	10300	48200	13200	11500	15000	46100	e14400	e60400	e10600	e2700	e20800	e12300
23	9010	42000	14000	10600	13400	38700	e15000	e44700	e9800	e2700	e8600	e10700
24	7910	30700	24500	8810	13300	30100	e9200	e29700	e8500	e2900	e6090	e8400
25	6670	26300	41800	6700	14000	21600	e8700	e24100	e7100	e3400	e4200	e7100
26	6820	24300	35300	7030	13000	17700	e14700	e16400	e7600	e3800	e5500	e7000
27	7810	18500	29500	7570	12100	14400	e24700	e11500	e5500	e16400	e2700	e6200
28	10600	14700	25600	7790	10600	12600	e23400	e18900	e5600	e20000	e3900	e7400
29	15400	20800	21100	8560	9580	11200	e16700	e41500	e5900	e13200	e3200	e8000
30	15100	25400	17800	7230	---	e13100	e14700	e34000	e4300	e11300	e3300	e9300
31	13000	---	20300	8210	---	e13500	---	e25400	---	e8000	e5100	---
TOTAL	331000	965460	679500	620490	698800	923910	861900	549200	439200	183500	178590	454900
MEAN	10680	32180	21920	20020	24100	29800	28730	17720	14640	5919	5761	15160
MAX	15700	131000	43700	72300	91500	96600	116000	60400	36600	20000	20800	117000
MIN	6370	8230	11800	6580	6590	9110	8700	5800	4300	2700	2700	2700
CFSM	1.46	4.39	2.99	2.73	3.28	4.06	3.92	2.41	2.00	0.81	0.79	2.07
IN.	1.68	4.90	3.45	3.15	3.54	4.68	4.37	2.78	2.23	0.93	0.91	2.31

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	5378	9593	15410	17090	20740	24070	18950	14420	9520	6396	5835	4969
MAX	23130	42130	37600	36150	43120	54500	39180	40310	30240	15620	23720	18290
(WY)	1980	1986	1973	1952	1956	1963	1940	1996	1981	1958	1956	1971
MIN	1200	971	2748	3389	6387	8042	6473	3352	2107	1765	1531	1005
(WY)	1954	1954	1954	1977	1954	1969	1971	1982	1965	1966	1957	1946

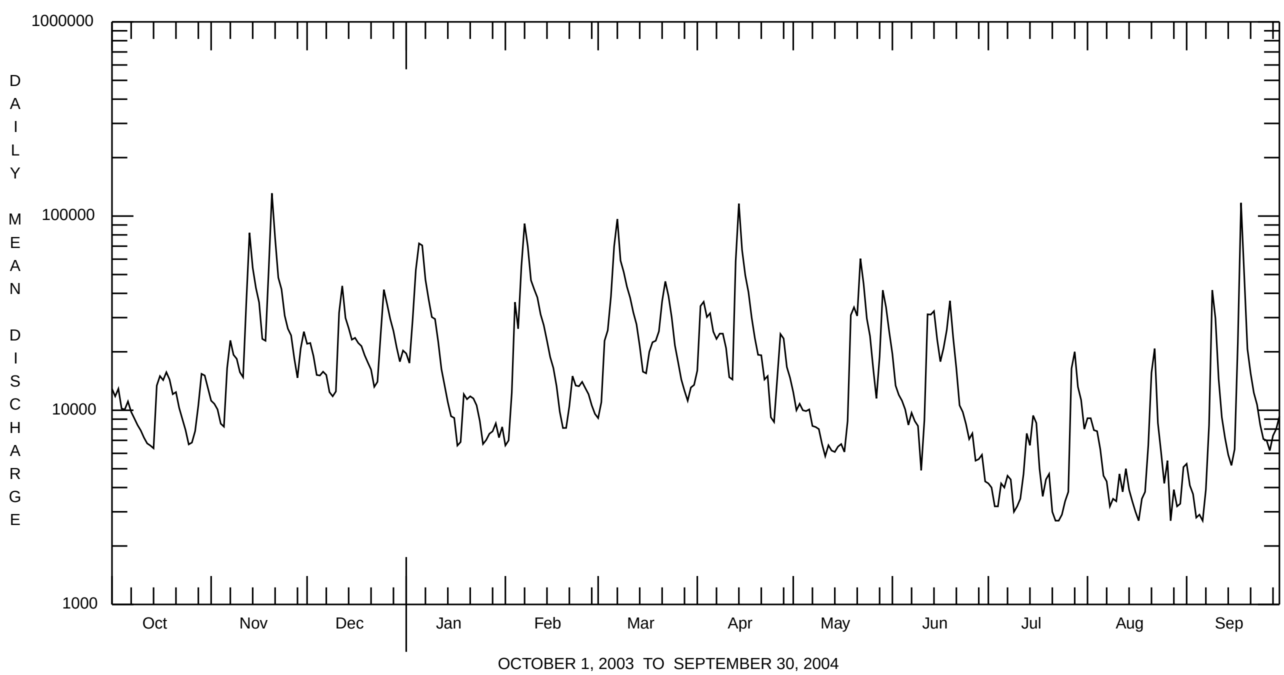
e Estimated.

MONONGAHELA RIVER BASIN

03085000 MONONGAHELA RIVER AT BRADDOCK, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1939 - 2004	
ANNUAL TOTAL	6946360		6886450			
ANNUAL MEAN	19030		18820		12650	
HIGHEST ANNUAL MEAN					18820	2004
LOWEST ANNUAL MEAN					6946	1954
HIGHEST DAILY MEAN	131000	Nov 20	131000	Nov 20	188000	Jan 20 1996
LOWEST DAILY MEAN	3050	Jul 28	**a**2700	Jul 22	703	Sep 3 1946**b**
ANNUAL SEVEN-DAY MINIMUM	4330	Jun 30	**c**3310	Jul 20	839	Nov 17 1953
MAXIMUM PEAK FLOW			142000	Nov 20	**d**210000	Jan 20 1996
MAXIMUM PEAK STAGE			23.10	Nov 20	**f**29.07	Jan 20 1996
ANNUAL RUNOFF (CFSM)	2.59		2.56		1.72	
ANNUAL RUNOFF (INCHES)	35.22		34.92		23.43	
10 PERCENT EXCEEDS	39800		39300		29500	
50 PERCENT EXCEEDS	14500		13000		7800	
90 PERCENT EXCEEDS	5510		4200		2290	

a Based on river summation. Also July 23, Aug. 17, 27, Sept. 6.
b Also Sept. 4, 22, 1946.
c Based on river summation.
d From rating curve extended above 183,000 ft^3/s.
f Maximum gage height, 31.39 ft, June 24, 1972 (backwater from Allegheny River). Datum then in use.



MONONGAHELA RIVER BASIN

03085000 MONONGAHELA RIVER AT BRADDOCK, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 240-288.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unf lab, µS/cm 25 degC (90095)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water unfltrd recoverable, mg/L (00916)	Magnesium, water, unfltrd recoverable, mg/L (00927)
OCT 2003													
02...	1330	1028	9813	11100	9.0	7.1	7.1	223	230	17.5	75	21.2	5.4
DEC													
04...	1000	1028	9813	15600	10.3	7.2	7.6	253	262	6.5	94	26.3	6.9
FEB 2004													
10...	1400	1028	9813	41000	15.2	6.4	7.4	310	310	3.0	87	24.8	6.0
APR													
12...	0915	1028	9813	E14400	11.4	7.4	7.4	264	265	10.0	88	24.5	6.4
JUN													
08...	1150	1028	9813	E8800	8.9	7.4	7.1	285	286	22.0	89	25.1	6.5
AUG													
10...	1300	1028	9813	E3400	9.1	7.9	7.9	435	428	26.0	130	36.5	10.2

Date	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Fluoride, water, unfltrd mg/L (00951)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recoverable, µg/L (01105)
OCT 2003													
02...	31	<.2	54.9	188	10	.040	.72	<.040	.02	.027	.98	2.6	570
DEC													
04...	35	<.2	68.9	186	2	.080	.72	<.040	.02	.019	.95	1.9	610
FEB 2004													
10...	28	.7	55.6	216	12	.120	1.06	<.040	--	--	1.5	2.0	2800
APR													
12...	30	<.2	62.8	168	10	.070	.83	<.040	.02	.017	1.1	1.3	420
JUN													
08...	36	.2	68.2	244	14	.090	.70	<.040	.04	.035	.88	2.4	590
AUG													
10...	53	<.2	111	330	<2	<.020	.72	<.040	.01	.022	.97	2.4	310

Date	Copper, water, unfltrd recoverable, µg/L (01042)	Cyanide amenable to chlorination wat unf mg/L (00722)	Iron, water, unfltrd recoverable, µg/L (01045)	Lead, water, unfltrd recoverable, µg/L (01051)	Manganese, water, unfltrd recoverable, µg/L (01055)	Nickel, water, unfltrd recoverable, µg/L (01067)	Zinc, water, unfltrd recoverable, µg/L (01092)	Phenolic compounds, water, unfltrd µg/L (32730)
OCT 2003								
02...	<10	<1.00	1020	<1.0	120	<50	<10	<5
DEC								
04...	<10	<1.00	940	<1.0	190	<50	<10	<5
FEB 2004								
10...	<10	<1.00	4000	4.2	260	<50	50	<5
APR								
12...	<10	<1.00	600	<1.0	120	<50	10	<5
JUN								
08...	<10	<1.00	1220	1.2	130	<50	30	<5
AUG								
10...	<10	<1.00	830	1.0	70	<50	70	<5

MONONGAHELA RIVER BASIN

03085000 MONONGAHELA RIVER AT BRADDOCK, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 animal (approximate) subsamples.

Date	10/16/03
Benthic Macroinvertebrate	Count
Platyhelminthes	
Turbellaria (FLATWORMS)	
Tricladida	
Planariidae	2
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Tubificida	
Naididae	16
Arthropoda	
Acariformes	
Hydrachnidia (WATER MITES)	1
Crustacea	
Amphipoda (SCUDS)	
Gammaridae	
Gammarus	4
Insecta	
Ephemeroptera (MAYFLIES)	
Heptageniidae	
Stenonema	1
Trichoptera (CADDISFLIES)	
Hydropsychidae	
Cheumatopsyche	4
Hydropsyche	6
Hydroptilidae	
Hydroptila	4
Polycentropodidae	
Neureclipsis	4
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
Stenelmis	1
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	319
Empididae (DANCE FLIES)	
Hemerodromia	2
Total Organisms	364
Total Taxa	12

MONONGAHELA RIVER BASIN

LAKES AND RESERVOIRS IN MONONGAHELA RIVER BASIN

03055500 TYGART LAKE.--Lat 39°18'50", long 80°02'00", Taylor County, W. Va., Hydrologic Unit 05020001, at dam on Tygart Valley River, 2.2 mi upstream from Threefork Creek, and 2.4 mi upstream from Grafton, W. Va. DRAINAGE AREA, 1,184 mi^2. PERIOD OF RECORD, April 1938 to current year. Prior to October 1960 published as "*Tygart Reservoir*". GAGE, water-stage recorder. Datum of gage is at sea level.

REMARKS.--Lake is formed by concrete gravity dam completed and accepted February 1938, storage began May 15, 1938. Capacity, 285,000 acre-ft (from sedimentation resurvey made in 1959) between elevations 991.5 ft (sill of valves) and 1,167.0 ft (crest of spillway) above sea level. Dead storage, 2,700 acre-ft. Figures given herein represent total contents. Conservation pool elevation is 1,010.0 ft and water below elevation 991.5 ft cannot be withdrawn. Lake is used for flood control, for supplementary supply for navigation on Monongahela River during periods of low flow, and for recreation.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 255,680 acre-ft, Nov. 7, 1985, elevation, 1,156.69 ft; minimum since October 1939, 8,330 acre-ft, Jan. 25, 1940, elevation, 1,005.15 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 169,850 acre-ft, Feb. 8, elevation, 1,123.77 ft; minimum 28,030 acre-ft, Dec. 23, elevation, 1,031.13 ft.

03076000 DEEP CREEK RESERVOIR.--Lat 39°30'34", long 79°23'28", Garrett County, Md., Hydrologic Unit 05020006, on Deep Creek at dam, 1.8 mi upstream from mouth, and 7 mi north of Oakland, Md. DRAINAGE AREA, 64.7 mi^2. PERIOD OF RECORD, July 1925 to current year. Prior to October 1950, monthend contents published in WSP 1305, and October 1950 to September 1955, monthend contents published in WSP 1385. GAGE, water-stage recorder at right end of spillway. Datum of gage is at sea level (unadjusted).

REMARKS.--Reservoir is formed by an earthfill dam completed January 1925, with storage beginning at that time. Usable capacity, 92,975 acre-ft between elevations 2,425 ft (top of intake to outlet tunnel) and 2,462 ft (crest of spillway). Dead storage, 13,085 acre-ft. Figures given herein represent usable contents. Reservoir is used for hydroelectric power.

COOPERATION.--Records furnished by Reliant Energy.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 93,800 acre-ft, July 14, 1990, elevation, 2,462.25 ft; minimum observed, 11,760 acre-ft, Sept. 30, 1925, elevation, 2,433.45 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 90,400 acre-ft, June 12, elevation, 2,461.30 ft; minimum 70,100 acre-ft, Jan. 26 to Feb. 2, elevation, 2,455.70 ft.

03077000 YOUGHIOGHENY RIVER LAKE.--Lat 39°47'56", long 79°22'06", Somerset County, Hydrologic Unit 05020006, remote control recorder at control house at dam, 1.2 mi upstream from Confluence, Pa., since June 1951. Water- stage recorder and transmitter at lat 39°45'21", long 79°24'00", at bridge on U.S. Highway 40, 500 ft upstream from Stuck Hollow Run, 0.6 mi upstream from Tub Run, on Youghiogheny River, 7.5 mi upstream from Youghiogheny River Dam, Pa. DRAINAGE AREA, 434 mi^2. PERIOD OF RECORD, October 1943 to current year. Prior to October 1970 published as "Youghiogheny River Reservoir." GAGE, water-stage recorder since Mar. 9, 1948. Datum of gage is at sea level. Prior to Mar. 9, 1948, non-recording gage at dam at same datum.

REMARKS.--Lake is formed by a rock-faced earthfill dam with uncontrolled side channel spillway. Storage began during construction and lake acted as a retention basin from December 1942 to December 1947. Dam became fully operational in January 1948. Lake first reached minimum pool elevation, 1,344.0 ft (capacity, 5,230 acre-ft) in December 1942. Capacity 254,000 acre-ft between elevations 1,319.50 ft (invert at intake to outlet tunnel) and 1,470.00 ft (full pool). Winter low-water pool elevation is 1,419.0 ft, capacity, 103,000 acre-ft. Summer pool normally occurs during period Mar. 15 to Apr. 15. Depletion of low-water storage for Youghiogheny River flow augmentation occurs normally during the period July through November. Figures given herein represent total contents. Lake is used for flood control, for low-flow augmentation of Youghiogheny River and downstream rivers, and for recreation.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 222,610 acre-ft, May 16, 1967, elevation, 1,460.95; minimum (after dam became fully operational), 3,700 acre-ft, Oct. 31, 1946, elevation 1,340.30 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 174,220 acre-ft, Apr. 15, elevation, 1,446.69 ft; minimum 65,840 acre-ft, Jan. 1, elevation, 1,402.16 ft.

MONONGAHELA RIVER BASIN

Lakes and Reservoirs in Monongahela River Basin--Continued

MONTHEND ELEVATION, IN FEET ABOVE SEA LEVEL, AND CONTENTS AT 2400 HRS, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (equivalent in ft^3/s)	Elevation (feet)	Contents (acre-feet)	Change in contents (equivalent in ft^3/s)
	03055500 Tygart Lake			03076000 Deep Creek Reservoir		
Sept. 30	1,076.20	82,480	---	2,458.50	80,000	---
Oct. 31	1,057.48	56,740	-419	2,457.50	76,400	-59
Nov. 30	1,044.10	41,070	-263	2,456.70	73,600	-47
Dec. 31	1,052.85	51,040	+162	2,457.00	74,700	+18
CAL YR 2003	--	--	+25	--	--	+4.0
Jan. 31	1,049.84	47,520	-57	2,455.70	70,100	-75
Feb. 29	1,052.49	50,610	+56	2,456.60	73,200	+56
Mar. 31	1,043.27	40,170	-170	2,458.90	81,500	+135
Apr. 30	1,093.70	110,730	+1,190	2,460.80	88,500	+118
May 31	1,097.94	118,260	+122	2,461.00	89,300	+13
June 30	1,094.29	111,760	-109	2,460.80	88,500	-13
July 31	1,098.44	119,180	+121	2,460.10	85,900	-42
Aug. 31	1,090.78	105,750	-218	2,459.30	83,000	-47
Sept. 30	1,080.16	88,550	-289	2,459.00	81,900	-18
WTR YR 2004	--	--	+8.4	--	--	+2.6

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (equivalent in ft^3/s)
	03077000 Youghiogheny River Lake		
Sept. 30	1,434.64	139,690	---
Oct. 31	1,418.96	100,230	-642
Nov. 30	1,418.23	98,560	-28
Dec. 31	1,402.95	67,260	-509
CAL YR 2003	--	--	-28
Jan. 31	1,405.34	71,700	+72
Feb. 29	1,419.13	100,620	+521
Mar. 31	1,437.99	148,950	+786
Apr. 30	1,439.81	154,090	+86
May 31	1,439.57	153,410	-11
June 30	1,438.48	150,330	-52
July 31	1,431.24	130,570	-321
Aug. 31	1,422.23	107,890	-369
Sept. 30	1,423.62	111,240	+56
WTR YR 2004	--	--	-39

CHARTIERS CREEK BASIN

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 mi^2.

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 above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Some regulations at low flow by mine drainage, reservoirs, and industrial usage above station. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 2, 1912 reached a discharge of 20,000 ft^3/s, from U.S. Army Corps of Engineers.

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

Date	Time	Discharge ft^3/s	Gage Height (ft)
Nov. 19	1900	6,800	9.20
Dec. 11	0300	2,960	5.28
Jan. 5	0200	9,730	12.13
Feb. 3	2100	2,920	5.23
Feb. 6	1700	7,440	9.84
Apr. 13	1900	7,150	9.55
May 21	1600	3,270	5.61
June 14	2100	3,960	6.35
June 15	1800	4,270	6.67
Sept. 8	2400	8,380	10.78
Sept. 17	2145	*27,400	*25.05

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	138	170	294	309	267	320	1050	268	293	193	235	152
2	126	165	255	739	276	458	1180	266	255	196	154	136
3	111	155	232	1100	1610	439	715	261	376	205	135	128
4	139	146	222	8060	1110	485	640	230	251	179	142	119
5	133	246	251	6950	477	488	550	217	320	172	199	120
6	106	286	286	1890	5300	900	488	212	256	164	134	114
7	99	197	254	1090	2140	705	461	243	223	163	124	118
8	96	168	221	843	705	625	473	264	201	159	116	1820
9	96	152	216	735	549	557	464	205	191	149	114	4850
10	92	144	430	632	519	496	400	189	206	143	116	842
11	88	153	2050	558	565	453	375	183	641	146	129	479
12	86	294	699	546	512	440	543	171	1030	185	136	356
13	85	265	475	509	e500	394	3980	175	400	236	145	293
14	215	212	432	460	e420	376	3310	220	2650	167	127	268
15	581	186	400	431	e385	373	1160	181	2120	149	113	248
16	212	177	376	382	e335	472	791	184	893	134	106	229
17	287	163	616	408	e325	593	651	165	689	160	104	9050
18	234	152	502	e459	e310	482	576	548	923	204	103	15900
19	186	3200	418	e395	e340	546	508	1240	509	299	263	1780
20	157	2620	379	e336	446	577	466	566	406	156	432	909
21	155	679	334	e281	617	947	418	2160	361	136	1190	669
22	152	474	328	e308	468	657	400	1780	500	128	310	562
23	154	383	484	e255	394	552	455	724	363	125	192	483
24	131	370	687	e282	405	497	369	491	298	121	161	427
25	120	343	551	e286	393	492	373	392	270	111	146	392
26	149	289	438	e287	355	449	445	421	249	565	153	363
27	551	263	384	e324	336	441	370	385	228	434	178	330
28	414	388	353	e350	320	411	337	422	224	232	162	321
29	272	444	332	300	315	383	296	371	246	161	158	306
30	211	340	444	282	---	392	276	290	208	141	316	283
31	184	---	352	265	---	477	---	337	---	211	200	---
TOTAL	5760	13224	13695	30052	20694	15877	22520	13761	15780	5924	6293	42047
MEAN	186	441	442	969	714	512	751	444	526	191	203	1402
MAX	581	3200	2050	8060	5300	947	3980	2160	2650	565	1190	15900
MIN	85	144	216	255	267	320	276	165	191	111	103	114
CFSM	0.72	1.72	1.72	3.77	2.78	1.99	2.92	1.73	2.05	0.74	0.79	5.45
IN.	0.83	1.91	1.98	4.35	3.00	2.30	3.26	1.99	2.28	0.86	0.91	6.09

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1920 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	115	197	284	358	456	576	471	353	242	179	144	144
MAX	393	1400	1003	986	1255	1361	999	887	694	951	960	1402
(WY)	1980	1986	1951	1924	1926	1945	1961	1924	1980	1928	1980	2004
MIN	31.3	35.5	36.5	37.8	80.9	101	154	92.7	46.5	30.0	28.4	24.1
(WY)	1933	1931	1931	1931	1964	1969	1925	1926	1926	1926	1930	1927

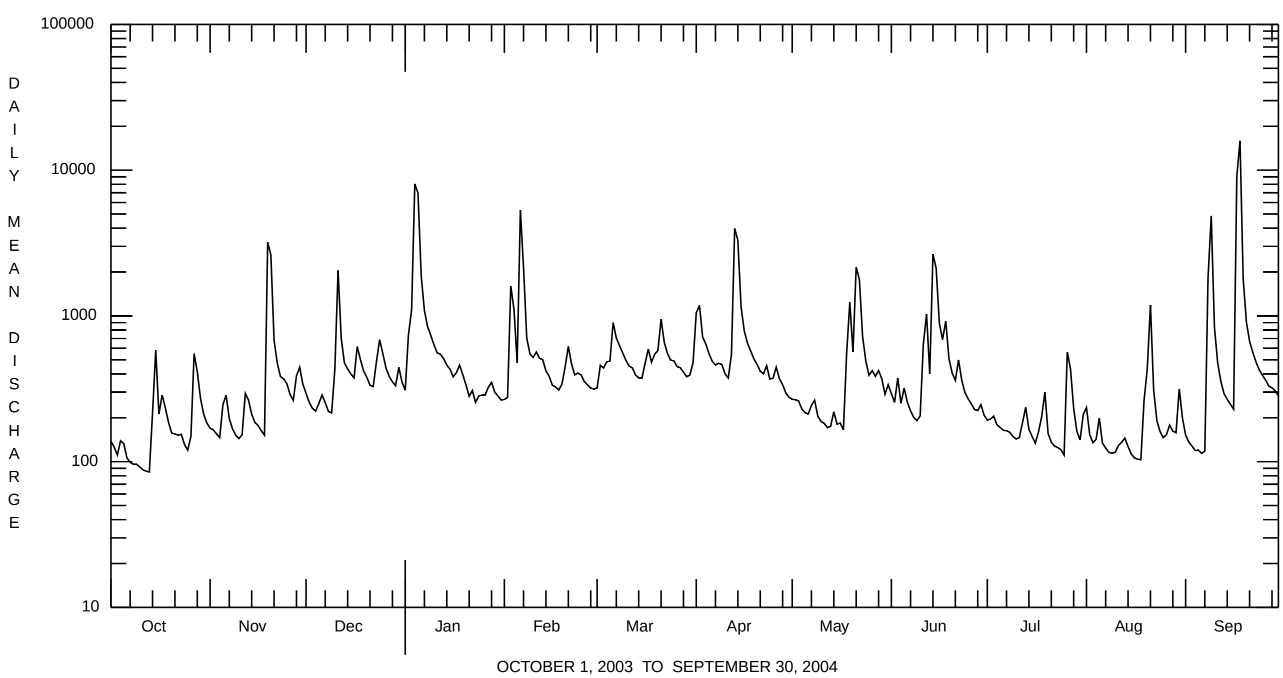
e Estimated.

CHARTIERS CREEK BASIN

03085500 CHARTIERS CREEK AT CARNEGIE, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1920 - 2004	
ANNUAL TOTAL	140767		205627			
ANNUAL MEAN	386		562		292	
HIGHEST ANNUAL MEAN					562	2004
LOWEST ANNUAL MEAN					132	1954
HIGHEST DAILY MEAN	3220	May 10	15900	Sep 18	15900	Sep 18 2004
LOWEST DAILY MEAN	85	Oct 13	85	Oct 13	16	Aug 9 1926
ANNUAL SEVEN-DAY MINIMUM	92	Oct 7	92	Oct 7	19	Sep 26 1927
MAXIMUM PEAK FLOW			**a**27400	Sep 17	**a**27400	Sep 17 2004
MAXIMUM PEAK STAGE			25.05	Sep 17	25.05	Sep 17 2004
INSTANTANEOUS LOW FLOW			84	Oct 12-14	**b**16	Aug 9 1926**c**
ANNUAL RUNOFF (CFSM)	1.50		2.19		1.14	
ANNUAL RUNOFF (INCHES)	20.38		29.76		15.46	
10 PERCENT EXCEEDS	687		806		617	
50 PERCENT EXCEEDS	286		326		164	
90 PERCENT EXCEEDS	136		136		56	

a From rating curve extended above 13,100 ft^3/s on basis of contracted-opening measurement of peak flow.
b Minimum observed.
c Also at times in September 1932.



03085956 MONTOUR RUN AT SCOTT STATION NEAR IMPERIAL, PA

LOCATION.--Lat 40°27'23", long 80°10'34", Allegheny County, Hydrologic Unit 05030101, on left bank at upstream side of privately owned single span bridge on south side of Montour Run Road, SR3072, 0.3 mi downstream from McCalrens Run, and 0.9 mi upstream from Trout Run.

DRAINAGE AREA.--25.4 mi^2.

PERIOD OF RECORD.--August 2000 to current year.

GAGE.--Water-stage recorder. Datum of gage is 850.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Several measurements of water temperature were made during the year. Satellite telemetry at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a 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. 4	1115	1,660	7.48	Sept. 8	2030	2,390	8.58
May 21	0630	1,170	6.53	Sept. 17	1715	*8,280	*15.58
Aug. 21	0630	2,920	9.23				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.4	11	25	29	22	30	141	28	27	12	21	15
2	8.1	10	20	97	25	53	86	29	21	11	13	13
3	7.4	9.4	18	140	328	40	57	25	26	11	11	12
4	24	8.9	16	825	62	53	55	21	15	11	35	11
5	10	33	21	479	35	46	41	19	32	115	30	10
6	8.2	16	25	107	445	72	35	18	18	20	12	9.5
7	7.5	11	21	68	89	53	31	35	14	14	10	9.3
8	7.1	9.1	18	53	41	47	44	24	12	12	9.3	621
9	6.8	8.2	18	45	30	38	34	18	16	10	8.5	581
10	6.7	7.9	112	42	34	31	27	16	51	9.7	58	64
11	6.6	13	181	41	32	28	24	15	128	9.5	22	39
12	6.5	32	62	35	38	29	94	14	54	26	18	29
13	6.7	18	43	29	32	23	373	12	27	31	15	25
14	65	12	40	26	29	22	161	16	161	14	11	22
15	41	10	36	24	25	21	80	25	149	11	9.2	19
16	16	9.8	46	34	27	39	59	15	70	9.2	8.3	17
17	19	9.7	79	37	25	41	50	11	74	36	7.7	2870
18	11	9.1	51	39	23	45	44	168	185	35	9.1	877
19	9.5	396	41	25	36	70	38	112	52	20	169	116
20	8.6	87	36	30	49	115	47	48	36	11	384	71
21	8.3	40	30	35	74	107	34	351	28	9.0	938	54
22	11	28	33	22	46	60	37	260	47	8.3	68	42
23	9.4	23	52	25	40	45	163	73	24	8.2	38	35
24	7.9	26	74	22	44	38	58	48	20	7.6	28	31
25	7.4	21	48	21	37	41	67	35	18	7.0	23	28
26	20	17	39	28	31	33	56	34	16	294	22	26
27	85	16	33	37	28	36	50	28	14	59	20	24
28	25	78	30	33	26	29	39	38	27	29	24	32
29	23	44	28	21	26	27	32	23	21	18	29	25
30	14	30	61	20	---	37	29	19	14	14	29	21
31	12	---	34	21	---	53	---	56	---	48	19	---
TOTAL	508.1	1044.1	1371	2490	1779	1402	2086	1634	1397	930.5	2099.1	5748.8
MEAN	16.4	34.8	44.2	80.3	61.3	45.2	69.5	52.7	46.6	30.0	67.7	192
MAX	85	396	181	825	445	115	373	351	185	294	938	2870
MIN	6.5	7.9	16	20	22	21	24	11	12	7.0	7.7	9.3

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2004, BY WATER YEAR (WY)

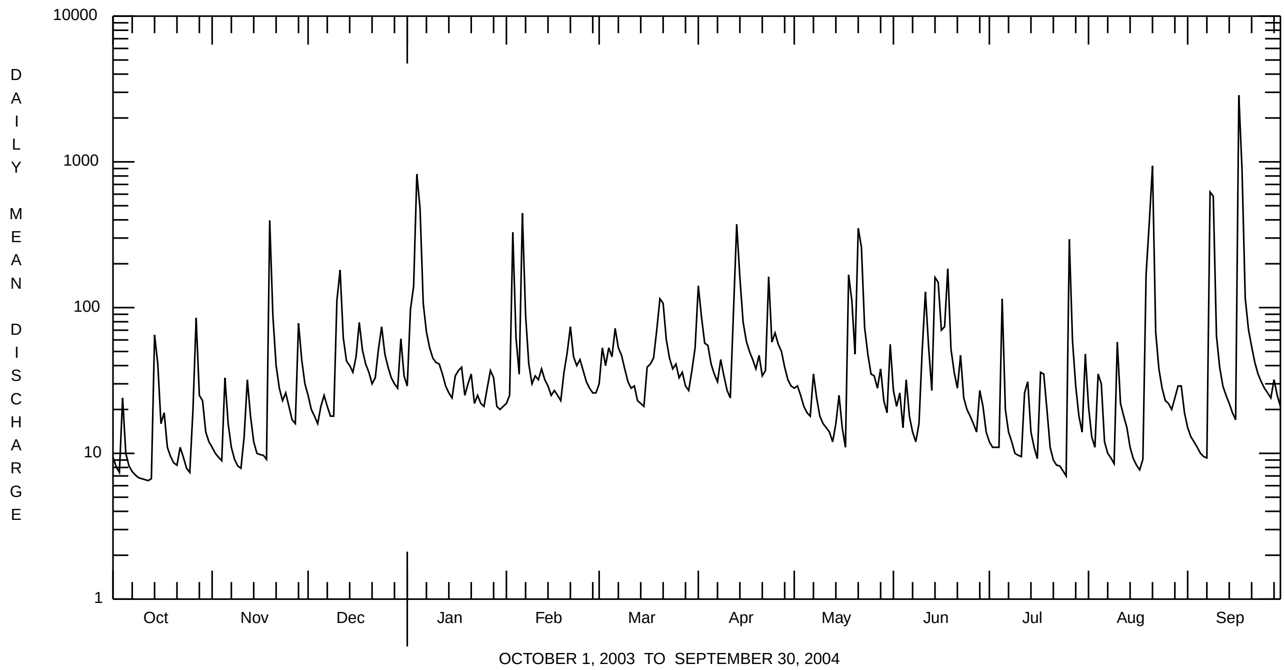
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	14.3	19.7	32.9	40.0	35.3	46.6	45.8	37.5	29.2	19.2	29.9	57.9
MAX	16.4	34.8	44.2	80.3	61.3	49.5	69.5	52.7	46.6	30.0	67.7	192
(WY)	2004	2004	2004	2004	2004	2002	2004	2004	2004	2004	2004	2004
MIN	10.2	7.01	22.2	17.4	19.3	44.1	28.2	13.9	15.6	5.58	9.17	9.21
(WY)	2002	2001	2003	2002	2002	2003	2003	2001	2001	2002	2002	2001

OHIO RIVER MAIN STEM

03085956 MONTOUR RUN AT SCOTT STATION NEAR IMPERIAL, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 2000 - 2004	
ANNUAL TOTAL	11488.5		22489.6			
ANNUAL MEAN	31.5		61.4		34.0	
HIGHEST ANNUAL MEAN					61.4	2004
LOWEST ANNUAL MEAN					22.4	2002
HIGHEST DAILY MEAN	396	Nov 19	2870	Sep 17	2870	Sep 17 2004
LOWEST DAILY MEAN	5.1	Aug 25	6.5	Oct 12	2.0	Aug 11 2002
ANNUAL SEVEN-DAY MINIMUM	5.5	Aug 20	6.8	Oct 7	2.4	Aug 8 2002
MAXIMUM PEAK FLOW			**a**8280	Sep 17	**a**8280	Sep 17 2004
MAXIMUM PEAK STAGE			15.58	Sep 17	15.58	Sep 17 2004
INSTANTANEOUS LOW FLOW			6.3	Oct 12,14	1.8	Aug 12 2002
10 PERCENT EXCEEDS	67		88		61	
50 PERCENT EXCEEDS	18		28		16	
90 PERCENT EXCEEDS	7.3		9.5		4.7	

a From rating curve extended above 4,600 ft^3/s.



OHIO RIVER MAIN STEM

03086000 OHIO RIVER AT SEWICKLEY, PA
(Pennsylvania Water-Quality Network Station)
(National Stream-Quality Accounting Network Station)

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 mi^2, approximately.

WATER-DISCHARGE RECORDS

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 680.00 ft above National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers bench mark). Prior to Nov. 22, 1933, nonrecording gage, Nov. 22, 1933 to May 4, 1981, water-stage recorder at site 1.5 mi upstream, Nov. 14, 1988 to July 12, 1990, nonrecording gage, and July 13, 1990 to June 13, 1991, water-stage recorder at present site at datum 10.41 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Some regulation by locks, and by many reservoirs above station. Combined capacity of reservoirs and lakes, excluding that of Chautauqua Lake (station 03013946), but including Lake Lynn, Deep Creek Reservoir (station 03076000), and 15 smaller reservoirs, 2,773,000 acre-ft. Several measurements of water temperature were made during the year. Satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33900	34200	75700	62800	14300	29900	58100	41400	50200	11600	43600	19500
2	30500	31500	69700	58500	14400	39900	75800	35100	40900	11200	53100	15600
3	30000	30400	62900	77200	24600	82700	89000	32700	37700	9200	44800	17200
4	30200	27700	52700	123000	48200	98600	85600	31500	33300	8980	39700	15400
5	31300	28400	48500	186000	37900	111000	86600	32500	28800	11500	37100	13300
6	34800	35000	45700	167000	74400	140000	74800	29100	23800	10900	29600	9850
7	31000	43600	43100	117000	134000	172000	67900	26600	23000	11700	24600	11400
8	26900	35400	37200	103000	102000	133000	63700	26000	22000	11700	18900	25200
9	23100	37200	35100	101000	71200	123000	58800	24900	17900	9210	17300	92700
10	21800	31700	35500	94200	e67000	121000	52700	23200	13600	9110	16000	154000
11	19400	30800	75700	78700	62400	108000	42000	27600	20300	9030	15800	101000
12	17900	47800	104000	69800	52400	96500	39200	35400	48100	11300	14700	82300
13	19200	101000	88600	61600	45800	86300	80700	39900	50700	22000	15300	71900
14	20900	75400	79800	49800	39000	70800	159000	36300	51900	30100	15400	62900
15	32200	65100	75200	39200	34200	54900	133000	35200	49000	27400	12400	52700
16	42100	59800	70500	30200	30700	51100	106000	33500	43000	28400	12900	48100
17	47400	51000	64800	23300	26100	51500	103000	33800	42100	25000	10200	87200
18	47900	46900	62600	20300	20500	49600	88200	39600	63400	24600	12400	283000
19	43900	82900	55400	e26500	18800	47100	e77900	63300	78300	27300	11300	206000
20	37900	205000	52100	27000	20100	49500	e67800	79500	55900	28900	19200	106000
21	36100	150000	48500	24900	28500	74200	e60500	75600	39200	21700	51900	96800
22	32300	102000	e44500	24800	39900	98300	50600	135000	32100	18500	65700	91200
23	27500	97400	40900	20800	40900	88200	48500	143000	24100	17400	37900	83900
24	24900	87100	56300	18300	41500	77000	40700	115000	22600	16100	30000	76400
25	22700	77900	93000	14600	40800	66000	38000	102000	20800	17700	23000	61700
26	23400	78700	90000	14300	36300	64500	43500	86700	15700	23500	23100	49900
27	26000	73700	80700	16100	32500	62600	62600	72700	14500	46300	16000	40600
28	32700	66800	72300	16900	29800	66200	61200	69100	13600	57700	17400	37800
29	41900	78500	61200	17600	30000	59900	51400	86800	12900	54800	17900	33500
30	41200	85700	57100	16500	---	56300	46900	75600	11600	50000	17000	30900
31	37400	---	60700	16300	---	54200	---	60200	---	39600	17400	---
TOTAL	968400	1998600	1940000	1717200	1258200	2483800	2113700	1748800	1001000	702430	781600	2077950
MEAN	31240	66620	62580	55390	43390	80120	70460	56410	33370	22660	25210	69260
MAX	47900	205000	104000	186000	134000	172000	159000	143000	78300	57700	65700	283000
MIN	17900	27700	35100	14300	14300	29900	38000	23200	11600	8980	10200	9850
CFSM	1.60	3.42	3.21	2.84	2.22	4.11	3.61	2.89	1.71	1.16	1.29	3.55
IN.	1.85	3.81	3.70	3.28	2.40	4.74	4.03	3.34	1.91	1.34	1.49	3.96

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1934 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	15200	26150	40120	44590	49410	65300	56540	38670	24880	16130	13470	12810
MAX	51010	83490	88890	132000	91820	147900	124500	90380	70490	50770	48180	69260
(WY)	1955	1986	1973	1937	1939	1936	1940	1996	1989	1972	1956	2004
MIN	3073	3991	6705	10470	11610	18670	16790	9593	5001	3892	3565	3081
(WY)	1964	1954	1961	1977	1934	1969	1946	1934	1934	1966	1957	1946

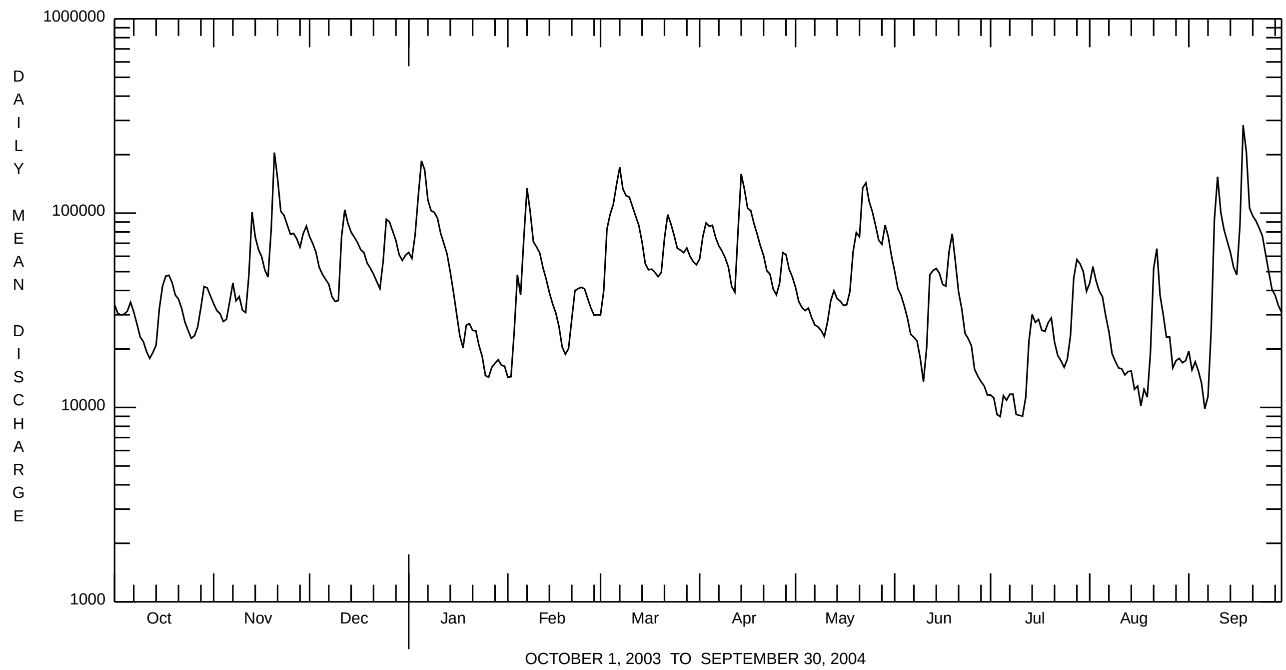
e Estimated.

OHIO RIVER MAIN STEM

03086000 OHIO RIVER AT SEWICKLEY, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1934 - 2004	
ANNUAL TOTAL	16894820		18791680			
ANNUAL MEAN	46290		51340		33520	
HIGHEST ANNUAL MEAN					51340	2004
LOWEST ANNUAL MEAN					21110	1934
HIGHEST DAILY MEAN	205000	Nov 20	283000	Sep 18	465000	Mar 18 1936
LOWEST DAILY MEAN	9040	Aug 25	8980	Jul 4	2100	Sep 4 1957
ANNUAL SEVEN-DAY MINIMUM	10500	Jun 30	10400	Jul 6	2330	Sep 1 1957
MAXIMUM PEAK FLOW			313000	Sep 18	**a**574000	Mar 18 1936
MAXIMUM PEAK STAGE			30.02	Sep 18	**b**34.75	Mar 18 1936
INSTANTANEOUS LOW FLOW					1800	Sep 4 1957
ANNUAL RUNOFF (CFSM)	2.37		2.63		1.72	
ANNUAL RUNOFF (INCHES)	32.23		35.85		23.36	
10 PERCENT EXCEEDS	83300		97000		74600	
50 PERCENT EXCEEDS	41800		41300		23100	
90 PERCENT EXCEEDS	14800		15900		6030	

a From rating curve extended above 535,000 ft^3/s.
b From floodmarks in gage house, site and datum then in use.



OHIO RIVER MAIN STEM

03086000 OHIO RIVER AT SEWICKLEY, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 2000 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 240-288.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unf lab, µS/cm 25 degC (90095)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water unfltrd recoverable, mg/L (00916)	Magnesium, water, unfltrd recoverable, mg/L (00927)
OCT 2003													
28...	0930	1028	9813	30300	10.6	7.4	7.4	271	297	12.0	99	27.7	7.3
DEC													
22...	1045	1028	9813	E44500	14.6	7.3	7.6	296	313	2.0	98	27.8	7.0
FEB													
12...	1000	1028	9813	57100	14.7	7.0	7.0	302	321	1.0	93	26.4	6.7
APR													
26...	0920	1028	9813	47100	10.2	6.7	7.6	285	288	15.0	99	27.7	7.2
AUG													
16...	0900	1028	9813	12300	8.3	7.8	6.9	328	349	22.0	110	29.2	7.9

Date	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Fluoride, water, unfltrd mg/L (00951)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recoverable, µg/L (01105)
OCT 2003													
28...	41	<.2	55.4	184	<2	.090	.69	<.040	.03	.041	1.1	2.8	300
DEC													
22...	39	<.2	61.6	208	<2	.070	.79	<.040	.02	.019	.79	1.8	390
FEB													
12...	30	<.2	60.9	204	30	.110	.98	<.040	.05	.046	1.3	1.9	1600
APR													
26...	32	<.2	65.2	252	8	.040	.74	<.040	.02	.026	1.0	1.9	470
AUG													
16...	49	<.2	69.5	248	16	<.020	.82	<.040	.02	.036	1.1	2.7	240

Date	Copper, water, unfltrd recoverable, µg/L (01042)	Cyanide amenable to chlorination wat unf mg/L (00722)	Iron, water, unfltrd recoverable, µg/L (01045)	Lead, water, unfltrd recoverable, µg/L (01051)	Manganese, water, unfltrd recoverable, µg/L (01055)	Nickel, water, unfltrd recoverable, µg/L (01067)	Zinc, water, unfltrd recoverable, µg/L (01092)	Phenolic compounds, water, unfltrd µg/L (32730)
OCT 2003								
28...	<10	<1.00	670	<1.0	140	<50	120	<5
DEC								
22...	<10	<1.00	750	<1.0	180	<50	30	<5
FEB								
12...	<10	<1.00	2250	2.4	260	<50	20	<5
APR								
26...	<10	<1.00	860	<1.0	220	<50	20	<5
AUG								
16...	40	<1.00	420	<1.0	90	<50	90	<5

OHIO RIVER MAIN STEM

03086000 OHIO RIVER AT SEWICKLEY, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 animal (approximate) subsamples.

Date	10/23/03
Benthic Macroinvertebrate	Count
Platyhelminthes	
Turbellaria (FLATWORMS)	
Tricladida	
Planariidae	2
Mollusca	
Bivalvia (CLAMS)	
Veneroida	
Sphaeriidae	
Sphaerium	1
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Tubificida	
Tubificidae	4
Arthropoda	
Crustacea	
Cladocera	
Gammaridae	
Gammarus	4
Insecta	
Ephemeroptera (MAYFLIES)	
Heptageniidae	
Stenonema	1
Trichoptera (CADDISFLIES)	
Hydropsychidae	
Cheumatopsyche	5
Polycentropodidae	
Neureclipsis	45
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	164
Total Organisms	226
Total Taxa	8

03086000 OHIO RIVER AT SEWICKLEY, PA--Continued
(National Stream-Quality Accounting Network Station)

REMARKS.--All water-quality samples were collected and analyzed by the U.S. Geological Survey. An explanation of selected abbreviations used in the water-quality tables is given on pages 40-41. Some values for '*dissolved*' parameters exceed values for the corresponding '*total*' parameter. These results are within the limits of analytical precision and methods.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Medium code	Instantaneous discharge, cfs (00061)	Turbidity, wat unf lab, Hach 2100AN NTU (99872)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Data base number
OCT 2003											
28...	0930	9	30000	2.4	.068	.050	740	10.6	7.4	297	01
NOV											
20...	1000	9	213000	260	.082	.061	743	11.4	7.3	219	01
25...	0940	9	78700	5.7	.073	.054	749	12.3	6.6	191	01
DEC											
30...	1000	9	61000	14	.043	.032	--	14.7	6.9	229	01
JAN 2004											
05...	1040	9	189000	90	.050	.037	741	13.4	7.2	268	01
FEB											
12...	0900	Q	--	--	<.004	<.004	--	--	--	--	02
12...	1000	9	57800	35	.029	.021	748	14.7	7.0	321	01
MAR											
29...	1000	9	60400	14	.040	.030	750	12.9	7.3	223	01
29...	1010	R	60400	13	.040	.030	750	12.9	7.3	223	02
APR											
14...	1500	9	171000	180	.056	.042	741	11.7	7.3	234	01
26...	0920	9	46600	7.9	.042	.031	743	10.2	6.7	288	01
MAY											
25...	0830	9	107000	89	.094	.070	742	9.8	7.2	185	01
JUN											
30...	0810	9	11400	7.6	.064	.047	--	8.5	7.3	326	01
JUL											
23...	0930	9	15100	9.8	.110	.081	743	7.7	8.2	269	01
23...	0940	R	15100	11	.111	.082	743	7.7	8.2	269	02
28...	0900	9	61200	24	.079	.058	743	6.9	7.4	374	01
28...	0903	S	61200	--	--	--	743	6.9	7.4	374	02
AUG											
16...	0900	9	12400	4.1	.070	.051	750	8.3	7.8	349	01
16...	0910	R	12400	3.7	.069	.050	750	8.3	7.8	349	02
SEP											
10...	1320	9	161000	220	.109	.081	745	9.0	7.1	244	01

Date	Temperature, water, deg C (00010)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Data base number	Medium code
OCT 2003													
28...	12.0	26.1	6.72	2.19	17.7	39	21.5	<.2	5.04	55.4	180	01	9
NOV													
20...	9.0	22.6	5.09	2.58	9.75	36	10.7	<.2	5.51	38.4	123	01	9
25...	8.0	17.0	4.40	1.80	7.63	21	10.7	<.2	5.29	35.6	111	01	9
DEC													
30...	3.0	22.3	6.06	1.57	13.2	44	20.0	<.2	5.64	48.2	136	01	9
JAN 2004													
05...	5.5	23.5	5.67	1.68	14.5	32	21.6	<.2	6.05	47.1	145	01	9
FEB													
12...	--	.03	<.008	--	E.08	--	--	--	<.04	--	--	02	Q
12...	1.0	25.9	6.73	1.66	20.8	29	30.7	<.2	5.10	60.9	175	01	9
MAR													
29...	7.0	18.8	5.43	1.69	13.0	25	23.1	<.2	4.78	41.5	132	01	9
29...	7.0	19.4	5.47	1.87	13.1	25	29.9	<.2	4.83	42.7	128	02	R
APR													
14...	8.0	21.4	5.43	1.63	13.2	30	15.3	<.2	5.02	44.9	133	01	9
26...	15.0	26.7	6.97	1.62	16.2	27	21.5	<.2	4.51	65.2	179	01	9
MAY													
25...	18.5	16.5	4.08	1.53	7.88	22	10.0	<.2	5.30	34.3	88	01	9
JUN													
30...	22.0	31.5	7.60	1.99	19.9	37	23.5	<.2	5.03	73.7	207	01	9
JUL													
23...	23.5	23.4	5.45	1.78	13.3	30	18.0	<.2	5.19	47.2	148	01	9
23...	23.5	23.8	5.54	1.81	13.5	30	18.0	<.2	5.26	47.2	149	02	R
28...	24.0	33.7	7.78	2.15	20.7	36	22.6	<.2	4.98	85.5	222	01	9
28...	24.0	--	--	--	--	36	--	--	--	--	--	02	S
AUG													
16...	22.0	31.2	7.15	2.06	19.7	39	23.9	<.2	4.67	69.5	206	01	9
16...	22.0	30.9	7.13	2.02	19.5	39	23.9	<.2	4.61	71.5	200	02	R
SEP													
10...	20.5	21.5	6.23	2.35	12.2	27	11.4	<.2	4.75	57.3	153	01	9

OHIO RIVER MAIN STEM

03086000 OHIO RIVER AT SEWICKLEY, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Particulate nitrogen, susp, water, mg/L (49570)	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Data base number	Medium code
OCT 2003											
28...	.27	.33	.06	.73	.014	.07	.012	.021	.041	01	9
NOV											
20...	.27	1.9	.05	.98	E.007	1.19	<.006	.008	.55	01	9
25...	.22	.46	E.03	.77	.008	.39	<.006	.009	.091	01	9
DEC											
30...	.22	.27	.08	.84	.016	.09	E.003	.006	.034	01	9
JAN 2004											
05...	.18	.72	E.04	1.06	E.006	.25	E.004	.006	.20	01	9
FEB											
12...	--	--	<.010	<.016	<.002	<.02	<.006	--	--	02	Q
12...	.26	.43	.11	.97	E.007	.15	<.006	E.003	.046	01	9
MAR											
29...	.13	.23	E.03	.81	.009	.08	<.006	.004	.038	01	9
29...	.17	.28	E.04	.81	.009	.09	<.006	E.004	.042	02	R
APR											
14...	.20	1.3	E.04	.85	.008	.35	<.006	.007	.33	01	9
26...	.15	.27	E.03	.73	.011	.06	<.006	.007	.026	01	9
MAY											
25...	.22	.65	E.04	.67	.013	.04	E.003	.009	.124	01	9
JUN											
30...	.19	.30	<.04	.94	.015	.11	<.006	.007	.035	01	9
JUL											
23...	.21	.33	<.04	.83	.010	.26	.008	.018	.044	01	9
23...	.23	.34	<.04	.79	.010	.15	.008	.017	.046	02	R
28...	.25	.44	.05	.81	.009	.21	.007	.020	.070	01	9
28...	--	--	--	--	--	--	--	--	--	02	S
AUG											
16...	.21	.28	<.04	.83	.008	.15	E.004	.010	.036	01	9
16...	.21	.26	<.04	.83	.008	.14	E.005	.009	.034	02	R
SEP											
10...	.29	1.7	<.04	.49	<.008	1.13	<.006	.009	.25	01	9

Date	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	Aluminum, water, fltrd, µg/L (01106)	Antimony, water, fltrd, µg/L (01095)	Arsenic water, fltrd, µg/L (01000)	Barium, water, fltrd, µg/L (01005)	Beryllium, water, fltrd, µg/L (01010)	Cadmium water, fltrd, µg/L (01025)	Data base number	Medium code
OCT 2003												
28...	.5	--	--	2.5	16	<.20	.3	38	<.06	<.04	01	9
NOV												
20...	15.6	.4	15.2	3.2	17	E.12	.3	33	<.06	<.04	01	9
25...	3.7	<.1	3.7	2.7	19	<.20	.3	36	<.06	<.04	01	9
DEC												
30...	1.0	<.1	1.0	1.8	16	<.20	E.2	36	<.06	.11	01	9
JAN 2004												
05...	1.9	.2	1.7	2.1	16	<.20	.2	32	<.06	E.03	01	9
FEB												
12...	<.1	<.1	<.1	E.3	<2	<.20	<.2	<.2	<.06	<.04	02	Q
12...	1.4	<.1	1.4	1.4	--	--	<.2	--	--	--	01	9
MAR												
29...	.8	<.1	.8	1.7	--	--	E.2	--	--	--	01	9
29...	.9	<.1	.9	1.8	--	--	E.2	--	--	--	02	R
APR												
14...	3.2	<.1	3.1	2.6	--	--	.3	--	--	--	01	9
26...	.4	<.1	.4	2.1	--	--	.2	--	--	--	01	9
MAY												
25...	.2	<.1	.2	3.5	--	--	.3	--	--	--	01	9
JUN												
30...	.6	<.1	.6	2.3	--	--	.3	--	--	--	01	9
JUL												
23...	1.3	<.1	1.2	3.3	--	--	.5	--	--	--	01	9
23...	.9	<.1	.9	3.2	--	--	.5	--	--	--	02	R
28...	2.0	<.1	1.9	2.5	--	--	.5	--	--	--	01	9
28...	--	--	--	--	--	--	--	--	--	--	02	S
AUG												
16...	.8	<.1	.8	2.3	--	--	.4	--	--	--	01	9
16...	.9	<.1	.9	2.3	--	--	.5	--	--	--	02	R
SEP												
10...	12.5	.2	12.3	3.7	--	--	.5	--	--	--	01	9

OHIO RIVER MAIN STEM

03086000 OHIO RIVER AT SEWICKLEY, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Chromium, water, fltrd, µg/L (01030)	Cobalt water, fltrd, µg/L (01035)	Copper, water, fltrd, µg/L (01040)	Iron, water, fltrd, µg/L (01046)	Lead, water, fltrd, µg/L (01049)	Lithium water, fltrd, µg/L (01130)	Manganese, water, fltrd, µg/L (01056)	Molybdenum, water, fltrd, µg/L (01060)	Nickel, water, fltrd, µg/L (01065)	Selenium, water, fltrd, µg/L (01145)	Data base number	Medium code
OCT 2003												
28...	<.8	.387	1.7	25	<.08	5.3	73.0	1.4	3.93	E.2	01	9
NOV												
20...	<.8	.387	1.3	27	<.08	3.1	83.8	.8	2.28	E.2	01	9
25...	<.8	.319	1.1	34	E.05	3.2	81.6	.6	2.60	E.3	01	9
DEC												
30...	<.8	1.60	2.2	22	<.08	4.9	137	E.3	5.01	E.2	01	9
JAN 2004												
05...	<.8	.745	1.4	22	.10	4.2	105	.7	3.69	E.3	01	9
FEB												
12...	<.8	<.014	<.4	<6	<.08	<.6	<.2	<.4	<.06	<.4	02	Q
12...	--	--	--	13	--	5.4	--	--	--	<.4	01	9
MAR												
29...	--	--	--	23	--	4.4	--	--	--	<.4	01	9
29...	--	--	--	17	--	4.4	--	--	--	<.4	02	R
APR												
14...	--	--	--	23	--	3.6	--	--	--	E.3	01	9
26...	--	--	--	31	--	8.3	--	--	--	E.3	01	9
MAY												
25...	--	--	--	31	--	3.1	--	--	--	E.2	01	9
JUN												
30...	--	--	--	15	--	6.6	--	--	--	E.4	01	9
JUL												
23...	--	--	--	60	--	5.0	--	--	--	<.4	01	9
23...	--	--	--	56	--	5.0	--	--	--	<.4	02	R
28...	--	--	--	24	--	7.5	--	--	--	.5	01	9
28...	--	--	--	--	--	--	--	--	--	--	02	S
AUG												
16...	--	--	--	20	--	6.1	--	--	--	E.2	01	9
16...	--	--	--	20	--	5.8	--	--	--	.4	02	R
SEP												
10...	--	--	--	26	--	5.3	--	--	--	<.4	01	9

Date	Pheophytin a, phytoplankton, µg/L (62360)	Chlorophyll a phytoplankton, fluoro, µg/L (70953)	Silver, water, fltrd, µg/L (01075)	Strontium, water, fltrd, µg/L (01080)	Thallium, water, fltrd, µg/L (01057)	Vanadium, water, fltrd, µg/L (01085)	Suspnd. sediment, sieve diametr percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Data base number	Medium code
OCT 2003										
28...	1.5	3.0	<.2	159	--	<.1	98	9	01	9
NOV										
20...	8.2	6.2	<.2	105	--	.2	97	444	01	9
25...	1.7	.9	<.2	90.2	--	E.1	99	41	01	9
DEC										
30...	.6	.6	<.2	119	--	E.1	98	12	01	9
JAN 2004										
05...	5.8	4.7	<.2	113	--	.3	95	165	01	9
FEB										
12...	--	--	.2	<.40	<.04	<.1	--	--	02	Q
12...	E.7	E.5	--	132	--	<.1	99	36	01	9
MAR										
29...	.7	1.3	--	98.9	--	.3	99	19	01	9
29...	1.1	1.6	--	101	--	.4	99	19	02	R
APR										
14...	4.4	4.9	--	114	--	.2	92	348	01	9
26...	1.3	5.2	--	165	--	E.1	98	13	01	9
MAY										
25...	2.3	1.6	--	69.1	--	<.1	98	93	01	9
JUN										
30...	3.1	7.8	--	193	--	<.1	100	6	01	9
JUL										
23...	3.6	4.8	--	129	--	.3	100	8	01	9
23...	3.6	4.5	--	131	--	.3	100	7	02	R
28...	10.5	10.8	--	213	--	.3	99	38	01	9
28...	--	--	--	--	--	--	--	--	02	S
AUG										
16...	5.4	9.0	--	184	--	.4	100	7	01	9
16...	4.5	8.8	--	181	--	.4	100	--	02	R
SEP										
10...	17.4	9.9	--	115	--	E.1	--	--	01	9

OHIO RIVER MAIN STEM

03086000 OHIO RIVER AT SEWICKLEY, PA--Continued

REMARKS.--The following data are for analytes from the National Water Quality Laboratory (NWQL) schedule 2001-pesticides in filtered water. Samples are filtered through a glass-fiber membrane filter with openings that are 0.7 microns in size to remove sediment and microorganisms. The filtered samples are then sent to the NWQL where they are analyzed by gas chromatography/mass spectrometric detector.

A field-matrix spike containing the series of organic compounds used in the analytical schedule was added to the replicate sample collected on July 28 at 0903. Data from the spiked sample can be used to determine extraction and elution recoveries from the filtered water and to evaluate the accuracy and precision of the results.

The method detection limit (MDL) provides an index to indicate where measurement uncertainty is increased. When an analyte is detected and all criteria for a positive result are met, the concentration is reported. If the concentration is less than the MDL, an ‘E’ code will be reported with the value. If the analyte is qualitatively identified as present, but the quantitative determination is substantially more uncertain, the NWQL will identify the result with an ‘E’ code even though the measured value is greater than the MDL. A value reported with an ‘E’ code should be used with caution. When no analyte is detected in a sample, the default reporting value is the MDL preceded by a less-than sign (<). The abbreviations SRG, SURROGT, or SURROG indicate surrogate and recovery is reported in percent.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Medium code	2,6-Diethylaniline water fltrd 0.7µ GF µg/L (82660)	Acetochlor, water, fltrd, µg/L (49260)	Alachlor, water, fltrd, µg/L (46342)	alpha-HCH, water, fltrd, µg/L (34253)	Atrazine, water, fltrd, µg/L (39632)	Benfluralin, water, fltrd 0.7µ GF µg/L (82673)	Butylate, water, fltrd, µg/L (04028)	Data base number
OCT 2003										
28...	0930	9	<.006	<.006	<.005	<.005	.012	<.010	<.004	01
NOV										
20...	1000	9	<.006	<.006	<.005	<.005	E.006	<.010	<.004	01
25...	0940	9	<.006	<.006	<.005	<.005	.010	<.010	<.004	01
DEC										
30...	1000	9	<.006	<.006	<.005	<.005	<.010	<.010	<.004	01
JAN 2004										
05...	1040	9	<.006	<.006	<.005	<.005	E.006	<.010	<.004	01
FEB										
12...	0900	Q	<.006	<.006	<.005	<.005	<.007	<.010	<.004	02
12...	1000	9	<.006	<.006	<.005	<.005	E.007	<.010	<.004	01
MAR										
29...	1000	9	<.006	<.006	<.005	<.005	.008	<.010	<.004	01
29...	1010	R	<.006	<.006	<.005	<.005	.008	<.010	<.004	02
APR										
14...	1500	9	<.006	<.006	<.005	<.005	.013	<.010	<.004	01
26...	0920	9	<.006	<.006	<.005	<.005	.022	<.010	<.004	01
MAY										
25...	0830	9	<.006	.013	<.005	<.005	.287	<.010	<.004	01
JUN										
30...	0810	9	<.006	<.020	<.005	<.005	.204	<.010	<.004	01
JUL										
23...	0930	9	<.006	.009	<.005	<.005	.174	<.010	<.004	01
23...	0940	R	<.006	.008	<.005	<.005	.172	<.010	<.004	02
28...	0900	9	<.006	.009	<.005	<.005	.097	<.010	<.004	01
28...	0903	S	.116	.150	.135	.122	.247	.133	.138	02
AUG										
16...	0900	9	<.006	<.006	<.005	<.005	.052	<.010	<.004	01
16...	0910	R	<.006	<.006	<.005	<.005	.051	<.010	<.004	02
SEP										
10...	1320	9	<.006	<.006	<.005	<.005	.023	<.010	<.004	01

OHIO RIVER MAIN STEM

03086000 OHIO RIVER AT SEWICKLEY, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	CIAT, water, fltrd, µg/L (04040)	Carbaryl, water, fltrd 0.7µ GF µg/L (82680)	Carbofuran, water, fltrd 0.7µ GF µg/L (82674)	Chlorpyrifos water, fltrd, µg/L (38933)	Cyanazine, water, fltrd, µg/L (04041)	DCPA, water fltrd 0.7µ GF µg/L (82682)	Diazinon, water, fltrd, µg/L (39572)	Diazinon-d10 surrog. wat flt 0.7µ GF percent recovry (91063)	Dieldrin, water, fltrd, µg/L (39381)	Disulfoton, water, fltrd 0.7µ GF µg/L (82677)	Data base number	Medium code
OCT 2003												
28...	E.003	E.007	<.020	<.005	<.018	<.003	<.005	110	<.009	<.02	01	9
NOV												
20...	<.006	<.041	<.020	<.005	<.018	<.003	<.005	97.2	<.009	<.02	01	9
25...	E.004	E.005	<.020	<.005	<.018	<.003	<.005	116	<.009	<.02	01	9
DEC												
30...	<.006	<.041	<.020	<.005	<.018	<.003	<.010	125	<.009	<.02	01	9
JAN 2004												
05...	E.005	<.041	<.020	<.005	<.018	<.003	<.005	111	<.009	<.02	01	9
FEB												
12...	<.006	<.041	<.020	<.005	<.018	<.003	<.005	117	<.009	<.02	02	Q
12...	<.006	<.041	<.020	<.005	<.018	<.003	<.005	115	<.009	<.02	01	9
MAR												
29...	E.006	<.041	<.020	<.005	<.018	<.003	<.005	120	<.009	<.02	01	9
29...	E.006	<.041	<.020	<.005	<.018	<.003	<.005	117	<.009	<.02	02	R
APR												
14...	<.006	E.006	<.020	<.005	<.018	<.003	<.005	113	<.009	<.02	01	9
26...	E.006	<.041	<.020	<.005	<.018	<.003	<.005	122	<.009	<.02	01	9
MAY												
25...	E.017	<.041	<.020	<.005	<.018	<.003	<.005	110	<.009	<.02	01	9
JUN												
30...	E.011	<.041	<.020	<.005	<.018	<.003	<.005	105	<.070	<.02	01	9
JUL												
23...	E.029	<.041	<.020	<.005	<.018	<.003	<.005	112	<.009	<.02	01	9
23...	E.029	<.041	<.020	<.005	<.018	<.003	<.005	111	<.009	<.02	02	R
28...	E.009	<.041	<.020	<.005	<.018	<.003	<.005	106	<.009	<.02	01	9
28...	E.060	E.218	E.189	.120	.176	.153	.122	121	.192	.05	02	
AUG												
16...	E.010	<.041	<.020	<.005	<.018	<.003	<.005	110	<.009	<.02	01	9
16...	E.011	<.041	<.020	<.005	<.018	<.003	<.005	113	<.075	<.02	02	R
SEP												
10...	E.008	<.041	<.020	<.005	<.018	<.003	<.005	87.6	<.009	<.02	01	9

Date	alpha-HCH-d6, surrog, wat flt 0.7µ GF percent recovry (91065)	Azinphos-methyl, water, fltrd 0.7µ GF µg/L (82686)	EPTC, water, fltrd 0.7µ GF µg/L (82668)	Ethalfluralin, water, fltrd 0.7µ GF µg/L (82663)	Ethoprop, water, fltrd 0.7µ GF µg/L (82672)	Fonofos water, fltrd, µg/L (04095)	Lindane water, fltrd, µg/L (39341)	Linuron water fltrd 0.7µ GF µg/L (82666)	Malathion, water, fltrd, µg/L (39532)	Methyl parathion, water, fltrd 0.7µ GF µg/L (82667)	Data base number	Medium code
OCT 2003												
28...	93.5	<.050	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	01	9
NOV												
20...	87.7	<.050	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	01	9
25...	90.1	<.050	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	01	9
DEC												
30...	98.2	<.050	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	01	9
JAN 2004												
05...	91.6	<.050	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	01	9
FEB												
12...	101	<.050	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	02	Q
12...	98.8	<.050	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	01	9
MAR												
29...	96.2	<.050	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	01	9
29...	98.1	<.050	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	02	R
APR												
14...	87.8	<.050	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	01	9
26...	94.7	<.050	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	01	9
MAY												
25...	90.5	<.050	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	01	9
JUN												
30...	91.9	<.050	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	01	9
JUL												
23...	98.6	<.050	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	01	9
23...	96.6	<.050	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	02	R
28...	91.3	<.050	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	01	9
28...	101	E.172	.118	.155	.142	.129	.114	.155	.175	.155	02	S
AUG												
16...	87.5	<.050	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	01	9
16...	90.7	<.050	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	02	R
SEP												
10...	82.2	<.050	<.004	<.009	<.005	<.003	<.004	<.035	<.027	<.015	01	9

OHIO RIVER MAIN STEM

03086000 OHIO RIVER AT SEWICKLEY, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	cis-Per-methrin water fltrd 0.7μ GF μg/L (82687)	Metola-chlor, water, fltrd, μg/L (39415)	Metri-buzin, water, fltrd, μg/L (82630)	Moli-nate, water, fltrd 0.7μ GF μg/L (82671)	Naprop-amide, water, fltrd 0.7μ GF μg/L (82684)	p,p'-DDE, water, fltrd, μg/L (34653)	Para-thion, water, fltrd, μg/L (39542)	Peb-ulate, water, fltrd 0.7μ GF μg/L (82669)	Pendi-meth-alin, water, fltrd 0.7μ GF μg/L (82683)	Phorate water fltrd 0.7μ GF μg/L (82664)	Data base number	Medium code
OCT 2003												
28...	<.006	E.007	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011	01	9
NOV												
20...	<.006	E.005	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011	01	9
25...	<.006	E.008	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011	01	9
DEC												
30...	<.006	<.013	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011	01	9
JAN 2004												
05...	<.006	E.006	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011	01	9
FEB												
12...	<.006	<.013	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011	02	Q
12...	<.006	E.005	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011	01	9
MAR												
29...	<.006	E.006	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011	01	9
29...	<.006	E.006	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011	02	R
APR												
14...	<.006	E.009	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011	01	9
26...	<.006	E.006	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011	01	9
MAY												
25...	<.006	.130	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011	01	9
JUN												
30...	<.006	.047	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011	01	9
JUL												
23...	<.006	.067	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011	01	9
23...	<.006	.066	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011	02	R
28...	<.006	.032	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011	01	9
28...	.061	.169	.101	.122	.159	.083	.178	.117	.175	.110	02	S
AUG												
16...	<.006	E.012	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011	01	9
16...	<.006	E.012	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011	02	R
SEP												
10...	<.006	E.009	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011	01	9

Date	Prome-ton, water, fltrd, μg/L (04037)	Propy-zamide, water, fltrd 0.7μ GF μg/L (82676)	Propa-chlor, water, fltrd, μg/L (04024)	Pro-panil, water, fltrd 0.7μ GF μg/L (82679)	Propar-gite, water, fltrd 0.7μ GF μg/L (82685)	Sima-zine, water, fltrd, μg/L (04035)	Tebu-thiuron water fltrd 0.7μ GF μg/L (82670)	Terba-cil, water, fltrd 0.7μ GF μg/L (82665)	Terbu-fos, water, fltrd 0.7μ GF μg/L (82675)	Thio-bencarb water fltrd 0.7μ GF μg/L (82681)	Data base number	Medium code
OCT 2003												
28...	.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010	01	9
NOV												
20...	M	<.004	<.025	<.011	<.02	E.004	<.02	<.034	<.02	<.010	01	9
25...	<.01	<.004	<.025	<.011	<.02	<.010	<.02	<.034	<.02	<.010	01	9
DEC												
30...	<.01	<.004	<.025	<.011	<.02	<.010	<.04	<.034	<.02	<.010	01	9
JAN 2004												
05...	M	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010	01	9
FEB												
12...	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010	02	Q
12...	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010	01	9
MAR												
29...	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010	01	9
29...	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010	02	R
APR												
14...	<.01	<.004	<.025	<.011	<.02	.007	<.02	<.034	<.02	<.010	01	9
26...	<.01	<.004	<.025	<.011	<.02	.012	<.02	<.034	<.02	<.010	01	9
MAY												
25...	.01	<.004	<.025	<.011	<.02	.019	<.02	<.034	<.02	<.010	01	9
JUN												
30...	.02	<.004	<.025	<.011	<.02	.012	<.02	<.034	<.02	<.010	01	9
JUL												
23...	.01	<.004	<.025	<.011	<.02	.010	<.02	<.034	<.02	<.010	01	9
23...	.01	<.004	<.025	<.011	<.02	.011	<.02	<.034	<.02	<.010	02	R
28...	<.01	<.004	<.025	<.011	<.02	.032	<.02	<.034	<.02	<.010	01	9
28...	.17	.147	.159	.150	.23	.168	.18	E.118	.11	.123	02	S
AUG												
16...	.04	<.004	<.025	<.011	<.02	.008	<.02	<.040	<.02	<.010	01	9
16...	.04	<.004	<.025	<.011	<.02	.008	<.02	<.040	<.02	<.010	02	R
SEP												
10...	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010	01	9

OHIO RIVER MAIN STEM

03086000 OHIO RIVER AT SEWICKLEY, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Thiobencarb water fltrd 0.7µ GF µg/L (82681)	Trifluralin, water, fltrd 0.7µ GF µg/L (82661)	Data base number	Medium code
OCT 2003				
28...	<.010	<.009	01	9
NOV				
20...	<.010	<.009	01	9
25...	<.010	<.009	01	9
DEC				
30...	<.010	<.009	01	9
JAN 2004				
05...	<.010	<.009	01	9
FEB				
12...	<.010	<.009	02	Q
12...	<.010	<.009	01	9
MAR				
29...	<.010	<.009	01	9
29...	<.010	<.009	02	R
APR				
14...	<.010	<.009	01	9
26...	<.010	<.009	01	9
MAY				
25-25	<.010	<.009	01	9
JUN				
30...	<.010	<.009	01	9
JUL				
23...	<.010	<.009	01	9
23...	<.010	<.009	02	R
28...	<.010	E.005	01	9
28...	.123	.142	02	S
AUG				
16...	<.010	<.009	01	9
16...	<.010	<.009	02	R
SEP				
10...	<.010	<.009	01	9

BEAVER RIVER BASIN

03101500 SHENANGO RIVER AT PYMATUNING DAM, PA
(Pennsylvania Water-Quality Network Station)

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, at mile 84.9.

DRAINAGE AREA.--167 mi^2.

WATER-DISCHARGE RECORDS

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 of 1929.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since December 1933 by Pymatuning Reservoir (station 03100500). Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	294	555	446	372	361	353	184	202	610	130	310	71
2	369	552	482	427	359	360	226	270	611	130	365	70
3	411	543	506	407	362	308	121	179	607	130	442	69
4	427	528	504	436	366	301	139	132	530	131	440	69
5	425	531	504	508	363	271	229	130	352	132	440	69
6	418	528	504	388	365	233	276	127	215	131	437	69
7	414	521	500	371	375	224	382	125	125	130	436	69
8	411	516	496	370	367	227	452	125	125	95	436	123
9	386	516	494	367	366	224	450	125	125	89	436	677
10	406	513	526	363	361	170	448	128	127	87	436	269
11	406	517	567	361	361	136	447	125	276	87	435	455
12	406	546	506	361	361	138	446	125	351	142	433	530
13	406	534	493	361	361	139	498	125	343	151	435	651
14	457	525	492	361	361	141	461	125	351	114	294	749
15	449	516	489	364	359	141	569	133	352	115	130	791
16	395	516	493	366	357	137	556	131	344	111	130	778
17	425	516	588	366	357	138	554	126	353	112	130	583
18	421	512	558	366	357	138	552	148	355	139	130	572
19	420	544	553	366	357	144	549	162	345	123	130	773
20	420	546	549	366	361	238	558	139	343	226	131	774
21	420	516	544	363	424	208	558	223	343	273	137	768
22	420	507	547	361	385	148	593	325	342	271	94	766
23	417	504	502	361	376	142	579	148	339	269	71	765
24	413	504	493	361	379	143	561	385	339	216	71	765
25	412	504	390	361	370	171	555	557	341	191	71	763
26	425	503	376	361	368	164	434	550	197	194	71	759
27	442	501	371	361	370	208	366	592	124	195	73	757
28	515	537	370	361	380	151	366	620	125	193	82	756
29	568	435	370	361	395	141	253	614	127	193	76	750
30	560	447	443	361	---	150	196	611	130	206	78	748
31	556	---	382	361	---	172	---	609	---	264	73	---
TOTAL	13314	15533	15038	11620	10684	5959	12558	8116	9247	4970	7453	15808
MEAN	429	518	485	375	368	192	419	262	308	160	240	527
MAX	568	555	588	508	424	360	593	620	611	273	442	791
MIN	294	435	370	361	357	136	121	125	124	87	71	69
CFSM	2.57	3.10	2.90	2.24	2.21	1.15	2.51	1.57	1.85	0.96	1.44	3.16
IN.	2.97	3.46	3.35	2.59	2.38	1.33	2.80	1.81	2.06	1.11	1.66	3.52

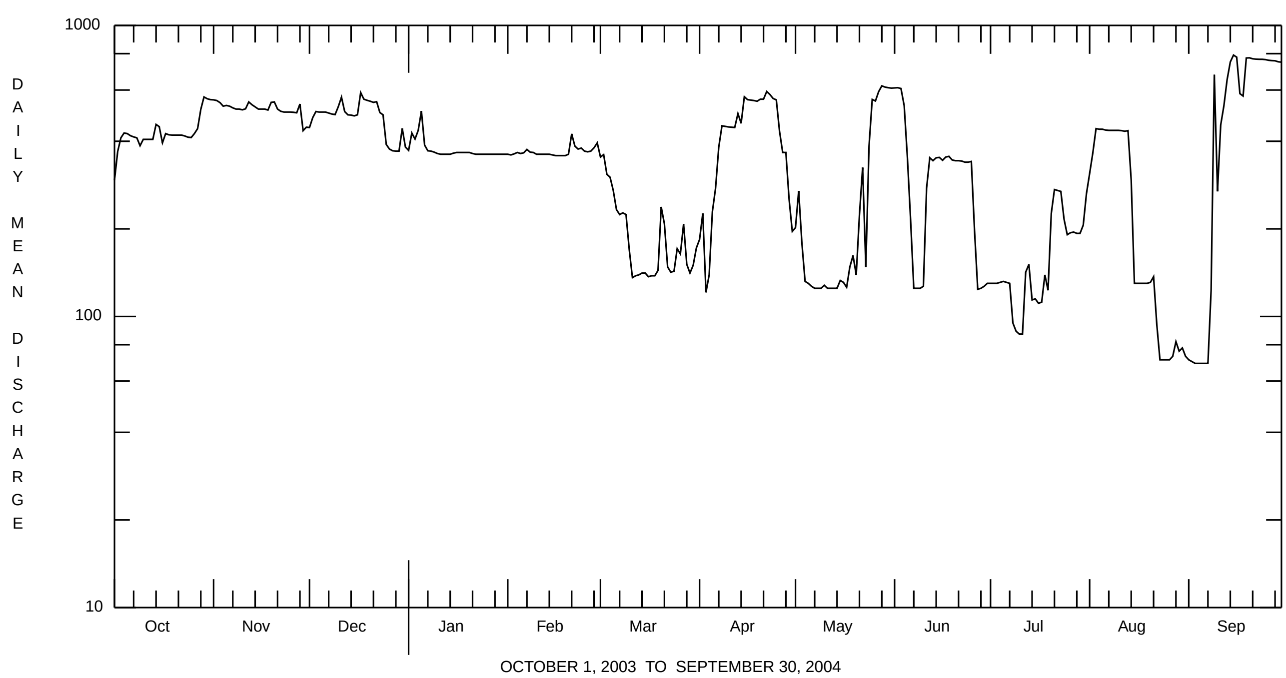
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1935 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	169	184	295	278	278	255	201	166	164	150	164	186
MAX	601	588	753	728	783	682	608	548	773	408	587	558
(WY)	1982	1997	1987	1943	1952	1956	1950	1956	1947	1987	1956	1956
MIN	17.3	6.27	3.79	10.4	13.2	17.0	2.78	5.78	5.37	20.0	31.6	40.2
(WY)	1935	1935	1945	1936	1935	1992	1935	1935	1935	1968	1935	1935

BEAVER RIVER BASIN

03101500 SHENANGO RIVER AT PYMATUNING DAM, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1935 - 2004	
ANNUAL TOTAL	106034		130300			
ANNUAL MEAN	291		356		207	
HIGHEST ANNUAL MEAN					356	2004
LOWEST ANNUAL MEAN					16.6	1935
HIGHEST DAILY MEAN	593	Jul 31	791	Sep 15	1240	Jan 28 1937
LOWEST DAILY MEAN	54	Jul 16	69	Sep 3-7	0.40	Aug 25 1935
ANNUAL SEVEN-DAY MINIMUM	70	Jul 11	69	Sep 1	0.73	Jun 6 1935
MAXIMUM PEAK FLOW			1660	Sep 9	1660	Sep 9 2004
MAXIMUM PEAK STAGE			9.81	Sep 9	9.81	Sep 9 2004
ANNUAL RUNOFF (CFSM)	1.74		2.13		1.24	
ANNUAL RUNOFF (INCHES)	23.62		29.02		16.84	
10 PERCENT EXCEEDS	528		558		547	
50 PERCENT EXCEEDS	212		366		137	
90 PERCENT EXCEEDS	125		125		26	



BEAVER RIVER BASIN

03101500 SHENANGO RIVER AT PYMATUNING DAM, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 240-288.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unf lab, µS/cm 25 degC (90095)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water unfltrd recover -able, mg/L (00916)	Magnesium, water, unfltrd recover -able, mg/L (00927)
OCT 2003													
21...	1255	1028	9813	420	10.6	7.3	7.2	170	170	12.5	67	19.3	4.6
DEC													
15...	1345	1028	9813	492	14.6	7.0	7.6	167	169	2.0	66	19.4	4.2
FEB 2004													
23...	1330	1028	9813	375	12.3	7.1	7.1	179	182	2.5	69	20.1	4.5
APR													
13...	1315	1028	9813	481	12.2	7.8	7.6	164	165	7.0	63	18.6	4.1
JUN													
15...	1255	1028	9813	352	8.6	7.4	7.6	166	167	21.5	62	17.9	4.3
AUG													
17...	1310	1028	9813	130	7.9	7.5	7.2	168	167	22.5	63	18.2	4.2

Date	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Fluoride, water, unfltrd mg/L (00951)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recover -able, µg/L (01105)
OCT 2003													
21...	50	<.2	12.4	114	4	.040	.06	<.040	.03	.056	.94	6.0	<200
DEC													
15...	51	<.2	12.6	110	<2	.120	.20	<.040	.02	.031	.80	6.0	<200
FEB 2004													
23...	53	<.2	13.0	124	<2	.140	.36	<.040	.01	.033	.94	6.0	<200
APR													
13...	46	<.2	12.3	110	<2	<.020	.37	<.040	.03	.043	1.2	5.6	<200
JUN													
15...	52	<.2	11.9	132	4	.150	.18	<.040	.01	--	--	5.9	<200
AUG													
17...	51	<.2	11.2	118	18	<.020	<.04	<.040	.02	.051	.79	4.9	<200

Date	Copper, water, unfltrd recover -able, µg/L (01042)	Cyanide amenable to chlorination wat unf mg/L (00722)	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, unfltrd recover -able, µg/L (01051)	Manganese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, unfltrd recover -able, µg/L (01092)	Phenolic compounds, water, unfltrd µg/L (32730)
OCT 2003								
21...	10	<1.00	330	<1.0	110	<50	70	<5
DEC								
15...	<10	<1.00	250	<1.0	30	<50	<10	<5
FEB 2004								
23...	<10	<1.00	170	<1.0	60	<50	<10	<5
APR								
13...	<10	<1.00	300	<1.0	60	<50	20	<5
JUN								
15...	<10	<1.00	180	<1.0	200	<50	50	<5
AUG								
17...	<10	<1.00	310	<1.0	150	<50	40	48

BEAVER RIVER BASIN

03101500 SHENANGO RIVER AT PYMATUNING DAM, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 animal (approximate) subsamples.

Date	09/04/03
Benthic Macroinvertebrate	Count
Platyhelminthes	
Turbellaria (FLATWORMS)	
Tricladida	
Planariidae	10
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Tubificida	
Naididae	5
Tubificidae	1
Arthropoda	
Acariformes	
Hydrachnidia (WATER MITES)	4
Crustacea	
Amphipoda (SCUDS)	
Crangonyctidae	
Crangonyx	1
Insecta	
Trichoptera (CADDISFLIES)	
Hydropsychidae	
Cheumatopsyche	8
Polycentropodidae	
Neureclipsis	2
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
Promoresia	1
Stenelmis	5
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	263
Empididae (DANCE FLIES)	
Hemerodromia	5
Simuliidae (BLACK FLIES)	
Simulium	11
Total Organisms	316
Total Taxa	12

03102500 LITTLE SHENANGO RIVER AT GREENVILLE, PA
(Pennsylvania Water-Quality Network Station)

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 mi^2.

WATER-DISCHARGE RECORDS

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 of 1929. 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 those for estimated daily discharges, which are poor. Several measurements of water temperature were made during the year. Satellite telemetry at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 1,500 ft^3/s and maximum (*****):

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
May 22	2400	1,770	6.54	Sept. 9	2400	*3,670	*9.68

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	165	138	416	274	e98	461	465	127	128	42	643	60
2	135	127	316	501	e91	736	975	400	137	37	313	50
3	122	123	241	600	e118	698	873	344	122	33	147	40
4	178	113	201	653	e187	439	456	208	99	33	103	34
5	281	107	184	1180	e190	452	353	171	83	41	84	35
6	174	118	180	785	e239	396	268	148	76	35	67	33
7	129	106	163	341	e511	316	224	128	72	30	57	29
8	107	96	142	242	e404	300	198	117	65	30	49	100
9	94	86	137	e198	e310	265	192	110	60	31	43	2590
10	85	79	202	e165	e226	212	159	121	75	26	43	2730
11	78	91	591	e143	e152	179	136	137	134	25	50	1180
12	73	232	466	e118	e121	177	125	116	196	137	41	505
13	67	303	244	e114	e105	172	334	94	139	665	43	375
14	116	252	183	e109	e94	170	741	82	107	243	47	282
15	709	173	164	e104	e86	191	407	108	186	167	44	188
16	537	143	157	e96	e78	165	254	147	176	167	36	137
17	258	129	356	e129	e68	157	196	100	122	123	31	534
18	185	118	307	e118	e70	151	173	326	190	98	31	1090
19	150	259	230	e103	e70	167	149	466	209	152	33	926
20	124	659	206	e99	e82	367	144	324	145	113	42	369
21	110	330	175	e96	e607	876	136	513	107	85	147	233
22	107	216	167	e98	e374	513	189	1390	87	69	157	174
23	109	172	346	e104	e268	322	242	1410	72	62	69	132
24	98	147	809	e105	e209	281	206	690	57	50	47	105
25	93	168	665	e102	e185	414	157	498	54	43	39	95
26	132	145	375	e99	e180	437	199	337	60	64	32	82
27	363	129	285	e99	192	743	162	231	50	108	34	70
28	359	409	237	e101	241	622	134	253	45	97	74	64
29	255	923	227	e103	329	333	115	206	56	87	133	60
30	223	551	460	e105	---	290	105	143	52	66	84	57
31	161	---	454	e106	---	453	---	125	---	265	74	---
TOTAL	5777	6642	9286	7190	5885	11455	8467	9570	3161	3224	2837	12359
MEAN	186	221	300	232	203	370	282	309	105	104	91.5	412
MAX	709	923	809	1180	607	876	975	1410	209	665	643	2730
MIN	67	79	137	96	68	151	105	82	45	25	31	29
CFSM	1.79	2.13	2.88	2.23	1.95	3.55	2.71	2.97	1.01	1.00	0.88	3.96
IN.	2.07	2.38	3.32	2.57	2.11	4.10	3.03	3.42	1.13	1.15	1.01	4.42

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	60.3	123	176	205	222	294	233	157	93.7	64.3	43.8	46.2
MAX	343	639	521	773	553	659	506	511	395	457	284	412
(WY)	1927	1986	1928	1937	1976	1963	1957	1929	1989	1958	1980	2004
MIN	5.19	6.31	16.8	21.3	36.0	66.5	16.7	21.8	11.9	5.91	5.33	5.90
(WY)	1964	1931	1961	1977	1963	1915	1915	1934	1934	1934	1930	1930

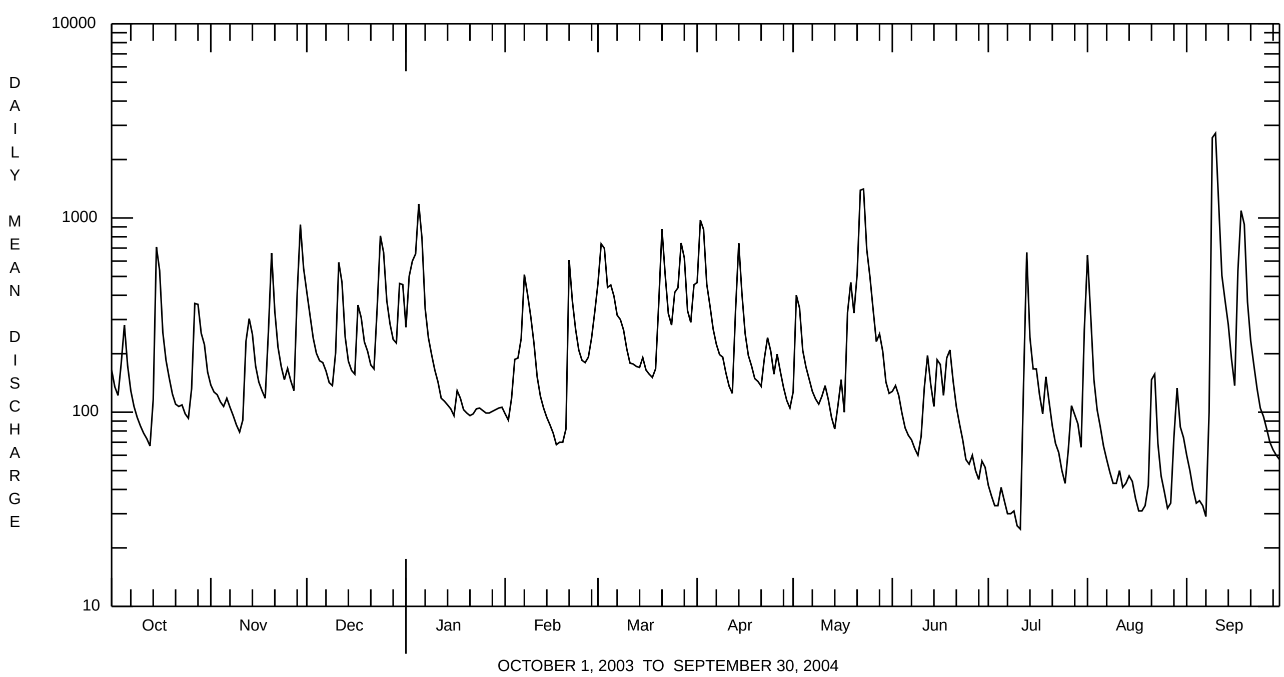
e Estimated.

BEAVER RIVER BASIN

03102500 LITTLE SHENANGO RIVER AT GREENVILLE, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1914 - 2004	
ANNUAL TOTAL	78285		85853			
ANNUAL MEAN	214		235		143	
HIGHEST ANNUAL MEAN					235	2004
LOWEST ANNUAL MEAN					65.6	1931
HIGHEST DAILY MEAN	3450	Jul 22	2730	Sep 10	5980	Jan 22 1959
LOWEST DAILY MEAN	29	Jul 2	25	Jul 11	2.8	Aug 16 2001
ANNUAL SEVEN-DAY MINIMUM	36	Jun 27	31	Jul 5	3.3	Sep 7 2001
MAXIMUM PEAK FLOW			**a**3670	Sep 9	**a**8540	Jan 22 1959
MAXIMUM PEAK STAGE			9.68	Sep 9	14.30	Jan 22 1959
INSTANTANEOUS LOW FLOW			24	Jul 11	2.4	Aug 16 2001**b**
ANNUAL RUNOFF (CFSM)	2.06		2.26		1.37	
ANNUAL RUNOFF (INCHES)	28.00		30.71		18.66	
10 PERCENT EXCEEDS	436		502		330	
50 PERCENT EXCEEDS	137		147		67	
90 PERCENT EXCEEDS	53		50		13	

a From rating curve extended above 3,200 ft^3/s on basis of slope-area measurement at gage height 12.26 ft.
b Also Sept. 13.



BEAVER RIVER BASIN

03102500 LITTLE SHENANGO RIVER AT GREENVILLE, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 240-288.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unf lab, µS/cm 25 degC (90095)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water unfltrd recoverable, mg/L (00916)	Magnesium, water, unfltrd recoverable, mg/L (00927)
OCT 2003													
21...	1140	1028	9813	109	9.9	7.1	7.2	214	215	11.2	92	27.0	5.9
DEC													
15...	1230	1028	9813	165	14.1	6.8	7.6	208	212	1.0	79	22.8	5.3
FEB 2004													
23...	1145	1028	9813	E268	13.5	7.0	7.5	210	221	.8	72	21.2	4.6
APR													
13...	1145	1028	9813	308	11.4	7.5	7.6	211	214	7.0	85	24.6	5.8
JUN													
15...	0930	1028	9813	186	7.4	7.4	7.6	216	208	21.0	86	24.7	5.9
AUG													
17...	1150	1028	9813	31	9.3	7.8	7.8	306	300	18.5	130	38.7	8.1

Date	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recoverable, µg/L (01105)	Copper, water, unfltrd recoverable, µg/L (01042)
OCT 2003													
21...	70	15.0	142	8	<.020	.42	<.040	.03	.041	.95	6.5	260	<10
DEC													
15...	63	18.7	118	26	.020	.86	<.040	.02	.025	1.2	3.6	<200	<10
FEB 2004													
23...	47	16.2	130	20	.140	1.04	<.040	.04	.049	1.5	3.7	610	<10
APR													
13...	60	18.8	152	<2	<.020	.51	<.040	.03	.045	1.2	3.8	640	<10
JUN													
15...	70	13.3	168	12	.060	.52	<.040	.03	.123	1.4	7.1	3200	10
AUG													
17...	107	19.1	222	4	<.020	.13	<.040	.02	.038	.47	4.3	220	<10

Date	Iron, water, unfltrd recoverable, µg/L (01045)	Lead, water, unfltrd recoverable, µg/L (01051)	Manganese, water, unfltrd recoverable, µg/L (01055)	Nickel, water, unfltrd recoverable, µg/L (01067)	Zinc, water, unfltrd recoverable, µg/L (01092)
OCT 2003					
21...	1020	<1.0	100	<50	80
DEC					
15...	560	<1.0	70	<50	<10
FEB 2004					
23...	1240	<1.0	90	<50	100
APR					
13...	1700	1.1	150	<50	<10
JUN					
15...	5140	3.5	270	<50	80
AUG					
17...	660	<1.0	110	<50	70

BEAVER RIVER BASIN

03102500 LITTLE SHENANGO RIVER AT GREENVILLE, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 animal (approximate) subsamples.

Date	09/04/03
Benthic Macroinvertebrate	Count
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Pleuroceridae	
Elimia	1
Bivalvia (CLAMS)	
Veneroida	
Sphaeriidae	
Sphaerium	5
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Tubificida	
Tubificidae	4
Arthropoda	
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	
Baetis	7
Caenidae	
Caenis	6
Heptageniidae	
Stenacron	1
Stenonema	2
Isonychiidae	
Isonychia	1
Plecoptera (STONEFLIES)	
Leuctridae	
Leuctra	1
Megaloptera	
Sialidae (ALDERFLIES)	
Sialis	1
Trichoptera (CADDISFLIES)	
Hydropsychidae	
Cheumatopsyche	32
Hydropsyche	6
Philopotamidae	
Chimarra	6
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
Optioservus	3
Promoresia	1
Stenelmis	15
Psephenidae (WATER PENNIES)	
Psephenus	2
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	33
Simuliidae (BLACK FLIES)	
Simulium	4
Tipulidae (CRANE FLIES)	
Hexatoma	1
Total Organisms	132
Total Taxa	20

BEAVER RIVER BASIN

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, at mile 71.8.

DRAINAGE AREA.--337 mi^2.

PERIOD OF RECORD.--October 1965 to current year.

REVISED RECORDS.--WDR PA-71-3: 1966, 1967.

GAGE.--Water-stage recorder. Datum of gage is 913.94 ft above National Geodetic Vertical Datum of 1929 (Pennsylvania Department of Transportation benchmark).

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated since December 1933 by Pymatuning Reservoir (station 03100500) 13 mi upstream and at low flow by mills upstream of station. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	506	748	1180	779	e487	1160	1050	454	796	190	1590	161
2	514	732	946	1410	e487	1690	2460	1160	818	185	709	149
3	605	723	866	1470	e485	1370	1460	905	766	178	656	136
4	729	694	804	1670	e499	970	843	507	726	178	591	129
5	864	693	784	3090	e565	1050	716	438	510	189	570	125
6	683	722	778	1700	e686	850	681	391	426	180	542	121
7	615	683	758	909	e850	708	672	366	233	174	527	113
8	579	658	726	e749	e761	701	766	346	223	158	517	275
9	533	648	719	e688	e688	635	755	333	218	128	508	5480
10	539	634	917	e729	e640	545	698	350	251	128	513	4400
11	527	682	1680	e672	e604	443	667	361	493	124	511	2040
12	517	975	1240	e594	e579	454	660	337	722	e224	504	1080
13	508	1040	873	e583	e563	441	1200	306	549	e1070	522	1010
14	812	902	785	e576	e544	449	1890	281	589	e471	482	990
15	2180	779	758	e576	e531	473	1240	351	765	e335	204	982
16	1160	738	757	e606	e517	429	966	396	581	300	187	933
17	813	715	1230	e743	e512	414	865	325	526	255	181	2040
18	688	690	1000	e615	e508	414	843	705	759	315	180	3720
19	652	1260	857	e528	e511	472	794	998	617	412	189	2130
20	611	1670	815	e481	e576	1110	802	648	528	328	207	1200
21	591	1050	768	e528	e1300	2120	777	1570	491	445	378	1020
22	586	847	766	e527	e1070	940	930	3940	467	386	322	946
23	584	777	1130	e530	864	626	1020	2350	451	372	176	897
24	565	749	2210	e533	854	579	906	1250	438	327	145	860
25	561	772	1470	e530	740	936	830	1260	444	256	131	839
26	692	734	935	e520	710	917	824	1040	401	316	123	831
27	1100	714	788	e501	707	1650	649	905	205	356	124	806
28	1010	1660	716	e497	808	1080	610	1030	202	334	201	795
29	980	2100	709	e494	976	650	524	897	224	319	247	785
30	902	1400	1330	e492	---	663	393	815	209	317	226	778
31	786	---	1100	e487	---	1040	---	804	---	642	185	---
TOTAL	22992	27189	30395	24807	19622	25979	27491	25819	14628	9592	12148	35771
MEAN	742	906	980	800	677	838	916	833	488	309	392	1192
MAX	2180	2100	2210	3090	1300	2120	2460	3940	818	1070	1590	5480
MIN	506	634	709	481	485	414	393	281	202	124	123	113
CFSM	2.20	2.69	2.91	2.37	2.01	2.49	2.72	2.47	1.45	0.92	1.16	3.54
IN.	2.54	3.00	3.36	2.74	2.17	2.87	3.03	2.85	1.61	1.06	1.34	3.95

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 2004, BY WATER YEAR (WY)

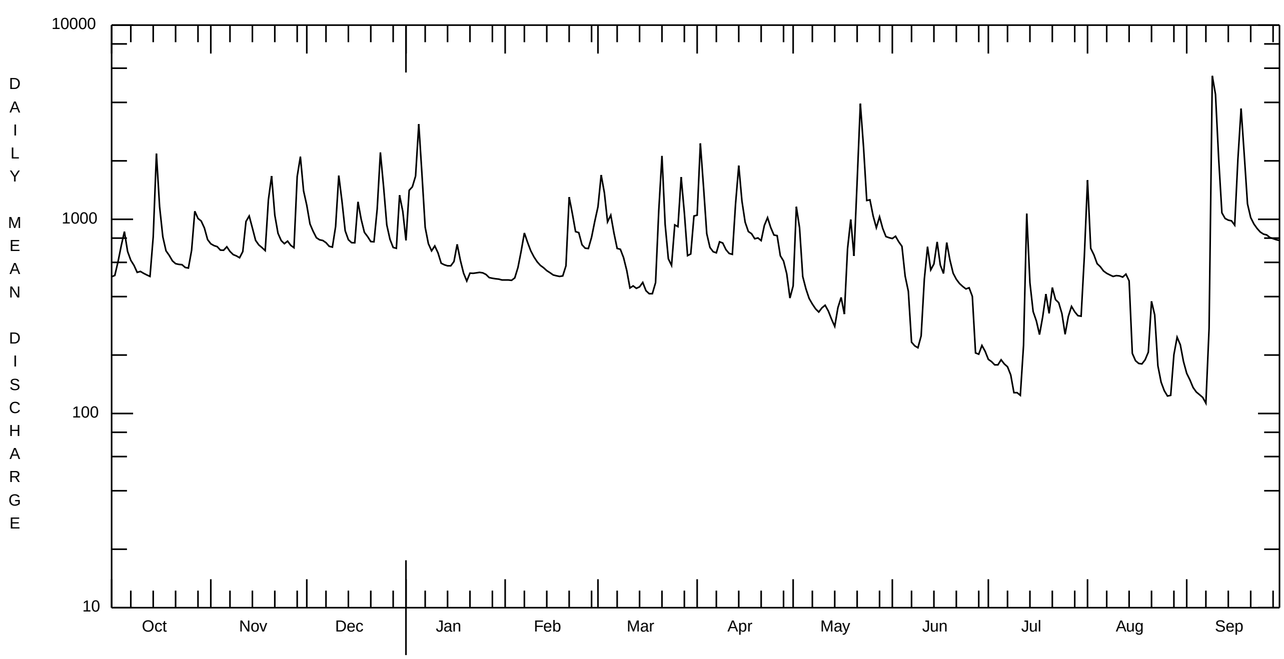
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	291	519	788	653	655	661	572	445	340	261	213	273
MAX	1034	1627	1343	1242	1319	1212	1273	1162	1080	902	1005	1192
(WY)	1991	1986	1991	1993	1990	1985	1994	2002	1989	2003	1980	2004
MIN	57.9	88.4	128	151	121	172	207	82.9	86.2	46.5	81.6	101
(WY)	1983	1999	1999	1977	1987	1969	1968	1987	1967	1968	1982	1999

e Estimated.

03102850 SHENANGO RIVER NEAR TRANSFER, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1966 - 2004	
ANNUAL TOTAL	235219		276433			
ANNUAL MEAN	644		755		472	
HIGHEST ANNUAL MEAN					755	2004
LOWEST ANNUAL MEAN					265	1999
HIGHEST DAILY MEAN	5560	Jul 22	5480	Sep 9	5560	Jul 22 2003
LOWEST DAILY MEAN	96	Jul 17	113	Sep 7	33	Jul 21 1968
ANNUAL SEVEN-DAY MINIMUM	151	Jun 27	133	Sep 1	39	Jul 17 1968
MAXIMUM PEAK FLOW			**a**6110	Sep 9	**a**6580	Jul 22 2003
MAXIMUM PEAK STAGE			10.66	Sep 9	11.33	Jul 22 2003
INSTANTANEOUS LOW FLOW			91	Jul 8	33	Jul 20-22 1968
ANNUAL RUNOFF (CFSM)	1.91		2.24		1.40	
ANNUAL RUNOFF (INCHES)	25.96		30.51		19.02	
10 PERCENT EXCEEDS	1120		1240		998	
50 PERCENT EXCEEDS	551		672		296	
90 PERCENT EXCEEDS	210		224		101	

a From rating curve extended above 4,800 ft^3/s.



OCTOBER 1, 2003 TO SEPTEMBER 30, 2004

03105500 BEAVER RIVER AT WAMPUM, PA
(Pennsylvania Water-Quality Network Station)

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, at mile 15.4.

DRAINAGE AREA.--2,235 mi^2.

WATER-DISCHARGE RECORDS

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 an auxiliary gage 10 mi downstream at Beaver Falls (station 03107500) is used during periods of backwater from Connoquenessing Creek.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated since 1916 by Milton Reservoir, since November 1929 by Meander Creek Reservoir, since December 1933 by Pymatuning Reservoir (station 03100500), since December 1942 by Berlin Lake, since October 1943 by Mosquito Creek Lake, since December 1966 by Michael J. Kirwan Reservoir, and since January 1967 by Shenango River Lake 40 mi upstream. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1912, 29.9 ft, Mar. 26, 1913, from floodmark, discharge, about 87,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5590	3420	6710	5860	1940	4430	9400	2810	6610	1160	5630	2960
2	5810	3310	6320	6260	1920	5170	13600	3290	6380	1080	4270	2720
3	5110	3270	6380	8540	2260	5380	14400	6350	5790	1030	3460	2420
4	4500	3190	6000	13100	3050	5230	10500	6170	5230	1020	2960	1900
5	4400	3100	5450	e21500	3070	5140	8110	5270	4240	1020	2140	1580
6	4130	2960	5280	e16600	5620	5660	7090	4840	3070	1010	2020	1600
7	3850	2820	4960	8140	8530	5180	6610	4510	2330	983	1970	1540
8	3630	2290	4320	7030	6240	4130	5600	4100	2070	1300	1900	2730
9	3060	2130	4130	7340	5550	3810	4780	3270	1610	1050	1850	e34000
10	2890	2080	4440	6910	5050	3500	3960	2640	1570	970	1860	e24800
11	2590	2210	7720	6800	5240	3210	3470	2540	2260	934	1810	12600
12	2440	3010	6980	6750	4730	3100	3270	2370	2560	1020	1750	7520
13	2380	4130	5840	6350	4520	2960	5400	2110	2420	1800	1460	6930
14	2690	4200	5240	6070	3790	2540	11800	1840	3370	1420	1450	6600
15	7640	3530	5000	5780	3300	2480	9620	1740	6560	1360	1330	6450
16	6200	3100	4460	5030	2990	2380	6580	2220	5880	1200	1290	6260
17	5850	2940	5500	3970	2910	2380	5090	2100	5280	1220	1080	12600
18	5210	2840	5840	3370	2760	2370	4560	2710	5780	1490	978	e32800
19	4880	4150	5220	3060	2430	2700	5180	5340	5210	1780	1340	21100
20	4210	7740	4710	2890	2530	4650	5710	7520	4640	1750	2380	8180
21	3640	5220	4340	2670	6570	11500	5290	10500	4240	1380	10400	6940
22	3130	5020	4200	2150	6830	7950	5140	e23000	3540	1240	5470	7070
23	2800	4560	3940	1930	5760	6160	5950	e20500	3050	1240	3380	7120
24	2630	4350	5660	1900	5430	5120	5600	15800	2580	1230	2660	6780
25	2330	4390	6570	1820	5170	5180	4690	8770	2780	1160	2030	6720
26	2330	4090	5870	1840	4720	5450	3670	8240	2070	1600	1760	e6750
27	4530	3400	3980	1900	4360	7660	3360	7770	1690	1810	1640	e6510
28	4790	6610	4040	1970	3900	8130	3400	7970	1520	1900	5610	e6270
29	4370	10400	4720	2040	4080	6780	3190	7770	1410	1480	6260	e5980
30	4200	8080	5960	2050	---	5890	2770	7030	1250	1750	3890	e5740
31	3670	---	6720	1970	---	6750	---	6750	---	4500	3240	---
TOTAL	125480	122540	166500	173590	125250	152970	187790	197840	106990	43887	89268	263170
MEAN	4048	4085	5371	5600	4319	4935	6260	6382	3566	1416	2880	8772
MAX	7640	10400	7720	21500	8530	11500	14400	23000	6610	4500	10400	34000
MIN	2330	2080	3940	1820	1920	2370	2770	1740	1250	934	978	1540
CFSM	1.81	1.83	2.40	2.51	1.93	2.21	2.80	2.86	1.60	0.63	1.29	3.92
IN.	2.09	2.04	2.77	2.89	2.08	2.55	3.13	3.29	1.78	0.73	1.49	4.38

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1915 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1280	1806	2843	3420	3865	4820	3953	2751	2020	1551	1321	1325
MAX	5888	7936	7978	13030	8779	9098	9226	8362	8004	7667	5272	8772
(WY)	1991	1986	1991	1937	1915	1916	1994	1996	1989	2003	2003	2004
MIN	168	278	447	534	304	1074	657	288	222	198	156	153
(WY)	1934	1915	1961	1918	1934	1969	1915	1934	1934	1918	1933	1916

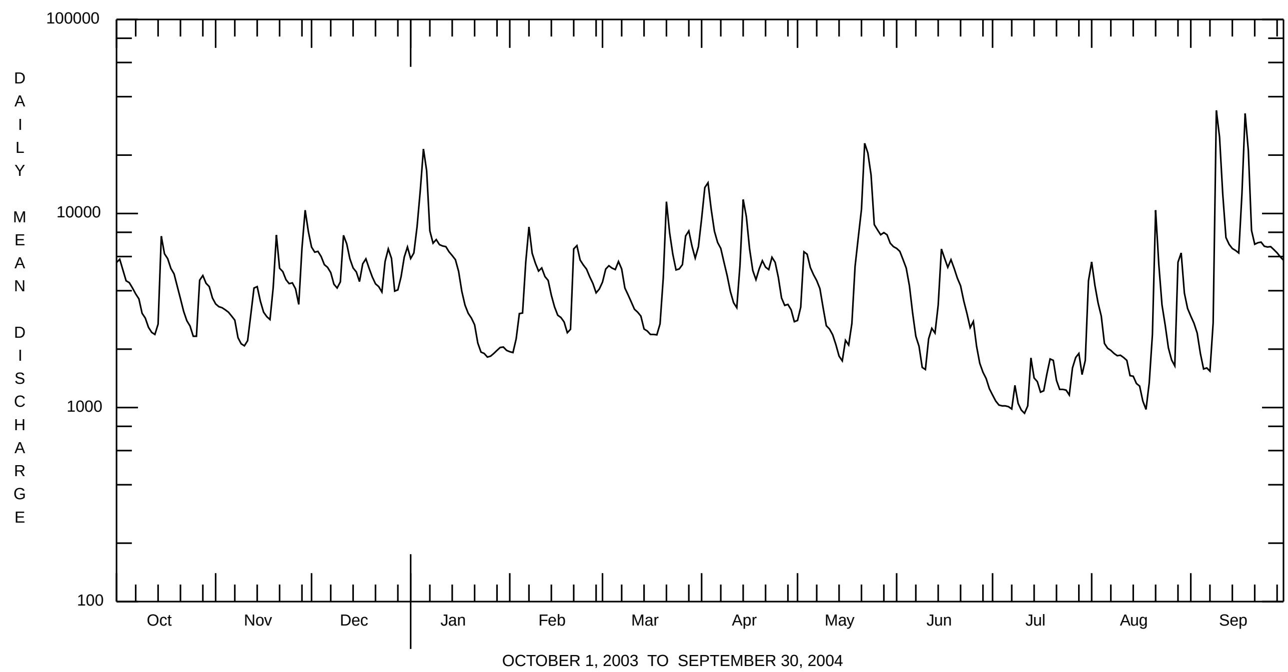
e Estimated.

BEAVER RIVER BASIN

03105500 BEAVER RIVER AT WAMPUM, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1915 - 2004	
ANNUAL TOTAL	1587473		1755275			
ANNUAL MEAN	4349		4796		2580	
HIGHEST ANNUAL MEAN					4796	2004
LOWEST ANNUAL MEAN					834	1934
HIGHEST DAILY MEAN	27500	Jul 23	**e**34000	Sep 9	47500	Jan 22 1959
LOWEST DAILY MEAN	830	Jan 30,31	934	Jul 11	88	Oct 5 1914
ANNUAL SEVEN-DAY MINIMUM	894	Jan 26	1040	Jul 5	94	Oct 3 1914
MAXIMUM PEAK FLOW			**a**40300	Sep 9	**a**50100	May 28 1946
MAXIMUM PEAK STAGE			**b**21.89	Sep 9	**c**21.53	May 28 1946
INSTANTANEOUS LOW FLOW					**d**74	Jul 30 1933
ANNUAL RUNOFF (CFSM)	1.95		2.15		1.15	
ANNUAL RUNOFF (INCHES)	26.42		29.22		15.68	
10 PERCENT EXCEEDS	7490		7730		5900	
50 PERCENT EXCEEDS	3920		4180		1450	
90 PERCENT EXCEEDS	1300		1590		582	

a From slope-rating curve extended above 28,000 ft^3/s on basis of contracted-opening measurement at gage height 21.44 ft.
b Backwater from Connoquenessing Creek.
c Maximum gage height, 24.86 ft, Jan. 22, 1959 (backwater from Connoquenessing Creek).
d Minimum discharge observed.
e Estimated.



BEAVER RIVER BASIN

03105500 BEAVER RIVER AT WAMPUM, PA--Continued

WATER-QUALITY RECORDS

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 240-288. Samples were collected using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 animal (approximate) subsamples.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

Date	10/14/03
Benthic Macroinvertebrate	Count
Platyhelminthes	
Turbellaria (FLATWORMS)	
Tricladida	
Planariidae	2
Mollusca	
Bivalvia (CLAMS)	
Veneroida	
Corbiculidae	
Corbicula fluminea	3
Sphaeriidae	
Sphaerium	4
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Tubificida	
Naididae	5
Tubificidae	6
Arthropoda	
Crustacea	
Amphipoda (SCUDS)	
Gammaridae	
Gammarus	2
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	
Acentrella	1
Ephemerellidae	
Serratella	1
Heptageniidae	
Stenonema	18
Tricorythidae	
Tricorythodes	11
Trichoptera (CADDISFLIES)	
Hydropsychidae	
Cheumatopsyche	27
Hydropsyche	6
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
Stenelmis	12
Psephenidae (WATER PENNIES)	
Psephenus	1
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	9
Empididae (DANCE FLIES)	
Hemerodromia	2
Total Organisms	110
Total Taxa	16

BEAVER RIVER BASIN

03106000 CONNOQUENESSING CREEK NEAR ZELIENOPLE, PA
(Pennsylvania Water-Quality Network Station)

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 mi^2.

WATER-DISCHARGE RECORDS

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 of 1929. Prior to June 23, 1941, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Some regulation by mills upstream of station. Several measurements of water temperature were made during the year. Satellite telemetry at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a 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)
Nov. 20	0115	7,770	10.19	June 15	1215	6,390	9.04
Dec. 11	1045	6,760	9.35	June 18	0945	6,270	8.94
Jan. 5	1115	9,920	11.75	July 26	2200	5,090	7.80
Mar. 21	0445	5,350	8.12	Aug. 21	1715	10,600	12.13
Apr. 14	0215	5,540	8.29	Sept. 9	1115	16,400	14.75
May 22	1615	10,600	12.13	Sept. 18	1230	*29,400	*a18.17

a From floodmarks.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	295	328	1060	773	e296	945	1700	525	399	191	754	603
2	263	313	878	1160	e251	1660	2240	466	319	174	433	455
3	233	294	734	1260	e326	e1630	1530	430	237	170	306	362
4	239	274	636	3220	e477	1510	1310	341	e215	146	421	314
5	355	289	603	8860	e883	1350	1090	290	184	183	870	288
6	237	420	620	4460	e1910	1430	920	268	175	180	453	237
7	191	310	550	1960	e3210	1300	823	348	e130	118	311	208
8	166	264	469	1320	e2180	1250	768	671	136	150	242	1130
9	148	228	442	1070	e1410	1110	775	419	124	115	196	14000
10	138	209	562	811	e883	962	632	345	121	83	167	6640
11	128	225	5220	741	e703	841	557	419	303	73	301	1980
12	119	453	2740	686	e525	805	547	354	455	73	207	1270
13	114	621	1510	625	e457	692	2110	290	248	152	185	947
14	193	504	1170	537	e447	609	4040	261	1050	113	158	755
15	1370	427	1030	484	e405	591	2000	264	5040	105	134	622
16	877	395	865	e355	e384	552	1370	254	e2510	97	113	559
17	662	378	1080	e344	e363	584	1110	210	1730	75	100	3950
18	511	337	988	e367	e332	550	953	391	4780	95	90	24500
19	426	2730	831	e367	e311	733	802	1030	1970	524	593	8930
20	348	5280	726	e329	e332	1520	e675	787	1210	232	1770	2240
21	302	2160	621	e314	2260	4270	e565	1780	878	146	8320	1410
22	290	1360	577	e291	1440	2160	e473	8210	789	105	4460	1060
23	277	1070	702	e275	1040	1400	e403	3470	669	87	1540	834
24	232	905	1110	e306	1020	1140	885	1600	453	74	991	660
25	202	907	1200	e321	858	1020	656	1100	339	63	714	552
26	201	702	1020	e329	731	933	1420	861	295	1690	556	466
27	525	606	881	e375	636	938	1100	820	242	2510	450	394
28	753	982	763	e383	649	837	884	633	232	1080	754	345
29	533	1460	697	e357	749	724	692	483	302	687	1090	316
30	468	1190	962	e342	---	681	567	377	239	482	1050	276
31	375	---	936	e322	---	793	---	382	---	628	892	---
TOTAL	11171	25621	32183	33344	25468	35520	33597	28079	25774	10601	28621	76303
MEAN	360	854	1038	1076	878	1146	1120	906	859	342	923	2543
MAX	1370	5280	5220	8860	3210	4270	4040	8210	5040	2510	8320	24500
MIN	114	209	442	275	251	550	403	210	121	63	90	208
CFSM	1.01	2.40	2.92	3.02	2.47	3.22	3.15	2.54	2.41	0.96	2.59	7.14
IN.	1.17	2.68	3.36	3.48	2.66	3.71	3.51	2.93	2.69	1.11	2.99	7.97

e Estimated.

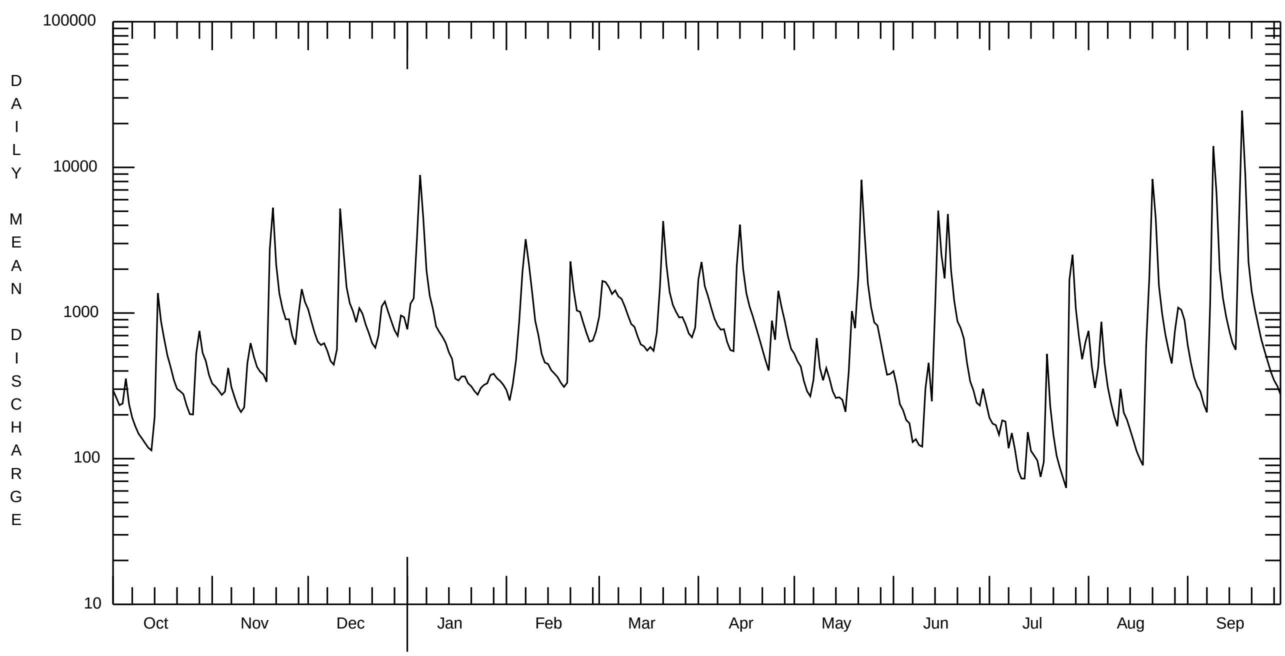
03106000 CONNOQUENESSING CREEK NEAR ZELIENOPLE, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1920 - 2004, BY WATER YEAR (WY)

MEAN	162	335	559	655	749	970	773	520	334	206	159	166
MAX	1290	1648	1778	2607	2048	2324	2054	1283	1518	1373	923	2543
(WY)	1955	1986	1928	1937	1956	1945	1940	1983	1989	1928	2004	2004
MIN	11.3	12.3	22.3	16.4	97.7	154	182	62.3	24.4	20.5	11.2	11.4
(WY)	1931	1931	1961	1931	1934	1969	1946	1934	1934	1936	1930	1930

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1920 - 2004	
ANNUAL TOTAL	223729		366282			
ANNUAL MEAN	613		1001		464	
HIGHEST ANNUAL MEAN					1001	2004
LOWEST ANNUAL MEAN					221	1931
HIGHEST DAILY MEAN	5280	Nov 20	24500	Sep 18	24500	Sep 18 2004
LOWEST DAILY MEAN	59	Aug 25	63	Jul 25	6.5	Jul 21 1936
ANNUAL SEVEN-DAY MINIMUM	87	Aug 20	98	Jul 11	8.7	Oct 13 1939
MAXIMUM PEAK FLOW			**b**29400	Sep 18	**b**29400	Sep 18 2004
MAXIMUM PEAK STAGE			**a**18.17	Sep 18	**a**18.17	Sep 18 2004
INSTANTANEOUS LOW FLOW			56	Jul 26	6.0	Jul 21 1936
ANNUAL RUNOFF (CFSM)	1.72		2.81		1.30	
ANNUAL RUNOFF (INCHES)	23.38		38.27		17.71	
10 PERCENT EXCEEDS	1210		1770		1100	
50 PERCENT EXCEEDS	420		566		214	
90 PERCENT EXCEEDS	169		175		33	

a From floodmarks.
b From rating curve extended above 17,100 ft^3/s.



OCTOBER 1, 2003 TO SEPTEMBER 30, 2004

03106000 CONNOQUENESSING CREEK NEAR ZELIENOPLE, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 240-288.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unf lab, µS/cm 25 degC (90095)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water unfltrd recover-able, mg/L (00916)	Magnesium, water, unfltrd recover-able, mg/L (00927)
OCT 2003													
09...	0930	1028	9813	147	10.8	7.1	7.8	480	473	11.0	160	43.3	11.8
DEC													
08...	1500	1028	9813	437	12.2	6.3	7.6	601	620	1.0	140	39.2	10.2
FEB 2004													
11...	0920	1028	9813	E703	12.0	6.4	7.5	418	421	1.2	100	29.6	7.5
APR													
19...	0920	1028	9813	812	9.8	7.6	7.6	347	346	15.0	110	30.9	7.9
JUN													
01...	1210	1028	9813	424	9.0	7.7	7.9	451	441	19.0	150	43.6	10.0
AUG													
02...	1105	1028	9813	441	8.1	7.5	7.5	384	383	22.5	120	34.0	8.3

Date	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recover-able, µg/L (01105)	Copper, water, unfltrd recover-able, µg/L (01042)
OCT 2003													
09...	67	69.9	346	4	<.020	1.34	<.200	.01	.019	1.7	2.6	<200	<10
DEC													
08...	47	58.6	410	10	<.020	2.05	<.200	.02	.024	2.1	2.0	<200	<10
FEB 2004													
11...	32	47.5	302	<2	.060	1.99	<.200	.03	.032	2.3	1.8	350	<10
APR													
19...	37	52.8	226	24	<.020	1.51	<.040	.02	.025	1.7	1.8	<200	<10
JUN													
01...	57	68.1	354	<2	<.020	1.49	<.040	.02	.038	1.5	2.3	<200	<10
AUG													
02...	58	46.0	270	24	.030	1.42	<.040	.03	.057	1.7	3.1	500	<10

Date	Iron, water, unfltrd recover-able, µg/L (01045)	Lead, water, unfltrd recover-able, µg/L (01051)	Manganese, water, unfltrd recover-able, µg/L (01055)	Nickel, water, unfltrd recover-able, µg/L (01067)	Zinc, water, unfltrd recover-able, µg/L (01092)
OCT 2003					
09...	390	<1.0	70	<50	<10
DEC					
08...	330	<1.0	140	<50	<10
FEB 2004					
11...	700	<1.0	120	<50	10
APR					
19...	380	<1.0	70	<50	<10
JUN					
01...	440	<1.0	100	<50	<10
AUG					
02...	1080	1.2	100	<50	<10

BEAVER RIVER BASIN

03106000 CONNOQUENESSING CREEK NEAR ZELIENOPLE, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 animal (approximate) subsamples.

Date	10/02/03
Benthic Macroinvertebrate	Count
Platyhelminthes	
Turbellaria (FLATWORMS)	
Tricladida	
Planariidae	1
Nematoda (NEMATODES)	1
Mollusca	
Bivalvia (CLAMS)	
Veneroida	
Corbiculidae	
Corbicula fluminea	2
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Lumbriculida	
Lumbriculidae	1
Tubificida	
Tubificidae	4
Arthropoda	
Acariformes	
Hydrachnidia (WATER MITES)	1
Crustacea	
Amphipoda (SCUDS)	
Gammaridae	
Gammarus	1
Insecta	
Ephemeroptera (MAYFLIES)	
Heptageniidae	
Stenacron	2
Stenonema	15
Isonychiidae	
Isonychia	2
Plecoptera (STONEFLIES)	
Taeniopterygidae	
Taeniopteryx	1
Trichoptera (CADDISFLIES)	
Hydropsychidae	
Cheumatopsyche	27
Hydropsyche	26
Lepidoptera (MOTHS AND BUTTERFLIES)	
Pyralididae	
Petrophila	1
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
Optioservus	1
Stenelmis	30
Diptera (TRUE FLIES)	
Empididae (DANCE FLIES)	
Hemerodromia	1
Chironomidae (MIDGES)	13
Tipulidae (CRANE FLIES)	
Antocha	1
Total Organisms	131
Total Taxa	19

BEAVER RIVER BASIN

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 of 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 September 1993, July 1994 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 Environmental Protection 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.--Records good except those for estimated daily discharges, which are poor. Some regulation from October 1966 to May 1969 and completely regulated thereafter by Lake Arthur (station 03106280) 1,000 ft upstream. Several measurements of water temperature were made during the year. Satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	78	78	180	130	e68	118	153	92	61	46	51	93
2	71	76	168	150	66	140	182	85	55	41	49	83
3	68	73	159	179	61	161	186	81	50	36	45	75
4	66	69	147	272	64	136	174	75	45	33	43	66
5	64	73	141	413	63	109	165	68	41	30	41	62
6	61	77	131	442	95	126	155	64	36	28	36	57
7	57	73	120	e412	127	134	142	62	33	26	32	47
8	53	68	113	379	135	136	137	64	30	25	29	75
9	50	65	105	335	136	134	124	59	27	22	26	345
10	47	60	110	292	138	128	113	57	28	20	25	429
11	46	62	194	251	133	120	105	58	40	19	22	405
12	41	70	244	218	125	112	104	55	42	19	21	354
13	39	67	250	193	117	108	128	52	38	19	19	304
14	49	78	245	172	109	103	167	49	45	18	18	258
15	86	81	220	156	102	94	180	47	84	18	16	215
16	107	83	204	139	98	99	177	43	97	16	14	177
17	111	82	195	127	117	94	164	40	120	16	13	251
18	108	85	185	119	126	90	152	42	169	17	12	545
19	101	148	174	109	113	88	137	47	173	17	21	565
20	97	256	157	112	89	101	128	49	161	16	33	502
21	88	283	146	120	78	145	117	63	144	15	142	428
22	86	274	134	109	85	169	108	110	127	15	193	363
23	81	252	131	100	110	170	118	125	111	14	191	306
24	76	224	140	93	133	167	112	120	97	13	171	256
25	71	203	143	85	129	162	109	115	85	12	149	213
26	71	183	142	83	124	156	117	108	73	25	128	179
27	83	165	137	81	118	155	113	100	64	37	113	153
28	88	176	131	78	115	149	111	89	60	42	109	130
29	86	195	123	e75	114	140	103	80	57	44	102	112
30	86	197	132	e72	---	132	96	72	51	43	105	97
31	81	---	134	e70	---	130	---	69	---	49	104	---
TOTAL	2297	3876	4935	5566	3088	4006	4077	2240	2244	791	2073	7145
MEAN	74.1	129	159	180	106	129	136	72.3	74.8	25.5	66.9	238
MAX	111	283	250	442	138	170	186	125	173	49	193	565
MIN	39	60	105	70	61	88	96	40	27	12	12	47

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 2004, BY WATER YEAR (WY)

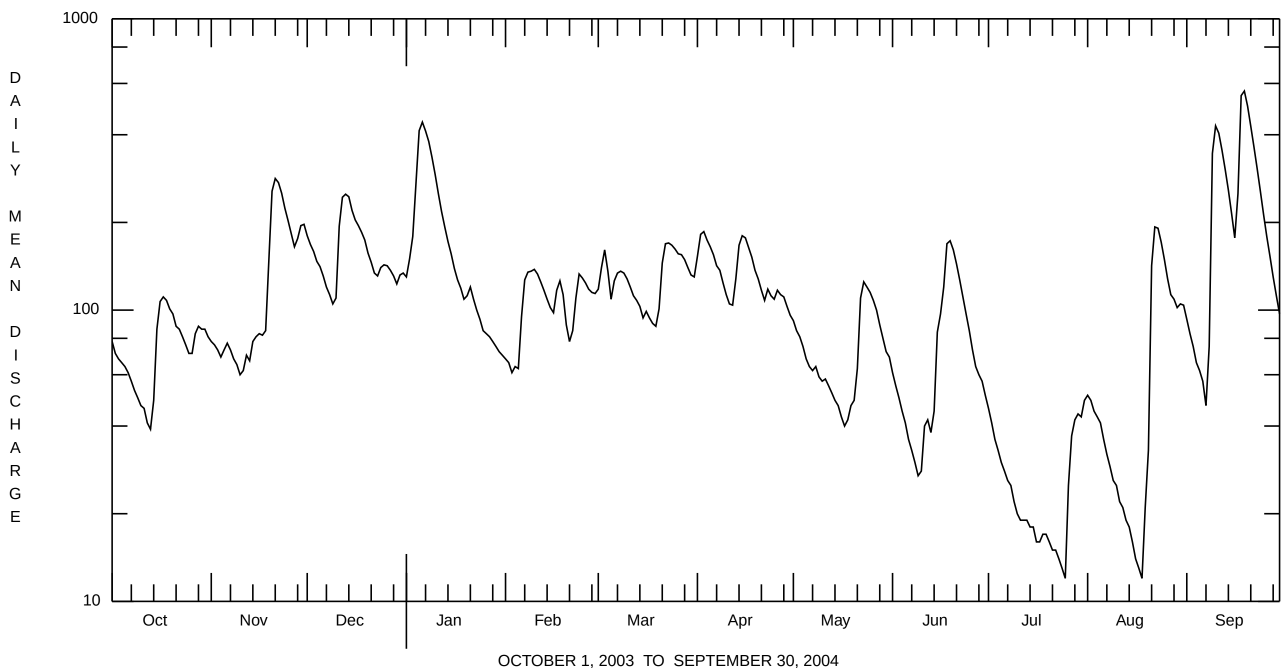
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	28.4	59.5	103	95.3	104	107	108	74.5	55.0	32.2	22.2	28.5
MAX	268	248	268	212	220	298	200	187	332	155	127	238
(WY)	1976	1973	1973	1965	1990	1964	1972	1983	1989	1990	1980	2004
MIN	1.11	1.50	2.41	2.40	31.0	4.31	2.78	2.97	1.53	3.01	1.98	0.61
(WY)	1964	1970	1970	1970	1980	1999	1986	1986	1969	1965	1966	1969

e Estimated.

03106300 MUDDY CREEK NEAR PORTERSVILLE, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1963 - 2004	
ANNUAL TOTAL	32534.3		42338			
ANNUAL MEAN	89.1		116		68.3	
HIGHEST ANNUAL MEAN					116	2004
LOWEST ANNUAL MEAN					24.1	1970
HIGHEST DAILY MEAN	283	Nov 21	565	Sep 19	1450	Mar 10 1964
LOWEST DAILY MEAN	3.6	Jan 4	12	Jul 25**a**	0.50	Sep 1 1969
ANNUAL SEVEN-DAY MINIMUM	20	Aug 20	15	Jul 19	0.54	Aug 29 1969
MAXIMUM PEAK FLOW			582	Sep 18	**b**1640	Mar 10 1964
MAXIMUM PEAK STAGE			6.72	Sep 18	8.18	Mar 10 1964
INSTANTANEOUS LOW FLOW					0.40	Sep 17 1966
10 PERCENT EXCEEDS	150		199		175	
50 PERCENT EXCEEDS	82		102		39	
90 PERCENT EXCEEDS	37		30		3.9	

a Also Aug. 18.
b From rating curve extended above 820 ft^3/s on basis of slope-area measurement of peak flow.



03106500 SLIPPERY ROCK CREEK AT WURTEMBURG, PA
(Pennsylvania Water-Quality Network Station)

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 mi^2.

WATER-DISCHARGE RECORDS

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 those for estimated daily discharges, which are poor. Some regulation since May 1969 by Lake Arthur (station 03106280) 13 mi upstream. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

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

Date	Time	Discharge ft^3/s	Gage Height (ft)	Date	Time	Discharge ft^3/s	Gage Height (ft)
Nov. 19	2200	4,750	5.65	May 2	0500	5,490	6.18
Nov. 28	1800	3,670	4.88	Aug. 21	1000	6,070	6.58
Dec. 11	0700	4,610	5.55	Sept. 9	2300	*11,800	*9.48
Jan. 5	0700	6,290	6.73	Sept. 18	1700	9,580	8.53
Mar. 21	0300	4,300	5.33				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	452	449	1320	951	e471	1340	2410	592	417	261	1780	629
2	403	428	1040	1410	e429	2180	2890	609	420	230	769	419
3	374	423	877	2010	e479	2360	1950	664	561	215	406	351
4	413	399	752	3720	e660	1790	1450	549	417	205	353	304
5	550	434	705	6020	e614	1510	1130	470	325	200	549	273
6	439	568	702	4480	e1390	1420	948	440	303	197	339	257
7	366	497	663	2370	e2180	1330	837	442	287	188	260	230
8	324	426	572	1710	e1690	1160	771	452	268	192	228	845
9	299	374	560	1330	e1280	1010	747	397	244	179	210	10700
10	284	347	715	895	e969	842	639	382	249	161	200	8210
11	268	400	4020	902	e760	732	562	436	395	152	191	3160
12	251	894	3300	879	e636	687	545	478	570	149	168	1700
13	236	1070	1750	783	e576	653	1470	400	377	268	162	1100
14	356	845	1230	676	e519	603	2690	358	644	253	168	852
15	1970	660	1030	614	e449	592	1870	379	1610	255	156	710
16	1420	583	942	470	e374	572	1220	415	935	244	142	597
17	929	543	1330	464	e379	568	948	366	942	187	129	2730
18	633	504	1280	e496	e379	566	822	756	1980	183	123	9220
19	510	2130	1000	e470	e381	639	718	1640	1480	305	187	6080
20	449	4170	863	e440	e430	1470	653	1280	927	374	750	2650
21	408	2710	730	e407	e1670	3730	610	2160	670	269	5150	1670
22	391	1630	679	e384	e1380	2230	585	4580	518	196	3960	1170
23	387	1170	842	e365	e1120	1420	936	3430	416	178	1670	941
24	359	986	1490	e344	e1050	1120	895	1760	342	202	1010	778
25	331	968	1600	e391	e895	1170	677	1210	355	164	735	662
26	352	847	1100	e429	811	1360	909	998	374	443	539	600
27	975	734	904	e459	741	1870	825	852	300	1260	408	526
28	1150	2050	784	e455	821	1720	733	667	274	1260	530	471
29	787	3100	754	e436	1020	1130	666	645	285	748	983	437
30	629	1890	1190	e450	---	948	592	476	280	444	1010	408
31	510	---	1370	e471	---	1090	---	427	---	1250	1060	---
TOTAL	17205	32229	36094	35681	24553	39812	32698	28710	17165	10812	24325	58680
MEAN	555	1074	1164	1151	847	1284	1090	926	572	349	785	1956
MAX	1970	4170	4020	6020	2180	3730	2890	4580	1980	1260	5150	10700
MIN	236	347	560	344	374	566	545	358	244	149	123	230
CFSM	1.39	2.70	2.93	2.89	2.13	3.23	2.74	2.33	1.44	0.88	1.97	4.91
IN.	1.61	3.01	3.37	3.34	2.29	3.72	3.06	2.68	1.60	1.01	2.27	5.48

e Estimated.

BEAVER RIVER BASIN

03106500 SLIPPERY ROCK CREEK AT WURTEMBURG, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 2004, BY WATER YEAR (WY) (SINCE REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	266	538	783	691	860	1028	955	645	528	347	281	309
MAX	741	1822	1576	1369	1949	1972	1608	1400	2075	1120	1323	1956
(WY)	1976	1986	1978	1999	1981	1972	1987	1983	1989	2003	1980	2004
MIN	56.5	82.2	178	153	289	243	345	215	112	84.8	51.1	53.0
(WY)	1992	1992	1990	1977	1987	1969	1971	1976	1992	1998	2001	1999

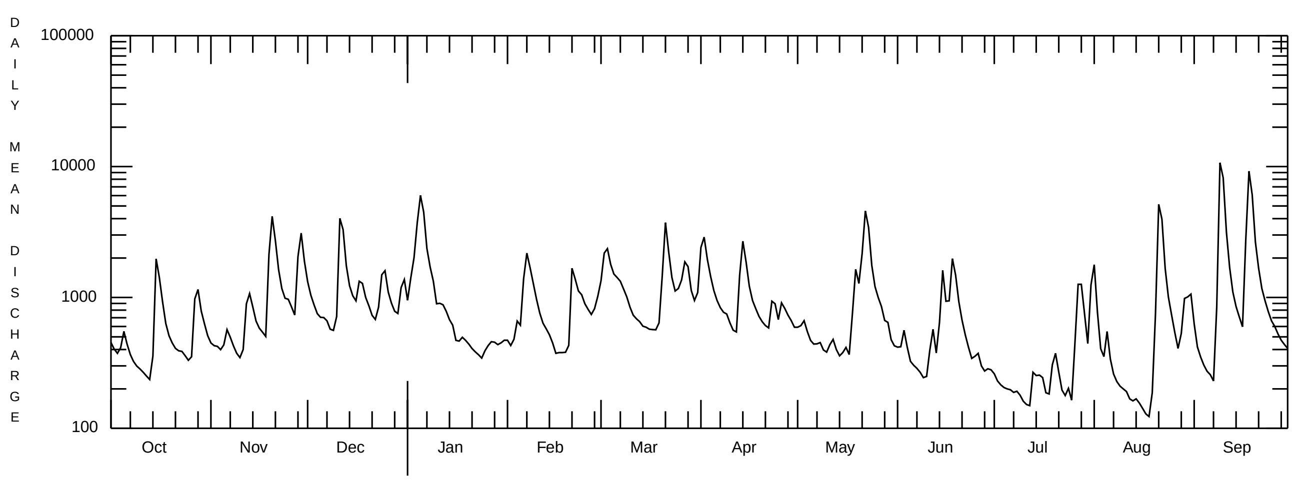
SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1969 - 2004	
ANNUAL TOTAL	300121		357964			
ANNUAL MEAN	822		978		601	
HIGHEST ANNUAL MEAN					978	2004
LOWEST ANNUAL MEAN					317	2001
HIGHEST DAILY MEAN	5730	Jul 28	10700	Sep 9	10700	Sep 9 2004
LOWEST DAILY MEAN	138	Jul 3	123	Aug 18	36	Sep 14 2002
ANNUAL SEVEN-DAY MINIMUM	168	Jun 27	150	Aug 12	39	Aug 13 2001
MAXIMUM PEAK FLOW			11800	Sep 9	11800	Sep 9 2004
MAXIMUM PEAK STAGE			9.48	Sep 9	9.48	Sep 9 2004
INSTANTANEOUS LOW FLOW			120	Aug 18	36	Sep 13 2002
ANNUAL RUNOFF (CFSM)	2.07		2.46		1.51	
ANNUAL RUNOFF (INCHES)	28.05		33.46		20.51	
10 PERCENT EXCEEDS	1620		1880		1360	
50 PERCENT EXCEEDS	580		642		370	
90 PERCENT EXCEEDS	269		254		92	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 1968, BY WATER YEAR (WY) (PRIOR TO REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	237	379	589	839	856	1203	911	653	386	237	191	160
MAX	1391	1329	2088	3161	2089	2728	1974	1472	1559	1307	905	1675
(WY)	1912	1922	1928	1937	1956	1913	1940	1924	1956	1958	1956	1926
MIN	37.7	43.0	58.5	56.3	94.7	291	238	94.3	79.3	54.8	35.3	38.2
(WY)	1964	1931	1931	1931	1934	1931	1925	1934	1936	1944	1930	1944

SUMMARY STATISTICS	WATER YEARS 1912 - 1968	
ANNUAL MEAN	552	
HIGHEST ANNUAL MEAN	917	1956
LOWEST ANNUAL MEAN	216	1931
HIGHEST DAILY MEAN	16700	Mar 26 1913
LOWEST DAILY MEAN	20	Sep 11 1938
ANNUAL SEVEN-DAY MINIMUM	24	Sep 6 1938
MAXIMUM PEAK FLOW	**a**19000	Jan 25 1937
MAXIMUM PEAK STAGE	**b**12.05	Jan 25 1937
INSTANTANEOUS LOW FLOW	**c**16	Sep 13 1932
ANNUAL RUNOFF (CFSM)	1.39	
ANNUAL RUNOFF (INCHES)	18.85	
10 PERCENT EXCEEDS	1390	
50 PERCENT EXCEEDS	248	
90 PERCENT EXCEEDS	58	

a From rating curve extended above 14,000 ft^3/s.
b From floodmark, site and datum then in use.
c Minimum observed.



OCTOBER 1, 2003 TO SEPTEMBER 30, 2004

03106500 SLIPPERY ROCK CREEK AT WURTEMBURG, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 240-288.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unf lab, µS/cm 25 degC (90095)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water unfltrd recover -able, mg/L (00916)	Magnesium, water, unfltrd recover -able, mg/L (00927)
OCT 2003													
06...	1400	1028	9813	425	12.6	7.9	8.2	365	371	10.0	160	45.2	12.0
DEC													
02...	1405	1028	9813	1020	11.0	7.5	7.8	276	280	3.5	110	31.7	8.0
FEB 2004													
11...	1130	1028	9813	E760	15.5	6.7	7.8	330	332	.0	120	34.6	8.8
APR													
06...	1410	1028	9813	933	12.7	7.7	7.4	314	312	6.5	120	34.9	8.8
JUN													
01...	1410	1028	9813	420	9.3	8.2	8.2	365	352	19.0	160	44.4	10.8
AUG													
02...	1325	1028	9813	670	8.6	7.9	7.5	267	268	22.0	100	29.9	7.2

Date	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recover -able, µg/L (01105)	Copper, water, unfltrd recover -able, µg/L (01042)
OCT 2003													
06...	70	84.9	304	<2	<.020	.57	<.040	.02	.028	.81	3.8	<200	<10
DEC													
02...	47	66.1	196	<2	<.020	.66	<.040	.02	.022	.86	3.5	210	<10
FEB 2004													
11...	47	72.7	250	6	.060	.76	<.040	.02	.031	1.1	2.7	<200	<10
APR													
06...	45	77.4	164	2	<.020	.65	<.040	.02	.022	.88	2.3	<200	<10
JUN													
01...	70	83.1	278	32	<.020	.64	<.040	.02	.040	.76	3.6	380	<10
AUG													
02...	60	47.7	220	38	.030	.44	<.040	.04	.104	.93	6.6	550	<10

Date	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, unfltrd recover -able, µg/L (01051)	Manganese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, unfltrd recover -able, µg/L (01092)
OCT 2003					
06...	380	<1.0	130	<50	10
DEC					
02...	480	<1.0	170	<50	<10
FEB 2004					
11...	500	<1.0	330	<50	10
APR					
06...	370	<1.0	210	<50	<10
JUN					
01...	790	<1.0	240	<50	<10
AUG					
02...	1440	1.7	330	<50	<10

BEAVER RIVER BASIN

03106500 SLIPPERY ROCK CREEK AT WURTEMBURG, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 animal (approximate) subsamples.

Date	10/03/03
Benthic Macroinvertebrate	Count
Nematoda (NEMATODES)	2
Mollusca	
Bivalvia (CLAMS)	
Veneroida	
Sphaeriidae	
Pisidium	1
Arthropoda	
Acariformes	
Hydrachnidia (WATER MITES)	2
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	
Acentrella	2
Baetis	6
Caenidae	
Caenis	7
Ephemerellidae	
Serratella	1
Heptageniidae	
Stenonema	11
Siphlonuridae	
Ameletus	1
Plecoptera (STONEFLIES)	
Perlidae	
Acroneuria	1
Agnetina	1
Trichoptera (CADDISFLIES)	
Glossosomatidae	
Protoptila	1
Hydropsychidae	
Cheumatopsyche	8
Hydropsyche	24
Macrostemum	1
Potamyia	2
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
Optioservus	7
Stenelmis	1
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	23
Empididae (DANCE FLIES)	
Hemerodromia	2
Simuliidae (BLACK FLIES)	
Simulium	8
Total Organisms	112
Total Taxa	21

BEAVER RIVER BASIN

03107500 BEAVER RIVER AT BEAVER FALLS, PA
(Pennsylvania Water-Quality Network Station)

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, at mile 5.5.

DRAINAGE AREA.--3,106 mi^2.

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); Instantaneous low flow for water years 1997, 1998 were published in error.

GAGE.--Water-stage recorder and concrete dam control. Datum of gage is 727.48 ft above National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers bench mark). Prior to Dec. 3, 1941, nonrecording gage at site 200 ft downstream at same datum.

REMARKS.--No estimated daily discharges. Records good above 2,000 ft^3/s, and fair below, except those below 1,200 ft^3/s, which are poor. Pumpage from gage pool, averaging 3.4 ft^3/s in 1935 and 6.0 ft^3/s at present, for local water supply, returns to river 2 mi downstream; information furnished by Beaver Falls Municipal Authority. Flow regulated since 1916 by Milton Reservoir, since November 1929 by Meander Creek Reservoir, since December 1933 by Pymatuning Reservoir (station 03100500), since December 1942 by Berlin Lake, since October 1943 by Mosquito Creek Lake, since December 1966 by Michael J. Kirwan Reservoir, since January 1967 by Shenango River Lake, all over 50 mi upstream, and since May 1969 by Lake Arthur (station 03106280) 29 mi upstream. U.S. Army Corps of Engineers satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 27, 1913 reached a stage of 17.4 ft, discharge, 103,000 ft^3/s, from rating curve extended above 60,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6280	4200	9550	7800	2370	6630	13500	4060	7590	1840	8230	4400
2	6410	4030	8410	8890	2340	8920	19400	4440	7260	1710	5620	3740
3	5620	3940	8090	12100	2890	9730	18500	7550	6740	1610	4360	3310
4	4990	3810	7430	19800	4500	8610	14000	7230	5980	1540	3710	2720
5	5170	3760	6690	37000	4190	8050	10800	6130	4980	1560	3810	2340
6	4710	3900	6530	27800	10100	8560	9090	5610	3780	1600	3000	2260
7	4290	3630	6110	13900	17100	7940	8280	5340	3020	1500	2710	2170
8	4020	3020	5340	10500	10400	6610	7030	5290	2700	1810	2510	3620
9	3500	2740	5040	10100	8130	6020	6160	4180	2240	1580	2400	55300
10	3230	2620	5490	8770	6980	5380	5150	3460	2130	1420	2320	47200
11	2910	2770	16600	8270	6740	4840	4520	3380	3060	1350	2390	18300
12	2740	4150	14200	8390	5970	4650	4290	3140	3770	1400	2290	10300
13	2670	5670	9570	7800	5640	4370	8410	2730	3340	2280	1970	8670
14	2990	5490	7740	7200	4800	3780	19400	2360	4790	2040	1950	7720
15	10800	4610	7040	6780	4240	3680	14700	2320	14000	1930	1780	7310
16	8750	4070	6230	5710	3660	3550	9590	2860	10700	1790	1690	6920
17	7580	3840	7850	4560	3580	3560	7240	2600	8320	1640	1470	15200
18	6440	3660	8280	4200	3490	3510	6240	3580	13100	1980	1330	58500
19	5860	7900	7100	3860	3180	4070	6570	7720	9300	2610	2160	35300
20	5060	18600	6280	3540	3680	7200	7050	9660	6910	2650	5180	13300
21	4390	10900	5680	3250	11100	20200	6480	13900	5830	2100	22300	9610
22	3790	8320	5440	2800	10800	13500	6210	35800	4960	1760	15800	8840
23	3410	6920	5380	2460	8230	9340	8130	31800	4330	1680	6960	8200
24	3170	6270	8080	2420	7710	7380	7720	20300	3550	1690	4820	7670
25	2840	6260	9680	2270	7120	7220	6210	12000	3600	1590	3620	7320
26	2840	5680	8110	2310	6380	7600	6240	10500	2990	3100	2970	7230
27	5690	4880	5820	2440	5840	10400	5550	9810	2510	6400	2650	7080
28	6620	9350	5540	2530	5450	11000	5190	9550	2280	4390	6060	6840
29	5610	15900	6090	2580	5850	8730	4760	9300	2260	3150	8930	6530
30	5260	12000	7940	2550	---	7430	4130	8190	2020	2670	6020	6200
31	4560	---	9360	2430	---	8600	---	7750	---	5780	5510	---
TOTAL	152200	182890	236690	245010	182460	231060	260540	262540	158040	70150	146520	384100
MEAN	4910	6096	7635	7904	6292	7454	8685	8469	5268	2263	4726	12800
MAX	10800	18600	16600	37000	17100	20200	19400	35800	14000	6400	22300	58500
MIN	2670	2620	5040	2270	2340	3510	4130	2320	2020	1350	1330	2170
CFSM	1.58	1.96	2.46	2.54	2.03	2.40	2.80	2.73	1.70	0.73	1.52	4.12
IN.	1.82	2.19	2.83	2.93	2.19	2.77	3.12	3.14	1.89	0.84	1.75	4.60

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 2004, BY WATER YEAR (WY)

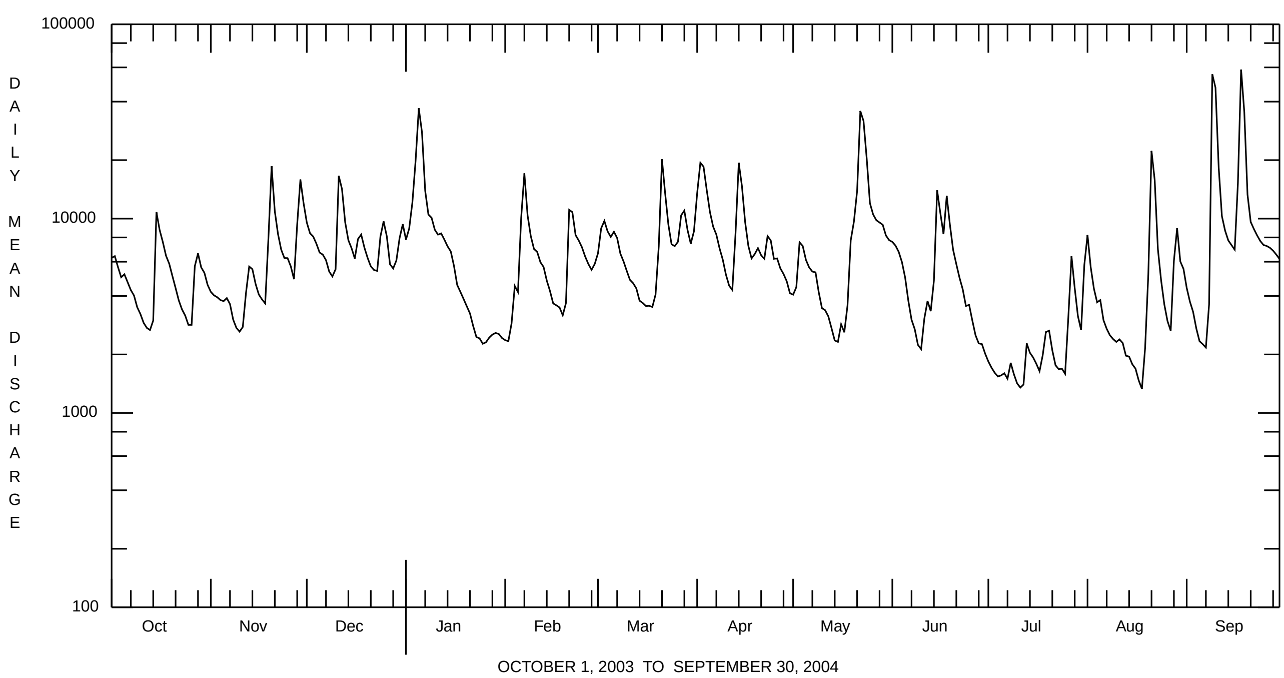
MEAN	1854	3041	4745	4844	5473	6697	5910	4153	3013	2403	1844	2078
MAX	6760	11520	11880	11620	12360	13040	13620	10880	11090	9298	6505	12800
(WY)	1991	1986	1991	1993	1990	1993	1957	1996	1989	2003	1980	2004
MIN	531	439	540	714	887	1606	1861	1271	966	916	777	739
(WY)	1992	1992	1961	1961	1963	1969	1971	1962	1992	1965	1991	1999

BEAVER RIVER BASIN

03107500 BEAVER RIVER AT BEAVER FALLS, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1957 - 2004	
ANNUAL TOTAL	2096340		2512200			
ANNUAL MEAN	5743		6864		3829	
HIGHEST ANNUAL MEAN					6864	2004
LOWEST ANNUAL MEAN					1938	1963
HIGHEST DAILY MEAN	32200	Jul 23	58500	Sep 18	65400	Jan 22 1959
LOWEST DAILY MEAN	1160	Jan 30,31	1330	Aug 18	320	Nov 5 1991
ANNUAL SEVEN-DAY MINIMUM	1210	Jan 25	1520	Jul 6	333	Nov 1 1991
MAXIMUM PEAK FLOW			**a**66500	Sep 9	**a**69900	Jan 22 1959
MAXIMUM PEAK STAGE			13.45	Sep 9	14.42	Jan 22 1959
ANNUAL RUNOFF (CFSM)	1.85		2.21		1.23	
ANNUAL RUNOFF (INCHES)	25.11		30.09		16.75	
10 PERCENT EXCEEDS	9970		11000		8390	
50 PERCENT EXCEEDS	4920		5610		2380	
90 PERCENT EXCEEDS	1690		2280		905	

a From rating curve extended above 57,000 ft^3/s.



BEAVER RIVER BASIN

03107500 BEAVER RIVER AT BEAVER FALLS, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 240-288.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unf lab, µS/cm 25 degC (90095)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as $CaCO_3$ (00900)	Calcium water unfltrd recover -able, mg/L (00916)	Magnesium, water, unfltrd recover -able, mg/L (00927)
OCT 2003													
01...	1330	1028	9813	6220	8.5	7.1	7.8	331	343	15.5	120	34.6	7.9
DEC													
01...	1420	1028	9813	9260	10.4	6.8	7.3	297	310	6.0	110	31.0	7.6
FEB 2004													
09...	1340	1028	9813	7840	14.8	6.6	7.8	495	494	.8	130	37.0	8.3
APR													
01...	1400	1028	9813	13600	10.5	7.7	7.7	405	395	9.0	120	35.2	8.4
JUN													
03...	1345	1028	9813	6540	8.0	7.7	7.5	374	374	20.0	120	32.4	8.3
AUG													
04...	1415	1028	9813	3690	6.8	7.6	7.5	364	368	25.0	120	34.6	8.2

Date	ANC, wat unf fixed end pt, lab, mg/L as $CaCO_3$ (00417)	Fluoride, water, unfltrd mg/L (00951)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recover -able, µg/L (01105)
OCT 2003													
01...	76	<.2	40.9	244	28	.030	.64	<.040	.08	.109	1.2	6.3	500
DEC													
01...	60	<.2	41.1	486	18	.050	.94	<.040	.07	.111	1.5	6.3	1100
FEB 2004													
09...	57	<.2	47.9	276	24	.160	1.17	<.040	.04	.056	1.8	4.0	430
APR													
01...	62	<.2	47.8	210	46	.080	.95	.070	.03	.100	1.6	5.0	2000
JUN													
03...	73	<.2	46.5	280	8	.080	.90	.220	.06	.110	1.5	6.0	650
AUG													
04...	78	.2	38.1	232	14	.070	.72	<.040	.06	.089	1.4	5.9	420

Date	Copper, water, unfltrd recover -able, µg/L (01042)	Cyanide amenable to chlorination wat unf mg/L (00722)	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, unfltrd recover -able, µg/L (01051)	Manganese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, unfltrd recover -able, µg/L (01092)	Phenolic compounds, water, unfltrd µg/L (32730)
OCT 2003								
01...	<10	<1.00	1250	2.8	140	<50	10	<5
DEC								
01...	<10	<1.00	2050	2.8	160	<50	20	<5
FEB 2004								
09...	<10	<1.00	1000	1.4	170	<50	20	<5
APR								
01...	10	<1.00	2520	3.1	180	<50	30	<5
JUN								
03...	<10	<1.00	1650	4.1	140	<50	100	<5
AUG								
04...	<10	<1.00	890	2.1	130	<50	60	8

BEAVER RIVER BASIN

03107500 BEAVER RIVER AT BEAVER FALLS, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 animal (approximate) subsamples.

Date	10/24/03
Benthic Macroinvertebrate	Count
Platyhelminthes	
Turbellaria (FLATWORMS)	
Tricladida	
Planariidae	3
Mollusca	
Bivalvia (CLAMS)	
Veneroida	
Sphaeriidae	
Sphaerium	3
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Tubificida	
Tubificidae	4
Arthropoda	
Acariformes	
Hydrachnidia (WATER MITES)	1
Crustacea	
Amphipoda (SCUDS)	
Gammaridae	
Gammarus	8
Insecta	
Ephemeroptera (MAYFLIES)	
Heptageniidae	
Stenonema	6
Trichoptera (CADDISFLIES)	
Hydropsychidae	
Cheumatopsyche	25
Hydropsyche	12
Polycentropodidae	
Neureclipsis	7
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	193
Empididae (DANCE FLIES)	1
Total Organisms	263
Total Taxa	11

BEAVER RIVER BASIN

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 mi^2. 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 sea level. 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. Controlled storage began Dec. 1933. 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 Conservation and Natural Resources.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 214,480 acre-ft, Sept. 18, 2004, elevation, 1,009.79 ft; minimum (after first filling), 110,570 acre-ft, Dec. 4, 1953, elevation, 1,002.17 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 214,480 acre-ft, Sept. 18, elevation, 1,009.79 ft; minimum, 154,170 acre-ft, Feb. 20, elevation, 1,005.58 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 mi^2. PERIOD OF RECORD, May 1969 to current year. GAGE, water-stage recorder. Datum of gage is sea level (Pennsylvania Department of Environmental Protection 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 Conservation and Natural Resources.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 44,240 acre-ft, June 16, 1989, elevation, 1,192.01 ft; minimum (after first filling), 21,320 acre-ft, Nov. 30, 1975, elevation, 1,183.88 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 44,200 acre-ft, Sept. 18, elevation, 1,192.00 ft; minimum, 37,700 acre-ft, July 25, 26, elevation, 1,190.03 ft..

MONTHEND ELEVATION, IN FEET ABOVE SEA LEVEL, AND CONTENTS AT 2400 HRS, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (equivalent in ft^3/s)	Elevation (feet)	Contents (acre-feet)	Change in contents (equivalent in ft^3/s)
	03100500 Pymatuning Reservoir			03106280 Lake Arthur		
Sept. 30	1,008.00	188,040	--	1,190.47	39,100	--
Oct. 31	1,007.28	177,710	-168	1,190.43	38,980	-2.0
Nov. 30	1,006.34	164,540	+221	1,190.87	40,380	+24
Dec. 31	1,006.30	163,990	-8.9	1,190.71	39,870	-8.3
CAL YR 2003	--	--	+5.7	--	--	+5.9
Jan. 31	1,006.12	161,510	-40	1,190.22	38,300	-26
Feb. 29	1,005.67	155,380	-107	1,190.29	38,530	+4.0
Mar. 31	1,007.55	181,560	+426	1,190.76	40,030	+24
Apr. 30	1,007.70	183,710	+31	1,190.61	39,550	-8.1
May 31	1,008.70	198,290	+237	1,190.47	39,100	-7.3
June 30	1,008.10	189,490	-148	1,190.36	38,750	-5.9
July 31	1,008.46	194,750	+86	1,190.38	38,820	+1.1
Aug. 31	1,007.80	185,150	-156	1,190.63	39,620	+13
Sept. 30	1,008.69	198,140	+218	1,190.58	39,460	-2.7
WTR YR 2004	--	--	+14	--	--	+0.5

RACCOON CREEK BASIN

03108000 RACCOON CREEK AT MOFFATTS MILL, PA
(Pennsylvania Water-Quality Network Station)

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.

WATER-DISCHARGE RECORDS

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 (U.S. Army Corps of Engineers benchmark). 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 those for estimated daily discharges, which are poor. 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 measurements of water temperature were made during the year. Satellite telemetry at station.

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.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a 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)
Nov. 20	0245	2,160	4.81	May 21	2215	2,460	5.09
Jan. 5	1215	5,920	7.87	June 16	0315	2,030	4.68
Feb. 7	0130	3,640	6.07	Aug. 21	2245	4,140	6.48
Apr. 14	0430	2,960	5.50	Sept. 9	1415	7,990	9.26
Apr. 23	1130	1,980	4.63	Sept. 18	0730	*21,200	*14.29

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	123	152	276	259	e201	188	494	285	248	94	279	229
2	115	142	246	406	e214	295	965	265	181	86	174	170
3	103	136	218	492	e408	322	632	253	182	93	125	136
4	108	128	198	2370	e882	343	518	214	146	81	132	118
5	121	135	199	5360	345	401	413	193	138	232	206	108
6	102	154	220	1830	1850	499	341	181	139	123	124	95
7	93	138	189	826	2070	487	306	178	119	96	92	85
8	90	130	167	580	627	438	285	225	104	120	76	626
9	88	116	160	479	427	363	286	184	95	85	66	6400
10	86	109	200	367	354	311	232	163	115	69	66	2030
11	84	114	1000	342	339	277	208	157	179	67	87	646
12	82	143	695	325	298	264	217	149	590	72	69	433
13	82	155	471	298	317	225	1160	139	267	114	68	327
14	95	125	408	266	e261	207	2180	132	748	85	63	266
15	283	108	369	251	e239	203	950	141	695	70	52	227
16	179	102	289	202	e176	188	638	143	1020	61	45	198
17	155	98	390	e180	e196	230	494	120	518	57	40	2080
18	143	113	391	e262	e176	213	434	197	1040	105	39	13400
19	122	680	340	e240	e190	303	366	595	553	98	60	2360
20	108	1400	305	e188	e284	420	346	596	362	74	443	972
21	100	603	264	e121	502	917	309	1170	273	57	3070	695
22	147	477	252	e171	396	629	278	1990	264	47	1390	560
23	134	397	293	e123	315	456	1280	876	214	44	452	462
24	104	337	378	e153	304	367	825	509	167	41	295	389
25	72	245	381	e159	282	339	588	350	141	37	211	339
26	71	196	332	e173	243	311	567	296	129	792	164	294
27	177	175	298	e239	217	287	463	274	114	617	145	257
28	268	264	273	e287	197	260	411	237	107	294	159	243
29	204	404	254	e263	186	232	341	238	134	180	298	235
30	173	323	309	e242	---	230	299	177	104	127	352	198
31	143	---	297	e222	---	292	---	253	---	213	357	---
TOTAL	3955	7799	10062	17676	12496	10497	16826	10880	9086	4331	9199	34578
MEAN	128	260	325	570	431	339	561	351	303	140	297	1153
MAX	283	1400	1000	5360	2070	917	2180	1990	1040	792	3070	13400
MIN	71	98	160	121	176	188	208	120	95	37	39	85
CFSM	0.72	1.46	1.82	3.20	2.42	1.90	3.15	1.97	1.70	0.78	1.67	6.48
IN.	0.83	1.63	2.10	3.69	2.61	2.19	3.52	2.27	1.90	0.91	1.92	7.23

e Estimated.

RACCOON CREEK BASIN

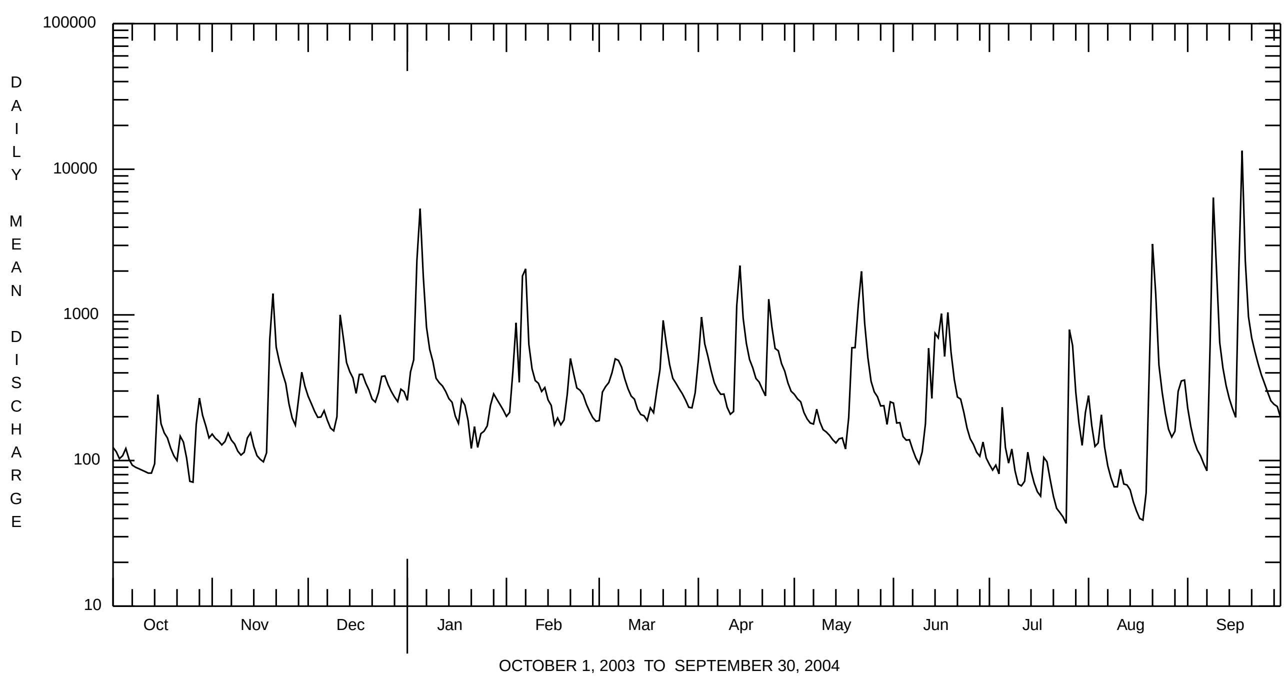
03108000 RACCOON CREEK AT MOFFATTS MILL, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 2004, BY WATER YEAR (WY)

MEAN	62.2	111	191	251	316	399	342	265	146	88.6	74.7	73.1
MAX	359	764	717	737	788	1010	757	618	632	389	651	1153
(WY)	1955	1986	1991	1952	1956	1945	1957	1983	1989	1990	1980	2004
MIN	7.98	14.8	15.1	34.5	47.7	56.3	94.7	65.6	26.3	15.6	10.2	9.73
(WY)	1964	1964	1964	1967	1964	1969	1946	1986	1988	1965	1965	1964

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1942 - 2004	
ANNUAL TOTAL	88304		147385			
ANNUAL MEAN	242		403		193	
HIGHEST ANNUAL MEAN					403	2004
LOWEST ANNUAL MEAN					90.9	1954
HIGHEST DAILY MEAN	1540	May 11	13400	Sep 18	13400	Sep 18 2004
LOWEST DAILY MEAN	48	Aug 26	37	Jul 25	4.8	Sep 8 1945
ANNUAL SEVEN-DAY MINIMUM	61	Aug 20	52	Aug 13	5.6	Aug 20 1965
MAXIMUM PEAK FLOW			**a**21200	Sep 18	**a**21200	Sep 18 2004
MAXIMUM PEAK STAGE			14.29	Sep 18	14.29	Sep 18 2004
INSTANTANEOUS LOW FLOW			33	Jul 26	4.5	Aug 24 1965
ANNUAL RUNOFF (CFSM)	1.36		2.26		1.08	
ANNUAL RUNOFF (INCHES)	18.45		30.80		14.71	
10 PERCENT EXCEEDS	452		640		445	
50 PERCENT EXCEEDS	180		236		99	
90 PERCENT EXCEEDS	84		89		20	

a From rating curve extended above 19,600 ft^3/s.



03108000 RACCOON CREEK AT MOFFATTS MILL, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 240-288.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unf lab, µS/cm 25 degC (90095)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water unfltrd recover -able, mg/L (00916)	Magnesium, water, unfltrd recover -able, mg/L (00927)
OCT 2003													
01...	0815	1028	9813	124	9.1	7.3	7.8	731	726	12.5	330	85.2	27.5
DEC													
01...	0835	1028	9813	285	9.7	6.9	7.6	619	621	5.0	280	76.4	22.9
FEB 2004													
09...	0900	1028	9813	405	7.2	6.1	7.7	569	567	.0	250	64.7	20.8
APR													
01...	0810	1028	9813	385	6.5	7.5	7.8	724	697	8.5	320	81.8	27.0
JUN													
01...	1030	1028	9813	245	8.5	7.9	8.1	836	808	18.0	430	110	37.4
AUG													
02...	0900	1028	9813	180	8.3	7.7	7.6	655	653	21.5	280	72.1	24.1

Date	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Orthophosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recover -able, µg/L (01105)	Copper, water, unfltrd recover -able, µg/L (01042)
OCT 2003													
01...	84	244	836	2	<.020	.70	<.040	.01	.020	.98	2.5	<200	<10
DEC													
01...	84	196	228	<2	<.020	1.20	<.040	.02	.015	1.4	1.8	<200	<10
FEB 2004													
09...	45	176	376	32	.070	1.29	<.040	.03	.032	1.6	1.7	1400	<10
APR													
01...	64	233	156	2	.020	1.10	<.040	.02	.051	1.4	1.9	1600	<10
JUN													
01...	74	337	680	24	<.020	.80	<.040	.01	.026	.82	2.2	1200	<10
AUG													
02...	69	201	572	16	<.020	.85	<.040	.02	.040	1.0	2.6	570	<10

Date	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, unfltrd recover -able, µg/L (01051)	Manganese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, unfltrd recover -able, µg/L (01092)
OCT 2003					
01...	230	<1.0	60	<50	20
DEC					
01...	410	<1.0	210	<50	20
FEB 2004					
09...	2820	2.9	440	<50	80
APR					
01...	2720	2.7	380	<50	70
JUN					
01...	1790	2.2	330	<50	60
AUG					
02...	910	1.4	130	<50	10

RACCOON CREEK BASIN

03108000 RACCOON CREEK AT MOFFATTS MILL, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 animal (approximate) subsamples.

Date	09/09/03
Benthic Macroinvertebrate	Count
Mollusca	
Bivalvia (CLAMS)	
Veneroida	
Corbiculidae	
Corbicula fluminea	1
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Tubificida	
Tubificidae	10
Arthropoda	
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	
Baetis	7
Tricorythidae	
Tricorythodes	4
Megaloptera	
Corydalidae (FISHFLIES AND DOBSONFLIES)	
Corydalus	1
Nigronia	1
Trichoptera (CADDISFLIES)	
Helicopsychidae	
Helicopsyche	1
Hydropsychidae	
Cheumatopsyche	36
Hydropsyche	86
Psychomyiidae	
Psychomyia	7
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
Stenelmis	9
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	18
Total Organisms	181
Total Taxa	12

04213000 CONNEAUT CREEK AT CONNEAUT, OHIO

LOCATION.--Latitude 41°55'37", longitude 80°36'15", Ashtabula County, Hydrologic Unit 04120101, on right bank at downstream side of Keefus Road bridge at Conneaut, Ohio, and 6.4 mi upstream from mouth.

DRAINAGE AREA.--175 mi^2.

PERIOD OF RECORD.--July 1922 to December 1935, March 1950 to September 1961 (published as "*at Amboy*"), October 1961 to current year.

REVISED RECORDS.--WSP 714: 1926. WSP 784: 1933. WSP 1437: 1923-25(M), 1926-30, 1931-32(M), 1933, 1935(M). WSP 1912: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 610.3 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 17, 1924, nonrecording gage at same site and datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Water-quality and sediment data formerly collected at this site.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	510	206	744	496	e190	797	899	138	120	54	1880	149
2	395	160	544	402	e170	1760	1840	606	113	39	1010	81
3	298	153	338	695	e250	2500	1880	1840	97	30	281	54
4	263	159	238	556	e400	1030	692	713	92	30	143	42
5	478	139	198	753	e600	989	532	361	79	43	105	36
6	298	116	189	825	e840	898	550	265	65	34	78	34
7	151	109	181	395	e1200	494	569	204	49	29	58	50
8	101	94	161	e320	e720	406	472	167	46	29	45	56
9	75	80	139	e220	e440	456	338	149	41	33	38	3700
10	63	71	148	e160	e290	424	271	131	50	31	34	9060
11	53	76	422	e130	e240	351	201	132	706	26	33	1190
12	45	172	612	e110	e200	304	166	177	426	72	44	324
13	39	749	328	e96	e160	307	310	139	245	230	41	173
14	49	733	214	e88	e130	312	1430	107	142	201	35	111
15	1250	368	177	e84	e105	548	1250	117	211	211	41	84
16	2380	227	168	e80	e86	470	487	136	373	291	37	76
17	632	180	476	e76	e78	281	286	148	391	245	30	1080
18	307	179	675	e72	e72	256	208	146	433	109	30	2720
19	187	189	375	e70	e260	295	179	332	274	68	31	2090
20	132	580	315	e68	e450	773	185	205	139	83	32	376
21	102	467	277	e64	e1500	2190	303	1300	90	58	34	197
22	135	253	311	e62	e1400	1290	573	5280	65	240	33	127
23	476	183	763	e60	990	484	629	6200	52	147	36	95
24	314	158	2710	e58	647	530	448	2260	45	68	30	75
25	241	213	2340	e56	564	770	295	801	42	43	25	61
26	496	262	708	e54	463	814	385	432	38	36	21	56
27	980	197	429	e88	398	930	463	307	35	38	33	47
28	648	671	318	e200	387	783	266	228	36	41	538	43
29	461	2590	320	e410	472	442	189	218	37	40	539	39
30	528	2170	837	e260	---	367	156	165	77	36	539	37
31	336	---	1220	e210	---	762	---	136	---	1000	343	---
TOTAL	12423	11904	16875	7218	13702	23013	16452	23540	4609	3635	6197	22263
MEAN	401	397	544	233	472	742	548	759	154	117	200	742
MAX	2380	2590	2710	825	1500	2500	1880	6200	706	1000	1880	9060
MIN	39	71	139	54	72	256	156	107	35	26	21	34
CFSM	2.29	2.27	3.11	1.33	2.70	4.24	3.13	4.34	0.88	0.67	1.14	4.24
IN.	2.64	2.53	3.59	1.53	2.91	4.89	3.50	5.00	0.98	0.77	1.32	4.73

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 2004, BY WATER YEAR (WY)

MEAN	136	314	413	414	457	529	395	246	140	76.8	70.1	111
MAX	804	1373	1049	929	1115	987	839	759	1013	415	493	742
(WY)	1927	1986	1928	1990	1981	1972	1957	2004	1986	1969	1980	2004
MIN	4.95	17.1	35.1	81.0	39.6	147	69.9	20.2	5.46	2.79	3.19	3.56
(WY)	1924	1954	1961	1977	1934	2000	1935	1934	1934	1934	1923	1932

e Estimated.

04213000 CONNEAUT CREEK AT CONNEAUT, OHIO

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1922 - 2004	
ANNUAL TOTAL	127063		161831			
ANNUAL MEAN	348		442		275	
HIGHEST ANNUAL MEAN					442	2004
LOWEST ANNUAL MEAN					140	1931
HIGHEST DAILY MEAN	4990	Jun 14	9060	Sep 10	11000	Jan 31 1968
LOWEST DAILY MEAN	14	Sep 14	21	Aug 26	0.30	Jul 30 1933
ANNUAL SEVEN-DAY MINIMUM	16	Sep 10	30	Aug 20	0.64	Aug 27 1933
MAXIMUM PEAK FLOW			13300	Sep 10	17000	Jan 22 1959
MAXIMUM PEAK STAGE			11.25	Sep 10	12.94	Mar 4 1934
INSTANTANEOUS LOW FLOW			20	Aug 27	0.20	Jul 31 1933
ANNUAL RUNOFF (CFSM)	1.99		2.53		1.57	
ANNUAL RUNOFF (INCHES)	27.01		34.40		21.33	
10 PERCENT EXCEEDS	775		945		687	
50 PERCENT EXCEEDS	180		210		100	
90 PERCENT EXCEEDS	33		39		11	

STREAMS TRIBUTARY TO LAKE ERIE

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 1986 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 800 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REVISED RECORDS.--WDR PA-94-3: 1987-89 (M).

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a 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)
May 21	2115	385	2.40	Sept. 9	0415	*520	*2.79
July 31	2045	481	2.68	Sept. 17	1000	395	2.43

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.4	3.1	6.7	7.2	e3.1	17	36	7.0	4.4	2.1	49	2.7
2	14	2.9	5.2	e11	e3.0	30	56	41	3.7	2.0	12	2.6
3	6.8	2.9	4.8	e12	e3.8	14	16	16	3.5	1.9	7.2	2.5
4	14	2.5	3.7	e9.0	e6.2	13	13	8.7	3.4	2.1	11	2.4
5	8.9	4.1	3.3	e7.4	e11	19	14	9.3	3.3	3.1	11	2.3
6	5.1	3.9	3.4	e4.7	e5.7	11	13	6.6	3.1	2.1	8.1	2.2
7	3.9	2.6	2.9	e8.6	e4.8	8.8	13	7.8	2.9	2.3	6.4	2.3
8	3.5	2.0	2.6	e7.0	e9.7	8.9	9.8	5.8	2.7	2.3	5.1	5.2
9	3.2	1.8	3.4	e5.0	e4.8	9.3	8.4	8.7	2.7	2.0	4.2	167
10	2.9	1.7	4.7	e20	e2.8	8.8	7.2	11	3.5	1.9	4.6	14
11	2.7	4.5	6.6	e16	e2.5	8.1	6.6	13	3.1	1.8	4.0	5.0
12	2.5	5.2	3.1	e4.5	e2.1	8.7	6.6	6.4	2.7	5.4	3.4	3.3
13	2.5	8.3	2.1	e3.8	e2.0	7.4	26	5.3	2.5	3.0	4.3	2.5
14	21	4.2	2.0	e4.8	e2.1	9.6	43	6.9	3.4	4.0	3.5	2.3
15	25	3.1	2.3	e5.0	e6.4	9.8	14	9.3	4.1	9.0	3.0	2.1
16	7.4	2.6	3.6	e4.9	53	6.9	9.2	6.5	2.7	9.5	2.8	4.9
17	4.7	3.1	7.4	e4.6	14	8.1	7.9	5.6	10	3.7	2.7	132
18	3.6	2.7	4.9	e4.4	8.1	11	7.3	8.4	5.1	3.3	3.2	27
19	3.0	5.8	4.8	e4.2	4.8	9.5	7.0	5.5	3.6	3.5	2.7	6.8
20	2.8	4.1	4.4	e4.0	14	37	7.8	4.5	2.9	2.6	3.2	3.8
21	3.0	2.3	4.1	e3.7	47	25	9.9	74	2.6	2.2	4.5	2.9
22	6.3	2.0	5.9	e3.8	14	14	14	63	2.4	2.2	3.0	2.4
23	4.3	1.7	24	e13	9.8	9.9	8.8	13	2.3	7.9	2.7	2.2
24	3.6	3.1	33	e9.1	8.9	11	7.4	13	2.1	3.0	2.6	2.1
25	3.3	3.3	10	e9.6	13	15	8.5	6.7	2.4	2.3	2.5	2.1
26	18	2.1	5.9	e13	10	12	12	5.5	2.3	2.9	2.4	2.0
27	9.0	2.6	4.4	e10	7.2	20	7.8	5.9	2.1	3.3	3.1	2.0
28	6.1	42	4.6	e8.2	8.9	9.9	6.6	21	2.4	2.7	4.3	2.0
29	6.8	36	5.1	e6.5	11	7.6	5.9	6.0	2.6	2.3	3.7	1.9
30	5.7	11	28	e5.0	---	14	5.7	4.7	2.7	3.7	4.4	1.9
31	3.7	---	9.2	e3.8	---	17	---	5.0	---	194	3.1	---
TOTAL	216.7	177.2	216.1	233.8	293.7	411.3	408.4	411.1	97.2	294.1	187.7	414.4
MEAN	6.99	5.91	6.97	7.54	10.1	13.3	13.6	13.3	3.24	9.49	6.05	13.8
MAX	25	42	33	20	53	37	56	74	10	194	49	167
MIN	2.5	1.7	2.0	3.7	2.0	6.9	5.7	4.5	2.1	1.8	2.4	1.9
CFSM	1.57	1.33	1.57	1.69	2.28	2.98	3.06	2.98	0.73	2.13	1.36	3.10
IN.	1.81	1.48	1.81	1.95	2.46	3.44	3.41	3.44	0.81	2.46	1.57	3.46

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2004, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	4.94	7.12	8.39	8.70	9.30	10.6	11.7	6.98	3.84	2.52	3.46	4.12
MAX	12.1	17.2	17.0	19.2	28.7	17.6	22.8	14.4	10.9	9.49	19.1	13.8
(WY)	1988	1993	1998	1998	1990	1989	1996	1989	1994	2004	1987	2004
MIN	1.24	0.89	1.49	3.13	2.21	3.71	6.24	1.56	0.86	0.71	0.49	0.75
(WY)	1999	1999	1999	1987	1987	1999	1999	1991	1991	1999	1991	1995

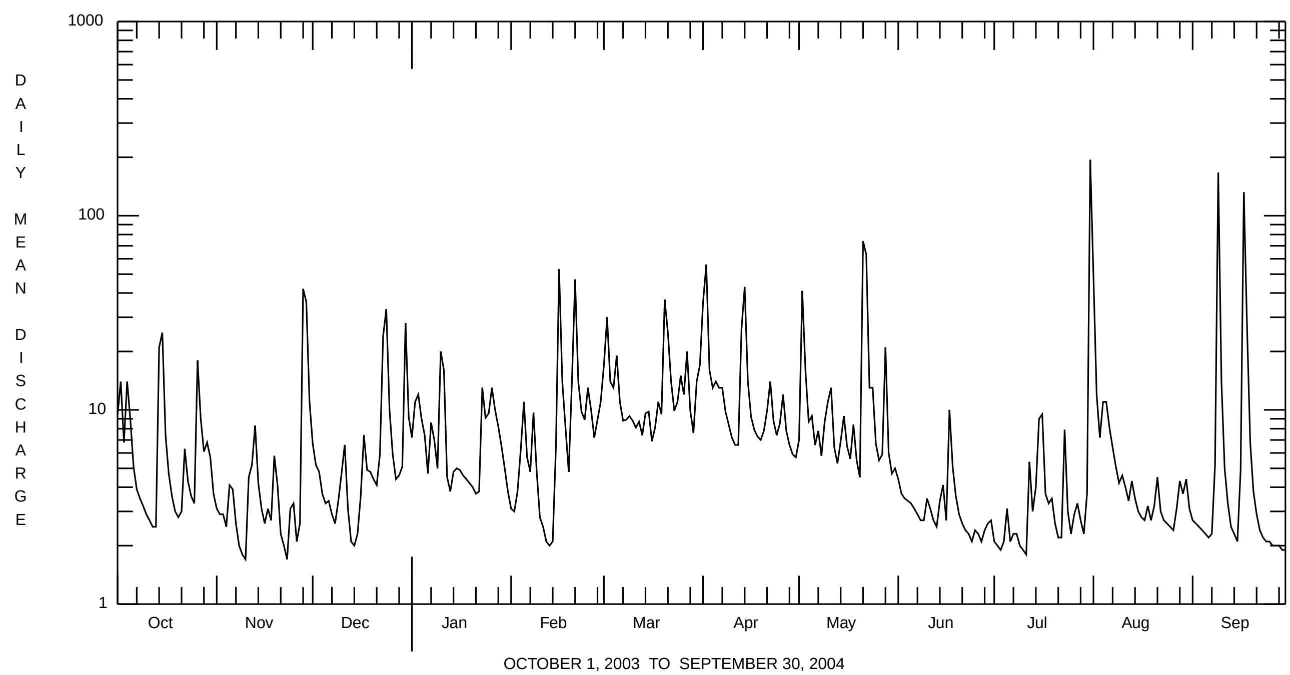
e Estimated.

STREAMS TRIBUTARY TO LAKE ERIE

04213075 BRANDY RUN NEAR GIRARD, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1986 - 2004	
ANNUAL TOTAL	2587.94		3361.7			
ANNUAL MEAN	7.09		9.18		6.81	
HIGHEST ANNUAL MEAN					9.84	1996
LOWEST ANNUAL MEAN					2.82	1999
HIGHEST DAILY MEAN	62	Apr 5**a**	194	Jul 31	405	Aug 2 1987
LOWEST DAILY MEAN	0.92	Jul 20	1.7	Nov 10,23	0.14	Aug 3 1991
ANNUAL SEVEN-DAY MINIMUM	0.97	Jun 27	2.0	Sep 24	0.16	Aug 1 1991
MAXIMUM PEAK FLOW			**b**520	Sep 9	**b**708	Jun 13 1994
MAXIMUM PEAK STAGE			2.79	Sep 9	**c**3.36	Jun 13 1994
INSTANTANEOUS LOW FLOW			1.5	Nov 23,24	0.19	Jun 11 1986
ANNUAL RUNOFF (CFSM)	1.59		2.06		1.53	
ANNUAL RUNOFF (INCHES)	21.63		28.10		20.81	
10 PERCENT EXCEEDS	16		14		14	
50 PERCENT EXCEEDS	4.1		4.9		3.4	
90 PERCENT EXCEEDS	1.4		2.3		0.95	

a Also Sept. 29.
b From rating curve extended above 160 ft^3/s.
c Maximum gage height, 4.55 ft., Dec. 19, 1989 (backwater from ice).



DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at crest-stage partial-record stations are presented in the following table. Discharge measurements made at low-flow partial-record sites and at miscellaneous sites and for special studies are given in separate tables.

Crest-Stage Partial-Record Stations

The following table contains annual maximum discharges for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with 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 during water year 2004

			Water year 2004 maximum			Period of record maximum		
Station name and number	Location and drainage area	Period of Record	Date	Gage height (ft)	Discharge (ft^3/s)	Date	Gage height (ft)	Discharge (ft^3/s)
		OHIO RIVER BASIN						
		ALLEGHENY RIVER BASIN						
Allegheny River at Warren, Pa. (03015310)	Lat 41°50’38”, long 79°09’00”, Warren County, Hydrologic Unit 05010002, on right bank at downstream end of municipal parking lot at Warren, Pa., 1,400 ft downstream from confluence of Conewango Creek, and at mile 188.7. Drainage area is 3,131 mi^2.	1988-94≠ 1995-2004	3-08-04	9.84	24,700	1-03-91	10.19	31,700
		FRENCH CREEK BASIN						
Woodcock Creek at Blooming Valley, Pa. (03022540)	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, Pa., and 3.4 mi upstream from Woodcock Creek Dam. Drainage area is 31.1 mi^2.	1974-95≠ 1996-2004	5-22-04	[a]8.37	903	2-17-76	11.48	2,980
		CLARION RIVER BASIN						
Clarion River at Johnsonburg, Pa. (03028500)	Lat 41°29’10”, long 78°40’43”, Elk County, Hydrologic Unit 05010005, on left bank at upstream side of highway bridge at Johnsonburg, Pa., 0.1 mi downstream from confluence of East and West Branches. Drainage area is 204 mi^2.	1945-95≠ 1996-2004	9-18-04	7.46	5,490	1-19-96	10.14	12,800

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Annual maximum discharge at crest-stage partial-record stations during water year 2004—Continued

			Water year 2004 maximum			Period of record maximum		
Station name and number	Location and drainage area	Period of Record	Date	Gage height (ft)	Discharge (ft^3/s)	Date	Gage height (ft)	Discharge (ft^3/s)
			OHIO RIVER BASIN--Continued					
			KISKIMINETAS RIVER BASIN					
Little Conemaugh River at East Conemaugh, Pa. (03041000)	Lat 40°20’45”, long 78°52’58”, Cambria County, Hydrologic Unit 05010007, upstream from bridge on State Highway 271 at East Conemaugh, Pa., 300 ft downstream from Clapboard Run, and 2.7 mi upstream from confluence with Stonycreek River. Drainage area is 183 mi^2.	1939-95≠ 1996-2004	11-19-03	13.61	5,360	7-20-77	18.85	40,000
			YOUGHIOGHENY RIVER BASIN					
Youghiogheny River at Ohiopyle, Pa. (03081500)	Lat 39°51’57”, long 79°29’41”, Fayette County, Hydrologic Unit 05020006, on left bank 900 ft downstream from Pa. Rt. 381 highway bridge at Ohiopyle and 1,100 ft upstream from mouth of Meadow Run. Drainage area is 1,062 mi^2.	2003≠ 2004	9-18-04	13.86	26,500	9-18-04	13.86	26,500
			LAKE ERIE BASIN					
Mill Creek at Erie, Pa. (04213200)	Lat 42°05’54”, long 80°04’35”, Erie County, Hydrologic Unit 04120101, at bridge on West 38th Street, 100 ft west of State Highway 505, at Erie, Pa. Drainage area is 9.16 mi^2.	1964-2004	9-09-04	12.73	1,440	9-17-96	15.06	3,310

≠ Operated as a continuous-record gaging station.
a Maximum gage height, 9.31 ft, Feb. 21(backwater from ice).

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Miscellaneous sites

Discharge measurements made at miscellaneous sites during water year 2004

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements: Date	Measurements: Discharge (ft^3/s)
OHIO RIVER BASIN						
ALLEGHENY RIVER BASIN						
03010956 Tunungwant Creek	Allegheny River	Lat 41°57’44”, long 78°37’30”, McKean County, Hydrologic Unit 05010001, at bridge on State Highway 346 at Bradford, Pa., and 1.5 mi downstream from confluence of East and West Branch Tunungwant Creek.	138	1989-2003	10-07-03	144
					11-17-03	396
					3-30-04	527
					5-12-04	553
					6-22-04	80.0
					8-03-04	226
					9-22-04	333
03017500 Tionesta Creek	Allegheny River	Lat 41°36’07”, long 79°03’01”, Forest County, Hydrologic Unit 05010003, in Allegheny National Forest, on left bank at downstream side of highway bridge at Lynch, Pa., 500 ft upstream from Bluejay Creek and 7 mi south of Sheffield, Pa.	233	1939-79≠	11-05-03	281
				1981	3-11-04	904
				1988-2003	4-21-04	480
					6-03-04	490
					7-15-04	929
					8-26-04	280
03022000 French Creek	Allegheny River	Lat 41°46’19”, long 80°06’29”, Crawford County, Hydrologic Unit 05010004, at downstream side of bridge at Venango, Pa., 1.2 mi upstream from Gravel Run and 2.2 mi downstream from Boles Run.	597	1938-46≠	10-08-03	1,600
				1994-2003	12-10-03	1,210
					2-25-04	1,630
					4-07-04	2,580
					5-19-04	1,640
					6-29-04	453
					8-11-04	453
03025000 Sugar Creek	Allegheny River	Lat 41°25’43”, long 79°52’48”, Venango County, Hydrologic Unit 05010004, at bridge 0.8 mi north of Sugarcreek, Pa., 0.9 mi upstream from mouth, and 3 mi northeast of Franklin, Pa.	166	1932-79≠	11-03-03	252
				1989-2003	12-11-03	1,620
					3-08-04	706
					4-19-04	300
					6-01-04	260
					7-13-04	606
					8-24-04	144
03029000 Clarion River	Allegheny River	Lat 41°25’15”, long 78°44’10”, Elk County, Hydrologic Unit 05010005, at bridge on State Highway 948 in Ridgway, Pa., 300 ft downstream from Elk Creek.	303	1940-53≠	10-08-03	480
				1954-2003	11-20-03	3,390
					3-29-04	1,510
					5-12-04	1,110
					6-21-04	279
					8-04-04	954
					9-22-04	1,740
03030852 Clarion River	Allegheny River	Lat 41°07’47”, long 79°33’18”, Clarion County, Hydrologic Unit 05010005, at bridge on State Highway 58 at Callensburg, Pa., and 0.3 mi upstream from Licking Creek.	1,163	1979-2003	11-06-03	1,570
					12-10-03	1,900
					3-12-04	3,740
					4-22-04	2,580
					6-04-04	470
					7-20-04	2,760
					8-27-04	373
03036995 Crooked Creek	Allegheny River	Lat 40°40’54”, long 79°11’27”, Indiana County, at bridge on State Highway 110 at Creekside, Pa.,and 150 ft upstream from McKee Run.	53.4	1996, 2003	10-29-03	61.4
					12-08-03	74.9
					1-21-04	34.8
					5-24-04	118
					6-29-04	41.1
					8-26-04	64.7

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at miscellaneous sites during water year 2004—Continued

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements: Date	Measurements: Discharge (ft^3/s)
		OHIO RIVER BASIN--Continued				
		BEAVER RIVER BASIN				
03099600 Mahoning River	Beaver River	Lat 41°01’06”, long 80°26’27”, Lawrence County, Hydrologic Unit 05030103, at bridge on State Highway 224 and 0.4 mi northwest of North Edinburg, Pa.	1,099	1989-2003	10-09-03	1,580
					12-16-03	1,930
					2-27-04	1,610
					4-13-04	2,550
					5-25-04	4,300
					7-07-04	471
					8-17-04	493
03104500 Shenango River	Beaver River	Lat 41°00’00”, long 80°21’21”, Lawrence County, Hydrologic Unit 05030102, at bridge on Grant Street in New Castle, Pa., and 0.6 mi above confluence with Neshannock Creek.	792	1910-34≠ 1989-2003	10-10-03	1,140
					2-26-04	1,970
					4-09-04	1,850
					5-26-04	3,260
					7-06-04	316
					8-17-04	328
03105810 Connoquenessing Creek	Beaver River	Lat 40°48’21”, long 79°57’55”, Butler County, Hydrologic Unit 05030105, at bridge on SR 3006 at Renfrew, Pa., and 0.8 mi upstream from Thorn Creek.	137	1989-2003	11-07-03	109
					12-12-03	960
					3-15-04	174
					4-26-04	587
					6-07-04	60.0
					7-20-04	98.9
					8-27-04	137
03105940 Little Connoquenessing Creek	Beaver River	Lat 40°48’36”, long 80°06’54”, Butler County, Hydrologic Unit 05030105, on right bank at pumping station for Harmony Borough Water Authority, .85 mi northeast of Harmony Borough and 1.3 mi above mouth.	63.8	1996-2003	10-06-03	42.2
					10-08-03	55.3
					1-12-04	115
					2-20-04	71.6
					4-05-04	166
					5-17-04	36.7
					6-28-04	30.0
					8-09-04	36.6
		LAKE ERIE BASIN				
04212945 Conneaut Creek	Lake Erie	Lat 41°55’04”, long 80°28’09”, Erie County, Hydrologic Unit 04120101, at bridge on Griffey Road and 1.2 mi northwest of Cherry Hill, Pa., and 1.9 mi south of West Springfield, Pa.	149	1989-2003	10-07-03	114
					12-09-03	112
					2-24-04	588
					4-08-04	378
					5-20-04	127
					6-30-04	62.7
					8-12-04	31.1
04213273 Twelvemile Creek	Lake Erie	Lat 42°12’15”, long 79°54’16”, Erie County, Hydrologic Unit 04120101, at bridge on Malbert Place near Moorheadville, Pa., and 0.5 mi upstream from mouth.	12.5	1989-2003	10-07-03	10.1
					12-09-03	8.30
					2-24-04	23.6
					4-06-04	27.6
					5-18-04	15.4
					6-29-04	4.67
					8-11-04	6.58

≠ Operated as a continuous-record gaging station.

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

The Pennsylvania Water-Quality Network (WQN) is a statewide, fixed station water-quality sampling system currently operated by the Department of Environmental Protection (PaDEP), Bureau of Water Supply and Wastewater Management in cooperation with the United States Geological Survey (USGS). It is designed to assess both the quality of Pennsylvania's surface waters and the effectiveness of the water quality management program by accomplishing three basic objectives:

* Monitor temporal water-quality trends in major surface streams throughout the Commonwealth of Pennsylvania.

* Monitor temporal water-quality trends in selected reference waters.

* Monitor temporal water-quality trends in selected Pennsylvania lakes.

Major streams are defined as interstate waters and intrastate streams with drainage areas of roughly 200 mi^2 or greater. These waters are sampled at or near their mouths to measure overall quality before flows enter the next higher order stream or before exiting the Commonwealth. In this way, trends can be established and the effectiveness of water-quality management programs can be assessed by watershed. Samples are collected on fixed-time intervals resulting in coverage of a range of flow regimes. All samples were collected by the USGS and analyzed by the PaDEP laboratory in Harrisburg.

Most of the current WQN standard sites are co-located with USGS gage stations and others are equipped with a wire-weight gage. Currently the network consists of 117 standard stream sites, and 22 reference stream sites, and 21 lakes distributed across the Commonwealth. This report contains only those sites in the Ohio or St. Lawrence River basins. The locations of these sites can be found in figures 4 and 5. Other data for the WQN can be found in the annual Water Data Reports PA-04-1 and PA-04-2.

Standard stations are sampled bimonthly (6 times per year) for physical and chemical parameters and stream discharge or a stage reading. Reference stations are sampled at 25-30 day intervals for physical and chemical parameters and stream discharge or a stage reading. Benthic macroinvertebrates are also collected annually at all WQN stations. Because of the time required to analyze the benthic macroinvertebrate samples the data presented may be from previous years.

Although sites 03026175 and 03105500 were discontinued in 2003 the benthic macroinvertebrate data is presented in this report without any chemical data. Chemical data for these sites were published in the 2003 annual report. Station 03075070 does not have any benthic macroinvertebrate data due to the loss of the artificial substrate sampler.

Ninety lakes are part of the WQN. Of these 90 lakes, approximately 15-25 are sampled annually during mid-summer stratification for 5 years; and then a different set of 15-25 lakes is sampled for 5 years. Using this schedule, all 90 lakes are sampled over a 30-year period. Lakes are sampled for physical and chemical parameters and chlorophyll-*a*. Two samples are collected from the deepest point of the lake with the first sample being collected 1-meter below the surface and the second sample collected 1-meter from the bottom. Each sample is analyzed separately. A temperature and dissolved oxygen profile is collected at the site through the water column. This report contains only data for lakes in the Ohio or St. Lawrence River basins. The locations of these sites can be found in figures 4 and 5.

For additional information, contact Andrew Reif at the U.S. Geological Survey, 770 Pennsylvania Drive, Suite 116, Exton, PA 19341; 610-647-9008, (email: agreif@usgs.gov).

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

TABLE 1.--List of stream sites sampled as part of the Pennsylvania Water-Quality Network (WQN).

Station number	WQN No.	Location	Latitude	Longitude	Drainage area (mi^2)
[a]03010500	807	Allegheny River at Eldred, PA	41°57’48"	78°23’11"	550
03010956	858	Tunungwant Creek at Bradford, PA	41°57’44"	78°37’30"	138
03012600	866	Allegheny River at Warren, PA	41°49’28"	79°07’09"	2,223
[a]03015000	832	Conewango Creek at Russell, PA	41°56’17"	79°08’00"	816
[a]03015500	831	Brokenstraw Creek at Youngsville, PA	41°51’09"	79°19’03"	321
[a]03016000	805	Allegheny River at West Hickory, PA	41°34’15"	79°24’29"	3,660
03017500	830	Tionesta Creek at Lynch, PA	41°36’07"	79°03’01"	233
03017800	871	Minister Creek at Truemans, PA (Reference station)	41°37’16"	79°09’11"	10.2
03020449	873	West Branch Caldwell Creek near Grand Valley, PA (Reference station)	41°41’40"	79°34’16"	18.1
[a]03020500	868	Oil Creek at Rouseville, PA	41°28’54"	79°41’44"	300
03022000	869	French Creek at Venango, PA (Reference station)	41°46’19"	80°06’29"	597
[a]03023100	846	French Creek at Meadville, PA	41°37’57"	80°09’35"	788
03025490	845	French Creek at Franklin, PA	41°24’06"	79°49’54"	1,237
03026175	867	Allegheny River at Kennerdell, PA (Biological only)	41°15’51"	79°50’29"	6,266
[a]03029500	822	Clarion River at Cooksburg, PA	41°19’50"	79°12’33"	807
03030852	843	Clarion River at Callensburg, PA	41°07’47"	79°33’18"	1,163
[a]03031500	803	Allegheny River at Parker, PA (Reference station)	41°06’02"	79°40’53"	7,671
03031505	875	Silver Creek at Walley Mill near North Washington, PA (Reference station)	41°02’39"	79°46’36"	5.50
[a]03032500	820	Redbank Creek at St. Charles, PA	40°59’40"	79°23’40"	528
[a]03034000	861	Mahoning Creek at Punxsutawney, PA	40°56’21"	79°00’31"	158
[a]03036500	802	Allegheny River at Kittanning, PA	40°49’13"	79°31’54"	8,973
03039815	870	Clear Shade Creek above Confluence near Cairnbrook, PA (Reference station)	40°08’54"	78°49’03"	32.1
03044000	810	Conemaugh River at Tunnelton, PA	40°27’16"	79°23’28"	1,358
03049652	801	Allegheny River at Hulton Bridge at Oakmont, PA	40°31’39"	79°50’51"	11,577
03063000	725	Monongahela River at Lock and Dam 8 at Point Marion, PA	39°43’37"	79°54’42"	2,720
03071700	727	Cheat River at Point Marion, PA	39°44’31"	79°53’59"	1,422
[a]03072000	714	Dunkard Creek at Shannopin, PA	39°45’33"	79°58’15"	229
[a]03075070	702	Monongahela River at Elizabeth, PA	40°15’44"	79°54’05"	5,340
03077500	709	Youghiogheny River at Youghiogheny River Dam, PA	39°48’19"	79°21’52"	436
03078020	726	Casselman River near Salisbury, PA	39°43’56"	79°06’03"	70.8
[a]03083500	706	Youghiogheny River at Sutersville, PA	40°14’24"	79°48’24"	1,715
[a]03085000	701	Monongahela River at Braddock, PA	40°23’28"	79°51’30"	7,337
[a]03086000	901	Ohio River at Sewickley, PA	40°32’57"	80°12’21"	19,500
03099600	915	Mahoning River at North Edinburg, PA	41°01’06"	80°26’27"	1,099
[a]03101500	911	Shenango River at Pymatuning Dam, PA	41°29’53"	80°27’37"	167
[a]03102500	913	Little Shenango River at Greenville, PA	41°25’19"	80°22’35"	104
03103500	910	Shenango River at Sharpsville, PA	41°15’58"	80°28’22"	584

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

TABLE 1.--List of stream sites sampled as part of the Pennsylvania Water-Quality Network (WQN)--continued.

Station number	WQN No.	Location	Latitude	Longitude	Drainage area (mi^2)
03104500	909	Shenango River at New Castle, PA	41°00’00"	80°21’21"	792
[a]03105500	906	Beaver River at Wampum, PA (Biological only)	40°53’19"	80°20’14"	2,235
03105810	917	Connoquenessing Creek at Renfrew, PA	40°48’21"	79°57’55"	137
[a]03106000	907	Connoquenessing Creek near Zelienople, PA	40°49’01"	80°14’33"	356
[a]03106500	922	Slippery Rock Creek at Wurtemburg, PA	40°53’02"	80°14’02"	398
[a]03107500	905	Beaver River at Beaver Falls, PA	40°45’48"	80°18’55"	3,106
[a]03108000	903	Raccoon Creek at Moffatts Mill, PA	40°37’40"	80°20’16"	178
03109670	901	Ohio River at mile 44.5 at Newell, WV	40°37’10"	80°35’24"	22,784
04212945	643	Conneaut Creek near Cherry Hill, PA	41°55’04"	80°28’09"	149
04213273	641	Twelvemile Creek near Moorheadville, PA (Reference station)	42°12’15"	79°54’46"	12.5

[a]Other data for this station can be found in the continuous station records section of this report.

TABLE 2.--List of lakes sampled as part of the Pennsylvania Water-Quality Network.

Station number	WQN No.	Location	Latitude	Longitude	Drainage area (mi^2)
03021545	L811	Union City Reservoir near Union City, PA	41°54’54"	79°48’55"	2.15
03023012	L810W	Tamarack Lake West near Meadville, PA	41°36’45"	80°07’02"	2.11
03023373	L810E	Tamarack Lake East near Meadville, PA	41°34’47"	80°04’39"	2.11
03024228	L809	Sugar Lake near Bradleytown, PA	41°33’59"	79°56’36"	21.8

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

REMARKS.--Some values for "*dissolved*" parameters exceed values for the corresponding "*total*" parameter. These results are within the limits of analytical precision and methods.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

MISCELLANEOUS STATION ANALYSES

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Pressure, osmotic water, unfltrd mosm/kg (82550)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unf lab, µS/cm 25 degC (90095)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
03010956 Tunungwant Creek at Bradford, PA (LAT 41 57 44N LONG 078 37 30W)													
OCT 2003													
28...	0900	1028	9813	260	--	12.1	7.4	7.4	146	151	6.6	39	--
DEC													
23...	0815	1028	9813	291	--	12.5	7.2	7.3	244	231	3.4	53	--
APR 2004													
15...	1115	1028	9813	584	--	12.7	7.2	7.0	117	117	5.5	31	--
JUN													
10...	1015	1028	9813	100	--	10.4	7.7	7.2	241	243	18.1	56	--
AUG													
12...	0845	1028	9813	211	--	10.0	7.4	7.4	160	156	15.0	43	--
03012600 Allegheny River at Warren, PA (LAT 41 49 28N LONG 079 07 09W)													
OCT 2003													
27...	1030	1028	9813	6950	--	10.9	7.4	6.9	115	110	12.2	40	--
DEC													
22...	1115	1028	9813	7140	--	13.7	7.2	7.3	102	105	3.0	31	--
FEB 2004													
12...	1100	1028	9813	2210	--	15.0	7.6	7.0	110	108	1.6	35	--
APR													
14...	1400	1028	9813	6270	--	13.1	7.5	6.7	101	99	6.2	30	--
JUN													
10...	0745	1028	9813	2180	--	9.7	7.3	6.9	100	100	16.9	29	--
AUG													
11...	0800	1028	9813	3190	--	9.4	7.5	6.9	119	117	19.5	38	--
03017500 Tionesta Creek at Lynch, PA (LAT 41 36 07N LONG 079 03 01W)													
OCT 2003													
28...	1315	1028	9813	454	--	12.2	7.2	7.0	60	61	7.4	17	4.5
DEC													
30...	1145	1028	9813	1000	--	12.2	6.7	6.9	60	59	3.7	15	3.8
APR 2004													
12...	1315	1028	9813	340	--	12.5	7.1	6.9	57	58	6.0	17	4.2
JUN													
09...	1330	1028	9813	194	--	10.5	8.1	6.9	63	63	21.0	18	4.5
AUG													
09...	1330	1028	9813	239	--	11.2	7.8	7.4	60	53	17.1	17	4.4
03017800 Minister Creek at Trumans, PA (LAT 41 37 16N LONG 079 09 11W)													
OCT 2003													
28...	1200	1028	9813	21	4.0	11.7	7.3	6.5	32	32	6.8	10	2.2
NOV													
20...	1415	1028	9813	91	3.0	11.0	5.7	5.8	29	29	8.1	9	--
DEC													
29...	1345	1028	9813	29	<1.0	11.5	5.9	6.4	31	32	3.6	9	2.0
MAR 2004													
22...	1100	1028	9813	41	4.0	13.7	7.4	6.1	30	31	1.4	9	2.1
APR													
14...	1030	1028	9813	67	4.0	12.2	5.5	5.7	28	26	4.8	8	1.9
MAY													
12...	1130	1028	9813	42	3.0	10.4	6.1	6.3	30	29	13.3	9	2.0
JUN													
09...	1145	1028	9813	16	2.0	10.1	6.8	6.3	30	30	14.3	9	2.0
JUL													
15...	1100	1028	9813	19	<1.0	9.3	6.0	6.0	31	30	15.3	9	2.1
AUG													
10...	0900	1028	9813	12	<1.0	10.2	6.4	6.5	33	28	13.2	10	2.3
SEP													
30...	0930	1028	9813	15	<1.0	10.6	6.3	6.4	31	28	11.8	10	2.2

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

MISCELLANEOUS STATION ANALYSES

Date	Calcium water unfltrd recover -able, mg/L (00916)	Magnes- ium, water, fltrd, mg/L (00925)	Magnes- ium, water, unfltrd recover -able, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Acidity water, unfltrd heated, mg/L as CaCO3 (70508)	Chlor- ide, water, fltrd, mg/L (00940)	Fluor- ide, water, unfltrd mg/L (00951)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, sus- pended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)
03010956 Tunungwant Creek at Bradford, PA (LAT 41 57 44N LONG 078 37 30W)													
OCT 2003 28...	11.3	--	2.7	29	--	--	<.2	8.4	110	4	.040	.12	<.040
DEC 23...	15.8	--	3.3	28	--	--	<.2	9.7	152	<2	.020	.30	<.040
APR 2004 15...	8.8	--	2.1	18	--	--	<.2	8.7	96	18	<.020	.36	<.040
JUN 10...	16.5	--	3.5	41	--	--	<.2	8.1	152	2	<.020	.21	<.040
AUG 12...	12.5	--	2.8	32	--	--	<.2	7.5	86	10	<.020	.21	<.040
03012600 Allegheny River at Warren, PA (LAT 41 49 28N LONG 079 07 09W)													
OCT 2003 27...	11.8	--	2.6	30	--	--	--	8.1	84	2	.060	.26	<.040
DEC 22...	9.0	--	2.1	24	--	--	--	8.7	90	<2	<.020	.40	<.040
FEB 2004 12...	10.6	--	2.2	25	--	--	--	8.8	68	<2	<.020	.48	<.040
APR 14...	8.7	--	2.0	21	--	--	--	8.6	38	4	<.020	.53	<.040
JUN 10...	8.7	--	1.8	24	--	--	--	8.0	56	8	<.020	.38	<.040
AUG 11...	11.3	--	2.3	34	--	--	--	7.7	294	<2	.020	.32	<.040
03017500 Tionesta Creek at Lynch, PA (LAT 41 36 07N LONG 079 03 01W)													
OCT 2003 28...	4.4	1.6	1.5	11	.00	--	--	7.9	46	2	.030	.13	<.040
DEC 30...	3.9	1.3	1.4	8	.00	--	--	8.0	112	<2	<.020	.39	<.040
APR 2004 12...	4.2	1.5	1.5	11	21	--	--	8.1	34	2	<.020	.36	<.040
JUN 09...	4.8	1.5	1.6	14	23	--	--	7.6	56	<2	<.020	.26	<.040
AUG 09...	4.4	1.5	1.6	14	29	--	--	7.0	66	2	.020	.26	<.040
03017800 Minister Creek at Trumans, PA (LAT 41 37 16N LONG 079 09 11W)													
OCT 2003 28...	2.3	1.0	1.0	5	.00	1.2	<.2	7.0	28	<2	.020	.10	<.040
NOV 20...	2.0	--	.90	2	--	.91	<.2	7.8	22	10	<.020	.22	<.040
DEC 29...	1.9	.95	.91	3	11	.88	<.2	7.7	36	<2	<.020	.24	<.040
MAR 2004 22...	2.1	.95	.97	3	14	.97	<.2	7.7	34	<2	<.020	.30	<.040
APR 14...	1.9	.82	.83	2	9.8	.77	<.2	7.3	20	6	<.020	.20	<.040
MAY 12...	2.2	.90	.96	3	19	.82	<.2	7.6	14	<2	<.020	.18	<.040
JUN 09...	2.1	.90	.95	4	6.0	.88	<.2	8.2	20	<2	<.020	.25	<.040
JUL 15...	2.1	.88	.90	9	25	1.2	<.2	6.5	56	<2	<.020	.13	<.040
AUG 10...	2.4	1.0	1.0	10	10	1.1	<.2	6.4	38	2	<.020	.27	<.040
SEP 30...	2.2	1.0	1.0	4	18	.88	<.2	6.5	12	<2	<.020	.25	<.040

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

MISCELLANEOUS STATION ANALYSES

Date	Ortho-phos-phate, water, unfltrd mg/L as P (70507)	Phos-phorus, water, unfltrd mg/L (00665)	Total nitro-gen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Fecal coli-form, M-FC 0.45µMF col/ 100 mL (31616)	Alum-inum, water, fltrd, µg/L (01106)	Alum-inum, water, unfltrd recover -able, µg/L (01105)	Arsenic water, fltrd, µg/L (01000)	Cadmium water, fltrd, µg/L (01025)	Copper, water, fltrd, µg/L (01040)	Copper, water, unfltrd recover -able, µg/L (01042)	Cyanide amen-able to chlor-ination wat unf mg/L (00722)
03010956 Tunungwant Creek at Bradford, PA (LAT 41 57 44N LONG 078 37 30W)													
OCT 2003 28...	.01	.019	.30	2.9	--	--	--	<200	--	--	--	<10	<1.00
DEC 23...	.02	<.010	.52	1.9	--	--	--	320	--	--	--	<10	<1.00
APR 2004 15...	.02	.018	.30	1.6	--	--	--	340	--	--	--	<10	<1.00
JUN 10...	.02	.012	.27	2.2	--	--	--	<200	--	--	--	<10	<1.00
AUG 12...	.01	.017	.79	2.5	--	--	--	370	--	--	--	<10	<1.00
03012600 Allegheny River at Warren, PA (LAT 41 49 28N LONG 079 07 09W)													
OCT 2003 27...	.02	.018	.54	2.4	--	--	--	200	--	--	--	<10	--
DEC 22...	.02	.019	.37	2.0	--	--	--	<200	--	--	--	<10	--
FEB 2004 12...	.01	.012	.59	1.6	--	--	--	<200	--	--	--	<10	--
APR 14...	.02	.029	1.1	1.7	--	--	--	220	--	--	--	<10	--
JUN 10...	.01	.013	.59	2.3	--	--	--	<200	--	--	--	<10	--
AUG 11...	<.01	.012	.81	2.6	--	--	--	<200	--	--	--	<10	--
03017500 Tionesta Creek at Lynch, PA (LAT 41 36 07N LONG 079 03 01W)													
OCT 2003 28...	<.01	.011	.32	--	1.3	--	40	100	--	--	<4	<4	--
DEC 30...	.03	.027	.61	--	.5	--	60	400	--	--	<4	<4	--
APR 2004 12...	<.01	<.010	.45	--	1.0	--	20	80	--	--	<4	<4	--
JUN 09...	<.01	<.010	.21	--	.4	--	40	90	--	--	<4	<4	--
AUG 09...	<.01	<.010	.32	--	1.4	--	20	70	--	--	<4	<4	--
03017800 Minister Creek at Trumans, PA (LAT 41 37 16N LONG 079 09 11W)													
OCT 2003 28...	<.01	<.010	.18	--	.8	<10	45	70	<4.0	<.20	<4	<4	--
NOV 20...	.01	.026	.39	--	1.3	60	190	270	<4.0	.24	<4	<4	--
DEC 29...	<.01	.013	.36	--	.4	<20	60	90	<4.0	<.20	<4	<4	--
MAR 2004 22...	<.01	<.010	.39	--	1.3	<20	90	140	<4.0	<.20	<4	<4	--
APR 14...	<.01	.011	.79	--	.5	<20	30	250	<4.0	<.20	<4	<4	--
MAY 12...	<.01	<.010	.68	--	.6	<20	70	140	<4.0	<.20	<4	<4	--
JUN 09...	<.01	<.010	.28	--	<.2	10	40	110	<4.0	<.20	<4	<4	--
JUL 15...	<.01	.031	.35	--	1.3	220	60	250	<4.0	<.20	<4	<4	--
AUG 10...	<.01	<.010	.29	--	1.1	20	20	60	<4.0	<.20	<4	<4	--
SEP 30...	<.01	<.010	.30	--	1.6	<10	30	60	<4.0	<.20	<4	<4	--

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

MISCELLANEOUS STATION ANALYSES

Date	Iron, water, fltrd, µg/L (01046)	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, fltrd, µg/L (01049)	Lead, water, unfltrd recover -able, µg/L (01051)	Mangan- ese, water, fltrd, µg/L (01056)	Mangan- ese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, fltrd, µg/L (01065)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, fltrd, µg/L (01090)	Zinc, water, unfltrd recover -able, µg/L (01092)	Phen- olic com- pounds, water, unfltrd µg/L (32730)
03010956 Tunungwant Creek at Bradford, PA (LAT 41 57 44N LONG 078 37 30W)											
OCT 2003 28...	--	560	--	<1.0	--	100	--	<50	--	50	<5
DEC 23...	--	610	--	<1.0	--	130	--	<50	--	10	<5
APR 2004 15...	--	510	--	<1.0	--	70	--	<50	--	<10	<5
JUN 10...	--	450	--	<1.0	--	90	--	<50	--	40	<5
AUG 12...	--	620	--	<1.0	--	90	--	<50	--	30	<5
03012600 Allegheny River at Warren, PA (LAT 41 49 28N LONG 079 07 09W)											
OCT 2003 27...	--	380	--	<1.0	--	120	--	<50	--	30	--
DEC 22...	--	310	--	<1.0	--	40	--	<50	--	<10	--
FEB 2004 12...	--	200	--	<1.0	--	60	--	<50	--	<10	--
APR 14...	--	300	--	<1.0	--	30	--	<50	--	10	--
JUN 10...	--	180	--	<1.0	--	30	--	<50	--	20	--
AUG 11...	--	150	--	<1.0	--	50	--	<50	--	<10	--
03017500 Tionesta Creek at Lynch, PA (LAT 41 36 07N LONG 079 03 01W)											
OCT 2003 28...	170	500	<1.0	<1.0	25	53	<4.0	<4.0	<5.0	<5.0	--
DEC 30...	100	880	<1.0	1.0	40	69	<4.0	<4.0	5.7	10	--
APR 2004 12...	60	240	<1.0	<1.0	34	42	<4.0	<4.0	<5.0	<5.0	--
JUN 09...	140	330	<1.0	<1.0	19	24	<4.0	<4.0	5.8	<5.0	--
AUG 09...	120	380	<1.0	<1.0	24	29	<4.0	<4.0	<5.0	<5.0	--
03017800 Minister Creek at Trumans, PA (LAT 41 37 16N LONG 079 09 11W)											
OCT 2003 28...	80	90	<1.0	<1.0	10	17	<4.0	<4.0	7.5	8.7	<5
NOV 20...	110	370	<1.0	<1.0	100	130	<4.0	<4.0	24	24	<5
DEC 29...	20	70	<1.0	<1.0	30	31	<4.0	<4.0	12	13	<5
MAR 2004 22...	20	60	<1.0	<1.0	40	43	<4.0	<4.0	14	16	<5
APR 14...	50	220	<1.0	<1.0	20	68	<4.0	<4.0	<5.0	19	<5
MAY 12...	30	200	<1.0	<1.0	40	52	<4.0	<4.0	12	17	<5
JUN 09...	30	120	<1.0	<1.0	20	24	<4.0	<4.0	8.9	10	<5
JUL 15...	100	430	<1.0	<1.0	20	44	<4.0	<4.0	6.2	11	<5
AUG 10...	20	130	<1.0	<1.0	10	18	<4.0	<4.0	7.8	7.7	<5
SEP 30...	40	80	<1.0	<1.0	10	19	<4.0	<4.0	6.8	7.7	<5

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

MISCELLANEOUS STATION ANALYSES

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Pressure, osmotic water, unfltrd mosm/kg (82550)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unf lab, µS/cm 25 degC (90095)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
03020449 West Branch Caldwell Creek near Grand Valley, PA (LAT 41 41 40N LONG 079 34 16W)													
OCT 2003													
29...	0815	1028	9813	37	3.0	11.0	7.0	6.4	66	68	7.7	20	--
NOV													
20...	1145	1028	9813	90	<1.0	11.2	7.0	7.0	54	55	7.2	17	--
DEC													
29...	1115	1028	9813	47	<1.0	11.5	6.7	7.1	65	64	2.0	20	--
MAR 2004													
22...	1445	1028	9813	102	6.0	14.0	6.8	6.9	57	60	1.6	17	--
APR													
13...	1100	1028	9813	55	5.0	12.2	7.1	7.0	65	66	5.1	21	--
MAY													
12...	1515	1028	9813	66	4.0	9.7	6.8	6.9	60	58	16.5	18	--
JUN													
08...	1100	1028	9813	14	2.0	10.3	7.5	6.8	80	77	14.8	25	--
JUL													
15...	1430	1028	9813	104	1.0	9.1	6.7	6.4	84	81	16.1	25	--
AUG													
10...	1400	1028	9813	24	<1.0	10.6	7.4	7.3	83	68	15.7	28	--
SEP													
29...	1300	1028	9813	14	<1.0	10.2	7.3	7.1	79	68	13.8	26	--
03022000 French Creek at Venango, PA (LAT 41 46 35N LONG 080 06 30W)													
OCT 2003													
22...	0840	1028	9813	1360	8.0	10.5	7.4	7.8	219	215	10.0	88	--
NOV													
19...	1250	1028	9813	1460	6.0	11.3	7.0	7.8	204	211	8.0	89	--
DEC													
16...	0815	1028	9813	1700	<1.0	13.5	7.2	7.4	174	181	.7	71	--
FEB 2004													
24...	0830	1028	9813	1920	7.0	13.5	7.4	7.2	281	278	.1	77	--
MAR													
10...	0905	1028	9813	2990	5.0	13.8	7.1	7.5	150	169	3.0	55	--
APR													
14...	0845	1028	9813	3720	2.0	11.4	7.6	7.7	178	182	5.5	72	--
MAY													
06...	0830	1028	9813	1320	6.0	10.2	7.8	7.9	213	204	11.5	88	--
JUN													
16...	0800	1028	9813	629	4.0	7.9	7.6	7.7	227	225	21.0	95	--
JUL													
28...	0815	1028	9813	1280	3.0	8.1	7.5	7.7	226	216	19.5	96	--
AUG													
18...	0825	1028	9813	285	3.0	8.1	8.0	7.9	291	292	19.5	130	--
SEP													
29...	0915	1028	9813	859	3.0	8.5	7.6	7.8	228	218	17.0	98	--

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

MISCELLANEOUS STATION ANALYSES

Date	Calcium water unfltrd recover -able, mg/L (00916)	Magnes- ium, water, fltrd, mg/L (00925)	Magnes- ium, water, unfltrd recover -able, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Acidity water, unfltrd heated, mg/L as CaCO3 (70508)	Chlor- ide, water, fltrd, mg/L (00940)	Fluor- ide, water, unfltrd mg/L (00951)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, sus- pended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)
03020449 West Branch Caldwell Creek near Grand Valley, PA (LAT 41 41 40N LONG 079 34 16W)													
OCT 2003													
29...	5.4	--	1.6	13	--	4.6	<.2	8.1	34	24	<.020	.22	<.040
NOV													
20...	4.5	--	1.4	9	--	3.8	<.2	8.5	62	<2	<.020	.34	<.040
DEC													
29...	5.2	--	1.7	12	--	4.3	<.2	8.8	66	<2	<.020	.60	<.040
MAR 2004													
22...	4.5	--	1.4	10	--	4.1	<.2	8.4	56	14	<.020	.63	<.040
APR													
13...	5.5	--	1.7	13	--	4.6	<.2	7.6	42	8	<.020	.45	<.040
MAY													
12...	5.0	--	1.5	13	--	3.2	<.2	8.0	52	96	<.020	.31	<.040
JUN													
08...	6.7	--	2.0	23	--	4.6	<.2	7.9	68	<2	.020	.44	<.040
JUL													
15...	7.1	--	1.8	20	--	10.3	<.2	6.2	86	30	<.020	.25	<.040
AUG													
10...	7.6	--	2.1	24	--	5.0	<.2	6.8	74	8	<.020	.43	<.040
SEP													
29...	7.1	--	2.1	22	--	4.5	<.2	7.5	58	<2	.060	.36	<.040
03022000 French Creek at Venango, PA (LAT 41 46 35N LONG 080 06 30W)													
OCT 2003													
22...	26.8	--	5.1	78	--	13.0	<.2	9.6	144	<2	<.020	.59	<.040
NOV													
19...	26.9	--	5.2	72	--	13.4	<.2	10.5	164	<2	<.020	.60	<.040
DEC													
16...	21.3	--	4.4	58	--	11.4	<.2	9.9	130	4	<.020	.80	<.040
FEB 2004													
24...	23.1	--	4.7	58	--	41.0	<.2	10.1	160	22	.130	1.19	<.040
MAR													
10...	16.9	--	3.1	41	--	13.4	<.2	8.4	126	8	.040	.94	<.040
APR													
14...	22.2	--	4.1	54	--	14.2	<.2	8.9	98	54	.030	.66	<.040
MAY													
06...	27.6	--	4.7	71	--	13.6	<.2	8.7	128	12	<.020	.51	<.040
JUN													
16...	29.3	--	5.3	81	--	12.1	<.2	9.3	150	34	.030	.69	<.040
JUL													
28...	29.0	--	5.7	82	--	12.4	<.2	8.8	158	26	.070	.48	<.040
AUG													
18...	39.3	--	7.0	107	--	17.0	<.2	10.5	156	<2	<.020	.60	<.040
SEP													
29...	30.0	--	5.5	87	--	12.0	<.2	8.8	158	2	<.020	.66	<.040

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

MISCELLANEOUS STATION ANALYSES

Date	Ortho-phos-phate, water, unfltrd mg/L as P (70507)	Phos-phorus, water, unfltrd mg/L (00665)	Total nitro-gen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Fecal coli-form, M-FC 0.45µMF col/ 100 mL (31616)	Alum-inum, water, fltrd, µg/L (01106)	Alum-inum, water, unfltrd recover -able, µg/L (01105)	Arsenic water, fltrd, µg/L (01000)	Cadmium water, fltrd, µg/L (01025)	Copper, water, fltrd, µg/L (01040)	Copper, water, unfltrd recover -able, µg/L (01042)	Cyanide amen-able to chlor-ination wat unf mg/L (00722)
03020449 West Branch Caldwell Creek near Grand Valley, PA (LAT 41 41 40N LONG 079 34 16W)													
OCT 2003													
29...	.01	.012	.39	--	1.4	40	30	90	<4.0	<.20	<4	<4	--
NOV													
20...	.02	.021	.71	--	1.6	200	70	290	<4.0	<.20	<4	<4	--
DEC													
29...	.01	.012	.74	--	.4	160	30	80	<4.0	<.20	<4	<4	--
MAR 2004													
22...	.02	.012	.74	--	1.2	10	40	160	<4.0	<.20	<4	<4	--
APR													
13...	.02	.018	.84	--	1.8	260	50	300	<4.0	<.20	<4	<4	--
MAY													
12...	.01	.018	.30	--	1.1	25	20	190	<4.0	<.20	<4	<4	--
JUN													
08...	<.01	.012	.61	--	.6	20	<10	90	<4.0	<.20	<4	<4	--
JUL													
15...	.03	.049	.50	--	1.6	3700	40	760	<4.0	<.20	<4	<4	--
AUG													
10...	.02	.020	.54	--	1.5	100	20	220	<4.0	<.20	<4	<4	--
SEP													
29...	.01	.015	.52	--	1.9	80	<10	60	<4.0	<.20	<4	<4	--
03022000 French Creek at Venango, PA (LAT 41 46 35N LONG 080 06 30W)													
OCT 2003													
22...	.02	.029	.96	--	1.5	620	20	210	<4.0	<.20	<4	<4	--
NOV													
19...	.02	.034	1.0	--	.6	340	10	210	<4.0	<.20	<4	<4	--
DEC													
16...	.03	.033	.99	--	1.8	380	10	280	<4.0	<.20	<4	<4	--
FEB 2004													
24...	.03	.039	1.7	--	1.8	140	20	790	<4.0	<.20	<4	<4	--
MAR													
10...	.05	.048	1.2	--	2.1	80	200	750	<4.0	<.20	<4	<4	--
APR													
14...	.01	.059	.99	--	.8	560	170	1000	<4.0	<.20	<4	<4	--
MAY													
06...	.02	.027	.74	--	1.5	120	60	200	<4.0	<.20	<4	<4	--
JUN													
16...	.04	.055	1.3	--	.7	550	20	670	<4.0	<.20	<4	<4	--
JUL													
28...	.02	.053	.98	--	1.8	400	10	340	<4.0	<.20	<4	<4	--
AUG													
18...	.01	.020	.80	--	1.2	100	40	90	<4.0	<.20	<4	<4	--
SEP													
29...	.02	.031	1.1	--	1.4	100	10	160	<4.0	<.20	<4	<4	--

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

MISCELLANEOUS STATION ANALYSES

Date	Iron, water, fltrd, µg/L (01046)	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, fltrd, µg/L (01049)	Lead, water, unfltrd recover -able, µg/L (01051)	Mangan- ese, water, fltrd, µg/L (01056)	Mangan- ese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, fltrd, µg/L (01065)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, fltrd, µg/L (01090)	Zinc, water, unfltrd recover -able, µg/L (01092)	Phen- olic com- pounds, water, unfltrd µg/L (32730)
03020449 West Branch Caldwell Creek near Grand Valley, PA (LAT 41 41 40N LONG 079 34 16W)											
OCT 2003											
29...	170	310	<1.0	<1.0	16	25	<4.0	<4.0	<5.0	<5.0	<5
NOV											
20...	--	--	<1.0	<1.0	24	41	<4.0	<4.0	<5.0	<5.0	<5
DEC											
29...	90	190	<1.0	<1.0	16	21	<4.0	<4.0	<5.0	<5.0	<5
MAR 2004											
22...	60	270	<1.0	<1.0	16	22	<4.0	<4.0	<5.0	<5.0	<5
APR											
13...	120	570	<1.0	<1.0	16	26	<4.0	<4.0	<5.0	<5.0	<5
MAY											
12...	100	960	<1.0	<1.0	17	33	<4.0	<4.0	<5.0	<5.0	<5
JUN											
08...	80	420	<1.0	<1.0	8.8	15	<4.0	<4.0	<5.0	<5.0	<5
JUL											
15...	270	2130	<1.0	1.4	17	97	<4.0	<4.0	<5.0	7.7	<5
AUG											
10...	120	890	<1.0	<1.0	18	29	<4.0	<4.0	<5.0	<5.0	<5
SEP											
29...	60	410	<1.0	<1.0	12	16	<4.0	<4.0	<5.0	<5.0	<5
03022000 French Creek at Venango, PA (LAT 41 46 35N LONG 080 06 30W)											
OCT 2003											
22...	140	630	<1.0	<1.0	35	58	<4.0	<4.0	<5.0	<5.0	<5
NOV											
19...	170	760	<1.0	<1.0	27	50	<4.0	<4.0	<5.0	<5.0	<5
DEC											
16...	120	750	<1.0	<1.0	25	44	<4.0	<4.0	<5.0	<5.0	<5
FEB 2004											
24...	150	1240	<1.0	1.4	55	100	<4.0	<4.0	<5.0	<5.0	<5
MAR											
10...	360	1400	<1.0	1.3	28	65	<4.0	<4.0	<5.0	8.2	<5
APR											
14...	130	1580	<1.0	1.1	63	66	<4.0	<4.0	<5.0	5.5	<5
MAY											
06...	210	670	<1.0	<1.0	39	56	<4.0	<4.0	<5.0	<5.0	<5
JUN											
16...	250	1280	<1.0	84	29	98	<4.0	<4.0	<5.0	<5.0	<5
JUL											
28...	70	1020	<1.0	<1.0	9.4	78	<4.0	<4.0	<5.0	<5.0	<5
AUG											
18...	120	320	<1.0	<1.0	32	53	<4.0	<4.0	<5.0	<5.0	<5
SEP											
29...	50	560	<1.0	<1.0	29	64	<4.0	<4.0	<5.0	<5.0	<5

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

MISCELLANEOUS STATION ANALYSES

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Pressure, osmotic water, unfltrd mosm/kg (82550)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unf lab, µS/cm 25 degC (90095)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
03025490 French Creek at Franklin, PA (LAT 41 24 06N LONG 079 49 54W)													
OCT 2003													
14...	1415	1028	9813	1340	--	11.5	8.2	8.0	231	233	12.5	96	--
DEC													
17...	1000	1028	9813	4380	--	13.0	7.1	7.8	173	178	2.0	64	--
FEB 2004													
25...	0915	1028	9813	3560	--	13.8	7.5	7.5	258	263	.3	80	--
APR													
15...	0900	1028	9813	6130	--	11.1	7.5	7.6	167	169	7.0	63	--
JUN													
16...	0900	1028	9813	1820	6.0	9.5	8.1	8.1	--	387	18.5	140	--
AUG													
19...	0830	1028	9813	630	--	7.6	7.9	7.7	270	266	20.5	110	--
03030852 Clarion River at Callensburg, PA (LAT 41 07 47N LONG 079 33 16W)													
OCT 2003													
15...	0830	1028	9813	1010	--	10.4	7.5	6.4	301	307	11.0	110	--
DEC													
18...	0905	1028	9813	3530	--	13.6	6.3	6.6	179	182	1.5	57	--
FEB 2004													
26...	0815	1028	9813	2160	--	13.3	5.7	6.6	289	274	.0	83	--
APR													
21...	1430	1028	9813	3340	--	10.6	6.7	6.5	168	170	14.0	50	--
JUN													
22...	1415	1028	9813	980	--	9.5	7.0	6.5	237	242	20.0	86	--
AUG													
23...	1445	1028	9813	3620	--	8.2	6.3	6.6	186	185	19.0	56	--
03031505 Silver Creek at Walley Mill near North Washington, PA (LAT 41 02 39N LONG 079 46 36W)													
OCT 2003													
15...	1300	1028	9813	27	4.0	10.6	6.9	6.8	125	124	11.0	40	--
NOV													
20...	1200	1028	9813	130	<1.0	10.0	6.4	6.8	104	137	8.5	35	--
DEC													
18...	1055	1028	9813	19	1.0	13.6	6.9	7.2	137	138	2.5	38	--
FEB 2004													
25...	1300	1028	9813	11	7.0	13.1	6.7	7.1	152	154	3.0	40	--
MAR													
09...	1015	1028	9813	13	6.0	13.7	6.4	7.2	127	138	3.0	38	--
APR													
21...	0920	1028	9813	8.7	6.0	11.2	7.1	7.2	124	126	10.5	39	--
MAY													
05...	0950	1028	9813	6.3	5.0	10.3	7.3	7.0	129	126	9.0	40	--
JUN													
22...	0945	1028	9813	7.6	3.0	10.0	7.3	6.8	148	147	14.5	47	--
JUL													
27...	1000	1028	9813	15	1.0	8.8	7.0	6.8	150	142	16.0	46	--
AUG													
23...	1000	1028	9813	16	<1.0	10.2	6.6	6.8	123	125	13.0	39	--
SEP													
27...	0915	1028	9813	5.4	1.0	10.4	7.0	6.8	171	183	12.0	68	--

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

MISCELLANEOUS STATION ANALYSES

Date	Calcium water unfltrd recover -able, mg/L (00916)	Magnes- ium, water, fltrd, mg/L (00925)	Magnes- ium, water, unfltrd recover -able, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Acidity water, unfltrd heated, mg/L as CaCO3 (70508)	Chlor- ide, water, fltrd, mg/L (00940)	Fluor- ide, water, unfltrd mg/L (00951)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, sus- pended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)
03025490 French Creek at Franklin, PA (LAT 41 24 06N LONG 079 49 54W)													
OCT 2003													
14...	29.0	--	5.7	79	--	--	--	11.3	156	<2	<.020	.55	<.040
DEC													
17...	18.7	--	4.2	48	--	--	--	11.6	132	6	.030	.77	<.040
FEB 2004													
25...	24.8	--	4.3	53	--	--	--	11.6	160	10	.100	1.99	<.040
APR													
15...	18.8	--	3.8	48	--	--	--	9.6	122	24	<.020	.58	<.040
JUN													
16...	42.0	--	8.1	82	--	42.6	<.2	38.1	292	<2	.020	2.81	<.040
AUG													
19...	33.2	--	6.0	92	--	--	--	11.4	164	4	<.020	.36	<.040
03030852 Clarion River at Callensburg, PA (LAT 41 07 47N LONG 079 33 16W)													
OCT 2003													
15...	23.8	--	11.7	8	--	--	--	111	244	32	.030	.48	<.040
DEC													
18...	13.2	--	5.9	5	--	--	--	59.1	414	4	.050	.44	<.040
FEB 2004													
26...	21.0	--	7.5	10	--	--	--	88.2	210	18	.130	.49	<.040
APR													
21...	12.3	--	4.8	6	--	--	--	54.3	126	8	.020	.33	<.040
JUN													
22...	19.8	--	8.8	7	--	--	<.2	83.5	178	<2	.040	.49	<.040
AUG													
23...	13.9	--	5.0	12	--	--	--	52.8	158	6	.030	.33	<.040
03031505 Silver Creek at Walley Mill near North Washington, PA (LAT 41 02 39N LONG 079 46 36W)													
OCT 2003													
15...	10.4	--	3.4	18	--	9.1	<.2	18.2	120	4	<.020	1.42	<.040
NOV													
20...	8.8	--	3.1	11	--	6.9	<.2	16.8	66	62	<.020	2.03	<.040
DEC													
18...	9.5	--	3.6	13	--	13.9	<.2	21.1	92	6	<.020	1.60	<.040
FEB 2004													
25...	10.3	--	3.6	12	--	19.7	<.2	20.3	90	<2	<.020	1.62	<.040
MAR													
09...	9.6	--	3.5	11	--	13.0	<.2	20.1	82	6	<.020	1.64	<.040
APR													
21...	9.8	--	3.5	14	--	10.4	<.2	20.7	94	<2	<.020	1.16	<.040
MAY													
05...	10.0	--	3.7	14	--	10.4	<.2	20.7	118	<2	.020	.92	<.040
JUN													
22...	12.3	--	4.0	18	--	13.4	<.2	19.4	84	4	<.020	2.13	<.040
JUL													
27...	12.1	--	3.8	23	--	12.5	<.2	17.4	124	10	.020	1.96	<.040
AUG													
23...	10.0	--	3.4	16	--	10.1	<.2	16.7	98	4	<.020	1.89	<.040
SEP													
27...	17.8	--	5.7	24	--	10.4	<.2	33.1	200	12	<.020	1.12	<.040

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

MISCELLANEOUS STATION ANALYSES

Date	Ortho-phos-phate, water, unfltrd mg/L as P (70507)	Phos-phorus, water, unfltrd mg/L (00665)	Total nitro-gen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Fecal coli-form, M-FC 0.45µMF col/ 100 mL (31616)	Alum-inum, water, fltrd, µg/L (01106)	Alum-inum, water, unfltrd recover -able, µg/L (01105)	Arsenic water, fltrd, µg/L (01000)	Cadmium water, fltrd, µg/L (01025)	Copper, water, fltrd, µg/L (01040)	Copper, water, unfltrd recover -able, µg/L (01042)	Cyanide amen-able to chlor-ination wat unf mg/L (00722)
03025490 French Creek at Franklin, PA (LAT 41 24 06N LONG 079 49 54W)													
OCT 2003													
14...	.02	.028	.96	4.2	--	--	--	<200	--	--	--	<10	--
DEC													
17...	.03	.044	.82	3.4	--	--	--	440	--	--	--	<10	--
FEB 2004													
25...	.03	.034	1.7	3.2	--	--	--	540	--	--	--	<10	--
APR													
15...	.04	.054	.91	3.8	--	--	--	1400	--	--	--	<10	--
JUN													
16...	<.01	.015	3.0	--	.6	420	10	50	<4.0	<.20	<4	<4	--
AUG													
19...	<.01	.019	.59	3.5	--	--	--	<200	--	--	--	<10	--
03030852 Clarion River at Callensburg, PA (LAT 41 07 47N LONG 079 33 16W)													
OCT 2003													
15...	.03	.033	.93	3.8	--	--	--	1300	--	--	--	<10	--
DEC													
18...	<.01	.011	.40	1.5	--	--	--	550	--	--	--	<10	--
FEB 2004													
26...	.01	.011	.80	2.1	--	--	--	530	--	--	--	<10	--
APR													
21...	.01	.011	.54	1.4	--	--	--	370	--	--	--	<10	--
JUN													
22...	<.01	<.010	.63	1.8	--	--	--	<200	--	--	--	<10	--
AUG													
23...	.03	.023	.52	3.8	--	--	--	600	--	--	--	<10	--
03031505 Silver Creek at Walley Mill near North Washington, PA (LAT 41 02 39N LONG 079 46 36W)													
OCT 2003													
15...	.04	.034	2.0	--	2.0	12000	30	290	<4.0	<.20	<4	<4	--
NOV													
20...	.02	.027	2.5	--	1.6	1100	40	380	<4.0	<.20	<4	<4	--
DEC													
18...	.01	.015	1.4	--	1.1	130	10	50	<4.0	<.20	<4	<4	--
FEB 2004													
25...	<.01	.010	1.7	--	1.3	<20	<10	50	<4.0	<.20	<4	<4	--
MAR													
09...	.01	.013	1.8	--	1.6	<20	<10	<10	20	<.20	<4	5	--
APR													
21...	<.01	<.010	1.3	--	.2	<20	<10	70	<4.0	<.20	<4	<4	--
MAY													
05...	<.01	<.010	.96	--	1.4	140	<10	40	<4.0	<.20	<4	<4	--
JUN													
22...	<.01	.014	2.3	--	1.4	240	<10	110	<4.0	<.20	<4	<4	--
JUL													
27...	.01	.044	2.2	--	1.5	49000	20	280	<4.0	<.20	<4	<4	--
AUG													
23...	.01	.015	2.0	--	<.2	1200	20	190	<4.0	<.20	<4	<4	--
SEP													
27...	<.01	<.010	1.2	--	1.1	60	<10	50	<4.0	<.20	<4	<4	--

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

MISCELLANEOUS STATION ANALYSES

Date	Iron, water, fltrd, µg/L (01046)	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, fltrd, µg/L (01049)	Lead, water, unfltrd recover -able, µg/L (01051)	Mangan- ese, water, fltrd, µg/L (01056)	Mangan- ese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, fltrd, µg/L (01065)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, fltrd, µg/L (01090)	Zinc, water, unfltrd recover -able, µg/L (01092)	Phen- olic com- pounds, water, unfltrd µg/L (32730)
03025490 French Creek at Franklin, PA (LAT 41 24 06N LONG 079 49 54W)											
OCT 2003											
14...	--	370	--	<1.0	--	30	--	<50	--	<10	--
DEC											
17...	--	820	--	<1.0	--	50	--	<50	--	<10	--
FEB 2004											
25...	--	960	--	<1.0	--	70	--	<50	--	<10	--
APR											
15...	--	1750	--	2.0	--	70	--	<50	--	<10	--
JUN											
16...	50	100	<1.0	<1.0	6.6	10	<4.0	<4.0	<5.0	<5.0	<5
AUG											
19...	--	170	--	<1.0	--	<10	--	<50	--	<10	--
03030852 Clarion River at Callensburg, PA (LAT 41 07 47N LONG 079 33 16W)											
OCT 2003											
15...	--	2930	--	<1.0	--	1960	--	<50	--	150	--
DEC											
18...	--	810	--	<1.0	--	860	--	<50	--	90	--
FEB 2004											
26...	--	960	--	<1.0	--	1030	--	<50	--	40	--
APR											
21...	--	490	--	<1.0	--	580	--	<50	--	30	--
JUN											
22...	--	320	--	<1.0	--	1140	--	<50	--	30	--
AUG											
23...	--	1150	--	<1.0	--	490	--	<50	--	20	--
03031505 Silver Creek at Walley Mill near North Washington, PA (LAT 41 02 39N LONG 079 46 36W)											
OCT 2003											
15...	110	680	<1.0	<1.0	54	76	<4.0	<4.0	6.1	8.4	<5
NOV											
20...	50	1000	<1.0	<1.0	35	92	<4.0	4.4	6.6	13	<5
DEC											
18...	60	140	<1.0	<1.0	43	46	<4.0	<4.0	6.9	5.7	<5
FEB 2004											
25...	40	120	<1.0	<1.0	32	36	<4.0	<4.0	5.0	5.0	<5
MAR											
09...	60	110	<1.0	1.1	96	95	<4.0	<4.0	110	290	<5
APR											
21...	30	140	<1.0	<1.0	38	40	<4.0	<4.0	<5.0	<5.0	<5
MAY											
05...	40	110	<1.0	<1.0	46	52	<4.0	<4.0	<5.0	<5.0	<5
JUN											
22...	70	280	<1.0	<1.0	30	38	<4.0	<4.0	<5.0	<5.0	<5
JUL											
27...	100	860	<1.0	<1.0	47	83	<4.0	<4.0	5.1	7.8	<5
AUG											
23...	50	450	<1.0	<1.0	35	52	<4.0	<4.0	<5.0	<5.0	14
SEP											
27...	30	120	<1.0	<1.0	30	37	<4.0	<4.0	<5.0	<5.0	<5

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

MISCELLANEOUS STATION ANALYSES

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Pressure, osmotic water, unfltrd mosm/kg (82550)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unf lab, µS/cm 25 degC (90095)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
03039815 Clear Shade Creek above confluence near Cairnbrook, PA (LAT 40 08 54N LONG 078 49 03W)													
OCT 2003													
08...	1145	1028	9813	56	2.0	11.2	6.9	6.3	42	41	9.5	12	3.5
DEC													
10...	1145	1028	9813	47	<1.0	12.0	6.6	6.5	43	42	3.5	13	3.8
MAR 2004													
08...	1145	1028	9813	450	2.0	14.5	5.2	5.8	37	38	3.0	10	2.9
APR													
08...	1145	1028	9813	148	5.0	11.5	6.0	6.3	38	38	5.5	11	--
MAY													
26...	1100	1028	9813	107	1.0	10.2	6.8	6.7	42	39	14.5	12	--
JUN													
10...	1050	1028	9813	24	2.0	8.9	7.0	6.4	47	48	18.5	14	4.3
JUL													
12...	1045	1028	9813	17	2.0	8.4	7.0	6.7	52	51	20.0	17	5.1
AUG													
31...	0800	1028	9813	24	<1.0	8.6	7.0	6.8	56	57	18.5	18	5.5
SEP													
23...	1100	1028	9813	106	<1.0	10.2	5.3	6.3	38	40	12.0	12	3.5
03044000 Conemaugh River at Tunnelton, PA (LAT 40 27 16N LONG 079 23 28W)													
OCT 2003													
16...	1315	1028	9813	2900	--	9.9	6.8	6.6	438	424	12.5	150	--
DEC													
23...	0840	1028	9813	2100	--	13.6	6.1	6.7	425	447	3.0	150	--
FEB 2004													
23...	0855	1028	9813	4070	--	12.4	7.3	7.0	447	446	1.7	130	--
APR													
22...	1320	1028	9813	8150	--	9.9	6.9	6.6	319	322	14.5	110	--
JUN													
28...	1113	1028	9813	1120	--	8.5	7.3	6.6	492	496	21.0	180	--
AUG													
12...	1345	1028	9813	1410	--	8.5	7.0	6.5	444	453	22.0	150	--
03049652 Allegheny River at Hulton Bridge at Oakmont, PA (LAT 40 31 39N LONG 079 50 51W)													
OCT 2003													
09...	1315	1028	9813	15200	--	11.4	7.2	7.7	228	232	14.0	84	--
DEC													
04...	1045	1028	9813	33700	--	11.3	7.2	7.5	169	171	4.5	59	--
APR 2004													
12...	1230	1028	9813	24300	--	12.2	7.3	7.3	229	230	8.5	75	--
JUN													
21...	1300	1028	9813	21400	--	8.5	7.6	7.3	233	232	22.0	82	--
AUG													
10...	0920	1028	9813	13000	--	9.1	7.5	7.6	215	209	22.0	68	--

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

MISCELLANEOUS STATION ANALYSES

Date	Calcium water unfltrd recover -able, mg/L (00916)	Magnes- ium, water, fltrd, mg/L (00925)	Magnes- ium, water, unfltrd recover -able, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Acidity water, unfltrd heated, mg/L as CaCO3 (70508)	Chlor- ide, water, fltrd, mg/L (00940)	Fluor- ide, water, unfltrd mg/L (00951)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, sus- pended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)
03039815 Clear Shade Creek above confluence near Cairnbrook, PA (LAT 40 08 54N LONG 078 49 03W)													
OCT 2003													
08...	3.6	.81	.83	4	18	2.4	<.2	8.3	52	<2	<.020	.24	<.040
DEC													
10...	3.8	.89	.90	4	0	2.3	<.2	8.7	8	<2	<.020	.27	<.040
MAR 2004													
08...	2.7	.70	.69	2	19	2.3	<.2	7.7	34	<2	<.020	.47	<.040
APR													
08...	--	.76	.79	3	16	2.1	<.2	7.9	20	<2	<.020	.34	<.040
MAY													
26...	3.6	--	.76	5	--	2.6	<.2	7.9	74	10	.020	.30	<.040
JUN													
10...	4.2	.84	.83	7	23	3.0	<.2	8.1	42	2	<.020	.31	<.040
JUL													
12...	5.1	.96	.97	10	27	3.2	<.2	7.8	50	10	<.020	.28	<.040
AUG													
31...	5.5	1.0	1.0	10	24	3.7	<.2	8.1	34	6	<.020	.24	<.040
SEP													
23...	3.5	.78	.78	4	23	2.5	<.2	8.0	52	2	<.020	.30	<.040
03044000 Conemaugh River at Tunnelton, PA (LAT 40 27 16N LONG 079 23 28W)													
OCT 2003													
16...	39.4	--	12.5	20	--	--	--	137	334	44	.190	.79	<.040
DEC													
23...	38.5	--	13.6	15	--	--	--	131	282	<2	.210	1.11	<.040
FEB 2004													
23...	34.6	--	10.6	15	--	--	--	108	306	<2	.220	1.28	<.200
APR													
22...	28.7	--	9.4	11	--	--	--	98.7	234	4	.080	1.01	<.040
JUN													
28...	47.7	--	14.0	22	--	--	--	155	402	2	.080	.98	<.040
AUG													
12...	41.3	--	12.3	25	--	--	--	139	330	2	.070	.83	<.040
03049652 Allegheny River at Hulton Bridge at Oakmont, PA (LAT 40 31 39N LONG 079 50 51W)													
OCT 2003													
09...	23.6	--	6.0	37	--	--	<.2	44.5	196	8	<.020	.50	<.040
DEC													
04...	15.8	--	4.8	27	--	--	<.2	32.0	132	12	.030	.56	<.040
APR 2004													
12...	20.4	--	5.8	27	--	--	<.2	48.3	100	6	<.020	.70	<.040
JUN													
21...	21.3	--	7.1	32	--	--	<.2	51.8	182	20	.040	.74	<.040
AUG													
10...	18.4	--	5.3	34	--	--	<.2	37.7	168	4	<.020	.56	<.040

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

MISCELLANEOUS STATION ANALYSES

Date	Ortho-phos-phate, water, unfltrd mg/L as P (70507)	Phos-phorus, water, unfltrd mg/L (00665)	Total nitro-gen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Fecal coli-form, M-FC 0.45µMF col/ 100 mL (31616)	Alum-inum, water, fltrd, µg/L (01106)	Alum-inum, water, unfltrd recover -able, µg/L (01105)	Arsenic water, fltrd, µg/L (01000)	Cadmium water, fltrd, µg/L (01025)	Copper, water, fltrd, µg/L (01040)	Copper, water, unfltrd recover -able, µg/L (01042)	Cyanide amen-able to chlor-ination wat unf mg/L (00722)
03039815 Clear Shade Creek above confluence near Cairnbrook, PA (LAT 40 08 54N LONG 078 49 03W)													
OCT 2003 08...	<.01	<.010	.41	--	.4	<10	120	200	<4.0	<.20	<4	<4	--
DEC 10...	<.01	<.010	.62	--	1.1	<20	160	250	<4.0	<.20	<4	<4	--
MAR 2004 08...	<.01	<.010	.61	--	1.0	<10	200	300	<4.0	.20	<4	<4	--
APR 08...	<.01	<.010	.43	--	<.2	<20	90	250	<4.0	<.20	<4	<4	--
MAY 26...	<.01	.011	.24	--	.3	60	130	310	<4.0	<.20	<4	<4	--
JUN 10...	<.01	<.010	.52	--	1.2	30	60	130	<4.0	<.20	<4	<4	--
JUL 12...	<.01	.012	.55	--	<.2	160	50	130	<4.0	<.20	<4	<4	--
AUG 31...	<.01	.011	.32	--	.8	120	60	160	<4.0	<.20	<4	<4	--
SEP 23...	<.01	<.010	.36	--	.6	30	110	230	<4.0	<.20	<4	<4	--
03044000 Conemaugh River at Tunnelton, PA (LAT 40 27 16N LONG 079 23 28W)													
OCT 2003 16...	.02	.015	1.4	2.3	--	--	--	280	--	--	--	<10	--
DEC 23...	<.01	.045	1.2	1.6	--	--	--	2500	--	--	--	<10	--
FEB 2004 23...	<.01	.010	1.7	1.3	--	--	--	<200	--	--	--	<10	--
APR 22...	<.01	<.010	1.3	1.0	--	--	--	<200	--	--	--	<10	--
JUN 28...	<.01	.010	1.2	1.5	--	--	--	<200	--	--	--	<10	--
AUG 12...	.01	.016	1.0	1.8	--	--	--	390	--	--	--	<10	--
03049652 Allegheny River at Hulton Bridge at Oakmont, PA (LAT 40 31 39N LONG 079 50 51W)													
OCT 2003 09...	.01	.022	.87	3.0	--	--	--	<200	--	--	--	<10	<1.00
DEC 04...	.03	.035	.81	3.0	--	--	--	500	--	--	--	<10	<1.00
APR 2004 12...	.01	.016	.91	1.7	--	--	--	300	--	--	--	<10	<1.00
JUN 21...	.02	.045	1.1	2.9	--	--	--	700	--	--	--	<10	<1.00
AUG 10...	.01	.020	.70	2.9	--	--	--	310	--	--	--	<10	<1.00

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

MISCELLANEOUS STATION ANALYSES

Date	Iron, water, fltrd, µg/L (01046)	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, fltrd, µg/L (01049)	Lead, water, unfltrd recover -able, µg/L (01051)	Mangan- ese, water, fltrd, µg/L (01056)	Mangan- ese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, fltrd, µg/L (01065)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, fltrd, µg/L (01090)	Zinc, water, unfltrd recover -able, µg/L (01092)	Phen- olic com- pounds, water, unfltrd µg/L (32730)
03039815 Clear Shade Creek above confluence near Cairnbrook, PA (LAT 40 08 54N LONG 078 49 03W)											
OCT 2003											
08...	60	110	<1.0	<1.0	68	70	<4.0	<4.0	15	12	<5
DEC											
10...	70	100	<1.0	<1.0	72	78	<4.0	<4.0	15	15	<5
MAR 2004											
08...	80	170	<1.0	<1.0	120	130	<4.0	<4.0	19	22	<5
APR											
08...	40	100	<1.0	<1.0	75	81	<4.0	<4.0	15	15	<5
MAY											
26...	110	280	<1.0	<1.0	49	63	<4.0	<4.0	9.8	11	<5
JUN											
10...	80	160	<1.0	<1.0	16	23	<4.0	<4.0	<5.0	5.1	<5
JUL											
12...	100	210	<1.0	<1.0	16	29	<4.0	<4.0	<5.0	<5.0	--
AUG											
31...	110	300	<1.0	<1.0	18	47	<4.0	<4.0	<5.0	6.1	<5
SEP											
23...	60	150	<1.0	<1.0	65	73	<4.0	<4.0	12	12	<5
03044000 Conemaugh River at Tunnelton, PA (LAT 40 27 16N LONG 079 23 28W)											
OCT 2003											
16...	--	950	--	<1.0	--	770	--	<50	--	50	--
DEC											
23...	--	5900	--	2.0	--	800	--	60	--	100	--
FEB 2004											
23...	--	950	--	15.5	--	620	--	<50	--	200	--
APR											
22...	--	710	--	<1.0	--	510	--	<50	--	40	--
JUN											
28...	--	360	--	<1.0	--	550	--	<50	--	10	--
AUG											
12...	--	1080	--	<1.0	--	1370	--	<50	--	<10	--
03049652 Allegheny River at Hulton Bridge at Oakmont, PA (LAT 40 31 39N LONG 079 50 51W)											
OCT 2003											
09...	--	580	--	<1.0	--	180	--	<50	--	<10	<5
DEC											
04...	--	1170	--	<1.0	--	220	--	<50	--	<10	<5
APR 2004											
12...	--	580	--	<1.0	--	230	--	<50	--	20	<5
JUN											
21...	--	1260	--	1.1	--	200	--	<50	--	50	<5
AUG											
10...	--	570	--	<1.0	--	160	--	<50	--	40	<5

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

MISCELLANEOUS STATION ANALYSES

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Pressure, osmotic water, unfltrd mosm/kg (82550)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unf lab, µS/cm 25 degC (90095)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
03063000 Monongahela River at Lock & Dam 8, at Point Marion, PA (LAT 39 43 37N LONG 079 54 42W)													
OCT 2003													
07...	1110	1028	9813	7000	--	11.6	7.4	7.6	300	303	15.0	110	--
DEC													
09...	1100	1028	9813	5100	--	14.5	7.3	7.5	276	293	4.5	100	--
FEB 2004													
17...	1030	1028	9813	5630	--	13.6	6.8	7.4	212	216	2.5	77	--
APR													
07...	1030	1028	9813	15000	--	11.9	7.4	7.3	230	237	8.0	87	--
JUN													
09...	1050	1028	9813	2270	--	9.0	7.5	7.4	299	300	20.0	110	--
AUG													
11...	1045	1028	9813	690	--	9.0	7.6	6.9	276	276	24.5	100	--
03071700 Cheat River at Point Marion, PA (LAT 39 44 31N LONG 079 53 59W)													
OCT 2003													
07...	1225	1028	9813	8000	--	9.2	7.4	6.8	114	119	13.5	45	--
DEC													
09...	1225	1028	9813	212	--	11.4	6.3	6.6	122	126	4.5	47	--
FEB 2004													
17...	1200	1028	9813	212	--	9.4	6.7	6.7	114	118	3.5	42	--
APR													
07...	1200	1028	9813	6000	--	12.1	7.1	6.8	95	104	8.0	35	--
JUN													
09...	1210	1028	9813	1000	--	6.5	7.2	6.8	88	90	20.0	37	--
AUG													
11...	1250	1028	9813	200	--	7.8	7.7	6.6	139	143	25.0	56	--
03077500 Youghiogheny River at Youghiogheny River Dam, PA (LAT 39 48 19N LONG 079 21 52W)													
OCT 2003													
07...	1435	1028	9813	1580	--	8.4	7.2	6.8	91	90	16.0	30	--
DEC													
09...	1445	1028	9813	2000	--	11.9	6.7	7.2	85	85	6.5	25	--
FEB 2004													
17...	1405	1028	9813	400	--	13.0	6.7	7.1	111	115	2.0	27	--
APR													
07...	1430	1028	9813	2540	--	12.3	7.3	6.8	100	111	6.0	25	--
JUN													
09...	1430	1028	9813	500	--	9.7	6.8	6.6	104	105	9.0	29	--
AUG													
30...	1100	1028	9813	850	--	7.2	6.8	6.8	110	108	19.0	33	--
03078020 Casselman River near Salisbury, PA (LAT 39 43 56N LONG 079 06 03W)													
OCT 2003													
08...	0900	1028	9813	358	--	11.2	7.0	6.8	144	142	8.5	48	13.0
DEC													
10...	0900	1028	9813	430	--	11.8	6.6	6.9	209	218	2.0	53	14.2
FEB 2004													
18...	0850	1028	9813	320	--	13.5	6.4	7.0	259	265	-.1	54	15.0
APR													
08...	0820	1028	9813	1130	--	11.4	7.0	7.0	161	159	5.5	40	11.7
JUN													
10...	0800	1028	9813	201	--	9.0	7.3	7.0	192	190	19.0	60	16.6
AUG													
30...	1300	1028	9813	254	--	8.0	6.7	6.9	113	116	21.0	37	10.5

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

MISCELLANEOUS STATION ANALYSES

Date	Calcium water unfltrd recover -able, mg/L (00916)	Magnes- ium, water, fltrd, mg/L (00925)	Magnes- ium, water, unfltrd recover -able, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Acidity water, unfltrd heated, mg/L as CaCO3 (70508)	Chlor- ide, water, fltrd, mg/L (00940)	Fluor- ide, water, unfltrd mg/L (00951)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, sus- pended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)
03063000 Monongahela River at Lock & Dam 8, at Point Marion, PA (LAT 39 43 37N LONG 079 54 42W)													
OCT 2003 07...	31.8	--	7.6	44	--	--	--	88.1	228	2	.070	.51	<.040
DEC 09...	30.0	--	7.3	38	--	--	--	88.4	212	14	.110	.53	<.040
FEB 2004 17...	22.0	--	5.4	26	--	--	--	60.6	178	8	.080	.71	<.040
APR 07...	24.2	--	6.5	32	--	--	--	67.6	174	28	.080	.56	<.040
JUN 09...	30.9	--	7.5	42	--	--	--	88.3	208	10	.080	.47	<.040
AUG 11...	29.5	--	7.2	39	--	--	--	80.0	346	16	<.020	.61	.040
03071700 Cheat River at Point Marion, PA (LAT 39 44 31N LONG 079 53 59W)													
OCT 2003 07...	12.9	--	3.1	12	--	--	--	32.2	86	6	.120	.33	<.040
DEC 09...	13.6	--	3.3	7	--	--	--	42.1	98	8	.100	.50	<.040
FEB 2004 17...	12.1	--	2.8	7	--	--	--	33.4	102	<2	.100	.74	<.040
APR 07...	9.5	--	2.6	9	--	--	--	26.7	74	12	.070	.63	<.040
JUN 09...	11.2	--	2.1	15	--	--	--	19.6	76	<2	.100	.44	<.040
AUG 11...	16.3	--	3.6	17	--	--	--	39.0	108	4	.080	.42	<.040
03077500 Youghiogheny River at Youghiogheny River Dam, PA (LAT 39 48 19N LONG 079 21 52W)													
OCT 2003 07...	8.8	--	1.9	16	--	--	--	11.7	78	6	.050	.47	<.040
DEC 09...	7.3	--	1.7	14	--	--	--	12.2	66	8	.030	.60	<.040
FEB 2004 17...	7.8	--	1.8	13	--	--	--	12.6	90	2	.050	.82	<.040
APR 07...	7.4	--	1.7	14	--	--	--	11.1	88	4	.030	.90	<.040
JUN 09...	8.5	--	1.8	14	--	--	--	11.5	76	<2	.060	.84	<.040
AUG 30...	9.9	--	1.9	20	--	--	--	11.8	62	4	<.020	.60	<.040
03078020 Casselman River near Salisbury, PA (LAT 39 43 56N LONG 079 06 03W)													
OCT 2003 08...	13.5	3.2	3.4	18	0	--	--	24.1	108	4	.030	.52	<.040
DEC 10...	15.4	3.7	3.6	18	0	--	--	24.9	124	<2	.030	.77	<.200
FEB 2004 18...	15.8	3.6	3.5	16	17	--	--	25.4	188	<2	.040	.84	<.040
APR 08...	11.3	2.7	2.7	13	17	--	--	19.9	88	<2	<.020	.90	<.040
JUN 10...	17.5	3.7	3.9	25	1.8	--	--	29.8	104	6	<.020	.51	<.040
AUG 30...	10.7	2.3	2.5	17	30	--	--	16.6	110	90	<.020	.43	<.040

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

MISCELLANEOUS STATION ANALYSES

Date	Ortho-phos-phate, water, unfltrd mg/L as P (70507)	Phos-phorus, water, unfltrd mg/L (00665)	Total nitro-gen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Fecal coli-form, M-FC 0.45µMF col/ 100 mL (31616)	Alum-inum, water, fltrd, µg/L (01106)	Alum-inum, water, unfltrd recover -able, µg/L (01105)	Arsenic water, fltrd, µg/L (01000)	Cadmium water, fltrd, µg/L (01025)	Copper, water, fltrd, µg/L (01040)	Copper, water, unfltrd recover -able, µg/L (01042)	Cyanide amen-able to chlor-ination wat unf mg/L (00722)
03063000 Monongahela River at Lock & Dam 8, at Point Marion, PA (LAT 39 43 37N LONG 079 54 42W)													
OCT 2003 07...	.02	.017	.82	2.0	--	--	--	200	--	--	--	<10	--
DEC 09...	.02	.028	.82	1.5	--	--	--	430	--	--	--	<10	--
FEB 2004 17...	--	--	.92	1.3	--	--	--	700	--	--	--	<10	--
APR 07...	.03	.024	.82	1.4	--	--	--	680	--	--	--	<10	--
JUN 09...	.03	.029	.88	2.0	--	--	--	550	--	--	--	<10	--
AUG 11...	.01	.020	.81	2.3	--	--	--	320	--	--	--	<10	--
03071700 Cheat River at Point Marion, PA (LAT 39 44 31N LONG 079 53 59W)													
OCT 2003 07...	.01	.014	.67	2.0	--	--	--	520	--	--	--	<10	--
DEC 09...	<.01	<.010	.72	1.0	--	--	--	390	--	--	--	<10	--
FEB 2004 17...	<.01	<.010	.88	.9	--	--	--	240	--	--	--	<10	--
APR 07...	.01	.012	.86	1.2	--	--	--	410	--	--	--	<10	--
JUN 09...	<.01	<.010	.76	2.7	--	--	--	320	--	--	--	<10	--
AUG 11...	<.01	.015	.58	2.1	--	--	--	<200	--	--	--	<10	--
03077500 Youghiogheny River at Youghiogheny River Dam, PA (LAT 39 48 19N LONG 079 21 52W)													
OCT 2003 07...	.01	.011	.84	2.6	--	--	--	<200	--	--	--	<10	--
DEC 09...	.02	.014	.85	2.2	--	--	--	<200	--	--	--	<10	--
FEB 2004 17...	.02	.012	1.0	1.6	--	--	--	<200	--	--	--	<10	--
APR 07...	.01	.015	1.1	1.6	--	--	--	<200	--	--	--	<10	--
JUN 09...	<.01	<.010	1.1	1.5	--	--	--	<200	--	--	--	<10	--
AUG 30...	<.01	.013	.76	2.3	--	--	--	<200	--	--	--	<10	--
03078020 Casselman River near Salisbury, PA (LAT 39 43 56N LONG 079 06 03W)													
OCT 2003 08...	<.01	.011	.78	--	.9	--	60	160	--	--	<4	<4	--
DEC 10...	.01	.012	.99	--	1.6	--	90	180	--	--	<4	<4	--
FEB 2004 18...	<.01	.013	1.1	--	.9	--	20	210	--	--	<4	<4	--
APR 08...	.01	.013	1.1	--	<.2	--	70	280	--	--	<4	<4	--
JUN 10...	.01	.014	.72	--	1.2	--	70	240	--	--	<4	<4	--
AUG 30...	.02	.133	1.4	--	1.9	--	380	2400	--	--	<4	4	--

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

MISCELLANEOUS STATION ANALYSES

Date	Iron, water, fltrd, µg/L (01046)	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, fltrd, µg/L (01049)	Lead, water, unfltrd recover -able, µg/L (01051)	Mangan- ese, water, fltrd, µg/L (01056)	Mangan- ese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, fltrd, µg/L (01065)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, fltrd, µg/L (01090)	Zinc, water, unfltrd recover -able, µg/L (01092)	Phen- olic com- pounds, water, unfltrd µg/L (32730)
03063000 Monongahela River at Lock & Dam 8, at Point Marion, PA (LAT 39 43 37N LONG 079 54 42W)											
OCT 2003											
07...	--	770	--	<1.0	--	150	--	<50	--	10	--
DEC											
09...	--	740	--	<1.0	--	150	--	<50	--	30	--
FEB 2004											
17...	--	1030	--	<1.0	--	130	--	<50	--	20	--
APR											
07...	--	1000	--	<1.0	--	120	--	<50	--	80	--
JUN											
09...	--	970	--	<1.0	--	100	--	<50	--	<10	--
AUG											
11...	--	440	--	<1.0	--	70	--	<50	--	<10	--
03071700 Cheat River at Point Marion, PA (LAT 39 44 31N LONG 079 53 59W)											
OCT 2003											
07...	--	640	--	<1.0	--	200	--	<50	--	<10	--
DEC											
09...	--	400	--	<1.0	--	170	--	<50	--	20	--
FEB 2004											
17...	--	350	--	<1.0	--	140	--	<50	--	20	--
APR											
07...	--	480	--	<1.0	--	130	--	<50	--	40	--
JUN											
09...	--	390	--	<1.0	--	120	--	<50	--	20	--
AUG											
11...	--	200	--	<1.0	--	130	--	<50	--	<10	--
03077500 Youghiogheny River at Youghiogheny River Dam, PA (LAT 39 48 19N LONG 079 21 52W)											
OCT 2003											
07...	--	230	--	<1.0	--	190	--	<50	--	<10	--
DEC											
09...	--	220	--	<1.0	--	60	--	<50	--	<10	--
FEB 2004											
17...	--	240	--	<1.0	--	130	--	<50	--	<10	--
APR											
07...	--	170	--	<1.0	--	70	--	<50	--	30	--
JUN											
09...	--	80	--	<1.0	--	50	--	<50	--	20	--
AUG											
30...	--	160	--	<1.0	--	450	--	<50	--	30	--
03078020 Casselman River near Salisbury, PA (LAT 39 43 56N LONG 079 06 03W)											
OCT 2003											
08...	100	210	<1.0	<1.0	49	53	<4.0	<4.0	<5.0	8.1	--
DEC											
10...	110	180	<1.0	<1.0	74	87	<4.0	<4.0	6.5	7.1	--
FEB 2004											
18...	60	270	<1.0	<1.0	84	89	<4.0	4.0	10	10	--
APR											
08...	70	260	<1.0	<1.0	69	80	<4.0	<4.0	8.3	9.9	--
JUN											
10...	110	340	<1.0	<1.0	66	83	<4.0	4.4	<5.0	6.0	--
AUG											
30...	1660	4940	1.1	3.6	270	560	5.0	12	10	43	--

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

MISCELLANEOUS STATION ANALYSES

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Pressure, osmotic water, unfltrd mosm/kg (82550)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unf lab, µS/cm 25 degC (90095)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
03099600 Mahoning River at North Edinburg, PA (LAT 41 01 06N LONG 080 26 27W)													
OCT 2003													
06...	1010	1028	9813	1250	--	9.7	7.2	8.0	410	403	13.0	130	--
DEC													
02...	1000	1028	9813	2530	--	11.2	7.3	7.9	403	397	5.0	130	--
FEB 2004													
19...	0945	1028	9813	939	--	14.2	7.0	7.6	672	673	4.0	190	--
APR													
06...	0945	1028	9813	2820	--	11.6	7.5	7.6	461	457	7.0	130	--
JUN													
07...	1020	1028	9813	1250	--	9.7	7.7	7.9	473	481	19.5	150	--
AUG													
05...	1040	1028	9813	745	--	6.0	7.5	7.3	530	537	24.0	140	--
03103500 Shenango River at Sharpsville, PA (LAT 41 15 58N LONG 080 28 22W)													
OCT 2003													
21...	0950	1028	9813	810	--	11.2	7.1	7.2	198	202	12.5	82	--
DEC													
15...	1045	1028	9813	1460	--	14.5	6.5	7.6	207	219	1.5	78	--
FEB 2004													
23...	0945	1028	9813	1440	--	14.9	7.1	7.7	246	250	1.2	85	--
APR													
13...	0955	1028	9813	640	--	11.4	7.6	7.5	193	198	8.0	64	--
JUN													
15...	0930	1028	9813	765	--	8.4	7.7	7.8	191	189	22.5	70	--
AUG													
17...	0950	1028	9813	263	--	7.5	7.6	7.2	221	221	22.0	83	--
03104500 Shenango River at New Castle, PA (LAT 41 00 00N LONG 080 21 21W)													
OCT 2003													
06...	1200	1028	9813	1550	--	9.7	7.4	7.9	251	254	13.5	92	--
DEC													
02...	1150	1028	9813	E2550	--	13.0	7.3	7.8	224	226	5.0	83	--
FEB 2004													
19...	1200	1028	9813	915	--	16.3	6.6	7.3	340	372	2.5	100	--
APR													
06...	1210	1028	9813	3280	--	11.2	7.5	7.8	241	240	7.5	78	--
JUN													
07...	1230	1028	9813	600	--	7.5	7.2	7.8	266	264	20.0	97	--
AUG													
05...	1330	1028	9813	633	--	7.5	7.8	7.5	272	277	23.5	100	--
03105810 Connoquenessing Creek at Renfrew, PA (LAT 40 48 21N LONG 079 57 55W)													
OCT 2003													
14...	0920	1028	9813	69	--	9.0	7.3	7.4	726	713	12.0	220	--
DEC													
18...	1400	1028	9813	309	--	12.4	7.0	7.5	563	572	3.0	140	--
FEB 2004													
11...	1350	1028	9813	265	--	14.9	6.6	7.5	567	572	2.5	140	--
APR													
15...	1345	1028	9813	715	--	11.8	7.3	7.2	301	309	8.5	88	--
JUN													
17...	1000	1028	9813	515	--	9.5	7.3	7.3	347	338	19.0	110	--
AUG													
19...	1320	1028	9813	145	--	8.5	7.6	7.8	736	708	20.0	250	--

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

MISCELLANEOUS STATION ANALYSES

Date	Calcium water unfltrd recover -able, mg/L (00916)	Magnes- ium, water, fltrd, mg/L (00925)	Magnes- ium, water, unfltrd recover -able, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Acidity water, unfltrd heated, mg/L as CaCO3 (70508)	Chlor- ide, water, fltrd, mg/L (00940)	Fluor- ide, water, unfltrd mg/L (00951)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, sus- pended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)
03099600 Mahoning River at North Edinburg, PA (LAT 41 01 06N LONG 080 26 27W)													
OCT 2003													
06...	38.2	--	9.1	81	--	--	.2	46.2	298	10	.060	.79	<.040
DEC													
02...	35.8	--	8.9	80	--	--	.2	48.2	312	12	.100	.80	<.040
FEB 2004													
19...	51.5	--	13.9	101	--	--	.2	82.0	460	<2	.260	1.64	.110
APR													
06...	37.7	--	8.8	74	--	--	.2	50.6	304	12	.080	.80	<.200
JUN													
07...	42.7	--	10.5	85	--	--	<.2	58.0	386	6	.080	1.29	.140
AUG													
05...	40.5	--	10.4	92	--	--	.3	66.2	398	14	.120	1.60	<.040
03103500 Shenango River at Sharpsville, PA (LAT 41 15 58N LONG 080 28 22W)													
OCT 2003													
21...	23.6	--	5.5	58	--	--	<.2	15.5	140	2	.060	.31	<.040
DEC													
15...	22.3	--	5.4	56	--	--	<.2	17.1	148	22	.090	.75	<.040
FEB 2004													
23...	24.5	--	5.8	61	--	--	<.2	18.0	150	8	.090	.74	<.040
APR													
13...	17.9	--	4.6	43	--	--	<.2	16.5	106	14	<.020	.72	<.040
JUN													
15...	20.2	--	4.6	59	--	--	<.2	12.5	134	4	.130	.38	<.040
AUG													
17...	24.2	--	5.5	69	--	--	<.2	13.6	148	22	.200	.10	<.040
03104500 Shenango River at New Castle, PA (LAT 41 00 00N LONG 080 21 21W)													
OCT 2003													
06...	26.9	--	6.1	67	--	--	<.2	21.6	146	18	.020	.53	<.040
DEC													
02...	24.3	--	5.4	61	--	--	<.2	20.2	138	16	.080	.59	<.040
FEB 2004													
19...	29.5	--	7.5	68	--	--	<.2	28.8	184	6	.230	.95	<.040
APR													
06...	22.6	--	5.2	48	--	--	<.2	21.3	148	16	.060	.86	.860
JUN													
07...	28.5	--	6.2	65	--	--	<.2	21.9	224	8	.060	.94	<.040
AUG													
05...	30.3	--	6.2	76	--	--	.2	19.8	198	24	.040	.41	<.040
03105810 Connoquenessing Creek at Renfrew, PA (LAT 40 48 21N LONG 079 57 55W)													
OCT 2003													
14...	67.4	--	12.4	72	--	--	--	99.8	520	4	<.020	2.22	<.200
DEC													
18...	41.8	--	8.1	37	--	--	--	47.2	404	14	.060	1.98	<.200
FEB 2004													
11...	43.2	--	7.8	32	--	--	--	45.3	382	2	.170	1.96	<.200
APR													
15...	25.0	--	6.1	28	--	--	--	36.9	212	28	.030	1.73	<.040
JUN													
17...	31.3	--	7.0	41	--	--	--	35.9	254	28	.050	1.84	<.040
AUG													
19...	85.0	--	9.8	64	--	--	--	69.8	600	20	.040	1.76	<.200

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
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WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

MISCELLANEOUS STATION ANALYSES

Date	Ortho-phos-phate, water, unfltrd mg/L as P (70507)	Phos-phorus, water, unfltrd mg/L (00665)	Total nitro-gen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Fecal coli-form, M-FC 0.45µMF col/ 100 mL (31616)	Alum-inum, water, fltrd, µg/L (01106)	Alum-inum, water, unfltrd recover -able, µg/L (01105)	Arsenic water, fltrd, µg/L (01000)	Cadmium water, fltrd, µg/L (01025)	Copper, water, fltrd, µg/L (01040)	Copper, water, unfltrd recover -able, µg/L (01042)	Cyanide amen-able to chlor-ination wat unf mg/L (00722)
03099600 Mahoning River at North Edinburg, PA (LAT 41 01 06N LONG 080 26 27W)													
OCT 2003													
06...	.07	.096	1.4	6.7	--	--	--	300	--	--	--	10	<1.00
DEC													
02...	.06	.110	1.8	8.4	--	--	--	740	--	--	--	<10	<1.00
FEB 2004													
19...	.11	.155	2.5	6.2	--	--	--	220	--	--	--	<10	<1.00
APR													
06...	.04	.080	1.4	5.7	--	--	--	430	--	--	--	<10	<1.00
JUN													
07...	.06	.099	2.0	6.1	--	--	--	400	--	--	--	<10	1.20
AUG													
05...	.12	.165	2.3	7.1	--	--	--	370	--	--	--	10	<1.00
03103500 Shenango River at Sharpsville, PA (LAT 41 15 58N LONG 080 28 22W)													
OCT 2003													
21...	.03	.054	1.1	6.8	--	--	--	380	--	--	--	<10	<1.00
DEC													
15...	.05	.060	1.2	5.7	--	--	--	540	--	--	--	<10	<1.00
FEB 2004													
23...	.03	.033	1.2	4.5	--	--	--	220	--	--	--	<10	<1.00
APR													
13...	.03	.042	1.4	5.0	--	--	--	580	--	--	--	<10	<1.00
JUN													
15...	<.01	.036	1.2	7.2	--	--	--	520	--	--	--	20	<1.00
AUG													
17...	.03	.065	1.2	6.0	--	--	--	230	--	--	--	<10	<1.00
03104500 Shenango River at New Castle, PA (LAT 41 00 00N LONG 080 21 21W)													
OCT 2003													
06...	.04	.090	1.1	6.4	--	--	--	620	--	--	--	<10	<1.00
DEC													
02...	.05	.071	1.2	6.0	--	--	--	650	--	--	--	<10	<1.00
FEB 2004													
19...	.04	.060	1.5	4.3	--	--	--	<200	--	--	--	<10	<1.00
APR													
06...	.05	.068	1.4	4.7	--	--	--	1300	--	--	--	<10	<1.00
JUN													
07...	.06	.084	1.2	6.4	--	--	--	460	--	--	--	30	<1.00
AUG													
05...	.03	.116	1.2	5.4	--	--	--	450	--	--	--	<10	<1.00
03105810 Connoquenessing Creek at Renfrew, PA (LAT 40 48 21N LONG 079 57 55W)													
OCT 2003													
14...	.08	.113	2.9	3.6	--	--	--	<200	--	--	--	<10	--
DEC													
18...	.03	.058	2.0	2.0	--	--	--	<200	--	--	--	<10	--
FEB 2004													
11...	.04	.061	2.4	1.8	--	--	--	210	--	--	--	<10	--
APR													
15...	.01	.042	1.9	1.9	--	--	--	840	--	--	--	40	--
JUN													
17...	.05	.080	2.2	3.1	--	--	--	1100	--	--	--	<10	--
AUG													
19...	.08	.107	2.2	3.6	--	--	--	310	--	--	--	20	--

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

MISCELLANEOUS STATION ANALYSES

Date	Iron, water, fltrd, µg/L (01046)	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, fltrd, µg/L (01049)	Lead, water, unfltrd recover -able, µg/L (01051)	Mangan- ese, water, fltrd, µg/L (01056)	Mangan- ese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, fltrd, µg/L (01065)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, fltrd, µg/L (01090)	Zinc, water, unfltrd recover -able, µg/L (01092)	Phen- olic com- pounds, water, unfltrd µg/L (32730)
03099600 Mahoning River at North Edinburg, PA (LAT 41 01 06N LONG 080 26 27W)											
OCT 2003											
06...	--	840	--	1.7	--	90	--	<50	--	30	<5
DEC											
02...	--	1140	--	51	--	100	--	<50	--	10	<5
FEB 2004											
19...	--	600	--	1.2	--	140	--	<50	--	220	<5
APR											
06...	--	870	--	49	--	80	--	<50	--	<10	14
JUN											
07...	--	1020	--	2.6	--	130	--	<50	--	100	<5
AUG											
05...	--	1090	--	3.8	--	130	--	<50	--	80	<5
03103500 Shenango River at Sharpsville, PA (LAT 41 15 58N LONG 080 28 22W)											
OCT 2003											
21...	--	800	--	<1.0	--	80	--	<50	--	60	<5
DEC											
15...	--	940	--	<1.0	--	70	--	<50	--	<10	<5
FEB 2004											
23...	--	600	--	<1.0	--	90	--	<50	--	110	<5
APR											
13...	--	870	--	<1.0	--	60	--	<50	--	<10	<5
JUN											
15...	--	780	--	<1.0	--	160	--	<50	--	50	<5
AUG											
17...	--	520	--	<1.0	--	220	--	<50	--	50	11
03104500 Shenango River at New Castle, PA (LAT 41 00 00N LONG 080 21 21W)											
OCT 2003											
06...	--	1410	--	3.2	--	130	--	<50	--	40	<5
DEC											
02...	--	1270	--	1.6	--	110	--	<50	--	20	<5
FEB 2004											
19...	--	660	--	<1.0	--	120	--	<50	--	150	<5
APR											
06...	--	1980	--	1.9	--	110	--	<50	--	20	<5
JUN											
07...	--	1320	--	1.6	--	140	--	<50	--	80	<5
AUG											
05...	--	1120	--	2.3	--	160	--	<50	--	20	<5
03105810 Connoquenessing Creek at Renfrew, PA (LAT 40 48 21N LONG 079 57 55W)											
OCT 2003											
14...	--	470	--	<1.0	--	70	--	<50	--	10	--
DEC											
18...	--	390	--	<1.0	--	90	--	<50	--	160	--
FEB 2004											
11...	--	450	--	<1.0	--	100	--	<50	--	20	--
APR											
15...	--	1100	--	1.6	--	80	--	<50	--	30	--
JUN											
17...	--	1680	--	1.8	--	100	--	<50	--	<10	--
AUG											
19...	--	690	--	1.4	--	80	--	<50	--	210	--

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

MISCELLANEOUS STATION ANALYSES

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Pressure, osmotic water, unfltrd mosm/kg (82550)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unf lab, µS/cm 25 degC (90095)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
03109670 Ohio River at Mile 44.5 at Newell, WV (LAT 40 37 10N LONG 080 35 24W)													
OCT 2003													
01...	1030	1028	9813	41600	--	9.6	7.0	7.4	253	261	15.5	88	--
DEC													
01...	1120	1028	9813	33100	--	12.0	6.5	7.0	222	231	6.5	81	--
FEB 2004													
09...	1100	1028	9813	77100	--	17.7	6.3	7.6	331	329	1.5	95	--
APR													
01...	1055	1028	9813	72200	--	11.5	7.6	7.5	267	263	10.0	85	--
JUN													
03...	1040	1028	9813	45000	--	9.1	7.6	7.3	250	249	20.0	77	--
AUG													
04...	1050	1028	9813	42500	--	9.3	7.7	7.2	259	264	24.0	81	--
04212945 Conneaut Creek at Cherry Hill, PA (LAT 41 55 04N LONG 080 28 09W)													
OCT 2003													
22...	1350	1028	9813	217	--	10.0	7.4	7.7	249	247	10.5	100	--
DEC													
16...	1330	1028	9813	127	--	15.4	7.4	7.7	207	212	1.5	87	--
FEB 2004													
24...	1400	1028	9813	545	--	13.5	7.0	7.5	165	166	.0	59	--
APR													
14...	1425	1028	9813	1570	--	12.0	7.5	7.3	121	123	5.5	53	--
JUN													
16...	1300	1028	9813	174	--	8.4	7.5	7.6	182	176	21.0	70	--
AUG													
18...	1310	1028	9813	19	--	11.7	8.5	8.4	306	306	22.0	140	--
04213273 Twelvemile Creek near Moorheadville, PA (LAT 42 12 15N LONG 079 54 46W)													
OCT 2003													
22...	1145	1028	9813	43	7.0	11.8	7.6	7.7	195	183	9.0	61	--
NOV													
19...	0750	1028	9813	11	8.0	10.4	7.7	7.5	274	282	11.0	99	--
DEC													
16...	1045	1028	9813	11	1.0	14.4	7.6	7.8	293	305	2.0	110	--
FEB 2004													
24...	1145	1028	9813	24	13	14.1	7.2	7.9	502	500	.7	110	--
MAR													
10...	1230	1028	9813	23	10	10.8	7.2	8.0	399	429	5.0	100	--
APR													
14...	1145	1028	9813	92	6.0	12.5	7.7	7.6	205	211	5.5	61	--
MAY													
06...	1130	1028	9813	14	8.0	10.2	8.7	7.9	327	318	13.0	110	--
JUN													
16...	1050	1028	9813	--	6.0	9.5	8.1	8.1	403	387	18.5	140	--
JUL													
28...	1130	1028	9813	15	5.0	9.4	8.1	8.1	343	322	18.5	120	--
AUG													
18...	1050	1028	9813	6.3	4.0	10.1	8.4	8.2	394	392	17.5	150	--
SEP													
29...	1200	1028	9813	14	4.0	10.0	8.0	8.1	397	370	15.0	140	--

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

MISCELLANEOUS STATION ANALYSES

Date	Calcium water unfltrd recover -able, mg/L (00916)	Magnes- ium, water, fltrd, mg/L (00925)	Magnes- ium, water, unfltrd recover -able, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Acidity water, unfltrd heated, mg/L as CaCO3 (70508)	Chlor- ide, water, fltrd, mg/L (00940)	Fluor- ide, water, unfltrd mg/L (00951)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, sus- pended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)
03109670 Ohio River at Mile 44.5 at Newell, WV (LAT 40 37 10N LONG 080 35 24W)													
OCT 2003													
01...	24.8	--	6.2	42	--	--	--	50.0	218	4	.020	.68	<.040
DEC													
01...	22.5	--	6.0	36	--	--	--	45.3	230	28	.040	.75	<.040
FEB 2004													
09...	26.9	--	6.8	32	--	--	--	52.4	192	164	.140	1.08	<.040
APR													
01...	23.6	--	6.2	35	--	--	--	50.3	176	14	.070	.83	<.040
JUN													
03...	20.8	--	6.0	42	--	--	--	45.1	172	28	.060	.69	<.040
AUG													
04...	21.9	--	6.3	36	--	--	--	49.3	166	24	.050	.69	<.040
04212945 Conneaut Creek at Cherry Hill, PA (LAT 41 55 04N LONG 080 28 09W)													
OCT 2003													
22...	31.2	--	6.5	77	--	--	--	21.7	84	6	<.020	.62	<.040
DEC													
16...	25.3	--	5.7	63	--	--	--	18.8	162	2	.030	.61	<.040
FEB 2004													
24...	17.1	--	3.9	39	--	--	--	12.1	132	14	.110	.67	<.040
APR													
14...	14.0	--	4.4	35	--	--	--	8.5	62	162	.100	.29	<.040
JUN													
16...	20.1	--	4.8	56	--	--	--	12.4	178	30	.060	.94	<.040
AUG													
18...	39.5	--	8.8	104	--	--	--	22.3	190	<2	<.020	.32	<.040
04213273 Twelvemile Creek near Moorheadville, PA (LAT 42 12 15N LONG 079 54 46W)													
OCT 2003													
22...	18.2	--	3.8	43	--	22.1	<.2	14.2	54	36	.040	.20	<.040
NOV													
19...	30.3	--	5.5	61	--	31.2	<.2	26.6	186	<2	<.020	.85	<.040
DEC													
16...	32.3	--	6.1	59	--	33.6	<.2	31.5	198	<2	<.020	1.74	<.040
FEB 2004													
24...	32.7	--	6.0	48	--	101	<.2	27.6	356	6	<.020	1.73	<.200
MAR													
10...	32.8	--	5.7	51	--	63.8	<.2	30.4	292	<2	<.020	2.02	<.200
APR													
14...	18.8	--	3.5	37	--	26.7	<.2	16.2	92	12	.040	.86	<.040
MAY													
06...	35.8	--	6.0	64	--	36.8	<.2	31.1	228	2	<.020	1.74	<.040
JUN													
16...	42.0	--	8.1	82	--	42.6	<.2	38.1	292	<2	.020	2.81	<.040
JUL													
28...	36.2	--	6.7	79	--	34.7	<.2	29.8	258	2	.030	1.50	<.040
AUG													
18...	45.1	--	8.6	86	--	41.0	<.2	37.0	298	<2	<.020	2.47	<.040
SEP													
29...	44.6	--	7.7	83	--	39.3	<.2	39.1	300	<2	<.020	3.00	<.040

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

MISCELLANEOUS STATION ANALYSES

Date	Ortho-phos-phate, water, unfltrd mg/L as P (70507)	Phos-phorus, water, unfltrd mg/L (00665)	Total nitro-gen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Fecal coli-form, M-FC 0.45µMF col/ 100 mL (31616)	Alum-inum, water, fltrd, µg/L (01106)	Alum-inum, water, unfltrd recover -able, µg/L (01105)	Arsenic water, fltrd, µg/L (01000)	Cadmium water, fltrd, µg/L (01025)	Copper, water, fltrd, µg/L (01040)	Copper, water, unfltrd recover -able, µg/L (01042)	Cyanide amen-able to chlor-ination wat unf mg/L (00722)
03109670 Ohio River at Mile 44.5 at Newell, WV (LAT 40 37 10N LONG 080 35 24W)													
OCT 2003													
01...	.03	.038	1.1	3.7	--	--	--	400	--	--	--	<10	--
DEC													
01...	.04	.050	1.0	2.9	--	--	--	1200	--	--	--	<10	--
FEB 2004													
09...	.14	.140	1.7	2.3	--	--	--	3400	--	--	--	<10	--
APR													
01...	.01	.044	1.1	2.3	--	--	--	820	--	--	--	<10	--
JUN													
03...	.03	.056	1.2	3.3	--	--	--	700	--	--	--	<10	--
AUG													
04...	.02	.045	.97	3.0	--	--	--	920	--	--	--	<10	--
04212945 Conneaut Creek at Cherry Hill, PA (LAT 41 55 04N LONG 080 28 09W)													
OCT 2003													
22...	.03	.037	1.1	6.2	--	--	--	280	--	--	--	<10	--
DEC													
16...	.02	.024	.83	4.3	--	--	--	<200	--	--	--	<10	--
FEB 2004													
24...	.04	.051	1.3	4.8	--	--	--	730	--	--	--	<10	--
APR													
14...	.06	.220	1.5	8.2	--	--	--	5900	--	--	--	<10	--
JUN													
16...	.03	.091	1.6	8.7	--	--	--	1300	--	--	--	<10	--
AUG													
18...	.02	.020	.55	3.7	--	--	--	230	--	--	--	<10	--
04213273 Twelvemile Creek near Moorheadville, PA (LAT 42 12 15N LONG 079 54 46W)													
OCT 2003													
22...	.06	.060	.78	--	5.6	1800	50	1200	<4.0	<.20	<4	<4	--
NOV													
19...	<.01	<.010	1.2	--	.8	<20	<10	20	<4.0	<.20	<4	<4	--
DEC													
16...	<.01	<.010	1.8	--	1.7	200	<10	20	<4.0	<.20	<4	<4	--
FEB 2004													
24...	<.01	.014	1.9	--	1.8	60	20	70	<4.0	<.20	<4	<4	--
MAR													
10...	<.01	.012	2.2	--	1.7	60	20	40	<4.0	<.20	<4	<4	--
APR													
14...	.04	.040	1.8	--	.6	320	50	740	<4.0	<.20	<4	<4	--
MAY													
06...	<.01	.019	1.8	--	1.5	40	20	40	<4.0	<.20	<4	<4	--
JUN													
16...	<.01	.015	3.0	--	--	420	10	50	<4.0	<.20	<4	<4	--
JUL													
28...	.02	.037	1.8	--	.9	820	10	80	<4.0	<.20	<4	<4	--
AUG													
18...	<.01	<.010	2.7	--	1.2	580	<10	40	<4.0	<.20	<4	<4	--
SEP													
29...	<.01	<.010	3.1	--	2.1	100	<10	10	<4.0	<.20	<4	<4	--

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

MISCELLANEOUS STATION ANALYSES

Date	Iron, water, fltrd, µg/L (01046)	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, fltrd, µg/L (01049)	Lead, water, unfltrd recover -able, µg/L (01051)	Mangan- ese, water, fltrd, µg/L (01056)	Mangan- ese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, fltrd, µg/L (01065)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, fltrd, µg/L (01090)	Zinc, water, unfltrd recover -able, µg/L (01092)	Phen- olic com- pounds, water, unfltrd µg/L (32730)
03109670 Ohio River at Mile 44.5 at Newell, WV (LAT 40 37 10N LONG 080 35 24W)											
OCT 2003											
01...	--	1300	--	1.1	--	110	--	<50	--	20	--
DEC											
01...	--	2080	--	2.3	--	240	--	<50	--	20	--
FEB 2004											
09...	--	7730	--	7.9	--	470	--	<50	--	70	--
APR											
01...	--	1300	--	1.4	--	170	--	<50	--	20	--
JUN											
03...	--	1310	--	1.8	--	120	--	<50	--	70	--
AUG											
04...	--	1410	--	1.6	--	140	--	<50	--	40	--
04212945 Conneaut Creek at Cherry Hill, PA (LAT 41 55 04N LONG 080 28 09W)											
OCT 2003											
22...	--	890	--	<1.0	--	50	--	<50	--	<10	--
DEC											
16...	--	610	--	<1.0	--	40	--	<50	--	<10	--
FEB 2004											
24...	--	1190	--	<1.0	--	40	--	<50	--	<10	--
APR											
14...	--	7070	--	4.4	--	140	--	<50	--	30	--
JUN											
16...	--	2160	--	1.6	--	50	--	<50	--	50	--
AUG											
18...	--	440	--	<1.0	--	30	--	<50	--	<10	--
04213273 Twelvemile Creek near Moorheadville, PA (LAT 42 12 15N LONG 079 54 46W)											
OCT 2003											
22...	100	2070	<1.0	1.5	11	63	<4.0	<4.0	<5.0	8.2	<5
NOV											
19...	20	90	<1.0	<1.0	5.8	6.8	<4.0	<4.0	<5.0	<5.0	<5
DEC											
16...	<20	60	<1.0	<1.0	12	13	<4.0	<4.0	<5.0	<5.0	<5
FEB 2004											
24...	30	110	<1.0	<1.0	17	20	<4.0	<4.0	<5.0	<5.0	<5
MAR											
10...	<20	70	<1.0	<1.0	10	11	<4.0	<4.0	<5.0	<5.0	<5
APR											
14...	100	980	<1.0	<1.0	14	35	<4.0	<4.0	<5.0	5.4	<5
MAY											
06...	20	80	<1.0	<1.0	7.1	10	<4.0	<4.0	<5.0	<5.0	<5
JUN											
16...	50	100	<1.0	<1.0	6.6	9.9	<4.0	<4.0	<5.0	<5.0	<5
JUL											
28...	60	220	<1.0	<1.0	10	16	<4.0	<4.0	<5.0	<5.0	<5
AUG											
18...	30	100	<1.0	<1.0	6.5	9.4	<4.0	<4.0	<5.0	<5.0	<5
SEP											
29...	<20	40	<1.0	<1.0	4.5	5.5	<4.0	<4.0	<5.0	<5.0	<5

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

MISCELLANEOUS LAKE ANALYSES

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Sampling depth, meters (00098)	Transparency Secchi disc, meters (00078)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water unfltrd recoverable, mg/L (00916)	Magnesium, water, unfltrd recoverable, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)
03021545 Union City Reservoir near Union City, PA (LAT 41 54 54N LONG 079 48 55W)													
AUG 2004													
26...	1115	1028	9813	1.0	1.80	10.3	8.5	238	21.2	110	32.8	6.2	97
26...	1130	1028	9813	6.0	--	.1	7.4	361	11.9	130	40.5	6.7	147
03023012 Tamarack Lake West near Meadville, PA (LAT 41 36 45N LONG 080 07 02W)													
AUG 2004													
24...	1035	1028	9813	1.0	.70	10.4	8.8	119	21.7	36	10.4	2.5	26
24...	1100	1028	9813	3.0	--	.1	7.3	112	20.1	34	9.7	2.3	27
03023373 Tamarack Lake East near Meadville, PA (LAT 41 34 47N LONG 080 04 39W)													
AUG 2004													
24...	1210	1028	9813	1.0	.50	6.3	8.2	111	21.2	34	9.8	2.3	26
03024228 Sugar Lake near Bradleytown, PA (LAT 41 33 59N LONG 079 56 36W)													
AUG 2004													
24...	1450	1028	9813	1.0	1.30	9.9	7.8	138	22.7	59	18.1	3.3	51
24...	1515	1028	9813	4.0	--	.1	6.9	187	18.5	65	20.5	3.4	64

Date	Sulfate water, fltrd, mg/L (00945)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Chlorophyll a phytoplankton, uncorr, µg/L (32230)	Aluminum, water, fltrd, µg/L (01106)	Aluminum, water, unfltrd recoverable, µg/L (01105)	Copper, water, fltrd, µg/L (01040)	Copper, water, unfltrd recoverable, µg/L (01042)	Iron, water, fltrd, µg/L (01046)	Iron, water, unfltrd recoverable, µg/L (01045)
03021545 Union City Reservoir near Union City, PA (LAT 41 54 54N LONG 079 48 55W)													
AUG 2004													
26...	6.4	4	<.020	.031	.50	7.7	.011	<10	<10	<4	<4	90	180
26...	<1.0	<2	2.16	.043	3.4	12.0	--	<10	<10	<4	<4	6380	8400
03023012 Tamarack Lake West near Meadville, PA (LAT 41 36 45N LONG 080 07 02W)													
AUG 2004													
24...	7.9	12	<.020	.084	1.0	7.9	.098	22	100	<4	<4	210	900
24...	7.9	16	<.020	.084	1.0	7.8	--	17	100	<4	<4	200	890
03023373 Tamarack Lake East near Meadville, PA (LAT 41 34 47N LONG 080 04 39W)													
AUG 2004													
24...	8.1	14	<.020	.086	1.2	7.5	.151	16	69	<4	5	110	1190
03024228 Sugar Lake near Bradleytown, PA (LAT 41 33 59N LONG 079 56 36W)													
AUG 2004													
24...	4.9	8	<.020	.047	.55	7.3	.017	<10	16	<4	<4	260	570
24...	3.8	10	.620	.103	1.4	8.4	--	<10	100	<4	<4	3100	4970

Date	Lead, water, fltrd, µg/L (01049)	Lead, water, unfltrd recoverable, µg/L (01051)	Manganese, water, fltrd, µg/L (01056)	Manganese, water, unfltrd recoverable, µg/L (01055)	Zinc, water, fltrd, µg/L (01090)	Zinc, water, unfltrd recoverable, µg/L (01092)
03021545 Union City Reservoir near Union City, PA (LAT 41 54 54N LONG 079 48 55W)						
AUG 2004						
26...	<1.0	<1.0	9.7	60	<5.0	<5.0
26...	<1.0	<1.0	5480	6140	<5.0	<5.0
03023012 Tamarack Lake West near Meadville, PA (LAT 41 36 45N LONG 080 07 02W)						
AUG 2004						
24...	<1.0	<1.0	4.1	90	<5.0	<5.0
24...	<1.0	<1.0	4.6	100	<5.0	<5.0
03023373 Tamarack Lake East near Meadville, PA (LAT 41 34 59N LONG 080 04 39W)						
AUG 2004						
24...	<1.0	<1.0	3.7	110	<5.0	<5.0
03024228 Sugar Lake near Bradleytown, PA (LAT 41 33 59N LONG 079 56 36W)						
AUG 2004						
24...	<1.0	<1.0	550	580	--	--
24...	<1.0	1.2	2750	3000	<5.0	<5.0

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

REMARKS.--Samples were collected using a D-Frame net with a mesh size of 500 µm. A dash(--) indicates there were no observations of the organism in the sample. Samples represent counts per 100 animal (approximate) subsamples. *Samples collected with a multiplate sampler.

BIOLOGICAL DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
BENTHIC MACROINVERTEBRATES

Station number	03010956	03012600	03017500	03025490	03026175	03030852
Date	10/28/03	10/27/03	10/28/03	10/20/03	10/28/03	10/21/03
Benthic macroinvertebrate	Count	Count	Count	Count	Count	Count
Platyhelminthes						
Turbellaria (FLATWORMS)						
Tricladida						
Planariidae	--	1	--	2	1	--
Nematoda (NEMATODES)	3	1	3	--	--	--
Nemertea (PROBOSCIS WORMS)						
Enopla						
Hoplonemertea						
Tetrastemmatidae						
Prostoma	1	--	1	--	2	--
Mollusca						
Gastropoda (SNAILS)						
Basommatophora						
Ancylidae						
Ferrissia	4	9	4	1	--	--
Hydrobiidae						
Amnicola limosa	--	16	--	--	3	--
Pyrgulopsis lustrica	--	4	--	--	--	--
Lymnaeidae						
Fossaria	--	--	--	--	1	--
Physidae						
Physa	--	--	--	--	5	--
Planorbidae						
Planorbella	--	--	--	--	--	--
Valvatidae						
Valvata	--	--	--	--	--	--
Bivalvia (CLAMS)						
Veneroida						
Corbiculidae						
Corbicula fluminea	--	--	--	--	--	--
Sphaeriidae	--	7	--	--	--	--
Pisidium	--	4	--	--	--	--
Sphaerium	--	2	--	--	--	--
Annelida						
Oligochaeta (AQUATIC EARTHWORMS)						
Lumbriculida						
Lumbriculidae	--	2	3	32	7	1
Tubificida						
Naididae	248	3	19	--	--	--
Tubificidae	--	1	--	--	4	--
Branchiura sowerbyi	1	--	--	--	--	--
Arthropoda						
Acariformes						
Hydrachnidia (WATER MITES)	20	2	10	--	--	1
Crustacea						
Cladocera	--	--	--	--	--	--

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

BIOLOGICAL DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
BENTHIC MACROINVERTEBRATES

03044000	03049652*	03063000*	03071700*	03077500	03078020	Station number
10/29/03	10/15/03	10/22/03	10/22/03	10/07/03	10/08/03	Date
Count	Count	Count	Count	Count	Count	Benthic macroinvertebrate
						Platyhelminthes
						Turbellaria (FLATWORMS)
						Tricladida
1	--	--	--	6	--	Planariidae
--	--	--	--	2	--	Nematoda (NEMATODES)
						Nemertea (PROBOSCIS WORMS)
						Enopla
						Hoplonemertea
						Tetrastemmatidae
--	--	--	--	--	--	*Prostoma*
						Mollusca
						Gastropoda (SNAILS)
						Basommatophora
						Ancylidae
--	--	--	--	--	3	*Ferrissia*
						Hydrobiidae
--	--	--	--	--	--	*Amnicola*
--	--	--	--	--	--	*Pyrgulopsis lustrica*
						Lymnaeidae
--	--	--	--	--	--	*Fossaria*
						Physidae
--	--	1	6	1	--	*Physa*
						Planorbidae
--	--	1	--	--	--	*Planorbella*
						Valvatidae
--	--	1	--	--	--	*Valvata*
						Bivalvia (CLAMS)
						Veneroida
						Corbiculidae
1	--	--	--	--	--	*Corbicula fluminea*
--	--	--	--	--	--	Sphaeriidae
--	--	--	--	--	--	*Pisidium*
1	2	--	--	1	--	*Sphaerium*
						Annelida
						Oligochaeta (AQUATIC EARTHWORMS)
						Lumbriculida
--	--	--	--	3	--	Lumbriculidae
						Tubificida
1	--	2	1	4	--	Naididae
--	--	1	--	--	--	Tubificidae
--	--	--	--	--	--	*Branchiura sowerbyi*
						Arthropoda
						Acariformes
1	--	--	--	10	20	Hydrachnidia (WATER MITES)
						Crustacea
--	--	--	--	16	--	Cladocera

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

BIOLOGICAL DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
BENTHIC MACROINVERTEBRATES

Station number	03010956	03012600	03017500	03025490	03026175	03030852
Date	10/28/03	10/27/03	10/28/03	10/20/03	10/28/03	10/21/03
Benthic macroinvertebrate	Count	Count	Count	Count	Count	Count
Amphipoda (SCUDS)						
Crangonyctidae						
Crangonyx	--	5	--	--	--	--
Gammaridae						
Gammarus	--	--	--	3	9	--
Isopoda (AQUATIC SOWBUGS)						
Asellidae						
Caecidotea	--	1	--	--	--	--
Decapoda						
Cambaridae (CRAYFISH)						
Cambarus	--	1	--	--	--	--
Insecta						
Ephemeroptera (MAYFLIES)						
Baetidae						
Acentrella	1	--	--	--	--	--
Baetiscidae						
Baetisca	2	--	1	--	--	--
Caenidae						
Caenis	6	4	--	1	--	--
Ephemerellidae	1	--	--	--	--	--
Ephemerella	5	1	7	--	--	--
Eurylophella	8	--	--	--	1	--
Serratella	--	2	--	7	17	1
Ephemeridae						
Ephemera	1	--	--	--	--	--
Heptageniidae						
Leucrocuta	--	--	1	--	--	--
Stenacron	--	3	--	--	--	--
Stenonema	--	10	4	4	3	--
Isonychiidae						
Isonychia	--	4	--	1	3	--
Leptophlebiidae	--	--	--	1	--	--
Odonata (DRAGONFLIES AND DAMSELFLIES)						
Coenagrionidae						
Enallagma	--	--	--	--	--	--
Plecoptera (STONEFLIES)						
Capniidae	--	--	--	--	--	--
Nemouridae	--	--	--	--	--	--
Perlidae						
Acroneuria	--	--	1	--	--	--
Taeniopterygidae						
Taenionema	--	--	2	--	--	--
Taeniopteryx	--	1	4	1	--	--
Hemiptera (TRUE BUGS)						
Corixidae	--	--	--	1	--	--
Megaloptera						
Corydalidae (FISHFLIES AND DOBSONFLIES)						
Corydalus	--	--	--	--	--	1
Nigronia	--	--	--	--	--	--

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

BIOLOGICAL DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
BENTHIC MACROINVERTEBRATES

03044000	03049652*	03063000*	03071700*	03077500	03078020	Station number
10/29/03	10/15/03	10/22/03	10/22/03	10/07/03	10/08/03	Date
Count	Count	Count	Count	Count	Count	Benthic macroinvertebrate
						Amphipoda (SCUDS)
						Crangonyctidae
--	--	--	--	1	--	*Crangonyx*
						Gammaridae
--	1	5	--	--	--	*Gammarus*
						Isopoda (AQUATIC SOWBUGS)
						Asellidae
--	--	--	--	35	--	*Caecidotea*
						Decapoda
						Cambaridae (CRAYFISH)
--	--	--	--	--	--	*Cambarus*
						Insecta
						Ephemeroptera (MAYFLIES)
						Baetidae
5	--	--	--	--	5	*Acentrella*
						Baetiscidae
--	--	--	--	--	--	*Baetisca*
						Caenidae
--	--	--	--	--	1	*Caenis*
--	--	--	--	--	--	Ephemerellidae
--	--	--	--	--	--	*Ephemerella*
--	--	--	--	--	--	*Eurylophella*
--	--	--	--	--	1	*Serratella*
						Ephemeridae
--	--	--	--	--	1	*Ephemera*
						Heptageniidae
--	--	--	--	--	--	*Leucrocuta*
--	--	--	--	--	--	*Stenacron*
--	3	--	--	5	16	*Stenonema*
						Isonychiidae
--	--	--	--	--	5	*Isonychia*
--	--	--	--	1	1	Leptophlebiidae
						Odonata (DRAGONFLIES AND DAMSELFLIES)
						Coenagrionidae
--	--	2	1	--	--	*Enallagma*
						Plecoptera (STONEFLIES)
1	--	--	--	--	--	Capniidae
--	--	--	--	--	1	Nemouridae
						Perlidae
--	--	--	--	--	--	*Acroneuria*
						Taeniopterygidae
--	--	--	--	--	--	*Taenionema*
1	1	--	--	--	12	*Taeniopteryx*
						Hemiptera (TRUE BUGS)
--	--	--	--	--	--	Corixidae
						Megaloptera
						Corydalidae (FISHFLIES AND DOBSONFLIES)
2	--	--	--	--	--	*Corydalus*
--	--	--	--	2	--	*Nigronia*

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

BIOLOGICAL DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
BENTHIC MACROINVERTEBRATES

Station number	03010956	03012600	03017500	03025490	03026175	03030852
Date	10/28/03	10/27/03	10/28/03	10/20/03	10/28/03	10/21/03
Benthic macroinvertebrate	Count	Count	Count	Count	Count	Count
Trichoptera (CADDISFLIES)						
Brachycentridae						
Brachycentrus	--	--	--	--	--	--
Micrasema	--	--	--	--	1	--
Glossosomatidae						
Glossosoma	--	--	7	--	--	--
Hydropsychidae						
Cheumatopsyche	3	17	2	4	5	8
Hydropsyche	3	4	2	--	1	82
Macrostemum	--	--	--	--	--	18
Potamyia	--	--	--	--	--	--
Hydroptilidae						
Hydroptila	--	1	4	--	--	--
Leucotrichia	--	--	--	--	--	--
Philopotamidae						
Chimarra	--	--	--	--	--	--
Dolophilodes	--	--	--	--	--	--
Polycentropodidae						
Neureclipsis	--	--	--	--	--	--
Polycentropus	--	--	--	--	--	--
Rhyacophilidae						
Rhyacophila	--	--	2	--	--	--
Uenoidae						
Neophylax	--	--	--	--	20	--
Coleoptera (BEETLES)						
Elmidae (RIFFLE BEETLES)						
Dubiraphia	--	1	--	--	--	--
Optioservus	8	1	10	16	-	1
Oulimnius	--	1	--	--	--	--
Promoresia	--	1	--	--	--	--
Stenelmis	--	10	--	22	--	--
Hydrophilidae						
Berosus	--	--	--	--	1	--
Psephenidae (WATER PENNIES)						
Psephenus	--	--	--	--	2	--
Diptera (TRUE FLIES)						
Ceratopogonidae (BITING MIDGES)	1	1	--	--	1	--
Chironomidae (MIDGES)	72	13	53	8	19	2
Empididae (DANCE FLIES)						
Hemerodromia	3	2	4	--	--	--
Psychodidae						
Telmatoscopus	--	--	--	1	--	--
Simuliidae (BLACK FLIES)						
Simulium	--	--	--	--	--	--
Tipulidae (CRANE FLIES)						
Antocha	4	5	11	1	1	--
Total Organisms	395	141	155	106	107	115
Total Taxa	20	34	22	17	21	9

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

BIOLOGICAL DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
BENTHIC MACROINVERTEBRATES

03044000	03049652*	03063000*	03071700*	03077500	03078020	Station number
10/29/03	10/15/03	10/22/03	10/22/03	10/07/03	10/08/03	Date
Count	Count	Count	Count	Count	Count	Benthic macroinvertebrate
						Trichoptera (CADDISFLIES)
						Brachycentridae
--	--	--	--	--	1	*Brachycentrus*
--	--	--	--	--	--	*Micrasema*
						Glossosomatidae
--	--	--	--	--	--	*Glossosoma*
						Hydropsychidae
64	24	--	--	9	11	*Cheumatopsyche*
17	--	--	--	1	32	*Hydropsyche*
--	--	--	--	--	--	*Macrostemum*
--	--	--	--	1	--	*Potamyia*
						Hydroptilidae
3	9	1	--	--	--	*Hydroptila*
--	--	--	--	--	1	*Leucotrichia*
						Philopotamidae
1	--	--	--	--	1	*Chimarra*
--	--	--	--	--	1	*Dolophilodes*
						Polycentropodidae
4	53	1	--	--	--	*Neureclipsis*
--	--	1	1	--	--	*Polycentropus*
						Rhyacophilidae
--	--	--	--	--	1	*Rhyacophila*
						Uenoidae
--	--	--	--	--	--	*Neophylax*
						Coleoptera (BEETLES)
						Elmidae (RIFFLE BEETLES)
--	--	--	--	--	--	*Dubiraphia*
--	--	--	--	--	6	*Optioservus*
--	--	--	--	6	--	*Oulimnius*
--	--	--	--	--	--	*Promoresia*
--	--	--	--	--	3	*Stenelmis*
						Hydrophilidae
--	--	--	--	--	--	*Berosus*
						Psephenidae (WATER PENNIES)
1	--	--	--	--	2	*Psephenus*
						Diptera (TRUE FLIES)
--	--	--	--	--	--	Ceratopogonidae (BITING MIDGES)
1	122	11	--	16	15	Chironomidae (MIDGES)
						Empididae (DANCE FLIES)
21	--	--	--	--	--	*Hemerodromia*
						Psychodidae
--	--	--	--	--	--	*Telmatoscopus*
						Simuliidae (BLACK FLIES)
--	--	--	--	1	--	*Simulium*
						Tipulidae (CRANE FLIES)
--	--	--	--	--	1	*Antocha*
126	215	27	9	121	141	Total Organisms
17	8	11	4	19	23	Total Taxa

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

BIOLOGICAL DATA, **WATER YEARS OCTOBER 2002 TO SEPTEMBER 2004**
BENTHIC MACROINVERTEBRATES

Station number	03099600	03103500	03104500	03105810	03109670*	04212945
Date	10/14/03	08/05/03	10/14/03	10/02/03	10/27/03	09/04/03
Benthic macroinvertebrate	Count	Count	Count	Count	Count	Count
Platyhelminthes						
Turbellaria (FLATWORMS)						
Tricladida						
Planariidae	--	9	1	-	5	--
Nematoda (NEMATODES)	--	--	--	1	--	--
Mollusca						
Gastropoda (SNAILS)						
Basommatophora						
Ancylidae						
Ferrissia	1	2	--	--	2	--
Hydrobiidae						
Amnicola	--	--	--	--	33	--
Physidae						
Physa	--	1	--	--	--	1
Pleuroceridae						
Elimia	--	--	--	--	2	--
Bivalvia (CLAMS)						
Veneroida						
Corbiculidae						
Corbicula fluminea	19	--	2	--	--	3
Sphaeriidae						
Pisidium	--	--	1	--	--	2
Sphaerium	2	--	5	--	--	--
Annelida						
Hirudinea (LEECHES)						
Rhynchobdellida						
Glossiphoniidae						
Helobdella	--	--	1	--	--	--
Oligochaeta (AQUATIC EARTHWORMS)						
Tubificida						
Enchytraeidae	--	2	--	--	--	--
Naididae	2	1	1	1	1	--
Tubificidae	8	1	8	9	--	1
Arthropoda						
Acariformes						
Hydrachnidia (WATER MITES)	1	3	--	--	--	2
Crustacea						
Cladocera	--	--	--	--	6	--
Amphipoda (SCUDS)						
Crangonyctidae						
Crangonyx	--	--	--	8	--	--
Gammaridae						
Gammarus	15	6	8	--	14	--
Isopoda (AQUATIC SOWBUGS)						
Asellidae						
Caecidotea	--	--	--	--	1	--
Decapoda						
Cambaridae (CRAYFISH)						
Orconectes	--	--	1	--	--	--

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

BIOLOGICAL DATA, **WATER YEARS OCTOBER 2002 TO SEPTEMBER 2004**
BENTHIC MACROINVERTEBRATES

Station number	03099600	03103500	03104500	03105810	03109670*	04212945
Date	10/14/03	08/05/03	10/14/03	10/02/03	10/27/03	09/04/03
Benthic macroinvertebrate	Count	Count	Count	Count	Count	Count
Insecta						
Ephemeroptera (MAYFLIES)						
Baetidae	--	--	--	--	--	1
Baetis	--	--	--	--	--	38
Caenidae						
Caenis	--	--	--	--	--	8
Ephemerellidae	--	--	--	--	--	1
Ephemeridae						
Ephemera	--	--	--	--	--	1
Heptageniidae	1	--	--	--	--	--
Stenonema	--	--	3	--	--	2
Isonychiidae						
Isonychia	--	--	--	3	--	2
Tricorythidae						
Tricorythodes	3	--	10	--	--	--
Odonata (DRAGONFLIES AND DAMSELFLIES)						
Coenagrionidae						
Argia	--	--	--	1	--	--
Plecoptera (STONEFLIES)						
Perlidae	--	--	--	--	--	1
Neoperla	--	--	--	--	--	2
Trichoptera (CADDISFLIES)						
Glossosomatidae						
Protoptila	--	--	--	--	--	5
Helicopsychidae						
Helicopsyche	--	--	--	--	--	3
Hydropsychidae						
Cheumatopsyche	5	52	33	32	--	13
Hydropsyche	--	21	8	18	--	41
Hydroptilidae						
Hydroptila	--	--	--	--	--	1
Leptoceridae						
Ceraclea	--	--	--	--	--	2
Philopotamidae						
Chimarra	--	--	--	--	--	3
Polycentropodidae						
Neureclipsis	--	4	--	--	--	--
Coleoptera (BEETLES)						
Elmidae (RIFFLE BEETLES)						
Macronychus	--	--	1	--	--	--
Optioservus	--	--	--	--	--	2
Oulimnius	--	--	--	11	--	--
Stenelmis	3	1	15	18	--	21
Psephenidae (WATER PENNIES)						
Psephenus	--	--	--	--	--	1

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

BIOLOGICAL DATA, **WATER YEARS OCTOBER 2002 TO SEPTEMBER 2004**
BENTHIC MACROINVERTEBRATES

Station number	03099600	03103500	03104500	03105810	03109670*	04212945
Date	10/14/03	08/05/03	10/14/03	10/02/03	10/27/03	09/04/03
Benthic macroinvertebrate	Count	Count	Count	Count	Count	Count
Diptera (TRUE FLIES)						
Chironomidae (MIDGES)	13	30	3	8	38	31
Empididae (DANCE FLIES)						
Hemerodromia	1	5	1	2	--	3
Simuliidae (BLACK FLIES)						
Simulium	2	--	6	--	--	5
Tipulidae (CRANE FLIES)						
Antocha	--	--	1	--	--	--
Total Organisms	76	138	109	112	102	196
Total Taxa	14	14	19	12	9	27

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

REMARKS.--Samples were collected using rapid bioassessment protocols for benthic macroinvertebrates using a D-Frame net with a mesh size of 500 µm. A dash (--) indicates there were no observations of the organism in the sample. Samples represent counts per 200 animal (approximate) subsamples.

BIOLOGICAL DATA, WATER YEAR **OCTOBER 2002 TO SEPTEMBER 2003**
BENTHIC MACROINVERTEBRATES

Station number	03017800	03020449	03022000	03031505
Date	12/17/02	12/17/02	11/21/02	11/13/02
Benthic macroinvertebrate	Count	Count	Count	Count
Mollusca				
Gastropoda (SNAILS)				
Basommatophora				
Ancylidae				
Ferrissia	--	2	22	--
Hydrobiidae				
Amnicola	--	--	4	--
Physidae				
Physa	--	--	1	--
Planorbidae				
Planorbella	--	--	1	--
Pleuroceridae				
Elimia	--	--	7	--
Bivalvia (CLAMS)				
Sphaeriidae				
Pisidium	--	--	21	--
Sphaerium	--	--	12	--
Annelida				
Oligochaeta (AQUATIC EARTHWORMS)				
Lumbriculida				
Lumbriculidae	1	8	--	--
Tubificida				
Tubificidae	--	1	5	3
Arthropoda				
Acariformes				
Hydrachnidia (WATER MITES)	--	--	--	2
Crustacea				
Amphipoda (SCUDS)				
Gammaridae				
Gammarus	--	--	1	--

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

BIOLOGICAL DATA, WATER YEAR **OCTOBER 2002 TO SEPTEMBER 2003**
BENTHIC MACROINVERTEBRATES

Station number	03017800	03020449	03022000	03031505
Date	12/17/02	12/17/02	11/21/02	11/13/02
Benthic macroinvertebrate	Count	Count	Count	Count
Insecta				
Ephemeroptera (MAYFLIES)				
Baetidae				
Baetis	--	1	--	--
Baetiscidae				
Baetisca	--	--	--	2
Caenidae				
Caenis	--	3	--	2
Ephemerellidae				
Ephemerella	5	22	--	--
Eurylophella	1	2	--	23
Serratella	10	--	--	--
Ephemeridae				
Ephemera	--	1	4	22
Heptageniidae	--	--	4	--
Cinygmula	--	1	--	--
Epeorus	21	4	--	--
Leucrocuta	--	1	--	--
Stenacron	--	1	14	--
Stenonema	--	3	--	11
Isonychiidae				
Isonychia	--	--	--	2
Leptophlebiidae	1	--	1	1
Paraleptophlebia	--	20	--	--
Potamanthidae				
Anthopotamus	--	--	2	--
Tricorythidae				
Tricorythodes	--	--	2	--
Odonata				
Coenagrionidae				
Argia	--	--	3	--
Cordulegastridae				
Cordulegaster	1	--	--	--
Gomphidae				
Lanthus	--	1	--	1
Plecoptera (STONEFLIES)				
Capniidae				
Allocapnia	--	8	--	44
Paracapnia	7	15	3	1
Chloroperlidae				
Alloperla	1	--	--	--
Leuctridae				
Leuctra	3	2	--	4
Perlidae				
Acroneuria	3	--	--	--
Perlodidae				
Isoperla	2	7	--	--
Taeniopterygidae				
Strophopteryx	--	2	--	--
Taenionema	1	--	--	--
Taeniopteryx	1	10	1	10

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

BIOLOGICAL DATA, WATER YEAR **OCTOBER 2002 TO SEPTEMBER 2003**
BENTHIC MACROINVERTEBRATES

Station number	03017800	03020449	03022000	03031505
Date	12/17/02	12/17/02	11/21/02	11/13/02
Benthic macroinvertebrate	Count	Count	Count	Count
Megaloptera				
Corydalidae				
Nigronia	--	--	--	3
Sialidae (ALDERFLIES)				
Sialis	--	2	1	--
Trichoptera (CADDISFLIES)				
Helicopsychidae				
Helicopsyche	--	--	1	--
Hydropsychidae				
Cheumatopsyche	--	3	1	--
Diplectrona	3	--	--	1
Hydropsyche	2	--	--	--
Hydroptilidae				
Hydroptila	--	--	2	--
Leptoceridae				
Oecetis	--	--	1	--
Limnephilidae				
Hydatophylax	--	--	1	--
Philopotamidae				
Dolophilodes	13	--	--	--
Psychomyiidae				
Psychomyia	--	--	--	1
Uenoidae				
Neophylax	--	3	1	3
Coleoptera (BEETLES)				
Elmidae (RIFFLE BEETLES)				
Dubiraphia	--	--	4	2
Optioservus	--	9	17	23
Oulimnius	9	--	--	2
Promoresia	2	1	--	--
Stenelmis	--	--	38	--
Psephenidae (WATER PENNIES)				
Ectopria	--	1	2	--
Psephenus	--	1	7	--

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

BIOLOGICAL DATA, WATER YEAR **OCTOBER 2002 TO SEPTEMBER 2003**
BENTHIC MACROINVERTEBRATES

Station number	03017800	03020449	03022000	03031505
Date	12/17/02	12/17/02	11/21/02	11/13/02
Benthic macroinvertebrate	Count	Count	Count	Count
Diptera (TRUE FLIES)				
Ceratopogonidae (BITING MIDGES)	--	--	--	1
Chironomidae (MIDGES)	103	29	26	50
Empididae (DANCE FLIES)	--	--	2	--
Psychodidae				
Pericoma	--	--	1	--
Tabanidae				
Chrysops	--	--	1	--
Tipulidae (CRANE FLIES)				
Antocha	1	1	--	--
Dicranota	5	3	--	--
Limnophila	--	1	--	--
Tipula	--	--	--	1
Total Organisms	196	169	214	215
Total Taxa	22	32	34	24

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

BIOLOGICAL DATA, WATER YEAR **OCTOBER 2002 TO SEPTEMBER 2003**
BENTHIC MACROINVERTEBRATES

Station number	03039815	03072850	03079448	04213273
Date	11/19/02	12/9/02	11/18/02	11/22/02
Benthic macroinvertebrate	Count	Count	Count	Count
Nematoda (NEMATODES)	--	--	1	--
Mollusca				
Gastropoda (SNAILS)				
Basommatophora				
Lymnaeidae				
Fossaria	--	--	--	14
Physidae				
Physa	--	--	--	3
Bivalvia (CLAMS)				
Sphaeriidae				
Sphaerium	--	2	1	--
Annelida				
Oligochaeta (AQUATIC EARTHWORMS)				
Lumbricina	--	--	4	5
Lumbriculida				
Lumbriculidae	--	--	--	8
Tubificida				
Enchytraeidae	--	--	--	2
Naididae	--	6	1	--
Tubificidae	--	1	--	1
Arthropoda				
Acariformes				
Hydrachnidia (WATER MITES)	3	2	7	--
Crustacea				
Amphipoda (SCUDS)				
Crangonyctidae				
Crangonyx	--	1	--	--

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

BIOLOGICAL DATA, WATER YEAR **OCTOBER 2002 TO SEPTEMBER 2003**
BENTHIC MACROINVERTEBRATES

Station number	03039815	03072850	03079448	04213273
Date	11/19/02	12/9/02	11/18/02	11/22/02
Benthic macroinvertebrate	Count	Count	Count	Count
Insecta				
Ephemeroptera (MAYFLIES)				
Baetidae	--	--	1	--
Acerpenna	3	--	--	--
Baetis	--	--	3	3
Caenidae				
Caenis	--	132	--	176
Ephemerellidae				
Ephemerella	7	--	13	--
Eurylophella	15	--	--	1
Serratella	--	--	--	1
Ephemeridae				
Ephemera	2	--	8	18
Heptageniidae	4	--	--	1
Epeorus	21	--	1	--
Stenacron	1	5	--	1
Stenonema	11	6	--	7
Leptophlebiidae	13	1	3	--
Plecoptera (STONEFLIES)	1	1	1	--
Capniidae				
Allocapnia	--	15	--	--
Paracapnia	5	--	--	9
Leuctridae				
Leuctra	4	--	--	--
Peltoperlidae				
Tallaperla	--	--	3	--
Perlidae				
Acroneuria	3	--	--	--
Taeniopterygidae				
Taeniopteryx	--	--	8	--

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

BIOLOGICAL DATA, WATER YEAR **OCTOBER 2002 TO SEPTEMBER 2003**
BENTHIC MACROINVERTEBRATES

Station number	03039815	03072850	03079448	04213273
Date	11/19/02	12/9/02	11/18/02	11/22/02
Benthic macroinvertebrate	Count	Count	Count	Count
Megaloptera				
Corydalidae				
Nigronia	1	--	--	1
Sialidae (ALDERFLIES)				
Sialis	2	--	--	--
Trichoptera (CADDISFLIES)				
Helicopsychidae				
Helicopsyche	--	--	--	2
Hydropsychidae				
Cheumatopsyche	10	4	--	2
Diplectrona	--	--	17	--
Hydropsyche	22	--	--	2
Lepidostomatidae				
Lepidostoma	--	--	1	--
Leptoceridae	2	--	--	--
Mystacides	--	--	--	1
Oecetis	--	--	--	2
Limnephilidae				
Hydatophylax	--	--	1	--
Philopotamidae				
Chimarra	2	--	--	1
Dolophilodes	12	--	--	--
Polycentropodidae				
Neureclipsis	1	--	2	--
Rhyacophilidae				
Rhyacophila	1	7	7	--
Uenoidae				
Neophylax	1	--	--	--
Coleoptera (BEETLES)				
Dytiscidae				
Agabus	--	--	--	1
Elmidae (RIFFLE BEETLES)				
Dubiraphia	--	3	--	3
Optioservus	--	7	36	3
Oulimnius	26	--	51	1
Promoresia	18	--	--	--
Stenelmis	--	38	--	--
Psephenidae (WATER PENNIES)				
Psephenus	--	1	--	2

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PENNSYLVANIA WATER-QUALITY NETWORK

BIOLOGICAL DATA, WATER YEAR **OCTOBER 2002 TO SEPTEMBER 2003**
BENTHIC MACROINVERTEBRATES

Station number	03039815	03072850	03079448	04213273
Date	11/19/02	12/9/02	11/18/02	11/22/02
Benthic macroinvertebrate	Count	Count	Count	Count
Diptera (TRUE FLIES)				
Ceratopogonidae (BITING MIDGES)	--	2	--	--
Bezzia	--	--	--	2
Probezzia	--	--	1	--
Chironomidae (MIDGES)	50	80	15	60
Empididae (DANCE FLIES)				
Hemerodromia	--	2	1	--
Psychodidae				
Pericoma	--	--	--	1
Simuliidae (BLACK FLIES)				
Prosimulium	--	--	--	1
Simulium	--	5	--	--
Tipulidae (CRANE FLIES)				
Antocha	--	--	1	--
Dicranota	1	--	1	1
Hexatoma	4	--	1	1
Molophilus	--	--	--	1
Tipula	1	1	--	6
Total Organisms	247	322	190	344
Total Taxa	30	22	27	35

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PRESQUE ISLE BACTERIA PROJECT

The following table contains water-quality data from two sites at Presque Isle Beach 2 in Erie, Pennsylvania sampled as part of a water-quality monitoring and modeling study to forecast fecal-indicator bacteria in recreational waters. The project is a cooperative study conducted by the U.S. Geological Survey in cooperation with the Erie County Health Department. The results were based on 33 water samples collected from Lake Erie at each of two recreational sites (referred to as east and west) at Presque Isle Beach 2. Samples were analyzed for *Escherichia coli* bacteria. The objective is to develop a surrogate for the rapid assesment of the recreational water-quality of Presque Isle Beach 2 using factors such as wave height, number of birds on the beach, lake-current direction, rainfall, turbidity, and wind direction. For additional information, contact Tammy Zimmerman at the U.S. Geological Survey, 215 Limekiln Road, New Cumberland, PA 17070: 717-730-6974 (email: tmzimmer@usgs.gov).

REMARKS--Explanation of column headings--**FNMU**: formazin nephelometric units; **mg/L**: milligrams per liter; **µS/cm**: microsiemens per centimeter at 25 degrees Celsius; **deg C**: degrees Celsius; **col/100 mL**: colonies per 100 milliliters.

420752080084601 -- 28b Presque Isle Beach 2 West

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Turbidity, IR LED light, mult. detect, FNMU (63684)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	*E coli*, modif. m-TEC, water, col/100 mL (90902)
JUN 2004									
27...	0840	84218	84218	65	9.9	8.0	303	19.7	60
28...	0840	84218	84218	16	7.8	8.0	299	19.9	23
29...	0830	84218	84218	56	9.4	7.9	306	18.3	37
JUL									
04...	0910	84218	84218	2.4	8.1	7.9	290	20.4	3k
05...	1040	84218	84218	160	8.6	8.1	245	21.9	73
06...	1100	84218	84218	13	9.2	8.4	291	23.1	<1
11...	0850	84218	84218	5.5	8.1	8.0	288	22.0	<1
12...	0850	84218	84218	6.2	7.6	7.9	289	21.8	9k
13...	0940	84218	84218	6.6	8.5	8.0	307	22.7	9k
18...	0900	84218	84218	8.2	7.2	7.9	288	21.7	10k
19...	0950	84218	84218	16	7.8	8.0	288	21.9	18k
20...	1110	84218	84218	34	7.5	8.0	296	23.2	73
25...	0840	84218	84218	7.1	8.5	8.2	291	22.0	18k
26...	0830	84218	84218	7.8	8.1	8.2	290	21.9	10k
27...	1140	84218	84218	5.8	8.0	8.1	289	22.0	480
AUG									
01...	0840	84218	84218	11	7.5	7.8	282	22.7	210
02...	0730	84218	84218	5.7	7.9	8.1	287	22.6	36
03...	1040	84218	84218	4.9	8.5	8.1	287	23.6	18k
08...	0850	84218	84218	21	8.5	8.1	292	21.1	82
09...	0710	84218	84218	7.1	8.1	8.1	293	21.2	<1
10...	1350	84218	84218	41	8.5	8.1	289	22.9	140
15...	0900	84218	84218	6.5	8.8	8.0	288	20.8	<1
16...	0900	84218	84218	3.4	8.8	8.2	286	21.0	<1
17...	1040	84218	84218	1.9	8.9	8.3	283	22.7	--
22...	0910	84218	84218	5.0	8.7	8.1	287	19.5	<1
23...	0830	84218	84218	26	8.8	8.1	290	20.3	36
24...	0940	84218	84218	7.4	8.6	8.1	290	21.9	10k
29...	0840	84218	84218	--	--	--	--	--	10k
30...	0850	84218	84218	13	8.4	8.0	287	22.0	82
SEP									
05...	0830	84218	84218	4.5	8.1	8.2	282	22.0	10k
06...	0750	84218	84218	4.6	7.9	8.1	285	21.4	<1
07...	1040	84218	84218	11	8.0	8.1	286	21.9	82

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
PRESQUE ISLE BACTERIA PROJECT

420755080084501 -- 29b Presque Isle Beach 2 East

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Turbidity, IR LED light, mult. detect, FNMU (63684)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	E coli, modif. m-TEC, water, col/100 mL (90902)
JUN 2004									
27...	0850	84218	84218	64	8.7	8.0	303	19.7	43
28...	0850	84218	84218	27	9.2	8.0	301	19.7	34
29...	0820	84218	84218	150	8.9	8.0	302	18.7	46
JUL									
04...	0920	84218	84218	7.8	7.9	8.0	291	20.4	3k
05...	1030	84218	84218	140	8.4	8.1	291	21.9	160
06...	1110	84218	84218	11	7.9	8.0	291	22.4	<1
11...	0900	84218	84218	5.6	7.7	8.0	288	22.1	<1
12...	0900	84218	84218	8.7	7.7	7.9	289	21.7	18k
13...	0930	84218	84218	15	7.9	8.0	288	22.8	18k
18...	0910	84218	84218	12	7.0	7.9	289	21.8	<1
19...	1000	84218	84218	14	7.9	8.0	288	21.9	10k
20...	1120	84218	84218	53	8.0	8.1	293	22.9	45
25...	0850	84218	84218	7.9	8.4	8.3	291	22.3	10k
26...	0840	84218	84218	5.5	7.7	8.1	290	22.0	290
27...	1130	84218	84218	7.1	8.1	8.1	289	22.0	330
AUG									
01...	0850	84218	84218	18	7.9	7.9	285	22.6	290
02...	0740	84218	84218	5.2	8.0	8.0	288	22.4	36
03...	1050	84218	84218	6.6	7.9	8.2	287	23.8	<1
08...	0900	84218	84218	21	8.7	8.1	291	21.2	36
09...	0720	84218	84218	8.0	8.2	8.1	293	21.5	10k
10...	1340	84218	84218	28	8.7	8.1	289	22.9	45
15...	0910	84218	84218	4.2	8.7	8.1	287	21.0	9k
16...	0910	84218	84218	3.9	8.3	8.1	286	21.2	<1
17...	1050	84218	84218	2.6	8.7	8.2	284	22.6	--
22...	0900	84218	84218	8.8	8.7	8.1	287	19.7	<1
23...	0840	84218	84218	17	8.9	8.1	289	20.4	36
24...	0930	84218	84218	6.9	8.3	8.0	291	21.8	<1
29...	0850	84218	84218	--	--	--	--	--	27
30...	0900	84218	84218	14	8.6	8.0	287	21.9	370
SEP									
05...	0840	84218	84218	3.6	7.8	8.2	282	22.1	<1
06...	0740	84218	84218	4.8	8.2	8.1	284	21.4	<1
07...	1050	84218	84218	11	8.1	8.1	286	22.0	91

SPECIAL NOTES, REMARK CODES, AND SELECTED CONSTITUENT DEFINITIONS

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NOTES--Traditionally, dissolved trace-element concentrations have been reported at the microgram per liter(µG/L) level. Recent evidence, mostly from large rivers, indicates that actual dissolved-phase concentrations for a number of trace elements are within the range of 10's to 100's of nanograms per liter (ng/L). Data above the µG/L level should be viewed with caution. Such data may actually represent elevated environmental concentrations from natural or human causes; however, these data could reflect contamination introduced during sampling, processing, or analysis. To confidently produce dissolved trace-element data with insignificant contamination, the U.S. Geological Survey began using new trace-element protocols at some stations in water year 1994. Full implementation of the protocols took place during the 1995 water year.

--Sample handling procedures at all **National Trends Network** stations were changed substantially on January 11, 1994, in order to reduce contamination from the sample shipping container. The data for samples before and after that date are different and not directly comparable. A tabular summary of the differences based on a special intercomparison study, is available from the NADP/NTN Coordination Office, Colorado State University, Fort Collins, CO 80523 (Telephone: 303-491-5643).

--In March 1989 a bias was discovered in the turbidimetric method for sulfate analysis for those samples analyzed by the U.S. Geological Survey National Water-Quality Laboratory indicating that values below 75 mg/L have a median positive bias of 2 mg/L above the true value for the period between 1982 and 1989.

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

MBASCOR = M - 0.0088N - 0.00019C

where:

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

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

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Remark Codes.--The following remark codes may appear with the data tables in this report:

PRINTED OUTPUT	REMARK
E,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.
M	Presence of material verified, but not quantified.
N	Presumptive evidence of presence of material.
U	Material specifically analyzed for, but not detected.
A	Value is an average.
V	Analyte was detected in both the environmental sample and the associated blanks.
S	Most probable value.

****

EXPLANATION OF CODES USED TO DEFINE SAMPLE COLLECTION PROCEDURES (partial listing)

(71999) SAMPLE PURPOSE CODES:

10--Routine
15--NAWQA
20--NASQAN
30--Benchmark
50--GW Network

(82398) SAMPLE METHOD CODES:

10--Equal width increment
20--Equal discharge increment
30--Single vertical
40--Multiple verticals
50--Point sample
70--Grab sample
120--Velocity integrated
4040--Submersible pump

(84164) SAMPLER TYPE: (partial list)

110--Sewage sampler

3011--US D-77

3035--DH-76 Trace metal sampler with teflon gasket and nozzle

3039--D-77 Trace metal

3040--D-77 Trace metal modified teflon bag sampler

3045--DH-81 with Teflon cap and nozzle

8010--Other (other than a defined sampler type)

SPECIAL NOTES, REMARK CODES AND SELECTED CONSTITUENT DEFINITIONS--Continued

Explanation of selected abbreviations used in constituent definitions in water-quality tables:

AC-FT	acre-feet
BOT MAT	bottom material (Unconsolidated material of which a streambed, lake, pond, reservoir, or estuary bottom is composed.)
COLS/100 ML	colonies per 100 milliliters
DIS	dissolved
FET	fixed end-point titration
FLD	field (Measurement determined at field site.)
F/S	feet per second
G/M	gallons per minute
G/SQM; MG/M2	grams or milligrams per square meter
IT	incremental titration
KF AGAR	nutrient medium for growth of fecal streptococcal bacteria
µG/L	micrograms per liter
µS/CM	microsiemens per centimeter
MG/L	milligrams per liter
MG/M2	milligrams per square meter
MM OF HG	millimeters of mercury
NONCARB	noncarbonate
NTU	nephelometric turbidity unit
PCI/L	picocuries per liter
REC	recoverable
TOT	total
T/DAY	tons per day
WH IT	whole water, incremental titration (Alkalinity, bicarbonate, and carbonate as determined by incremental titration of unfiltered water at the field site.)
2 SIGMA	Counting statistic that represents error in the reported radon, uranium, or tritium value caused by variations in sample counting, background radiation, volume of sample, and decay since sample was collected.
0.7µ GF	0.7 micron glass-fiber filter (Water filtered through a glass-fiber membrane filter with openings that are 0.7 microns in size.)

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(00027) AGENCY COLLECTING SAMPLE CODES: (partial listing)

1028 --U.S. Geological Survey
84218 --Erie County Health Department

(00028) AGENCY ANALYZING SAMPLE CODES: (partial listing)

1028 --U.S. Geological Survey
80020 --U.S. Geological Survey, National Water-Quality Laboratory, Denver, Colorado
9813 --Pennsylvania Department of Environmental Protection
83613 --USGS Water Science Center, Water-Quality Laboratory, Troy, New York
84218 --Erie County Health Department

MEDIUM CODES: (partial listing)

9-- Surface water.
6-- Ground water.
R-- Quality-control sample. Surface water.
S-- Quality-control sample, Ground water.
Q-- Quality-control sample. Artificial.

GROUND-WATER-LEVEL STATION RECORDS

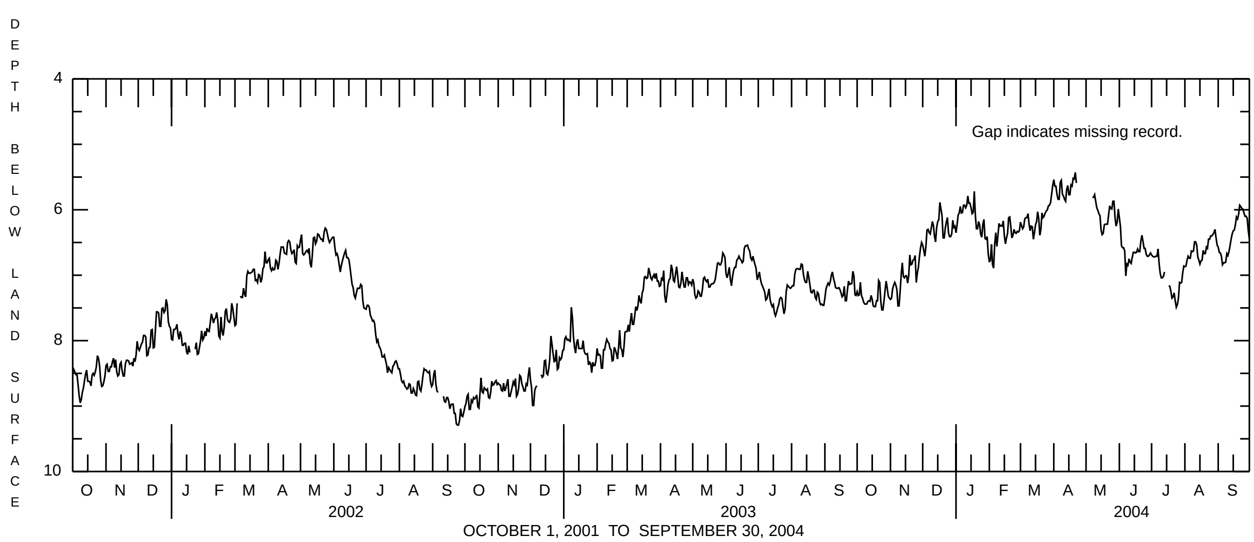
ALLEGHENY COUNTY

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.--Data collection platform with 60-minute recording interval. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 1,035 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 3.40 ft above land-surface datum.
REMARKS.--In addition to the daily maximum water level table shown below, daily minimum and mean water levels, since October 1987, are available from the USGS Pennsylvania Water Science Center Office.
PERIOD OF RECORD.--November 1967 to current year.
EXTREMES FOR PERIOD OF RECORD.--Prior to October 2000, the extremes were based on extremes of the daily maximum depth below land-surface datum. Since that date, the extremes are based on the instantaneous depth below land-surface datum.
Highest water level, 4.67 ft below land-surface datum, Mar. 21, 1997, also May 2, 1998; lowest, 9.29 ft below land-surface datum, Sept. 25, 2002.
EXTREMES FOR CURRENT YEAR.--Highest water level, 5.28 ft below land-surface datum, Apr. 21; lowest, 7.53 ft below land-surface datum, Oct. 24, 25.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.25	7.37	6.54	6.35	6.79	6.19	5.54	---	6.12	6.69	6.87	6.57
2	7.31	7.35	6.62	6.23	6.78	6.24	5.64	---	6.25	6.71	6.86	6.65
3	7.30	7.21	6.71	6.08	6.53	6.29	5.64	---	6.55	6.72	6.77	6.66
4	7.11	7.15	6.56	6.05	6.84	6.26	5.77	---	6.58	6.72	6.71	6.71
5	7.31	7.11	6.31	5.95	6.89	6.14	5.84	---	6.58	6.71	6.74	6.84
6	7.35	7.15	6.30	6.05	6.53	6.12	5.84	---	6.63	6.71	6.74	6.81
7	7.41	7.22	6.35	6.04	6.35	6.12	5.58	5.81	7.01	6.60	6.63	6.81
8	7.44	7.47	6.37	5.93	6.56	6.06	5.55	5.81	6.83	6.82	6.64	6.80
9	7.44	7.47	6.28	5.93	6.40	6.22	5.76	5.77	6.85	6.97	6.63	6.67
10	7.44	7.25	6.18	5.97	6.21	6.32	5.79	5.87	6.75	7.04	6.49	6.70
11	7.40	6.99	6.24	5.93	6.25	6.25	5.84	5.97	6.80	7.04	6.49	6.64
12	7.39	6.81	6.41	5.79	6.24	6.26	5.87	6.01	6.82	7.02	6.54	6.55
13	7.40	7.02	6.49	5.90	6.25	6.45	5.69	6.06	6.73	6.95	6.72	6.45
14	7.31	7.04	6.27	5.90	6.17	6.35	5.63	6.09	6.65	---	6.77	6.37
15	7.37	7.01	6.18	5.97	6.40	6.23	5.77	6.31	6.65	---	6.83	6.32
16	7.47	7.01	6.15	6.06	6.52	6.18	5.77	6.38	6.66	---	6.78	6.31
17	7.48	7.12	5.89	6.04	6.43	6.03	5.62	6.36	6.65	7.16	6.77	6.23
18	7.48	7.01	5.99	5.72	6.36	6.14	5.64	6.23	6.60	7.17	6.62	6.11
19	7.39	6.69	6.09	6.08	6.12	6.39	5.52	6.22	6.64	7.25	6.67	6.14
20	7.39	6.84	6.43	6.29	6.11	6.30	5.53	6.22	6.64	7.35	6.67	6.07
21	7.08	6.83	6.43	6.29	6.26	6.05	5.43	6.22	6.48	7.33	6.57	5.93
22	7.11	6.77	6.28	6.18	6.43	6.12	5.59	6.08	6.39	7.27	6.59	5.95
23	7.40	6.76	6.19	6.23	6.39	6.10	---	5.94	6.48	7.39	6.45	5.98
24	7.53	6.70	6.12	6.38	6.30	6.05	---	5.98	6.59	7.49	6.45	5.99
25	7.53	7.11	6.35	6.42	6.35	6.02	---	5.99	6.59	7.45	6.40	6.05
26	7.39	6.97	6.41	6.22	6.36	6.00	---	5.87	6.68	7.35	6.40	6.10
27	7.23	6.88	6.41	6.15	6.33	5.94	---	5.87	6.71	7.11	6.38	6.10
28	7.09	6.71	6.37	6.44	6.34	5.93	---	6.12	6.71	7.12	6.35	6.13
29	7.20	6.58	6.16	6.45	6.32	5.89	---	6.25	6.69	7.11	6.30	6.32
30	7.32	6.50	6.27	6.41	---	5.76	---	6.19	6.66	6.96	6.43	6.45
31	7.35	---	6.25	6.68	---	5.63	---	5.99	---	6.86	6.54	---
MEAN	7.34	7.00	6.31	6.13	6.41	6.13	5.67	6.06	6.63	7.04	6.61	6.38
MAX	7.53	7.47	6.71	6.68	6.89	6.45	5.87	6.38	7.01	7.49	6.87	6.84
MIN	7.08	6.50	5.89	5.72	6.11	5.63	5.43	5.77	6.12	6.60	6.30	5.93



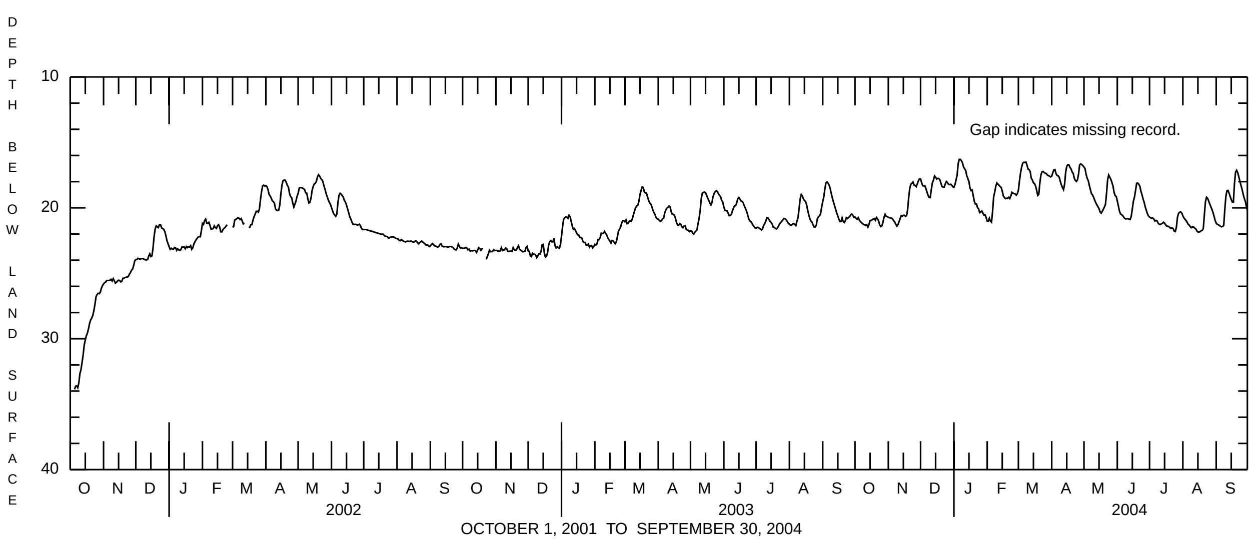
ARMSTRONG COUNTY

405344079380201. Local number, AR 109.

LOCATION.--Lat 40°53'44", long 79°38'02", Hydrologic Unit 05010009, at State Game Lands No. 259.
Owner: U.S. Geological Survey.
AQUIFER.--Allegheny Formation, Middle Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 152.5 ft, cased to 19 ft.
INSTRUMENTATION.--Data collection platform with 60-minute recording interval. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 1,400 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of instrument shelf, 2.00 ft above land-surface datum.
REMARKS.--In addition to the daily mean water level table shown below, daily maximum and minimum water levels are available from the USGS Pennsylvania Water Science Center Office. Water levels of Oct. 21-25, 2002 affected by well pumping and clean out of Oct. 21, 2002.
PERIOD OF RECORD.--October 2001 to current year.
EXTREMES FOR PERIOD OF RECORD.--The extremes shown are extremes of the instantaneous depth below land surface for the period of record indicated above.
Highest water level, 16.26 ft below land-surface datum, Jan. 7, 2004; lowest, 34.64 ft below land-surface datum, Oct. 4, 2001.
EXTREMES FOR CURRENT YEAR.--Highest water level, 16.26 ft below land-surface datum, Jan. 7; lowest, 21.88 ft below land-surface datum, Aug. 15, 16.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.71	20.72	17.80	18.43	21.01	18.66	17.58	16.88	19.47	20.71	20.61	21.16
2	20.80	20.76	18.08	18.23	21.02	17.94	17.32	17.00	19.85	20.76	20.77	21.26
3	20.87	20.77	18.31	17.88	20.79	17.34	17.10	17.44	20.24	20.80	20.88	21.30
4	20.75	20.79	18.33	17.51	21.01	16.90	17.08	17.74	20.47	20.78	20.97	21.34
5	20.93	20.85	18.31	16.63	21.10	16.59	17.38	17.93	20.52	20.86	21.11	21.42
6	21.05	20.99	18.54	16.30	20.28	16.52	17.53	18.29	20.59	21.01	21.26	21.45
7	21.12	21.08	18.80	16.30	19.15	16.54	17.55	18.61	20.71	20.96	21.33	21.42
8	21.21	21.26	19.04	16.40	18.79	16.50	17.67	18.92	20.82	21.00	21.45	21.35
9	21.27	21.40	19.21	16.56	18.35	16.73	17.98	19.02	20.85	21.17	21.52	20.13
10	21.30	21.28	19.22	16.88	18.10	17.04	18.25	19.20	20.83	21.26	21.44	19.14
11	21.35	21.06	18.59	17.02	18.19	17.08	18.45	19.42	20.83	21.28	21.46	18.69
12	21.29	20.82	18.08	17.15	18.27	17.24	18.61	19.61	20.87	21.22	21.55	18.67
13	21.47	20.60	17.89	17.54	18.38	17.74	18.19	19.77	20.89	21.19	21.60	18.88
14	21.28	20.64	17.56	17.77	18.44	17.87	17.26	19.91	20.64	21.10	21.76	19.13
15	20.97	20.57	17.66	17.99	18.73	18.09	16.83	20.06	20.07	21.17	21.84	19.37
16	20.96	20.57	17.80	18.49	19.09	18.14	16.70	20.31	19.49	21.30	21.85	19.56
17	20.92	20.65	17.75	18.68	19.21	18.34	16.71	20.41	19.17	21.39	21.82	19.56
18	20.85	20.60	17.76	18.64	19.30	18.67	16.91	20.27	18.67	21.41	21.75	18.16
19	20.82	20.12	17.86	19.07	19.27	19.05	17.02	20.11	18.13	21.43	21.73	17.27
20	20.95	19.18	18.13	19.50	19.27	18.96	17.26	19.94	18.11	21.52	21.59	17.13
21	20.74	18.49	18.38	19.72	19.19	18.07	17.37	19.73	18.20	21.57	20.52	17.30
22	20.85	18.19	18.42	19.71	19.29	17.48	17.74	18.90	18.35	21.53	19.54	17.61
23	21.01	18.12	18.41	19.98	19.08	17.24	17.91	17.85	18.73	21.59	19.19	17.94
24	21.31	18.02	18.17	20.08	18.81	17.22	17.98	17.49	19.01	21.78	19.27	18.26
25	21.43	18.27	17.99	20.37	18.88	17.30	17.85	17.66	19.32	21.81	19.48	18.56
26	21.38	18.29	18.07	20.32	18.91	17.35	17.40	17.82	19.58	21.47	19.70	18.93
27	21.12	18.38	18.20	20.24	18.94	17.38	16.71	18.06	19.93	20.70	19.91	19.24
28	20.72	18.16	18.23	20.41	19.03	17.50	16.64	18.33	20.19	20.42	20.11	19.47
29	20.49	17.93	18.20	20.55	18.93	17.54	16.70	18.82	20.44	20.34	20.34	19.86
30	20.65	17.79	18.27	20.53	---	17.58	16.78	19.06	20.62	20.31	20.64	20.22
31	20.67	---	18.39	20.75	---	17.64	---	19.13	---	20.40	20.96	---
MEAN	21.01	19.88	18.24	18.57	19.27	17.56	17.42	18.83	19.85	21.10	20.90	19.46
MAX	21.47	21.40	19.22	20.75	21.10	19.05	18.61	20.41	20.89	21.81	21.85	21.45
MIN	20.49	17.79	17.56	16.30	18.10	16.50	16.64	16.88	18.11	20.31	19.19	17.13



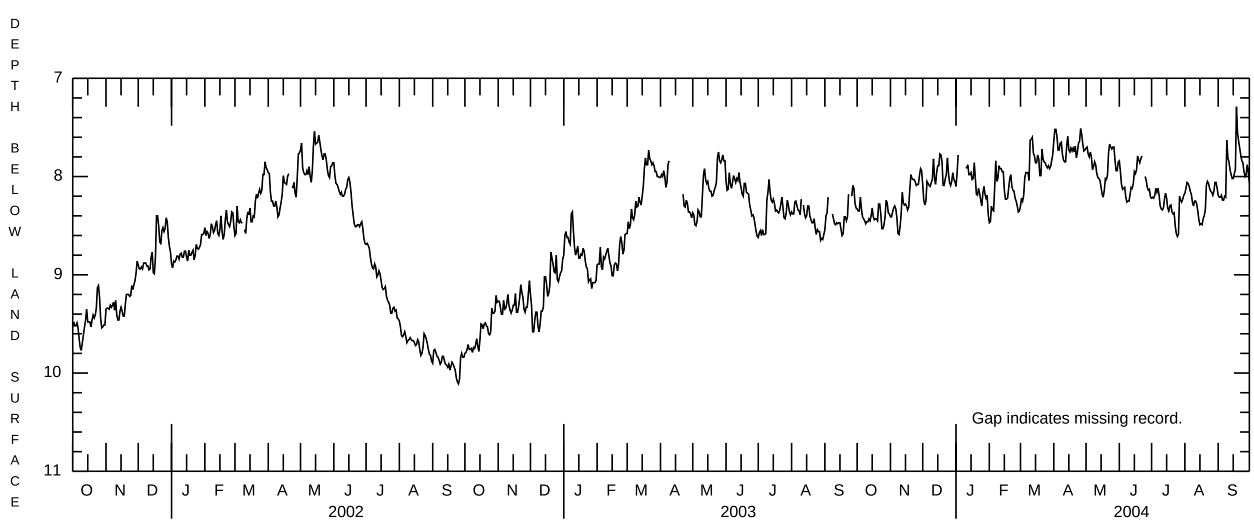
BEAVER COUNTY

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.
INSTRUMENTATION.--Data collection platform with 60-minute recording interval since Aug. 23, 2001. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 930 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 2.00 ft above land-surface datum.
REMARKS.--In addition to the daily maximum water level table shown below, daily minimum and mean water levels, since October 1991, are available from the USGS Pennsylvania Water Science Center Office.
PERIOD OF RECORD.--November 1967 to current year.
EXTREMES FOR PERIOD OF RECORD.--Prior to October 2000, the extremes were based on extremes of the daily maximum depth below land-surface datum. Since that date, the extremes are based on the instantaneous depth below land-surface datum.
Highest water level, 6.74 ft below land-surface datum, Sept. 17, 18, 2004: lowest, 13.72 ft below land-surface datum, June 5, 1968.
EXTREMES FOR CURRENT YEAR.--Highest water level, 6.74 ft below land-surface datum, Sept. 17, 18; lowest, 8.61 ft below land-surface datum, July 25.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.33	8.41	8.08	8.10	8.47	8.30	7.64	7.71	7.84	8.22	8.17	8.19
2	8.35	8.41	8.24	7.97	8.46	8.22	7.52	7.70	7.95	8.21	8.12	8.21
3	8.35	8.36	8.29	7.78	8.30	8.25	7.52	7.77	8.08	8.22	8.06	8.21
4	8.21	8.32	8.25	---	8.34	8.19	7.60	7.80	8.13	8.19	8.07	8.19
5	8.33	8.30	8.05	---	8.35	8.01	7.73	7.75	8.12	8.12	8.10	8.24
6	8.41	8.33	8.07	---	8.11	7.96	7.73	7.80	8.11	8.16	8.15	8.24
7	8.43	8.42	8.09	---	7.84	7.96	7.66	7.93	8.21	8.12	8.18	8.20
8	8.45	8.58	8.10	---	8.05	7.96	7.65	7.90	8.26	8.19	8.26	8.21
9	8.48	8.59	8.06	---	8.02	8.04	7.77	7.85	8.25	8.30	8.30	7.63
10	8.46	8.51	8.03	7.91	7.89	7.63	7.83	7.88	8.25	8.33	8.25	7.81
11	8.46	8.37	7.82	7.91	7.92	7.62	7.85	7.97	8.18	8.34	8.25	7.85
12	8.43	8.16	8.01	7.88	7.92	7.60	7.85	8.01	8.11	8.32	8.28	7.93
13	8.45	8.27	8.08	7.98	7.95	7.76	7.69	8.02	8.12	8.23	8.35	7.98
14	8.40	8.29	7.96	7.98	7.95	7.79	7.59	8.04	8.07	8.17	8.44	8.02
15	8.32	8.28	7.89	7.96	8.14	7.86	7.73	8.11	7.95	8.22	8.49	8.02
16	8.41	8.30	7.89	8.03	8.23	7.86	7.75	8.18	7.97	8.32	8.48	7.97
17	8.44	8.34	7.77	8.02	8.23	7.78	7.71	8.21	7.93	8.35	8.49	7.93
18	8.43	8.31	7.78	7.86	8.22	7.82	7.74	8.14	7.79	8.30	8.43	7.29
19	8.43	8.13	7.85	8.02	8.12	7.99	7.71	8.02	7.83	8.29	8.40	7.56
20	8.45	7.98	8.09	8.18	8.02	7.99	7.75	8.03	7.86	8.36	8.34	7.64
21	8.28	8.02	8.09	8.19	7.98	7.72	7.69	7.98	7.82	8.38	8.09	7.71
22	8.28	8.03	8.02	8.12	8.10	7.82	7.81	7.75	7.79	8.37	8.05	7.78
23	8.38	8.03	7.98	8.17	8.14	7.85	7.75	7.67	---	8.50	8.07	7.84
24	8.53	8.05	7.81	8.24	8.15	7.86	7.66	7.70	---	8.58	8.12	7.86
25	8.53	8.09	7.97	8.30	8.22	7.89	7.64	7.72	8.00	8.61	8.15	7.95
26	8.49	8.08	8.06	8.17	8.25	7.91	7.51	7.70	8.04	8.59	8.16	8.00
27	8.41	8.08	8.09	8.10	8.30	7.89	7.57	7.70	8.11	8.20	8.19	7.98
28	8.24	7.99	8.05	8.18	8.36	7.92	7.67	7.84	8.14	8.24	8.15	7.88
29	8.27	7.92	7.96	8.22	8.35	7.90	7.74	7.94	8.13	8.26	8.06	7.96
30	8.37	7.94	8.03	8.19	---	7.84	7.73	7.94	8.21	8.23	8.06	8.07
31	8.38	---	8.05	8.39	---	7.78	---	7.85	---	8.19	8.12	---
MEAN	8.39	8.23	8.02	8.07	8.15	7.90	7.69	7.89	8.04	8.29	8.22	7.95
MAX	8.53	8.59	8.29	8.39	8.47	8.30	7.85	8.21	8.26	8.61	8.49	8.24
MIN	8.21	7.92	7.77	7.78	7.84	7.60	7.51	7.67	7.79	8.12	8.05	7.29



OCTOBER 1, 2001 TO SEPTEMBER 30, 2004

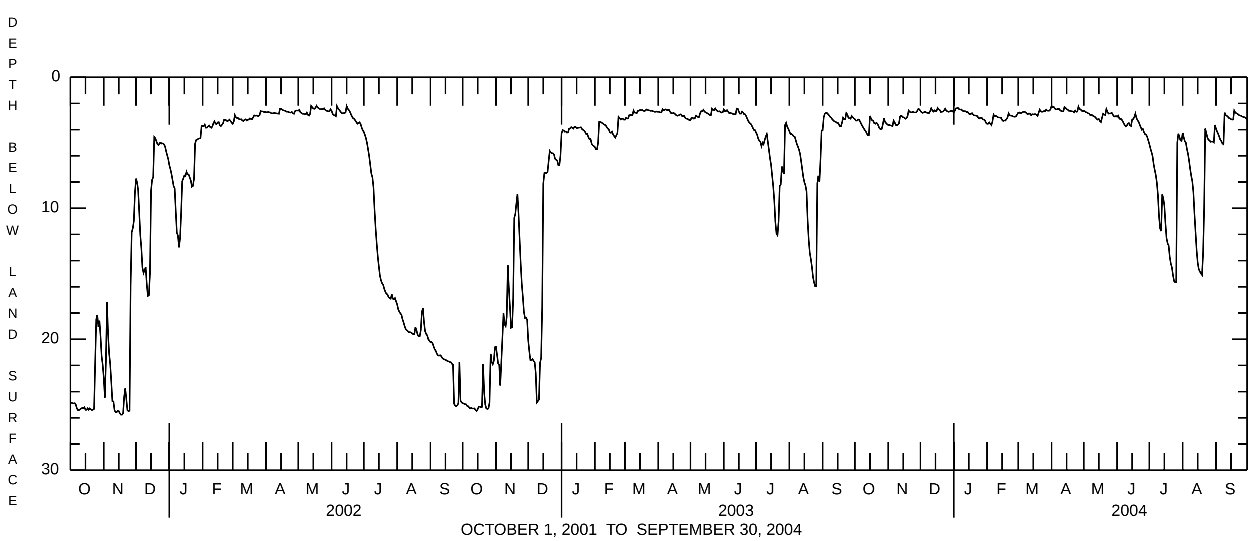
BUTLER COUNTY

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.--Data collection platform with 60-minute recording interval since March 15, 2001. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 1,465 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 3.14 ft above land-surface datum. Prior to Mar. 15, 2001, top of casing, 2.30 ft.
REMARKS.--In addition to the daily maximum water level table shown below, daily minimum and mean water levels, since March 2001, are available from the USGS Pennsylvania Water Science Center Office.
PERIOD OF RECORD.--November 1970 to current year.
EXTREMES FOR PERIOD OF RECORD.--Prior to October 2000, the extremes were based on extremes of the daily maximum depth below land-surface datum. Since that date, the extremes are based on the instantaneous depth below land-surface datum.
Highest water level, 1.98 ft below land-surface datum, May 18, 2002; lowest, 31.06 ft below land-surface datum, Oct. 16, 17, 18, 1983.
EXTREMES FOR CURRENT YEAR.--Highest water level, 2.00 ft below land-surface datum, Apr. 13; lowest, 15.65 ft below land-surface datum, July 25, 26.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.20	3.65	2.58	2.68	3.56	2.70	2.18	2.56	3.02	5.10	4.25	3.91
2	3.31	3.63	2.68	2.56	3.55	2.69	2.28	2.60	2.94	5.43	4.58	4.14
3	3.31	3.68	2.72	2.38	3.45	2.76	2.26	2.67	3.13	5.71	4.89	4.32
4	3.22	3.69	2.69	2.36	3.56	2.73	2.39	2.69	3.21	6.02	5.00	4.53
5	3.26	3.74	2.63	2.35	3.65	2.67	2.46	2.75	3.20	6.63	5.49	4.77
6	3.41	3.31	2.67	2.44	3.39	2.64	2.45	2.78	3.32	7.07	5.85	4.88
7	3.58	3.44	2.71	2.47	2.85	2.64	2.42	2.89	3.49	7.47	6.38	5.06
8	3.74	3.64	2.73	2.46	2.98	2.69	2.42	2.87	3.64	8.05	7.00	5.12
9	3.87	3.68	2.73	2.54	2.94	2.78	2.52	2.90	3.75	8.99	7.53	2.70
10	4.01	3.62	2.60	2.60	2.99	2.82	2.58	2.98	3.70	10.60	7.95	2.89
11	4.11	3.52	2.37	2.59	3.06	2.76	2.60	3.00	3.55	11.54	8.78	2.94
12	4.29	3.02	2.53	2.60	3.07	2.80	2.61	3.08	3.50	11.75	10.42	3.01
13	4.44	2.93	2.62	2.67	3.08	2.90	2.27	3.18	3.69	8.95	11.84	3.11
14	4.44	2.99	2.53	2.66	3.09	2.82	2.33	3.24	3.72	9.24	13.21	3.14
15	2.95	3.07	2.60	2.78	3.26	2.85	2.44	3.19	3.24	9.81	14.15	3.20
16	3.15	3.08	2.58	2.82	3.34	2.82	2.47	3.35	3.19	11.15	14.66	3.24
17	3.29	3.17	2.35	2.80	3.30	2.82	2.56	3.42	3.05	12.28	14.83	3.23
18	3.32	3.13	2.45	2.74	3.31	2.87	2.57	3.08	2.78	12.68	14.98	2.54
19	3.51	2.97	2.51	2.85	3.21	2.96	2.58	2.79	3.10	12.86	15.09	2.70
20	3.55	2.55	2.65	2.92	3.08	2.71	2.61	2.85	3.28	13.72	13.50	2.75
21	3.48	2.64	2.64	2.92	2.76	2.48	2.61	2.89	3.40	14.23	9.98	2.79
22	3.55	2.68	2.62	2.94	2.90	2.59	2.68	2.43	3.61	14.52	3.92	2.86
23	3.74	2.68	2.53	2.97	2.93	2.64	2.54	2.64	3.81	15.10	4.26	2.92
24	3.92	2.64	2.40	3.12	2.94	2.63	2.64	2.78	4.00	15.56	4.60	2.93
25	3.96	2.69	2.55	3.15	2.99	2.58	2.62	2.77	3.95	15.65	4.78	2.99
26	3.94	2.69	2.60	3.08	3.01	2.59	2.24	2.77	4.19	15.65	4.82	3.02
27	3.59	2.69	2.64	3.09	3.02	2.47	2.44	2.71	4.35	4.99	4.93	3.04
28	3.15	2.57	2.62	3.21	2.97	2.55	2.45	2.86	4.39	4.31	4.91	3.07
29	3.40	2.42	2.58	3.24	2.85	2.56	2.56	2.97	4.55	4.56	4.91	3.13
30	3.50	2.45	2.55	3.29	---	2.55	2.59	3.01	4.83	4.83	4.98	3.26
31	3.59	---	2.61	3.48	---	2.46	---	2.96	---	4.86	3.64	---
MEAN	3.61	3.09	2.59	2.80	3.14	2.69	2.48	2.89	3.59	9.66	7.94	3.41
MAX	4.44	3.74	2.73	3.48	3.65	2.96	2.68	3.42	4.83	15.65	15.09	5.12
MIN	2.95	2.42	2.35	2.35	2.76	2.46	2.18	2.43	2.78	4.31	3.64	2.54



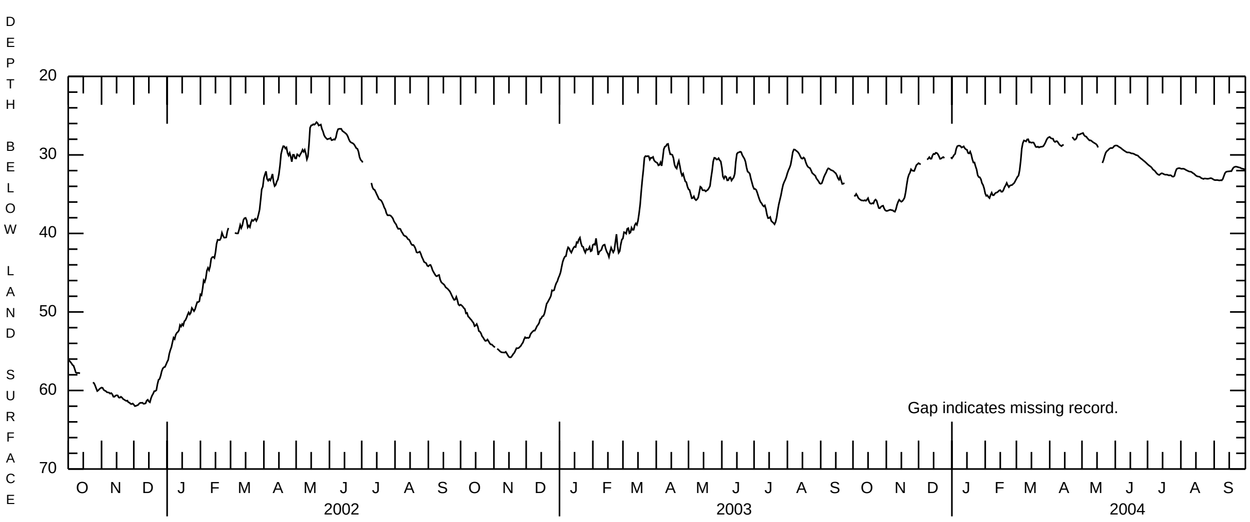
CLARION COUNTY

412020079133901. Local number, CR 3.

LOCATION.--Lat 41°20'20", long 79°13'39", Hydrologic Unit 05010005, at Cooks Forest State Park.
Owner: Commonwealth of Pennsylvania.
AQUIFER.--Pottsville Formation, Middle Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 130 ft, cased to 12 ft.
INSTRUMENTATION.--Data collection platform with 60-minute recording interval. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 1,545 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 0.80 ft above land-surface datum.
REMARKS.--In addition to the daily mean water level table shown below, daily maximum and minimum water levels are available from the USGS Pennsylvania Water Science Center Office.
PERIOD OF RECORD.--Jan. 1970 to Dec. 1974; July 2001 to current year.
EXTREMES FOR PERIOD OF RECORD.--The extremes shown are extremes of the instantaneous depth below land surface for the period of record indicated above.
Highest water level, 25.82 ft below land-surface datum, May 20, 2002; lowest, 75.90 ft below land-surface datum, Dec. 1, 1971.
EXTREMES FOR CURRENT YEAR.--Highest water level, 27.16 ft below land-surface datum, May 2; lowest, 37.29 ft below land-surface datum, Nov. 9.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	37.13	31.05	30.43	34.91	33.04	27.71	27.26	28.81	31.18	31.75	33.18
2	35.18	37.12	31.14	30.24	35.21	32.79	27.86	27.21	28.80	31.30	31.77	33.21
3	35.21	37.07	31.20	30.01	35.14	32.64	27.92	27.49	28.83	31.41	31.75	33.20
4	34.97	37.01	---	29.87	35.36	31.97	27.93	27.63	28.94	31.50	31.78	33.20
5	35.20	36.99	---	29.24	35.50	30.77	28.24	27.67	29.02	31.65	31.85	33.23
6	35.49	37.04	---	28.90	35.11	29.20	28.35	27.86	29.10	31.85	31.94	33.25
7	35.62	37.05	---	28.83	34.81	28.49	28.25	28.01	29.22	31.95	32.00	33.22
8	35.72	37.18	---	28.82	35.13	28.16	28.27	28.15	29.33	32.07	32.07	33.24
9	35.80	37.23	30.60	28.88	35.13	28.21	28.47	28.14	29.43	32.26	32.12	33.07
10	35.80	36.90	30.47	29.06	34.93	28.28	28.68	28.23	29.52	32.41	32.13	32.69
11	35.83	36.34	30.29	29.00	34.81	28.03	28.80	28.35	29.61	32.51	32.18	32.33
12	35.76	35.97	30.49	28.91	34.78	28.01	28.88	28.44	29.68	32.55	32.30	32.16
13	35.84	35.71	30.48	29.15	34.67	28.40	28.75	28.52	29.68	32.43	32.37	32.12
14	35.70	35.86	30.06	29.29	34.53	28.38	28.71	28.60	29.69	32.34	32.50	32.10
15	35.51	35.96	29.86	29.34	34.49	28.45	---	28.75	29.74	32.36	32.63	32.09
16	35.96	35.87	29.91	29.75	34.69	28.41	---	29.05	29.81	32.44	32.71	32.07
17	36.17	35.69	29.73	29.81	34.68	28.43	---	---	29.81	32.50	32.75	32.07
18	36.22	35.43	29.76	29.58	34.46	28.68	---	---	29.85	32.52	32.77	31.82
19	36.14	34.74	29.91	29.95	34.11	28.97	---	---	29.92	32.51	32.83	31.60
20	36.19	33.79	30.18	30.54	33.87	29.00	---	31.02	30.00	32.56	32.96	31.53
21	35.83	32.96	30.50	30.97	33.57	28.94	---	30.67	30.04	32.61	33.00	31.49
22	35.69	32.51	30.46	30.96	33.87	29.05	27.73	30.18	30.09	32.58	33.06	31.51
23	35.84	32.27	30.35	31.45	34.10	28.99	27.90	29.76	30.24	32.62	33.00	31.55
24	36.31	31.83	30.27	31.86	33.90	28.96	28.07	29.54	30.36	32.75	33.01	31.59
25	36.76	31.98	30.40	32.58	33.86	28.95	28.03	29.43	30.48	32.77	33.03	31.62
26	36.79	32.03	---	32.82	33.83	28.89	27.84	29.28	30.57	32.67	33.04	31.70
27	36.61	32.04	---	32.85	33.69	28.69	27.40	29.17	30.70	32.15	33.02	31.75
28	36.51	31.67	---	33.10	33.57	28.43	27.42	29.11	30.80	31.81	32.98	31.76
29	36.47	31.30	---	33.60	33.31	28.10	27.38	29.14	30.92	31.72	32.96	31.83
30	36.82	31.18	---	33.83	---	27.87	27.31	29.05	31.05	31.69	33.01	31.93
31	37.05	---	30.31	34.27	---	27.76	---	28.87	---	31.69	33.10	---
MEAN	35.97	34.86	30.35	30.58	34.48	29.13	28.08	28.73	29.80	32.17	32.53	32.27
MAX	37.05	37.23	31.20	34.27	35.50	33.04	28.88	31.02	31.05	32.77	33.10	33.25
MIN	34.97	31.18	29.73	28.82	33.31	27.76	27.31	27.21	28.80	31.18	31.75	31.49



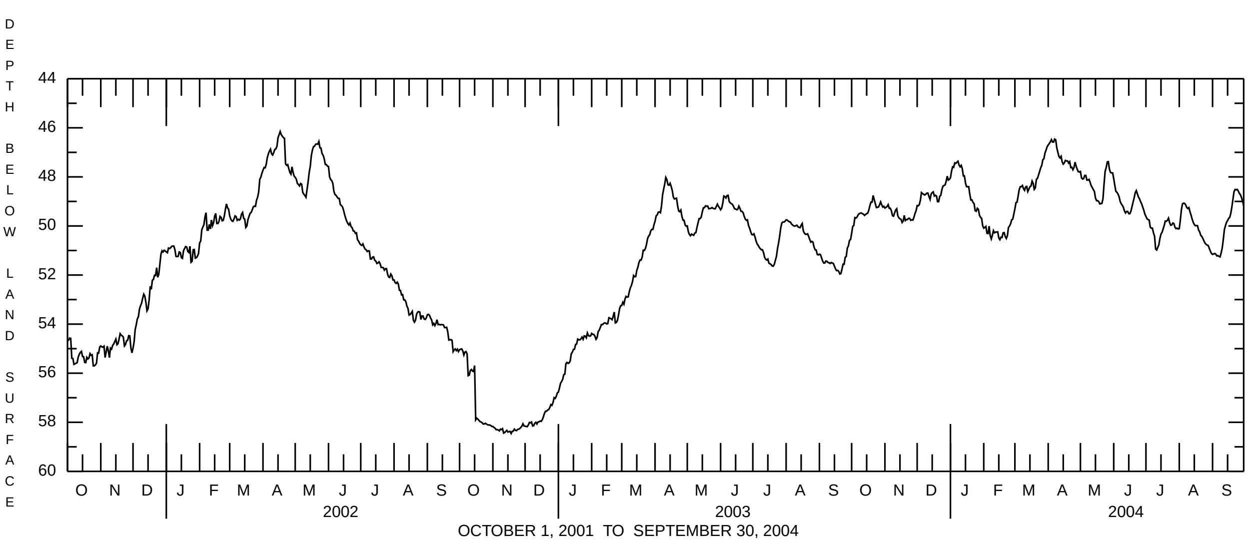
CRAWFORD COUNTY

413542080245002. 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.--Data collection platform with 60-minute recording interval since May 4, 2001. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 1,110 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 2.43 ft above land-surface datum. Prior to May 2, 2001, measuring point, top of casing, 2.70 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. Water levels were also affected by intermittent pumping. In addition to the daily maximum water level table shown below, daily minimum and mean water levels, since May 2001, are available from the USGS Pennsylvania Water Science Center Office. Since the Oct. 16, 2002 well pumping and clean out, the water level recovered by 2.2 ft less than the prior static level.
PERIOD OF RECORD.--July 1967 to current year. Prior to June 1981, water-level data stored with well identification number 413542080245001.
EXTREMES FOR PERIOD OF RECORD.--Prior to October 2000, the extremes were based on extremes of the daily maximum depth below land-surface datum. Since that date, the extremes are based on the instantaneous depth below land-surface datum.
Highest water level, 20.02 ft below land-surface datum, Feb. 23, 1975; lowest, 58.46 ft below land-surface datum, Nov. 18, 2002.
EXTREMES FOR CURRENT YEAR.--Highest water level, 46.20 ft below land-surface datum, Apr. 4; lowest, 51.26 ft below land-surface datum, Sept. 8.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50.30	49.27	49.17	48.04	50.09	49.30	46.70	47.78	48.07	49.61	50.11	51.16
2	50.02	49.24	49.18	47.77	50.06	49.05	46.64	48.04	48.35	49.71	49.76	51.14
3	49.98	49.21	49.13	47.59	50.02	49.03	46.57	48.09	48.59	49.74	49.34	51.12
4	49.66	49.13	48.95	47.61	50.30	48.78	46.48	48.07	48.63	49.76	49.10	51.15
5	49.68	49.28	48.64	47.43	50.31	48.52	46.58	47.94	48.70	50.05	49.07	51.22
6	49.64	49.28	48.68	47.45	50.01	48.40	46.58	47.94	48.81	50.09	49.08	51.21
7	49.55	49.38	48.71	47.40	50.39	48.40	46.46	48.13	49.00	50.09	49.14	51.24
8	49.50	49.58	48.74	47.36	50.53	48.35	46.49	48.13	49.10	50.28	49.25	51.26
9	49.48	49.60	48.71	47.52	50.38	48.48	46.82	48.10	49.16	50.42	49.29	51.10
10	49.47	49.47	48.66	47.59	50.19	48.55	47.00	48.22	49.24	50.94	49.25	50.90
11	49.50	49.35	48.66	47.53	50.28	48.41	47.17	48.36	49.39	50.98	49.42	50.55
12	49.52	49.30	48.80	47.66	50.25	48.39	47.23	48.43	49.47	50.87	49.56	50.15
13	49.57	49.59	48.92	47.96	50.25	48.60	47.16	48.52	49.41	50.77	49.72	49.99
14	49.53	49.67	48.70	47.96	50.24	48.50	47.39	48.59	49.41	50.51	49.85	49.85
15	49.50	49.71	48.64	48.25	50.49	48.40	47.48	48.86	49.50	50.33	49.94	49.78
16	49.48	49.73	48.61	48.40	50.56	48.37	47.43	48.97	49.50	50.26	49.99	49.69
17	49.35	49.86	48.78	48.40	50.46	48.17	47.33	48.97	49.40	50.12	49.98	49.65
18	49.17	49.80	48.75	48.40	50.47	48.26	47.35	49.00	49.22	49.98	49.99	49.48
19	49.03	49.57	48.78	48.71	50.28	48.51	47.35	49.10	49.03	49.80	50.17	49.22
20	49.03	49.78	49.01	48.94	50.27	48.45	47.44	49.09	48.86	49.81	50.24	48.91
21	48.76	49.74	49.01	48.94	50.43	48.10	47.38	49.08	48.65	49.77	50.38	48.60
22	48.92	49.74	48.79	49.04	50.51	48.06	47.62	48.89	48.56	49.68	50.43	48.51
23	49.08	49.69	48.75	49.09	50.40	47.92	47.61	48.28	48.69	49.86	50.51	48.53
24	49.25	49.69	48.52	49.38	50.06	47.78	47.71	47.77	48.82	49.97	50.61	48.51
25	49.24	49.77	48.38	49.40	50.00	47.63	47.62	47.62	48.89	49.96	50.70	48.58
26	49.23	49.75	48.35	49.28	49.91	47.53	47.40	47.39	49.01	49.88	50.75	48.68
27	49.13	49.76	48.33	49.32	49.75	47.30	47.56	47.38	49.10	49.90	50.78	48.73
28	49.02	49.65	48.18	49.56	49.72	47.26	47.69	47.69	49.23	50.05	50.80	48.85
29	49.14	49.49	47.97	49.65	49.51	47.03	47.79	47.82	49.36	50.11	50.92	49.00
30	49.23	49.38	48.13	49.69	---	46.91	47.80	47.84	49.52	50.09	51.03	49.18
31	49.20	---	48.10	49.99	---	46.77	---	47.84	---	50.12	51.12	---
MEAN	49.39	49.55	48.67	48.43	50.21	48.17	47.19	48.26	49.02	50.11	50.01	49.86
MAX	50.30	49.86	49.18	49.99	50.56	49.30	47.80	49.10	49.52	50.98	51.12	51.26
MIN	48.76	49.13	47.97	47.36	49.51	46.77	46.46	47.38	48.07	49.61	49.07	48.51



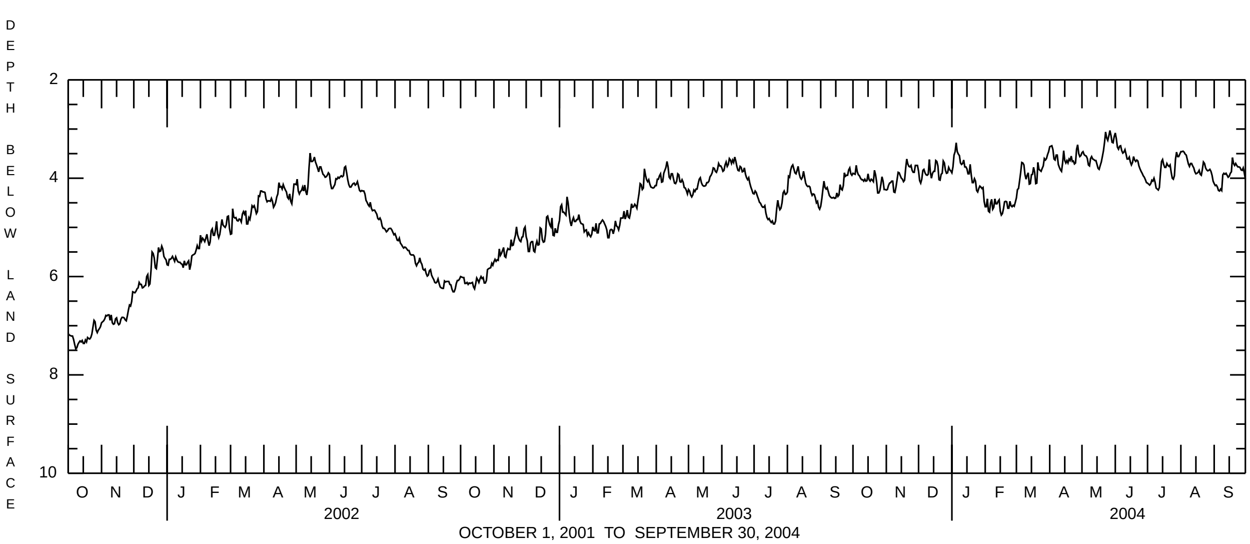
ELK COUNTY

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.--Data collection platform with 60-minute recording interval since July 25, 2001. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 1,740 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of plywood instrument shelf, 2.65 ft above land-surface datum. Prior to July 25, 2001, top of casing, 2.30 ft above land-surface datum.
REMARKS.--In addition to the daily maximum water level table shown below, daily minimum and mean water levels, since May 2001, are available from the USGS Pennsylvania Water Science Center Office.
PERIOD OF RECORD.--October 1974 to current year.
EXTREMES FOR PERIOD OF RECORD.--Prior to October 2000, the extremes were based on extremes of the daily maximum depth below land-surface datum. Since that date, the extremes are based on the instantaneous depth below land-surface datum.
Highest water level, 1.95 ft below land-surface datum, Mar. 4, 1991; lowest, 9.24 ft below land-surface datum, Jan. 21, 1996.
EXTREMES FOR CURRENT YEAR.--Highest water level, 2.93 ft below land-surface datum, May 28; lowest, 4.75 ft below land-surface datum, Feb. 16.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.90	4.24	3.86	3.89	4.58	4.40	3.36	3.48	3.08	4.10	3.46	4.11
2	3.91	4.23	4.05	3.77	4.58	4.23	3.35	3.46	3.20	4.12	3.46	4.15
3	3.92	4.15	4.10	3.53	4.42	4.21	3.34	3.52	3.37	4.14	3.45	4.14
4	3.74	4.10	4.02	3.46	4.67	4.05	3.42	3.54	3.41	4.11	3.47	4.18
5	3.87	4.09	3.84	3.28	4.69	3.88	3.61	3.55	3.35	4.04	3.51	4.25
6	3.93	4.06	3.82	3.46	4.50	3.68	3.63	3.60	3.34	4.06	3.53	4.26
7	3.95	4.06	3.89	3.51	4.43	3.69	3.53	3.73	3.44	4.00	3.62	4.22
8	4.00	4.28	3.93	3.54	4.63	3.73	3.53	3.75	3.49	4.08	3.71	4.25
9	4.03	4.29	3.94	3.69	4.59	3.93	3.72	3.60	3.47	4.20	3.76	3.93
10	4.03	4.18	3.92	3.72	4.42	4.02	3.78	3.56	3.42	4.22	3.70	3.90
11	4.06	4.03	3.62	3.70	4.52	3.94	3.83	3.61	3.51	4.24	3.70	3.92
12	4.02	3.88	3.88	3.63	4.52	3.89	3.86	3.62	3.61	4.19	3.75	3.90
13	4.06	3.89	4.00	3.77	4.47	4.12	3.69	3.64	3.61	3.90	3.79	3.94
14	4.05	3.95	3.90	3.77	4.44	4.11	3.44	3.64	3.57	3.66	3.87	3.98
15	3.91	4.00	3.86	3.81	4.67	3.93	3.64	3.72	3.67	3.62	3.91	3.96
16	4.03	4.02	3.86	3.91	4.75	3.92	3.69	3.80	3.73	3.72	3.90	3.90
17	4.06	4.07	3.64	3.91	4.72	3.78	3.64	3.82	3.68	3.78	3.88	3.87
18	4.02	4.04	3.66	3.72	4.62	3.88	3.69	3.74	3.56	3.78	3.84	3.58
19	4.04	3.80	3.75	3.93	4.48	4.11	3.61	3.67	3.63	3.70	3.92	3.70
20	4.07	3.61	4.03	4.09	4.47	4.10	3.64	3.56	3.66	3.74	3.94	3.74
21	3.84	3.71	4.04	4.09	4.48	3.68	3.55	3.44	3.63	3.76	3.82	3.70
22	3.93	3.76	3.92	4.01	4.61	3.82	3.66	3.27	3.65	3.73	3.67	3.74
23	4.08	3.77	3.90	4.06	4.61	3.84	3.65	3.06	3.75	3.88	3.70	3.77
24	4.30	3.74	3.65	4.25	4.47	3.86	3.71	3.18	3.81	4.00	3.79	3.77
25	4.30	3.84	3.69	4.28	4.56	3.80	3.69	3.23	3.86	4.02	3.83	3.78
26	4.25	3.88	3.84	4.21	4.58	3.75	3.41	3.14	3.90	3.95	3.85	3.83
27	4.12	3.88	3.90	4.16	4.55	3.60	3.32	3.03	3.95	3.61	3.84	3.84
28	3.97	3.74	3.89	4.18	4.57	3.63	3.50	3.13	3.98	3.47	3.82	3.79
29	4.06	3.74	3.78	4.21	4.49	3.60	3.56	3.27	4.03	3.56	3.86	3.89
30	4.23	3.74	3.83	4.19	---	3.52	3.54	3.28	4.09	3.56	3.94	4.02
31	4.23	---	3.85	4.47	---	3.46	---	3.15	---	3.51	4.06	---
MEAN	4.03	3.96	3.87	3.88	4.55	3.88	3.59	3.48	3.62	3.89	3.75	3.93
MAX	4.30	4.29	4.10	4.47	4.75	4.40	3.86	3.82	4.09	4.24	4.06	4.26
MIN	3.74	3.61	3.62	3.28	4.42	3.46	3.32	3.03	3.08	3.47	3.45	3.58



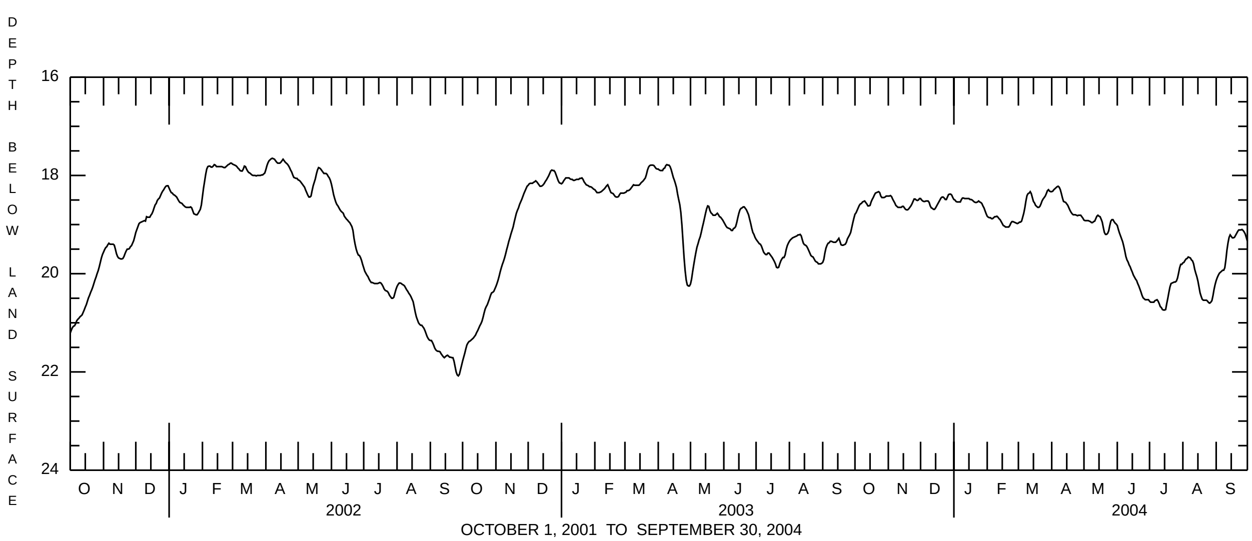
ERIE COUNTY

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.--Data collection platform with 60-minute recording interval since May 17, 2001. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 1,419 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of metal table, 3.44 ft above land-surface datum. Prior to May 17, 2001, top of plywood cover, 3.50 ft above land-surface datum.
REMARKS.--In addition to the daily maximum water level table shown below, daily minimum and mean water levels, since May 2001, are available from the USGS Pennsylvania Water Science Center Office.
PERIOD OF RECORD.--July 1966 to current year.
EXTREMES FOR PERIOD OF RECORD.--Prior to October 2000, the extremes were based on extremes of the daily maximum depth below land-surface datum. Since that date, the extremes are based on the instantaneous depth below land-surface datum.
Highest water level, 10.00 ft below land-surface datum, Mar. 17, 1973; lowest, 24.89 ft below land-surface datum, Oct. 21-23, 1998.
EXTREMES FOR CURRENT YEAR.--Highest water level, 18.27 ft below land-surface datum, Apr. 6, 7; lowest, 20.74 ft below land-surface datum, July 14, 15.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18.79	18.42	18.47	18.49	18.83	18.97	18.33	18.91	19.02	20.56	19.78	20.14
2	18.76	18.42	18.50	18.50	18.85	18.95	18.32	18.92	19.10	20.58	19.77	20.08
3	18.71	18.41	18.52	18.53	18.86	18.95	18.29	18.92	19.17	20.58	19.73	20.03
4	18.66	18.43	18.53	18.54	18.86	18.93	18.27	18.92	19.23	20.58	19.70	19.99
5	18.61	18.48	18.53	18.54	18.88	18.85	18.25	18.92	19.29	20.58	19.69	19.97
6	18.58	18.52	18.52	18.54	18.88	18.77	18.23	18.93	19.35	20.55	19.66	19.95
7	18.57	18.56	18.52	18.54	18.86	18.66	18.22	18.94	19.44	20.54	19.67	19.93
8	18.54	18.61	18.52	18.49	18.84	18.52	18.24	18.96	19.54	20.53	19.68	19.93
9	18.53	18.63	18.55	18.46	18.84	18.41	18.29	18.96	19.65	20.56	19.72	19.88
10	18.52	18.65	18.62	18.46	18.83	18.37	18.37	18.94	19.72	20.61	19.74	19.72
11	18.55	18.65	18.66	18.47	18.85	18.36	18.46	18.93	19.76	20.67	19.80	19.52
12	18.58	18.65	18.67	18.47	18.88	18.33	18.53	18.88	19.82	20.69	19.91	19.37
13	18.62	18.65	18.69	18.47	18.90	18.37	18.54	18.83	19.86	20.73	19.99	19.26
14	18.62	18.63	18.69	18.47	18.94	18.45	18.55	18.81	19.92	20.74	20.06	19.21
15	18.61	18.63	18.66	18.47	18.98	18.53	18.58	18.83	19.97	20.74	20.15	19.24
16	18.54	18.66	18.62	18.49	19.02	18.56	18.61	18.84	20.03	20.73	20.27	19.27
17	18.49	18.69	18.58	18.49	19.03	18.61	18.66	18.89	20.07	20.61	20.39	19.27
18	18.45	18.70	18.54	18.50	19.05	18.63	18.71	18.95	20.11	20.50	20.46	19.26
19	18.40	18.70	18.50	18.52	19.05	18.65	18.75	19.06	20.14	20.38	20.52	19.22
20	18.36	18.68	18.46	18.54	19.05	18.65	18.78	19.16	20.20	20.27	20.54	19.18
21	18.35	18.65	18.44	18.55	19.05	18.63	18.80	19.20	20.25	20.20	20.54	19.14
22	18.34	18.62	18.44	18.55	19.02	18.58	18.80	19.20	20.31	20.19	20.54	19.11
23	18.33	18.58	18.46	18.54	18.97	18.52	18.80	19.18	20.37	20.18	20.54	19.11
24	18.35	18.53	18.49	18.52	18.94	18.48	18.81	19.13	20.44	20.17	20.56	19.11
25	18.42	18.48	18.49	18.54	18.94	18.45	18.82	19.02	20.49	20.17	20.59	19.10
26	18.45	18.48	18.44	18.55	18.95	18.42	18.81	18.93	20.51	20.15	20.60	19.12
27	18.45	18.50	18.39	18.57	18.96	18.37	18.81	18.90	20.53	20.09	20.58	19.15
28	18.45	18.51	18.38	18.62	18.97	18.31	18.81	18.90	20.53	19.99	20.55	19.19
29	18.44	18.50	18.38	18.66	18.98	18.29	18.84	18.94	20.53	19.88	20.45	19.26
30	18.42	18.47	18.40	18.72	---	18.32	18.87	18.97	20.53	19.81	20.32	19.34
31	18.42	---	18.45	18.78	---	18.33	---	18.99	---	19.81	20.22	---
MEAN	18.51	18.57	18.52	18.53	18.93	18.56	18.57	18.96	19.93	20.40	20.15	19.47
MAX	18.79	18.70	18.69	18.78	19.05	18.97	18.87	19.20	20.53	20.74	20.60	20.14
MIN	18.33	18.41	18.38	18.46	18.83	18.29	18.22	18.81	19.02	19.81	19.66	19.10



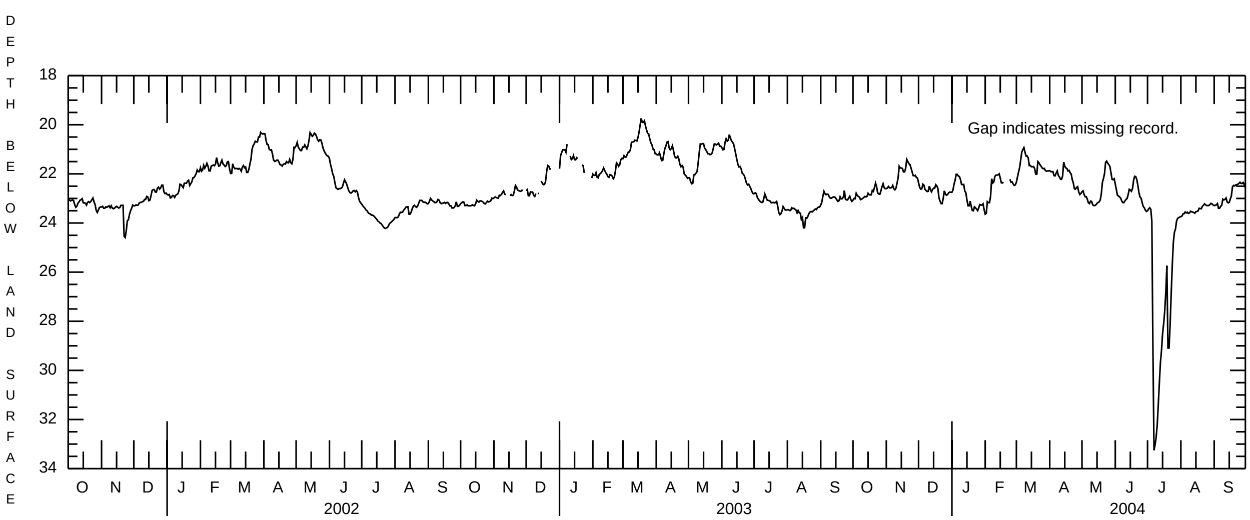
FAYETTE COUNTY

394843079351401. Local number, FA 17.

LOCATION.--Lat 39°48'43", long 79°35'14", Hydrologic unit 05020006, at Fort Necessity National Battlefield.
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.--Data collection platform with 60-minute recording interval since Dec. 12, 2000. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 1,910 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 2.00 ft above land-surface datum.
REMARKS.--Water levels affected by intermittent pumping. In addition to the daily maximum water level table shown below, daily minimum and mean water levels, since December 2000, are available from the USGS Pennsylvania Water Science Center Office.
PERIOD OF RECORD.--November 1967 to current year.
EXTREMES FOR PERIOD OF RECORD.--Prior to October 2000, the extremes were based on extremes of the daily maximum depth below land-surface datum. Since that date, the extremes are based on the instantaneous depth below land-surface datum.
Highest water level, 18.56 ft below land-surface datum, Apr. l, 1992; lowest, 40.00 ft below land-surface datum, Nov. 8, 1967.
EXTREMES FOR CURRENT YEAR.--Highest water level, 20.78 ft below land-surface datum, Mar. 8; lowest, 33.25 ft below land-surface datum, July 7.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23.07	22.60	22.36	22.75	23.64	22.34	21.87	22.73	22.42	23.50	23.74	23.29
2	23.00	22.58	22.55	22.66	23.61	22.13	21.91	22.69	22.64	23.43	23.72	23.28
3	23.01	22.51	22.62	22.42	23.13	21.93	21.91	22.84	22.87	23.38	23.63	23.26
4	22.79	22.57	22.61	22.26	23.17	21.75	21.91	22.93	22.90	23.44	23.62	23.21
5	22.88	22.57	22.42	22.02	23.17	21.44	22.07	22.93	22.94	23.92	23.55	23.40
6	22.92	22.56	22.46	22.02	22.92	21.12	22.08	23.03	22.99	29.06	23.59	23.40
7	22.94	22.47	22.63	22.09	22.20	21.01	21.97	23.18	23.10	33.25	23.56	23.32
8	23.05	22.61	22.68	22.11	22.37	20.93	21.88	23.21	23.17	33.03	23.61	23.28
9	23.03	22.65	22.72	22.23	22.33	21.12	22.06	23.11	23.17	32.72	23.59	23.03
10	23.00	22.58	22.71	22.43	22.10	21.27	22.12	23.12	23.10	32.22	23.52	23.06
11	22.96	22.38	22.50	22.44	22.05	21.27	22.21	23.26	23.04	31.38	23.54	23.04
12	22.92	22.15	22.64	22.43	22.05	21.35	22.22	23.29	23.00	30.51	23.56	22.98
13	22.94	21.69	22.73	22.70	22.04	21.66	22.09	23.29	22.84	29.68	23.57	23.14
14	22.92	21.76	22.64	22.77	22.00	21.66	21.52	23.26	22.63	29.18	23.60	23.18
15	22.79	21.76	22.58	23.06	22.17	21.71	21.69	23.20	22.66	28.50	23.54	23.16
16	22.84	21.78	22.58	23.30	22.36	21.71	21.76	23.16	22.71	28.10	23.53	23.02
17	22.86	21.92	22.44	23.30	22.37	21.70	21.78	23.14	22.60	27.57	23.51	22.89
18	22.85	21.92	22.49	23.11	22.34	21.79	21.88	23.06	22.27	26.80	23.40	22.53
19	22.67	21.77	22.60	23.32	---	22.01	21.86	22.82	22.10	25.74	23.41	22.47
20	22.71	21.41	22.98	23.49	---	22.01	21.95	22.35	22.11	29.09	23.42	22.49
21	22.55	21.50	23.11	23.50	---	21.50	22.01	22.19	22.23	29.09	23.32	22.45
22	22.38	21.59	23.21	23.34	---	21.55	22.24	21.98	22.47	28.14	23.28	22.44
23	22.53	21.62	23.21	23.38	---	21.63	22.38	21.53	22.76	26.89	23.22	22.42
24	22.78	21.76	22.98	23.44	22.22	21.69	22.61	21.48	22.94	25.72	23.26	22.39
25	22.82	21.92	22.69	23.50	22.34	21.76	22.62	21.57	22.99	24.79	23.29	22.34
26	22.83	22.07	22.83	23.38	22.33	21.79	22.55	21.62	23.17	24.38	23.29	22.39
27	22.69	22.08	22.87	23.25	22.41	21.78	22.52	21.70	23.33	24.24	23.29	22.39
28	22.52	22.06	22.84	23.27	22.47	21.87	22.74	21.96	23.38	23.92	23.25	22.35
29	22.40	22.15	22.77	23.27	22.45	21.89	22.84	22.22	23.48	23.81	23.20	22.44
30	22.56	22.17	22.74	23.22	---	21.88	22.80	22.24	23.53	23.78	23.22	22.58
31	22.60	---	22.75	23.46	---	21.88	---	22.20	---	23.76	23.27	---
MEAN	22.80	22.11	22.71	22.90	22.51	21.65	22.14	22.62	22.85	27.19	23.45	22.85
MAX	23.07	22.65	23.21	23.50	23.64	22.34	22.84	23.29	23.53	33.25	23.74	23.40
MIN	22.38	21.41	22.36	22.02	22.00	20.93	21.52	21.48	22.10	23.38	23.20	22.34



OCTOBER 1, 2001 TO SEPTEMBER 30, 2004

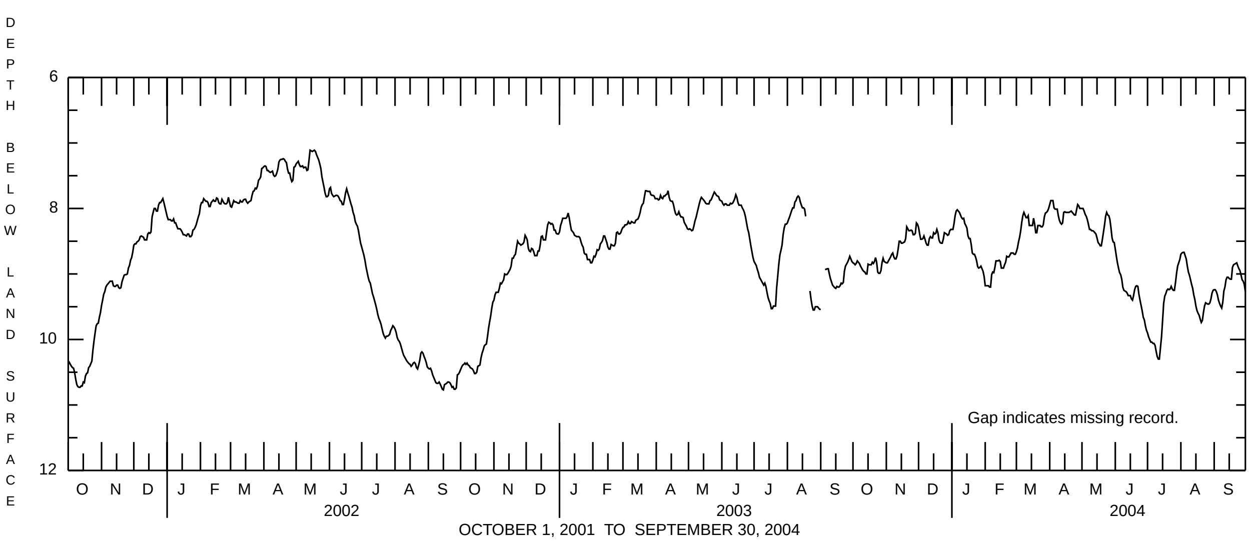
FOREST COUNTY

412823079030601. Local number, FO 11.

LOCATION.--Lat 41°28'23", long 79°03'06", Hydrologic Unit 05010005, in Allegheny National Forest.
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.--Data collection platform with 60-minute recording interval since June 7, 2001. Satellite telemetry at station
DATUM.--Elevation of land-surface datum is 1,780 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of plywood table, 1.47 ft above land-surface datum. Prior to June 7, 2001, top of casing, 1.40 ft above land-surface datum.
REMARKS.--In addition to the daily maximum water level table shown below, daily minimum and mean water levels, since June 2001, are available from the USGS Pennsylvania Water Science Center Office. Well pumping and cleanout on Aug. 19, 2003 caused water levels to be about 0.9 ft lower.
PERIOD OF RECORD.--August 1973 to current year.
EXTREMES FOR PERIOD OF RECORD.--Prior to October 2000, the extremes were based on extremes of the daily maximum depth below land-surface datum. Since that date, the extremes are based on the instantaneous depth below land-surface datum.
Highest water level, 7.06 ft below land-surface datum, May 14, 15, 2002; lowest, 12.07 ft below land-surface datum, Sept. 18, 19, 1982.
EXTREMES FOR CURRENT YEAR.--Highest water level, 7.86 ft below land-surface datum, Apr. 4; lowest, 10.30 ft below land-surface datum, July 11, 12.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.83	8.83	8.29	8.32	9.18	8.66	7.94	8.00	8.62	9.90	8.70	9.24
2	8.84	8.83	8.39	8.32	9.18	8.60	7.88	8.00	8.73	9.96	8.68	9.24
3	8.86	8.80	8.47	8.23	9.18	8.51	7.88	8.04	8.83	10.00	8.67	9.27
4	8.84	8.77	8.47	8.11	9.18	8.44	7.88	8.09	8.91	10.04	8.67	9.32
5	8.80	8.74	8.46	8.04	9.20	8.34	7.99	8.12	8.98	10.04	8.72	9.40
6	8.82	8.70	8.42	8.02	9.20	8.21	8.01	8.17	9.01	10.06	8.77	9.45
7	8.84	8.68	8.47	8.04	9.01	8.11	8.01	8.24	9.08	10.06	8.88	9.49
8	8.88	8.74	8.53	8.06	8.97	8.06	8.01	8.32	9.20	10.09	8.97	9.52
9	8.91	8.77	8.56	8.10	8.98	8.10	8.11	8.32	9.25	10.18	9.02	9.43
10	8.94	8.77	8.56	8.14	8.90	8.14	8.18	8.34	9.26	10.26	9.09	9.26
11	8.96	8.72	8.46	8.16	8.80	8.14	8.22	8.34	9.27	10.30	9.16	9.20
12	8.97	8.62	8.43	8.15	8.80	8.11	8.24	8.35	9.29	10.30	9.22	9.09
13	9.00	8.50	8.45	8.23	8.80	8.26	8.22	8.37	9.33	10.13	9.32	9.05
14	9.00	8.50	8.45	8.26	8.79	8.26	8.06	8.39	9.33	9.96	9.39	9.05
15	8.85	8.53	8.37	8.30	8.81	8.26	8.05	8.45	9.33	9.71	9.49	9.07
16	8.86	8.53	8.39	8.42	8.91	8.26	8.06	8.52	9.38	9.45	9.56	9.08
17	8.86	8.52	8.38	8.46	8.91	8.15	8.06	8.54	9.40	9.34	9.60	9.08
18	8.86	8.51	8.32	8.46	8.91	8.24	8.06	8.57	9.33	9.30	9.63	8.90
19	8.82	8.46	8.37	8.55	8.86	8.37	8.06	8.57	9.24	9.25	9.69	8.86
20	8.84	8.28	8.48	8.68	8.82	8.37	8.05	8.47	9.19	9.23	9.74	8.85
21	8.81	8.31	8.52	8.70	8.73	8.26	8.04	8.36	9.18	9.24	9.71	8.84
22	8.75	8.34	8.53	8.70	8.74	8.26	8.06	8.25	9.19	9.23	9.59	8.83
23	8.82	8.34	8.53	8.74	8.74	8.26	8.08	8.12	9.31	9.19	9.49	8.88
24	8.97	8.33	8.47	8.80	8.71	8.28	8.10	8.06	9.40	9.23	9.44	8.92
25	8.99	8.34	8.37	8.89	8.68	8.28	8.10	8.10	9.48	9.25	9.45	8.95
26	8.99	8.40	8.38	8.91	8.68	8.25	8.02	8.11	9.56	9.25	9.46	9.02
27	8.95	8.40	8.39	8.90	8.68	8.13	7.94	8.17	9.66	9.13	9.46	9.09
28	8.83	8.38	8.41	8.88	8.70	8.07	7.96	8.30	9.70	8.99	9.44	9.11
29	8.76	8.22	8.40	8.92	8.70	8.06	8.00	8.45	9.79	8.88	9.38	9.16
30	8.81	8.24	8.34	8.96	---	8.04	8.00	8.51	9.86	8.83	9.29	9.27
31	8.82	---	8.32	9.04	---	8.00	---	8.52	---	8.78	9.25	---
MEAN	8.87	8.54	8.43	8.47	8.89	8.24	8.04	8.30	9.27	9.60	9.26	9.13
MAX	9.00	8.83	8.56	9.04	9.20	8.66	8.24	8.57	9.86	10.30	9.74	9.52
MIN	8.75	8.22	8.29	8.02	8.68	8.00	7.88	8.00	8.62	8.78	8.67	8.83



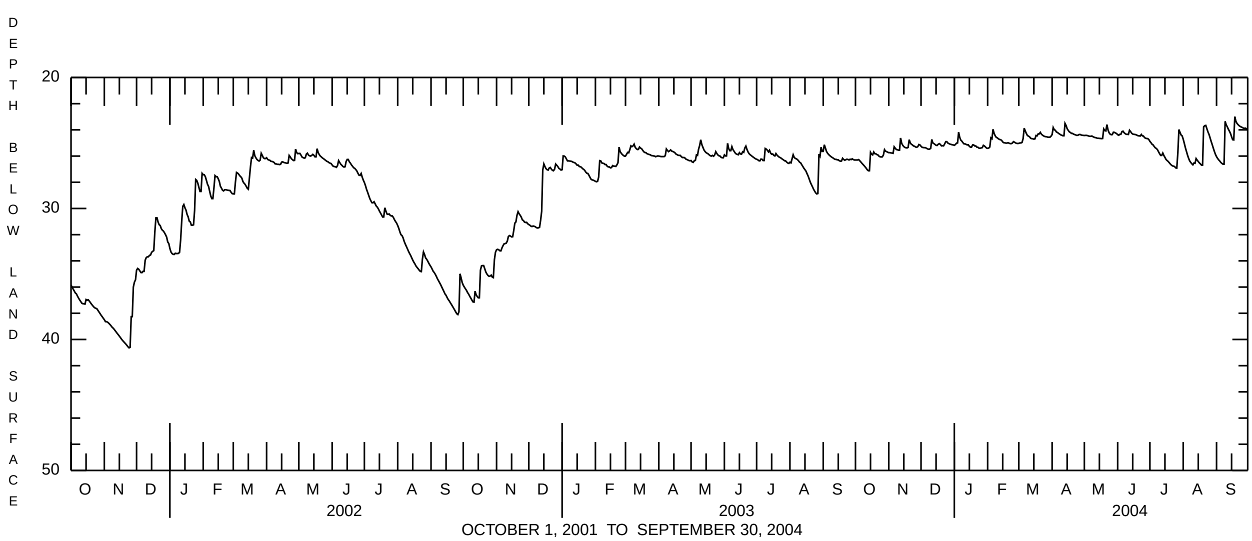
GREENE COUNTY

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.--Pressure transducer and digital data logger with 60-minute recording interval. Data collection platform with 60-minute recording interval since Sept. 7, 2001. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 1,000 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 1.40 ft above land-surface datum.
REMARKS.--Water levels affected by water cascading into the well. In addition to the daily maximum water level table shown below, daily minimum and mean water levels, since October 1987, are available from the USGS Pennsylvania Water Science Center Office.
PERIOD OF RECORD.--June 1973 to current year.
EXTREMES FOR PERIOD OF RECORD.--Prior to October 2000, the extremes were based on extremes of the daily maximum depth below land-surface datum. Since that date, the extremes are based on the instantaneous depth below land-surface datum.
Highest water level, 21.21 ft below land-surface datum, Sept. 17, 2004; lowest, 52.38 ft below land-surface datum, Nov. 25, 26, 1999.
EXTREMES FOR CURRENT YEAR.--Highest water level, 21.21 ft below land-surface datum, Sept. 17; lowest, 27.12 ft below land-surface datum, Oct. 13, 14.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26.30	25.74	25.25	25.18	25.41	25.03	24.36	24.43	24.37	24.88	24.71	26.05
2	26.30	25.74	25.33	25.12	25.39	25.00	23.82	24.42	24.41	24.98	25.03	26.18
3	26.30	25.76	25.35	25.02	25.31	25.00	23.99	24.42	24.34	25.10	25.36	26.29
4	26.27	25.77	25.36	25.00	24.61	24.96	24.03	24.44	24.34	25.15	25.64	26.38
5	26.36	25.79	25.36	24.18	24.68	24.67	24.16	24.47	24.13	25.27	25.93	26.49
6	26.45	25.29	25.40	24.57	23.96	23.87	24.20	24.49	24.10	25.37	26.17	26.56
7	26.55	25.40	25.45	24.78	24.26	24.08	24.27	24.49	24.22	25.42	26.37	26.62
8	26.64	25.50	25.48	24.86	24.45	24.27	24.32	24.47	24.29	25.51	26.49	26.62
9	26.73	25.52	25.47	24.98	24.57	24.43	24.38	24.52	24.34	25.67	26.59	23.35
10	26.83	25.55	25.41	25.07	24.61	24.48	24.41	24.56	24.34	25.82	26.67	23.61
11	26.93	25.55	24.73	25.07	24.68	24.53	24.45	24.59	24.35	25.95	26.53	23.77
12	27.05	24.62	25.00	25.11	24.73	24.64	24.45	24.60	24.03	25.95	26.55	23.95
13	27.12	25.03	25.05	25.15	24.75	24.67	23.51	24.64	24.13	25.77	26.19	24.10
14	27.12	25.18	25.11	25.14	24.80	24.68	23.67	24.64	24.25	25.96	26.31	24.28
15	25.72	25.28	25.18	25.26	24.92	24.71	23.91	24.65	24.32	26.10	26.42	24.52
16	25.86	25.34	25.19	25.32	24.98	24.69	24.04	24.66	24.34	26.26	26.52	24.75
17	25.91	25.37	25.10	25.32	24.99	24.43	24.15	24.67	24.35	26.34	26.60	24.77
18	25.69	25.38	25.05	25.15	25.01	24.46	24.20	24.66	24.37	26.41	26.69	22.99
19	25.82	25.34	25.11	25.15	25.01	24.31	24.27	23.93	24.41	26.51	26.69	23.34
20	25.83	24.75	25.22	25.23	24.98	24.31	24.27	24.05	24.45	26.61	23.77	23.50
21	25.89	24.99	25.21	25.23	25.02	24.19	24.33	24.08	24.46	26.69	23.68	23.60
22	25.92	25.10	25.22	25.32	25.05	24.33	24.36	23.60	24.47	26.75	23.66	23.68
23	26.02	25.15	25.07	25.33	25.05	24.40	24.39	24.00	24.35	26.77	23.91	23.74
24	26.06	25.23	24.90	25.40	25.01	24.46	24.42	24.22	24.46	26.80	24.15	23.78
25	26.07	25.25	24.90	25.40	24.90	24.50	24.41	24.33	24.47	26.90	24.35	23.82
26	26.06	25.31	25.01	25.38	24.94	24.52	24.36	24.37	24.59	26.92	24.61	23.87
27	25.92	25.33	25.05	25.36	25.00	24.53	24.35	24.36	24.64	25.75	24.88	23.88
28	25.51	25.28	25.09	25.18	25.03	24.56	24.39	24.18	24.66	23.98	25.13	23.87
29	25.63	25.12	25.11	25.23	25.04	24.56	24.41	24.19	24.67	24.19	25.40	23.93
30	25.66	25.15	25.14	25.31	---	24.56	24.42	24.24	24.74	24.39	25.65	24.03
31	25.71	---	25.15	25.39	---	24.48	---	24.28	---	24.46	25.87	---
MEAN	26.20	25.33	25.18	25.14	24.87	24.53	24.22	24.38	24.38	25.76	25.57	24.54
MAX	27.12	25.79	25.48	25.40	25.41	25.03	24.45	24.67	24.74	26.92	26.69	26.62
MIN	25.51	24.62	24.73	24.18	23.96	23.87	23.51	23.60	24.03	23.98	23.66	22.99



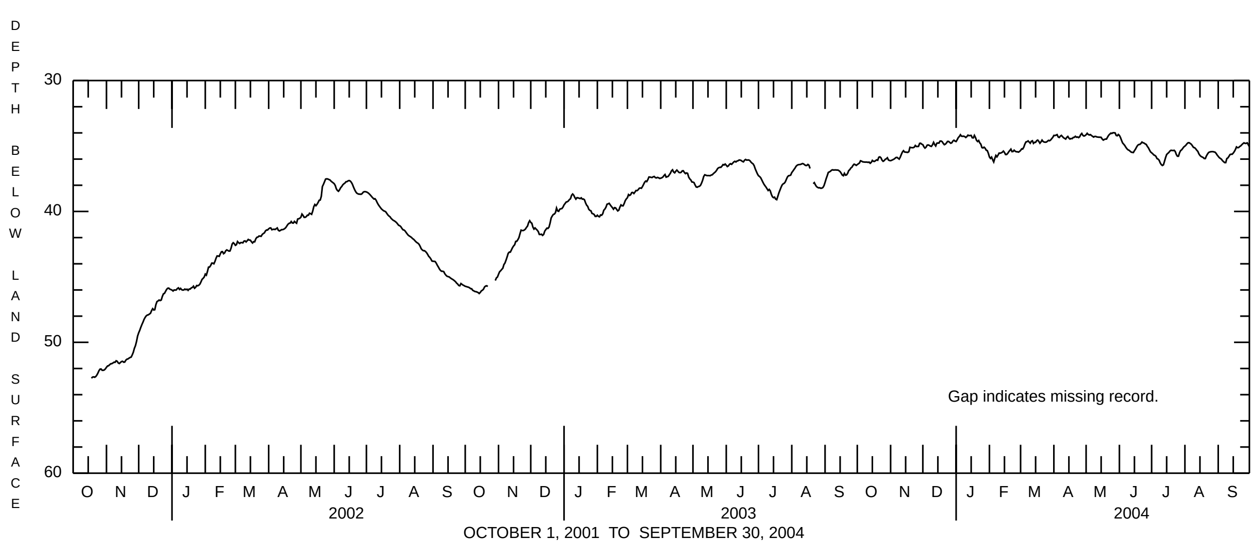
INDIANA COUNTY

405320078483901. Local number, IN 919.

LOCATION.--Lat 40°53'20", long 78°48'39", Hydrologic Unit 02050201, at State Game Lands 174.
Owner: U.S. Geological Survey.
AQUIFER.--Pottsville Formation, Middle Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 140 ft, cased to 18 ft.
INSTRUMENTATION.--Data collection platform with 60-minute recording interval. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 1,620 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of instrument shelf, 3.00 ft above land-surface datum.
REMARKS.--In addition to the daily mean water level table shown below, daily maximum and minimum water levels are available from the USGS Pennsylvania Water Science Center Office.
PERIOD OF RECORD.--October 2001 to current year.
EXTREMES FOR PERIOD OF RECORD.--The extremes shown are extremes of the instantaneous depth below land surface for the period of record indicated above.
Highest water level, 33.94 ft below land-surface datum, May 28, 2004; lowest, 52.76 ft below land-surface datum, Oct. 18, 2001.
EXTREMES FOR CURRENT YEAR.--Highest water level, 33.94 ft below land-surface datum, May 28; lowest, 36.51 ft below land-surface datum, July 11, 12.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36.42	36.12	34.90	34.66	35.84	35.34	34.19	34.14	34.19	35.52	35.01	35.79
2	36.36	36.09	35.06	34.52	35.95	35.22	34.20	34.03	34.35	35.59	34.93	35.89
3	36.30	36.05	35.16	34.36	35.85	35.23	34.17	34.12	34.57	35.68	34.82	35.95
4	36.13	36.01	35.09	34.27	36.05	35.09	34.13	34.16	34.77	35.72	34.75	36.01
5	36.16	35.95	34.94	34.14	36.22	34.85	34.31	34.13	34.86	35.79	34.75	36.12
6	36.21	35.88	34.92	34.25	35.95	34.69	34.35	34.20	34.96	35.96	34.81	36.20
7	36.22	35.87	34.95	34.26	35.72	34.67	34.25	34.26	35.10	36.00	34.87	36.27
8	36.23	35.94	35.01	34.25	35.83	34.61	34.19	34.32	35.21	36.09	34.99	36.27
9	36.23	36.00	35.03	34.28	35.70	34.70	34.28	34.27	35.29	36.29	35.11	35.96
10	36.23	35.85	34.91	34.35	35.54	34.79	34.37	34.27	35.33	36.42	35.13	35.91
11	36.25	35.64	34.72	34.28	35.55	34.64	34.42	34.31	35.40	36.49	35.21	35.79
12	36.23	35.46	34.89	34.17	35.52	34.60	34.47	34.32	35.47	36.44	35.32	35.65
13	36.32	35.36	35.00	34.21	35.48	34.80	34.34	34.33	35.49	36.17	35.41	35.63
14	36.25	35.46	34.79	34.20	35.39	34.72	34.27	34.33	35.50	35.88	35.60	35.63
15	36.10	35.47	34.77	34.19	35.49	34.72	34.40	34.34	35.36	35.65	35.72	35.54
16	36.17	35.48	34.78	34.37	35.65	34.59	34.47	34.47	35.24	35.57	35.80	35.42
17	36.18	35.49	34.63	34.38	35.65	34.55	34.43	34.55	35.08	35.50	35.84	35.27
18	36.12	35.43	34.62	34.19	35.57	34.65	34.44	34.50	34.95	35.39	35.88	35.07
19	36.06	35.10	34.67	34.35	35.44	34.79	34.35	34.47	34.89	35.33	35.96	35.13
20	36.09	35.12	34.80	34.57	35.34	34.69	34.34	34.47	34.88	35.34	35.96	35.12
21	35.86	35.13	34.90	34.66	35.24	34.55	34.26	34.32	34.81	35.35	35.76	35.04
22	35.83	35.13	34.86	34.58	35.43	34.66	34.33	34.18	34.70	35.33	35.62	34.99
23	35.90	35.09	34.77	34.76	35.42	34.70	34.31	34.10	34.75	35.42	35.50	34.90
24	36.08	34.96	34.65	34.86	35.32	34.71	34.36	34.02	34.78	35.65	35.46	34.82
25	36.17	35.04	34.65	35.12	35.40	34.70	34.30	34.04	34.84	35.78	35.44	34.76
26	36.12	35.04	34.72	35.15	35.44	34.64	34.13	33.99	34.88	35.78	35.43	34.80
27	36.02	35.03	34.79	35.09	35.44	34.57	34.04	33.99	35.03	35.51	35.43	34.80
28	35.98	34.80	34.75	35.17	35.47	34.60	34.19	34.00	35.14	35.35	35.45	34.76
29	35.90	34.79	34.62	35.32	35.42	34.54	34.24	34.19	35.30	35.29	35.47	34.90
30	36.07	34.86	34.56	35.35	---	34.44	34.21	34.22	35.45	35.18	35.56	35.06
31	36.11	---	34.63	35.56	---	34.34	---	34.12	---	35.07	35.69	---
MEAN	36.14	35.45	34.82	34.58	35.60	34.72	34.29	34.23	35.02	35.69	35.38	35.45
MAX	36.42	36.12	35.16	35.56	36.22	35.34	34.47	34.55	35.50	36.49	35.96	36.27
MIN	35.83	34.79	34.56	34.14	35.24	34.34	34.04	33.99	34.19	35.07	34.75	34.76



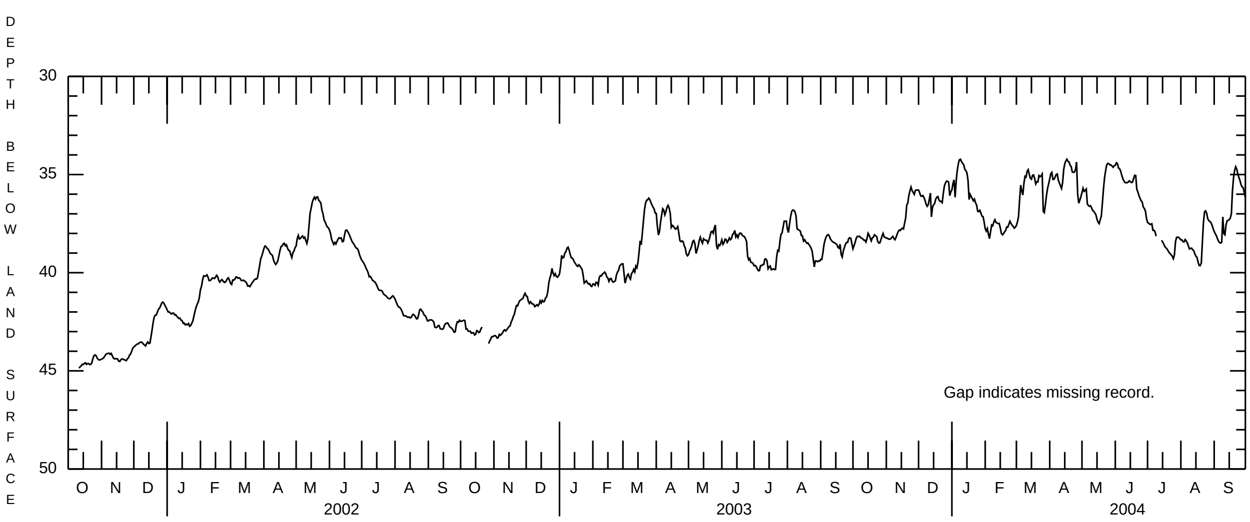
JEFFERSON COUNTY

411734078522101. Local number, JE 425.

LOCATION.--Lat 41°17'34", long 78°52'21", Hydrologic Unit 05010006, at State Game Lands 54.
Owner: U.S. Geological Survey.
AQUIFER.--Pottsville Formation, Middle Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 152 ft, cased to 20 ft.
INSTRUMENTATION.--Data collection platform with 60-minute recording interval. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 2,030 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 1.30 ft above land-surface datum.
REMARKS.--In addition to the daily mean water level table shown below, daily maximum and minimum water levels are available from the USGS Pennsylvania Water Science Center Office.
PERIOD OF RECORD.--October 2001 to current year.
EXTREMES FOR PERIOD OF RECORD.--The extremes shown are extremes of the instantaneous depth below land surface for the period of record indicated above.
Highest water level, 34.05 ft below land-surface datum, Apr. 27, 2004; lowest, 44.90 ft below land-surface datum, Oct. 11, 2001.
EXTREMES FOR CURRENT YEAR.--Highest water level, 34.05 ft below land-surface datum, Apr. 27; lowest, 39.69 ft below land-surface datum, Aug. 17.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38.78	38.24	35.79	35.78	37.76	37.59	35.22	35.92	34.53	37.44	38.33	37.90
2	38.62	38.24	35.92	35.46	37.88	37.41	34.96	35.70	34.40	37.48	38.33	38.01
3	38.46	38.29	36.09	35.27	37.75	37.14	34.89	35.86	34.44	37.53	38.42	38.12
4	38.25	38.29	36.11	36.16	38.05	36.28	35.25	35.81	34.67	37.54	38.43	38.26
5	38.15	38.28	36.07	35.32	38.26	35.54	35.24	35.74	34.70	37.51	38.31	38.39
6	38.16	38.21	36.16	34.80	37.91	35.85	35.14	36.49	34.83	37.84	38.38	38.47
7	38.14	38.15	36.31	34.44	37.57	36.04	35.00	36.58	35.03	37.84	38.48	38.49
8	38.21	38.25	36.51	34.25	37.61	35.45	34.97	36.62	35.21	37.92	38.64	38.45
9	38.24	38.32	36.62	34.22	37.42	35.09	35.28	36.59	35.32	38.14	38.79	37.16
10	38.27	38.21	36.54	34.35	37.30	35.13	35.43	36.70	35.41	---	38.76	38.01
11	38.34	38.05	36.26	34.43	37.44	34.83	35.57	36.84	35.41	---	38.75	38.07
12	38.34	37.91	35.95	34.50	37.47	34.75	35.71	36.87	35.42	---	38.83	37.56
13	38.44	37.83	37.15	34.73	37.50	35.00	35.41	36.96	35.39	---	38.88	37.36
14	38.27	37.85	36.67	34.80	37.49	35.19	34.75	37.05	35.32	38.35	39.04	37.33
15	37.99	37.77	36.54	34.92	37.71	35.24	34.45	37.28	35.36	38.43	39.16	37.30
16	38.08	37.73	36.47	35.29	37.99	35.04	34.31	37.43	35.41	38.53	39.22	37.21
17	38.23	37.77	36.25	36.27	38.07	35.02	34.22	37.50	35.39	38.66	39.46	36.99
18	38.38	37.48	36.15	36.01	38.02	35.21	34.33	37.30	35.21	38.73	39.63	35.82
19	38.22	37.22	36.12	36.12	37.92	35.48	34.36	37.13	35.04	38.78	39.64	35.16
20	38.19	36.56	36.30	36.23	37.85	35.37	34.53	36.46	35.05	38.87	39.51	34.79
21	38.07	36.44	36.37	36.34	37.67	35.38	34.60	35.74	35.75	38.97	38.46	34.60
22	38.12	36.06	36.36	36.25	37.68	35.05	34.87	35.16	35.88	39.03	37.45	34.72
23	38.15	35.83	36.43	36.44	37.53	35.11	34.89	34.81	36.07	39.09	36.90	34.98
24	38.40	35.64	35.97	36.55	37.38	35.07	34.87	34.51	36.21	39.16	36.85	35.15
25	38.49	35.82	35.59	36.87	37.49	34.97	34.75	34.43	36.34	39.29	36.97	35.31
26	38.48	35.91	35.43	36.89	37.58	36.88	34.37	34.45	36.39	39.09	37.25	35.52
27	38.32	36.01	35.34	36.82	37.64	36.94	35.99	34.51	36.65	38.42	37.35	35.63
28	38.14	35.81	35.34	36.96	37.73	36.52	36.46	34.51	36.73	38.20	37.39	35.67
29	38.00	35.79	35.39	37.12	37.69	36.06	36.31	34.57	36.85	38.19	37.45	35.92
30	38.18	35.79	36.07	37.14	---	35.71	36.13	34.63	37.23	38.20	37.58	36.17
31	38.20	---	35.89	37.42	---	35.48	---	34.55	---	38.26	37.75	---
MEAN	38.27	37.26	36.13	35.75	37.70	35.67	35.08	35.96	35.52	38.35	38.34	36.75
MAX	38.78	38.32	37.15	37.42	38.26	37.59	36.46	37.50	37.23	39.29	39.64	38.49
MIN	37.99	35.64	35.34	34.22	37.30	34.75	34.22	34.43	34.40	37.44	36.85	34.60



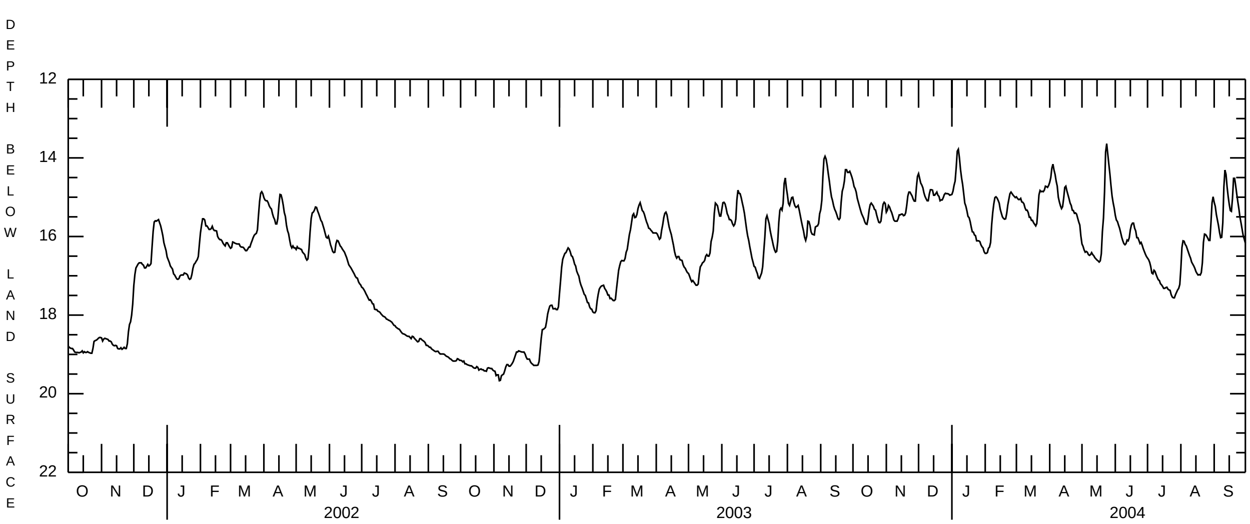
LAWRENCE COUNTY

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.--Data collection platform with 60-minute recording interval. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 1,040 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 3.40 ft above land-surface datum.
REMARKS.--In addition to the daily maximum water level table shown below, daily minimum and mean water levels, since October 1987, are available from the USGS Pennsylvania Water Science Center Office. Well pumping and cleanout on Aug. 19, 2003 caused water levels to be about 1.1 ft higher.
PERIOD OF RECORD.--November 1967 to current year.
EXTREMES FOR PERIOD OF RECORD.--Prior to October 2000, the extremes were based on extremes of the daily maximum depth below land-surface datum. Since that date, the extremes are based on the instantaneous depth below land-surface datum.
Highest water level, 12.25 ft below land-surface datum, May 19, 1978; lowest, 22.94 ft below land-surface datum, Apr. 15, 1986.
EXTREMES FOR CURRENT YEAR.--Highest water level, 13.48 ft below land-surface datum, May 24; lowest, 17.56 ft below land-surface datum, July 25, 26.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.59	15.38	14.40	14.93	16.43	14.99	14.62	16.19	15.46	16.55	16.81	15.13
2	14.73	15.33	14.52	14.85	16.43	15.03	14.50	16.25	15.58	16.59	16.28	15.23
3	14.78	15.21	14.64	14.70	16.41	15.06	14.26	16.34	15.62	16.66	16.11	15.44
4	14.87	15.25	14.69	14.59	16.30	15.06	14.16	16.40	15.71	16.77	16.12	15.58
5	15.03	15.33	14.76	14.25	16.27	15.03	14.31	16.38	15.79	16.93	16.20	15.72
6	15.13	15.39	14.89	13.83	16.15	15.12	14.42	16.40	15.90	16.95	16.24	15.90
7	15.23	15.48	14.98	13.78	15.70	15.13	14.59	16.46	16.02	16.86	16.32	16.03
8	15.33	15.58	15.04	14.00	15.39	15.17	14.72	16.48	16.11	16.89	16.40	16.02
9	15.42	15.61	15.09	14.29	15.17	15.27	15.00	16.46	16.18	16.97	16.48	15.65
10	15.48	15.61	15.09	14.51	15.01	15.33	15.12	16.41	16.21	17.04	16.55	14.74
11	15.54	15.61	14.92	14.68	14.99	15.33	15.22	16.46	16.18	17.10	16.65	14.31
12	15.63	15.55	14.81	14.91	15.02	15.39	15.29	16.49	16.09	17.12	16.70	14.42
13	15.68	15.45	14.81	15.15	15.08	15.51	15.24	16.54	16.11	17.20	16.75	14.74
14	15.69	15.45	14.82	15.23	15.15	15.51	15.02	16.57	16.03	17.23	16.81	14.98
15	15.55	15.43	14.95	15.35	15.31	15.59	14.75	16.60	15.83	17.27	16.89	15.18
16	15.33	15.43	14.95	15.49	15.41	15.59	14.72	16.62	15.71	17.32	16.94	15.34
17	15.19	15.47	14.91	15.52	15.50	15.65	14.84	16.65	15.66	17.32	16.98	15.36
18	15.15	15.46	14.87	15.62	15.54	15.69	14.94	16.62	15.66	17.30	16.97	15.04
19	15.19	15.40	14.95	15.76	15.56	15.73	15.04	16.44	15.79	17.29	16.98	14.52
20	15.23	15.21	14.98	15.88	15.55	15.67	15.15	15.88	15.86	17.34	16.92	14.52
21	15.31	14.97	15.09	15.89	15.41	15.31	15.21	15.53	16.03	17.36	16.67	14.71
22	15.33	14.87	15.07	15.96	15.20	14.94	15.33	14.86	16.03	17.37	16.15	14.92
23	15.45	14.87	15.07	15.98	15.05	14.83	15.34	13.85	16.10	17.48	15.94	15.12
24	15.55	14.92	15.01	16.11	14.91	14.86	15.41	13.64	16.18	17.54	15.95	15.30
25	15.64	14.97	14.93	16.11	14.87	14.85	15.40	13.90	16.15	17.56	15.99	15.51
26	15.65	15.05	14.90	16.11	14.91	14.86	15.43	14.16	16.22	17.56	16.04	15.66
27	15.61	15.10	14.91	16.13	14.95	14.82	15.53	14.41	16.31	17.48	16.10	15.82
28	15.37	15.10	14.91	16.21	14.98	14.72	15.63	14.71	16.38	17.42	16.10	15.98
29	15.18	14.74	14.92	16.26	15.01	14.73	15.71	14.97	16.45	17.36	15.65	16.07
30	15.13	14.47	14.95	16.29	---	14.75	15.99	15.14	16.51	17.32	15.14	16.17
31	15.16	---	14.94	16.39	---	14.70	---	15.28	---	17.22	14.99	---
MEAN	15.30	15.26	14.90	15.31	15.44	15.17	15.03	15.78	16.00	17.17	16.35	15.30
MAX	15.69	15.61	15.09	16.39	16.43	15.73	15.99	16.65	16.51	17.56	16.98	16.17
MIN	14.59	14.47	14.40	13.78	14.87	14.70	14.16	13.64	15.46	16.55	14.99	14.31



OCTOBER 1, 2001 TO SEPTEMBER 30, 2004

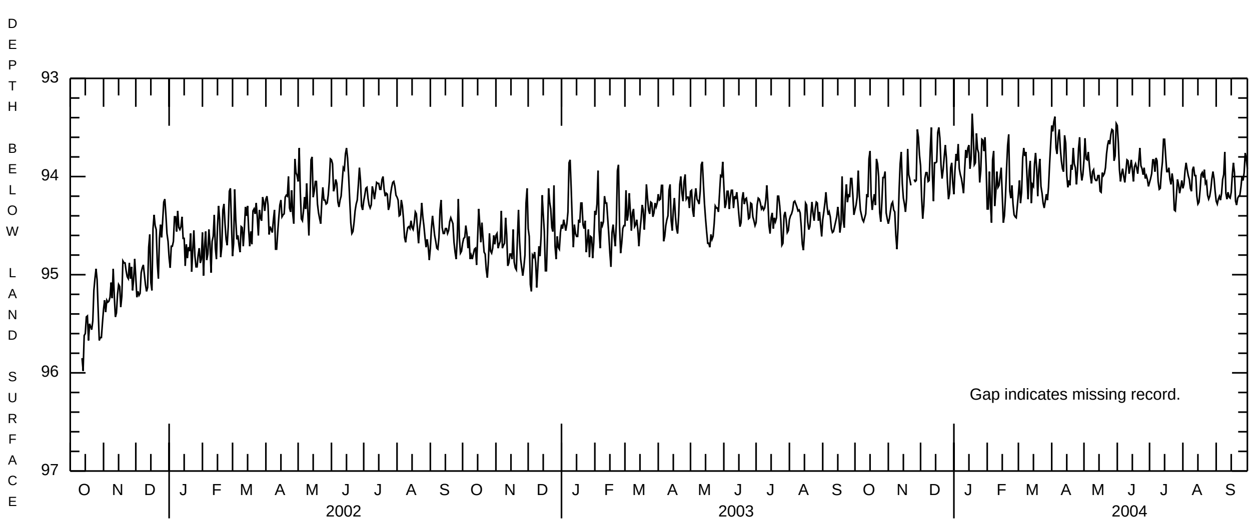
McKEAN COUNTY

414509078343401. Local number, MC 125.

LOCATION.--Lat 41°45'09", long 78°34'34", Hydrologic Unit 05010001, at State Game Lands 62.
Owner: U.S. Geological Survey.
AQUIFER.--Pottsville Formation, Middle Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 173.5 ft, cased to 17 ft.
INSTRUMENTATION.--Data collection platform with 60-minute recording interval. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 2,169 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.00 ft above land-surface datum.
REMARKS.--In addition to the daily mean water level table shown below, daily maximum and minimum water levels are available from the USGS Pennsylvania Water Science Center Office.
PERIOD OF RECORD.--October 2001 to current year.
EXTREMES FOR PERIOD OF RECORD.--The extremes shown are extremes of the instantaneous depth below land surface for the period of record indicated above.
Highest water level, 93.24 ft below land-surface datum, Apr. 4, 2004; lowest, 96.03 ft below land-surface datum, Oct. 13, 2001.
EXTREMES FOR CURRENT YEAR.--Highest water level, 93.24 ft below land-surface datum, Apr. 4; lowest, 94.82 ft below land-surface datum, Nov. 9.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	94.34	94.48	93.89	94.18	94.33	94.18	93.48	93.83	93.48	94.06	94.12	94.25
2	94.29	94.43	94.22	93.94	94.33	94.04	93.54	93.61	93.66	94.02	94.08	94.28
3	94.21	94.35	94.43	93.77	93.95	94.27	93.44	93.82	93.93	93.97	93.94	94.23
4	93.94	94.28	94.30	93.84	94.28	94.16	93.39	93.83	94.05	93.83	93.86	94.20
5	94.18	94.26	94.02	93.67	94.47	93.81	93.71	93.75	93.97	93.83	93.93	94.24
6	94.34	94.34	93.96	93.92	93.83	93.71	93.77	93.88	93.92	93.95	93.99	94.17
7	94.39	94.36	93.96	93.98	93.74	93.79	93.60	93.99	94.00	93.81	94.03	94.03
8	94.44	94.60	94.05	94.02	94.30	93.75	93.52	94.07	94.06	93.84	94.12	93.98
9	94.46	94.74	94.04	94.09	94.16	94.00	93.71	93.95	93.95	94.05	94.15	93.75
10	94.42	94.53	93.73	94.17	93.95	94.23	93.84	93.93	93.83	94.13	93.93	94.17
11	94.38	94.15	93.50	93.93	94.11	93.94	93.92	94.02	93.84	94.12	93.90	94.23
12	94.18	93.87	93.98	93.73	94.09	93.84	93.95	94.04	93.97	93.96	93.99	94.16
13	94.21	93.75	94.25	93.81	94.00	94.27	93.58	94.04	93.91	93.85	93.99	94.21
14	93.82	94.07	93.86	93.71	93.91	94.08	93.66	93.99	93.83	93.62	94.20	94.22
15	93.74	94.22	93.86	93.68	94.19	94.10	93.99	93.99	93.93	93.62	94.28	94.16
16	94.19	94.28	93.85	93.92	94.47	93.87	94.11	94.15	94.05	93.79	94.26	93.98
17	94.34	94.36	93.55	93.82	94.40	93.76	94.04	94.16	93.90	93.95	94.14	93.86
18	94.25	94.22	93.50	93.36	94.20	93.92	94.09	93.96	93.87	93.95	93.98	93.96
19	94.18	93.72	93.61	93.57	93.92	94.20	93.88	93.99	93.91	93.91	93.96	94.25
20	94.29	93.98	93.88	93.88	93.68	93.93	93.93	93.97	93.97	94.03	94.01	94.29
21	93.82	94.03	94.02	93.86	93.57	93.82	93.71	93.91	93.84	94.08	93.93	94.22
22	93.87	94.09	93.93	93.56	94.15	94.10	93.87	93.77	93.71	93.97	94.07	94.20
23	94.00	---	93.80	93.72	94.22	94.17	93.91	93.68	93.89	94.05	94.05	94.19
24	94.37	---	93.68	93.76	94.09	94.27	94.08	93.63	93.92	94.34	94.19	94.11
25	94.46	94.03	93.81	94.06	94.28	94.32	93.93	93.67	93.98	94.35	94.23	94.00
26	94.26	94.05	94.06	93.94	94.39	94.25	93.71	93.57	93.91	94.19	94.20	94.04
27	94.01	94.04	94.23	93.62	94.41	94.18	93.60	93.52	94.02	94.03	94.13	93.96
28	94.01	93.52	94.17	93.63	94.42	94.24	93.93	93.53	93.99	94.08	94.02	93.76
29	93.95	93.60	93.91	93.74	94.30	94.11	94.04	93.84	94.03	94.17	93.95	93.82
30	94.37	93.78	93.86	93.60	---	93.88	93.98	93.79	94.10	94.11	94.02	93.92
31	94.43	---	94.07	93.90	---	93.68	---	93.46	---	94.04	94.15	---
MEAN	94.20	94.15	93.93	93.82	94.14	94.03	93.80	93.85	93.91	93.99	94.06	94.09
MAX	94.46	94.74	94.43	94.18	94.47	94.32	94.11	94.16	94.10	94.35	94.28	94.29
MIN	93.74	93.52	93.50	93.36	93.57	93.68	93.39	93.46	93.48	93.62	93.86	93.75



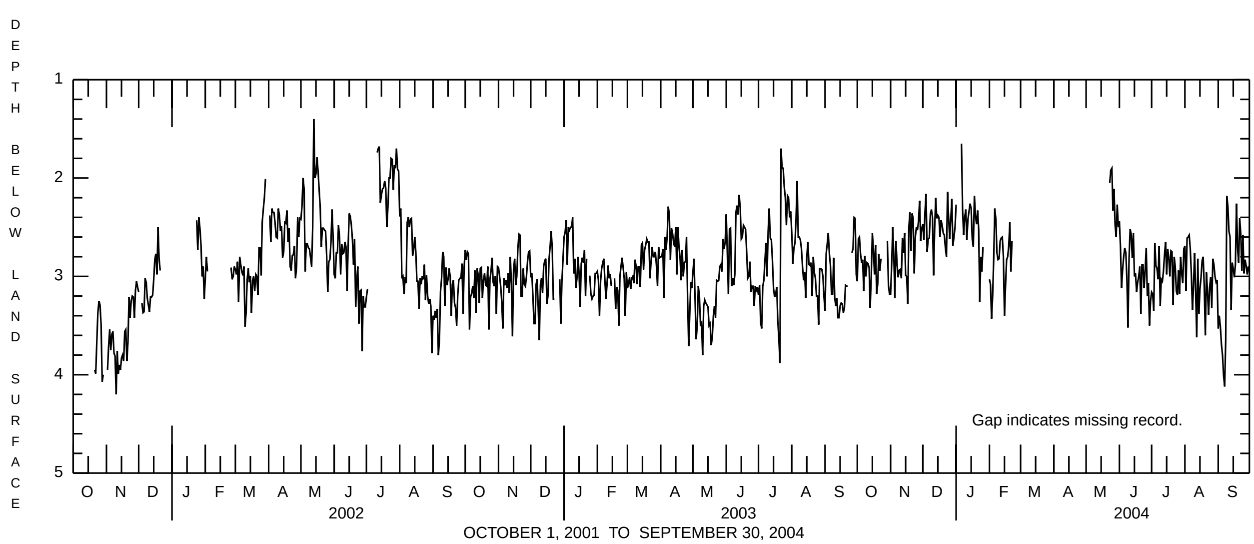
MERCER COUNTY

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 strip-chart recorder.
DATUM.--Elevation of land-surface datum is 965 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of plywood cover, 2.26 ft above land-surface datum.
REMARKS.--Water levels after Sept. 25, 1998 affected by Pymatuning earthquake (magnitude 5.2). Water levels affected by intermittent pumping.
PERIOD OF RECORD.--March 1964 to current year.
EXTREMES FOR PERIOD OF RECORD.--Prior to October 2000, the extremes were based on extremes of the daily maximum depth below land-surface datum. Since that date, the extremes are based on the instantaneous depth below land-surface datum.
Highest water level, 0.25 ft below land-surface datum, Apr. 17, 1998; lowest, 8.31 ft below land-surface datum, Feb. 12, 1967.
EXTREMES FOR CURRENT YEAR.--Highest water level, 1.40 ft below land-surface datum, Jan. 6; lowest, 4.12 ft below land-surface datum, Sept. 7.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.05	3.18	2.47	2.27	3.03	---	---	---	2.44	3.16	2.69	3.53
2	2.62	2.88	2.63	---	3.08	---	---	---	2.70	3.18	3.15	3.40
3	2.60	2.50	2.35	---	3.43	---	---	---	3.12	3.35	2.61	3.51
4	2.77	2.80	2.16	---	3.20	---	---	---	2.93	2.66	2.60	3.69
5	2.86	3.22	2.75	---	2.82	---	---	---	2.80	2.89	2.58	3.80
6	2.83	2.64	2.62	1.65	2.31	---	---	---	2.71	2.92	2.72	4.01
7	3.15	2.87	2.61	2.32	2.42	---	---	---	2.76	3.03	2.98	4.12
8	2.79	3.01	2.37	2.58	2.76	---	---	---	3.03	2.69	3.34	3.64
9	3.00	2.94	2.32	2.40	2.83	---	---	---	3.52	3.30	3.10	2.18
10	2.86	2.93	2.40	2.32	2.82	---	---	---	2.81	3.03	2.76	2.29
11	2.87	3.02	2.99	2.63	2.64	---	---	---	2.52	3.05	3.16	2.54
12	2.91	2.61	2.52	2.42	2.61	---	---	---	2.57	2.95	3.62	2.60
13	3.32	2.76	2.20	2.34	2.60	---	---	---	2.81	2.78	2.82	3.34
14	3.00	2.56	2.41	2.26	2.80	---	---	---	2.56	2.65	3.38	2.86
15	2.56	2.99	2.38	2.31	3.40	---	---	---	3.00	2.98	3.13	2.92
16	2.72	3.00	2.40	2.62	3.10	---	---	---	2.97	2.72	3.01	3.01
17	2.98	3.28	2.60	2.70	2.83	---	---	---	3.16	2.81	2.84	2.88
18	2.68	2.50	2.43	2.18	2.80	---	---	---	3.06	3.00	2.80	2.26
19	3.18	2.35	2.48	2.38	2.69	---	---	---	3.00	2.74	3.10	2.71
20	3.08	2.74	2.56	2.47	2.45	---	---	---	2.90	2.75	3.60	2.86
21	2.77	2.36	2.58	2.33	2.95	---	---	---	3.38	3.29	2.96	2.41
22	2.94	2.41	2.71	2.52	2.64	---	---	---	2.88	2.80	3.15	2.57
23	2.82	2.97	2.80	3.26	---	---	---	2.05	2.88	2.90	3.39	2.94
24	---	2.60	2.14	2.80	---	---	---	1.92	3.12	3.15	3.11	2.58
25	---	2.50	2.40	2.95	---	---	---	1.90	2.93	3.19	3.01	2.97
26	---	2.53	2.62	2.70	---	---	---	2.33	2.71	2.94	3.32	2.83
27	---	2.44	2.43	---	---	---	---	2.11	3.20	3.18	2.82	2.89
28	---	2.23	2.21	---	---	---	---	2.48	3.07	2.80	2.88	2.98
29	2.64	2.64	2.69	---	---	---	---	2.60	3.50	2.97	3.00	2.90
30	3.09	2.51	2.60	---	---	---	---	2.27	3.25	3.07	3.06	2.95
31	3.18	---	2.50	---	---	---	---	2.50	---	2.72	3.04	---
MEAN	2.90	2.73	2.49	2.47	2.83	---	---	2.24	2.94	2.96	3.02	3.01
MAX	3.32	3.28	2.99	3.26	3.43	---	---	2.60	3.52	3.35	3.62	4.12
MIN	2.56	2.23	2.14	1.65	2.31	---	---	1.90	2.44	2.65	2.58	2.18



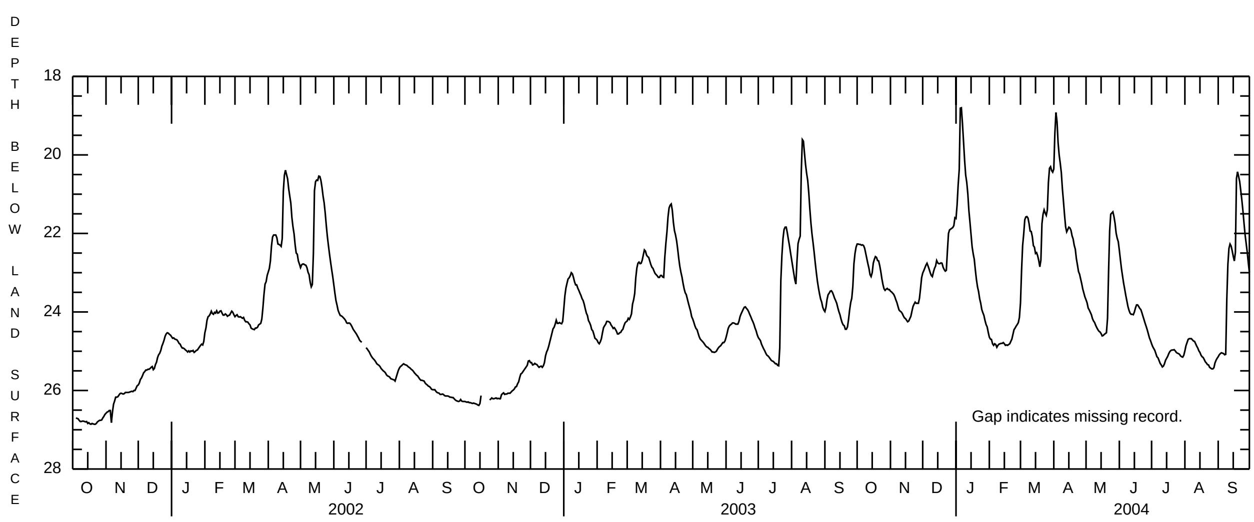
MERCER COUNTY

412739080104201. Local number, MR 3306.

LOCATION.--Lat 41°27'39", long 80°10'42", Hydrologic Unit 05010003, at State Game Lands 270.
Owner: U.S. Geological Survey.
AQUIFER.--Cuyahoga Group, Mississippian age.
WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 120 ft, cased to 30 ft.
INSTRUMENTATION.--Data collection platform with 60-minute recording interval. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 1,310 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.50 ft above land-surface datum.
REMARKS.--In addition to the daily mean water level table shown below, daily maximum and minimum water levels are available from the USGS Pennsylvania Water Science Center Office.
PERIOD OF RECORD.--October 2001 to current year.
EXTREMES FOR PERIOD OF RECORD.--The extremes shown are extremes of the instantaneous depth below land surface for the period of record indicated above.
Highest water level, 18.66 ft below land-surface datum, Jan. 5, 2004; lowest, 27.64 ft below land-surface datum, Nov. 6, 2001.
EXTREMES FOR CURRENT YEAR.--Highest water level, 18.66 ft below land-surface datum, Jan. 5; lowest, 25.47 ft below land-surface datum, Aug. 27.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22.27	23.47	23.01	21.62	24.64	23.77	20.36	23.69	22.43	24.81	24.99	25.14
2	22.27	23.49	22.95	21.28	24.69	22.95	19.45	23.77	22.67	24.88	24.86	25.09
3	22.28	23.52	22.88	20.77	24.70	22.31	18.92	23.90	22.90	24.93	24.78	25.06
4	22.28	23.55	22.81	20.37	24.81	22.02	19.15	23.95	23.09	24.98	24.70	25.04
5	22.30	23.61	22.76	18.81	24.85	21.65	19.69	24.01	23.27	25.06	24.68	25.05
6	22.29	23.69	22.83	18.80	24.81	21.58	20.00	24.07	23.42	25.14	24.68	25.06
7	22.31	23.76	22.91	19.20	24.83	21.57	20.21	24.17	23.58	25.17	24.68	25.09
8	22.38	23.86	23.00	19.66	24.90	21.61	20.45	24.23	23.72	25.24	24.71	25.08
9	22.51	23.95	23.07	20.13	24.85	21.75	20.86	24.27	23.86	25.31	24.74	23.67
10	22.64	23.98	23.10	20.51	24.82	21.94	21.18	24.34	23.96	25.35	24.75	22.79
11	22.77	24.00	22.98	20.70	24.81	21.95	21.53	24.40	24.03	25.40	24.81	22.38
12	22.89	24.04	22.89	20.99	24.80	22.08	21.83	24.45	24.06	25.38	24.87	22.27
13	23.05	24.10	22.83	21.42	24.80	22.31	21.96	24.49	24.06	25.32	24.92	22.32
14	23.10	24.15	22.69	21.72	24.78	22.35	21.90	24.51	24.07	25.23	24.99	22.44
15	23.00	24.17	22.75	22.03	24.81	22.51	21.84	24.55	24.00	25.18	25.03	22.58
16	22.76	24.21	22.77	22.34	24.85	22.49	21.86	24.61	23.90	25.13	25.10	22.70
17	22.66	24.25	22.77	22.52	24.84	22.57	21.92	24.60	23.82	25.06	25.14	22.48
18	22.59	24.23	22.75	22.66	24.85	22.69	22.06	24.57	23.82	25.01	25.16	20.60
19	22.61	24.17	22.76	22.93	24.83	22.85	22.14	24.55	23.86	24.98	25.21	20.43
20	22.69	24.11	22.86	23.17	24.81	22.68	22.30	24.53	23.91	24.97	25.27	20.55
21	22.70	23.98	22.92	23.36	24.75	21.75	22.40	24.16	23.94	24.97	25.30	20.68
22	22.82	23.86	22.96	23.48	24.69	21.51	22.64	22.96	24.02	24.96	25.34	20.91
23	22.97	23.80	22.94	23.66	24.57	21.40	22.80	21.93	24.11	24.99	25.35	21.15
24	23.15	23.75	22.45	23.78	24.45	21.48	22.97	21.51	24.20	25.03	25.41	21.42
25	23.30	23.78	22.00	23.94	24.41	21.54	23.04	21.48	24.29	25.05	25.43	21.73
26	23.41	23.78	21.91	24.02	24.36	21.40	23.16	21.45	24.37	25.06	25.45	22.03
27	23.45	23.78	21.89	24.09	24.32	20.70	23.28	21.57	24.46	25.08	25.45	22.25
28	23.42	23.65	21.87	24.22	24.27	20.34	23.42	21.74	24.56	25.12	25.42	22.47
29	23.40	23.40	21.85	24.32	24.14	20.30	23.52	21.99	24.66	25.14	25.30	22.74
30	23.43	23.13	21.80	24.38	---	20.40	23.62	22.12	24.73	25.15	25.23	22.99
31	23.43	---	21.60	24.52	---	20.44	---	22.21	---	25.10	25.18	---
MEAN	22.81	23.84	22.63	22.11	24.69	21.84	21.68	23.51	23.86	25.10	25.06	22.81
MAX	23.45	24.25	23.10	24.52	24.90	23.77	23.62	24.61	24.73	25.40	25.45	25.14
MIN	22.27	23.13	21.60	18.80	24.14	20.30	18.92	21.45	22.43	24.81	24.68	20.43



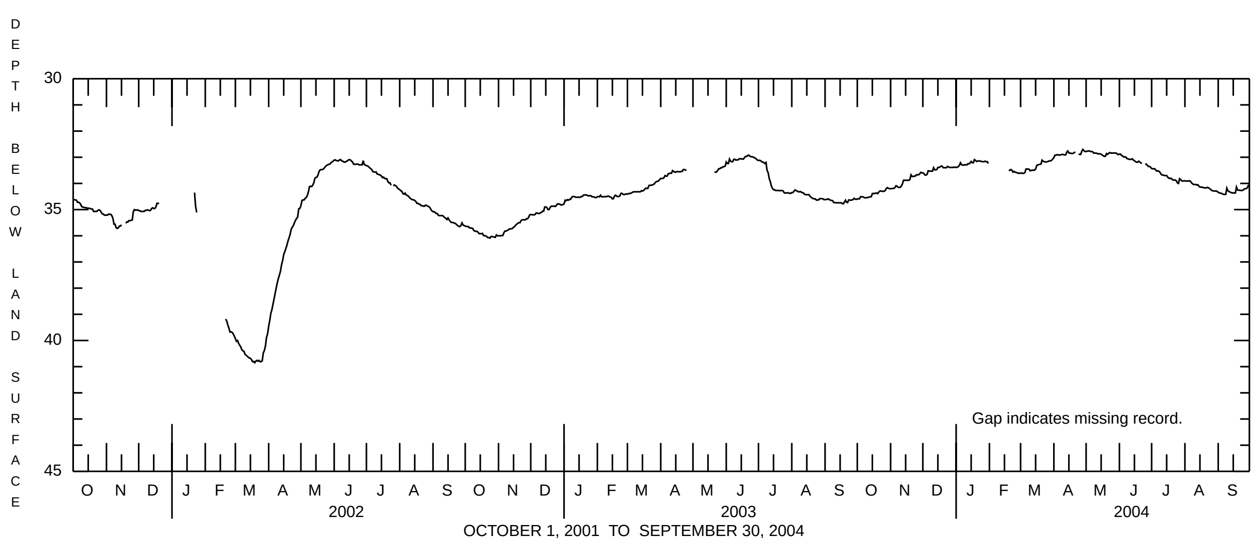
SOMERSET COUNTY

400008079142801. Local number, SO 2.

LOCATION.--Lat 40°00'04", long 79°14'22", 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 above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 1.43 ft above land-surface datum.
REMARKS.--Water levels affected by intermittent pumping.
PERIOD OF RECORD.--April 1937 to September 2004. (discontinued)
EXTREMES FOR PERIOD OF RECORD.--The extremes shown are extremes of the instantaneous depth below land surface for the period of record indicated above.
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).
EXTREMES FOR CURRENT YEAR.--Highest water level, 32.59 ft below land-surface datum, Apr. 13, 14; lowest, 34.59 ft below land-surface datum, Oct. 1-3.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34.59	34.20	33.60	33.39	---	33.61	33.01	32.78	32.88	33.43	33.90	34.34
2	34.59	34.20	33.62	33.38	---	33.60	32.92	32.77	32.88	33.44	33.91	34.36
3	34.59	34.19	33.68	33.36	---	33.62	32.92	32.76	32.93	33.44	33.91	34.37
4	34.51	34.19	33.68	33.31	---	33.61	32.90	32.76	32.95	33.44	33.91	34.38
5	34.51	34.16	33.65	33.21	---	33.59	32.91	32.78	32.99	33.50	33.90	34.40
6	34.51	34.09	33.52	33.28	---	33.45	32.92	32.78	32.99	33.53	33.91	34.42
7	34.53	34.11	33.53	33.30	---	33.45	32.91	32.79	32.99	33.52	33.97	34.42
8	34.55	34.15	33.53	33.30	---	33.45	32.90	32.84	33.05	33.54	34.01	34.42
9	34.55	34.15	33.53	33.29	---	33.46	32.89	32.84	33.06	33.59	34.04	34.18
10	34.54	34.15	33.53	33.29	---	33.52	32.90	32.84	33.08	33.66	34.04	34.28
11	34.54	34.10	33.40	33.29	---	33.50	32.91	32.85	33.08	33.68	34.04	34.31
12	34.52	34.02	33.48	33.25	---	33.49	32.91	32.87	33.08	33.68	34.06	34.33
13	34.51	33.88	33.48	33.25	---	33.50	32.80	32.87	33.06	33.70	34.05	34.35
14	34.51	33.88	33.47	33.22	---	33.49	32.76	32.87	33.11	33.70	34.10	34.36
15	34.39	33.88	33.39	33.16	---	33.45	32.84	32.88	33.13	33.70	34.14	34.36
16	34.38	33.88	33.39	33.21	---	33.32	32.84	32.92	33.17	33.76	34.14	34.37
17	34.39	33.88	33.37	33.21	---	33.29	32.85	32.94	33.19	33.80	34.15	34.36
18	34.37	33.88	33.34	33.09	---	33.28	32.86	32.97	33.19	33.81	34.15	34.14
19	34.37	33.85	33.34	33.12	33.50	33.27	32.85	32.96	33.15	33.80	34.17	34.25
20	34.39	33.67	33.40	33.16	33.50	33.26	32.82	32.86	33.18	33.84	34.17	34.26
21	34.33	33.73	33.40	33.15	33.47	33.11	32.80	32.89	33.22	33.87	34.17	34.26
22	34.29	33.74	33.40	33.14	33.50	33.15	---	32.85	33.23	33.87	34.15	34.27
23	34.29	33.72	33.40	33.14	33.57	33.17	---	32.82	---	33.87	34.17	34.27
24	34.30	33.72	33.35	33.16	33.54	33.18	32.88	32.84	---	33.90	34.20	34.26
25	34.30	33.67	33.37	33.16	33.57	33.18	32.89	32.84	33.27	33.98	34.23	34.22
26	34.30	33.67	33.39	33.17	33.58	33.17	32.89	32.84	33.26	34.00	34.27	34.20
27	34.27	33.67	33.39	33.17	33.60	33.15	32.77	32.84	33.31	33.82	34.28	34.20
28	34.19	33.64	33.39	33.15	33.61	33.14	32.70	32.84	33.35	33.85	34.29	34.17
29	34.16	33.58	33.39	33.17	33.61	33.14	32.75	32.84	33.35	33.90	34.29	34.08
30	34.19	33.59	33.38	33.17	---	33.11	32.78	32.88	33.38	33.91	34.29	34.09
31	34.20	---	33.38	33.24	---	33.07	---	32.90	---	33.90	34.30	---
MEAN	34.41	33.91	33.46	33.22	33.55	33.35	32.86	32.85	33.13	33.72	34.11	34.29
MAX	34.59	34.20	33.68	33.39	33.61	33.62	33.01	32.97	33.38	34.00	34.30	34.42
MIN	34.16	33.58	33.34	33.09	33.47	33.07	32.70	32.76	32.88	33.43	33.90	34.08



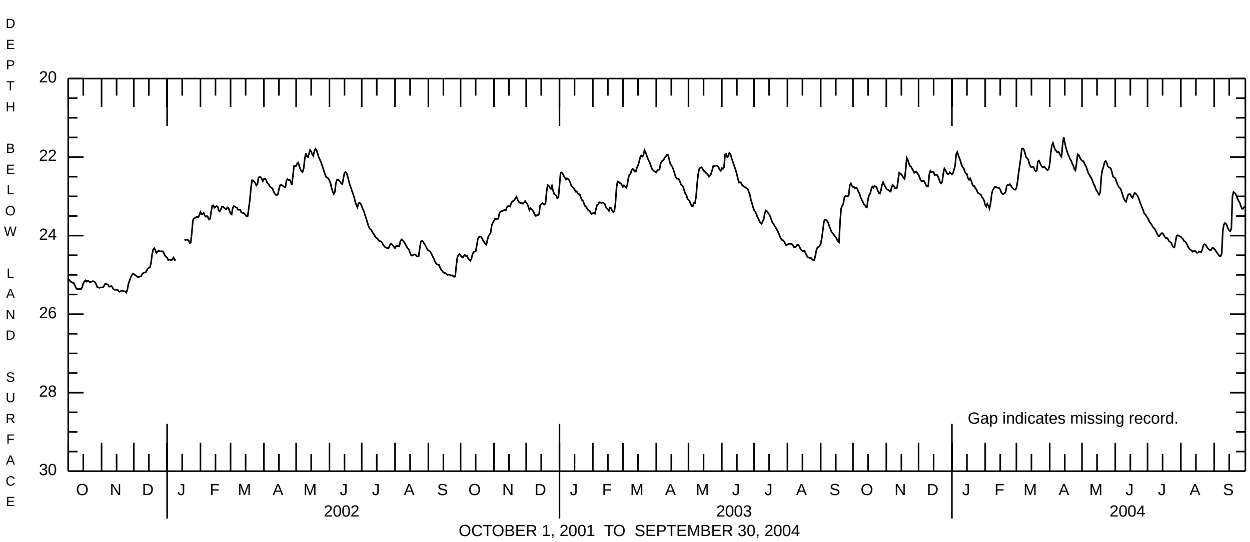
SOMERSET COUNTY

395920079021501. Local number, SO 854.

LOCATION.--Lat 39°59'20", long 79°02'15", Hydrologic Unit 05020006, at Somerset County Conservancy.
Owner: Somerset County Conservancy.
AQUIFER.--Allegheny Formation, Pennsylvanian age.
WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 121 ft, cased to 42 ft.
INSTRUMENTATION.--Data collection platform with 60-minute recording interval. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 2,280 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of instrument shelf, 1.50 ft above land-surface datum.
REMARKS.--In addition to the daily mean water level table shown below, daily maximum and minimum water levels are available from the USGS Pennsylvania Water Science Center Office.
PERIOD OF RECORD.--July 2001 to current year.
EXTREMES FOR PERIOD OF RECORD.--The extremes shown are extremes of the instantaneous depth below land surface for the period of record indicated above.
Highest water level, 21.46 ft below land-surface datum, Apr. 14, 2004; lowest, 25.45 ft below land-surface datum, Nov. 18, 24, 25, 2001.
EXTREMES FOR CURRENT YEAR.--Highest water level, 21.46 ft below land-surface datum, Apr. 14; lowest, 24.53 ft below land-surface datum, Sept. 8.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22.76	22.80	22.45	22.44	23.22	22.79	22.18	22.09	22.54	23.55	24.03	24.34
2	22.76	22.83	22.52	22.41	23.26	22.64	21.89	22.10	22.62	23.60	24.06	24.37
3	22.80	22.84	22.59	22.32	23.19	22.42	21.71	22.14	22.69	23.66	24.09	24.41
4	22.78	22.87	22.62	22.22	23.24	22.23	21.64	22.20	22.75	23.69	24.14	24.45
5	22.81	22.88	22.60	21.93	23.31	22.04	21.73	22.25	22.78	23.73	24.15	24.49
6	22.88	22.77	22.61	21.87	23.18	21.79	21.81	22.34	22.81	23.78	24.19	24.52
7	22.93	22.71	22.66	21.95	22.95	21.78	21.84	22.41	22.89	23.81	24.24	24.52
8	23.01	22.74	22.72	22.03	22.84	21.81	21.88	22.46	22.98	23.84	24.30	24.46
9	23.08	22.79	22.75	22.10	22.80	21.90	21.86	22.50	23.06	23.90	24.34	23.89
10	23.13	22.80	22.74	22.20	22.76	22.00	21.90	22.55	23.11	23.96	24.36	23.72
11	23.19	22.78	22.43	22.26	22.76	22.03	21.96	22.62	23.14	24.01	24.38	23.68
12	23.22	22.58	22.35	22.29	22.78	22.06	21.99	22.69	23.04	24.01	24.41	23.70
13	23.27	22.40	22.39	22.37	22.78	22.17	21.68	22.74	22.96	23.97	24.39	23.75
14	23.28	22.42	22.37	22.42	22.79	22.23	21.49	22.82	22.94	23.94	24.39	23.83
15	23.07	22.44	22.38	22.43	22.83	22.26	21.63	22.87	22.95	23.94	24.41	23.87
16	22.97	22.48	22.46	22.54	22.90	22.25	21.75	22.92	23.01	23.98	24.44	23.89
17	22.93	22.53	22.45	22.58	22.94	22.25	21.84	22.96	23.04	24.03	24.43	23.81
18	22.82	22.56	22.45	22.54	22.94	22.33	21.93	22.90	22.97	24.06	24.41	22.99
19	22.75	22.33	22.49	22.60	22.92	22.36	21.98	22.50	22.91	24.06	24.41	22.89
20	22.78	22.02	22.56	22.69	22.89	22.34	22.05	22.33	22.93	24.09	24.42	22.91
21	22.74	22.07	22.64	22.74	22.73	22.11	22.09	22.25	22.96	24.14	24.35	22.94
22	22.75	22.16	22.67	22.74	22.71	22.09	22.17	22.13	23.00	24.16	24.24	23.01
23	22.77	22.23	22.63	22.80	22.72	22.15	22.22	22.10	23.07	24.18	24.22	23.08
24	22.85	22.24	22.42	22.83	22.69	22.21	22.31	22.14	23.15	24.25	24.23	23.13
25	22.91	22.30	22.29	22.91	22.73	22.25	22.34	22.23	23.22	24.29	24.28	23.18
26	22.93	22.34	22.33	22.92	22.78	22.26	22.15	22.26	23.29	24.30	24.32	23.26
27	22.85	22.40	22.39	22.94	22.80	22.25	21.93	22.27	23.36	24.16	24.35	23.32
28	22.71	22.38	22.43	22.96	22.83	22.28	21.95	22.30	23.44	24.01	24.37	23.31
29	22.64	22.37	22.43	23.02	22.83	22.31	22.01	22.40	23.46	23.99	24.37	23.27
30	22.70	22.42	22.39	23.05	---	22.33	22.06	22.50	23.51	24.00	24.32	23.26
31	22.75	---	22.41	23.11	---	22.31	---	22.52	---	24.02	24.31	---
MEAN	22.90	22.52	22.50	22.52	22.90	22.20	21.93	22.44	23.02	23.97	24.30	23.68
MAX	23.28	22.88	22.75	23.11	23.31	22.79	22.34	22.96	23.51	24.30	24.44	24.52
MIN	22.64	22.02	22.29	21.87	22.69	21.78	21.49	22.09	22.54	23.55	24.03	22.89



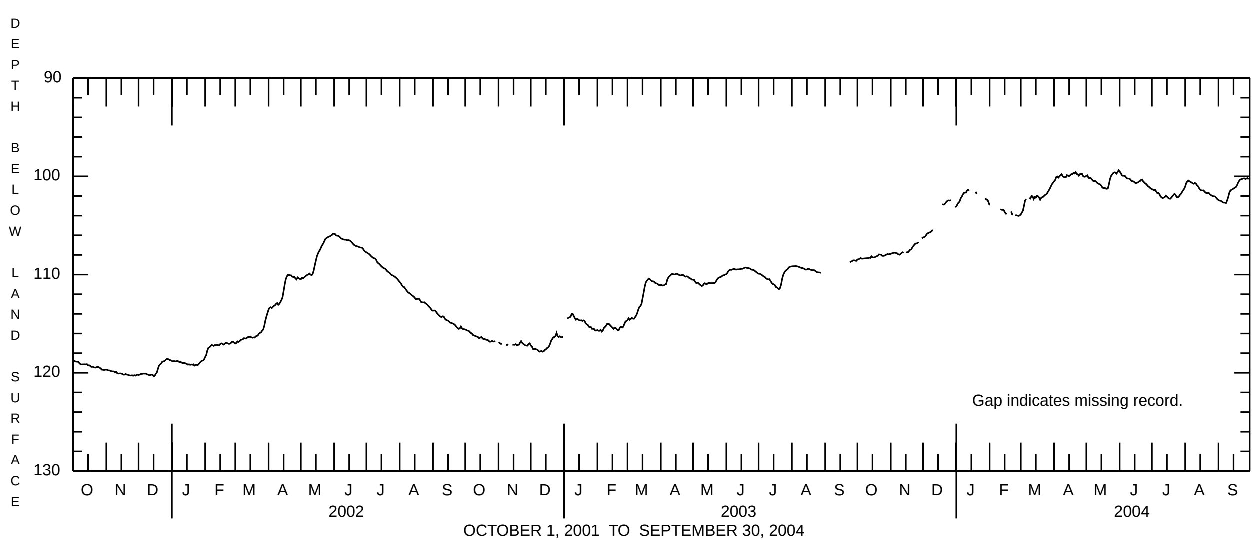
VENANGO COUNTY

411958079540202. Local number, VE 57.

LOCATION.--Lat 41°19'58", long 79°54'02", Hydrologic Unit 05010003, at State Game Lands 39.
Owner: U.S. Geological Survey.
AQUIFER.--Shale of Venango Formation of Late Devonian age.
WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 215 ft, cased to 9 ft.
INSTRUMENTATION.--Data collection platform with 60-minute recording interval. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 1,518 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of pipe on instrument shelf, 2.52 ft above land-surface datum.
REMARKS.--In addition to the daily mean water level table shown below, daily maximum and minimum water levels are available from the USGS Pennsylvania Water Science Center Office.
PERIOD OF RECORD.--Aug. 1974 to Aug. 1977; June 2001 to current year.
EXTREMES FOR PERIOD OF RECORD.--The extremes shown are extremes of the instantaneous depth below land surface for the period of record indicated above.
Highest water level, 99.36 ft below land-surface datum, May 31, 2004; lowest, 120.40 ft below land-surface datum, Dec. 15, 16, 2001.
EXTREMES FOR CURRENT YEAR.--Highest water level, 99.36 ft below land-surface datum, May 31; lowest, 108.51 ft below land-surface datum, Oct. 1.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	108.46	107.90	106.22	103.08	102.96	103.88	100.51	99.95	99.51	101.30	101.04	102.42
2	108.45	107.84	106.19	102.85	---	103.69	100.37	99.90	99.66	101.36	100.69	102.47
3	108.38	107.81	106.13	102.68	---	103.50	100.08	100.16	99.88	101.41	100.51	102.49
4	108.32	107.78	105.97	102.58	---	103.00	100.02	100.18	99.95	101.38	100.43	102.55
5	108.38	107.78	105.81	102.26	---	102.46	100.13	100.17	99.94	101.54	100.51	102.65
6	108.38	107.81	105.77	102.10	---	102.32	100.01	100.29	99.97	101.70	100.58	102.68
7	108.36	107.84	105.72	101.86	---	---	99.87	100.44	100.11	101.67	100.63	102.68
8	108.35	107.94	105.67	101.70	103.40	---	99.78	100.49	100.22	101.82	100.72	102.72
9	108.34	107.98	105.60	101.65	---	102.19	100.0	100.46	100.23	102.04	100.76	102.46
10	108.33	107.92	105.43	101.66	---	102.26	100.06	100.53	100.23	102.15	100.67	102.13
11	108.32	107.81	---	101.44	103.36	102.01	100.10	100.66	100.32	102.21	100.75	101.70
12	108.28	107.73	---	101.37	103.40	102.04	100.09	100.73	100.49	102.18	100.91	101.45
13	108.30	107.78	---	101.47	103.42	102.31	99.88	100.79	100.49	102.11	101.02	101.37
14	108.14	---	---	---	103.41	102.10	99.95	100.83	100.53	101.97	101.22	101.32
15	108.24	107.77	---	---	103.62	102.18	99.98	100.97	100.62	102.07	101.36	101.25
16	108.26	107.73	---	---	103.80	101.98	99.88	101.16	100.72	102.18	101.43	101.17
17	108.25	107.73	---	101.51	103.79	102.03	99.78	101.19	100.66	102.26	101.44	101.12
18	108.17	107.61	---	---	---	102.15	99.77	101.15	100.62	102.29	101.43	100.97
19	108.13	107.47	102.83	101.57	---	102.39	99.66	101.25	100.52	102.18	101.55	100.70
20	108.08	107.45	102.88	101.81	---	102.19	99.71	101.27	100.48	102.05	101.67	100.50
21	107.95	107.25	102.85	---	103.58	102.12	99.57	101.24	100.36	101.91	101.70	100.35
22	107.96	107.09	102.71	---	103.88	102.08	99.76	100.82	100.33	101.78	101.71	100.30
23	107.98	106.96	102.56	---	103.90	101.95	99.79	100.29	100.54	101.88	101.70	100.27
24	108.09	106.84	102.48	101.98	---	101.87	99.94	99.97	100.62	102.11	101.83	100.22
25	108.10	106.84	102.45	---	103.93	101.81	99.78	99.82	100.75	102.15	101.91	100.21
26	108.08	106.77	102.47	102.12	103.97	101.63	99.74	99.67	100.80	102.07	101.98	100.27
27	108.02	106.70	102.42	---	104.00	101.45	99.75	99.59	100.98	101.91	102.02	100.23
28	107.97	---	---	102.22	104.03	101.25	99.98	99.61	101.04	101.79	102.03	100.18
29	107.91	---	---	102.38	103.98	101.02	100.05	99.73	101.15	101.61	102.07	100.31
30	107.95	106.31	---	102.37	---	100.80	100.03	99.60	101.25	101.43	102.21	---
31	107.91	---	103.11	102.65	---	100.66	---	99.39	---	101.28	102.34	---
MEAN	108.19	107.50	104.26	102.06	103.67	102.11	99.93	100.40	100.43	101.86	101.32	101.35
MAX	108.46	107.98	106.22	103.08	104.03	103.88	100.51	101.27	101.25	102.29	102.34	102.72
MIN	107.91	106.31	102.42	101.37	102.96	100.66	99.57	99.39	99.51	101.28	100.43	100.18



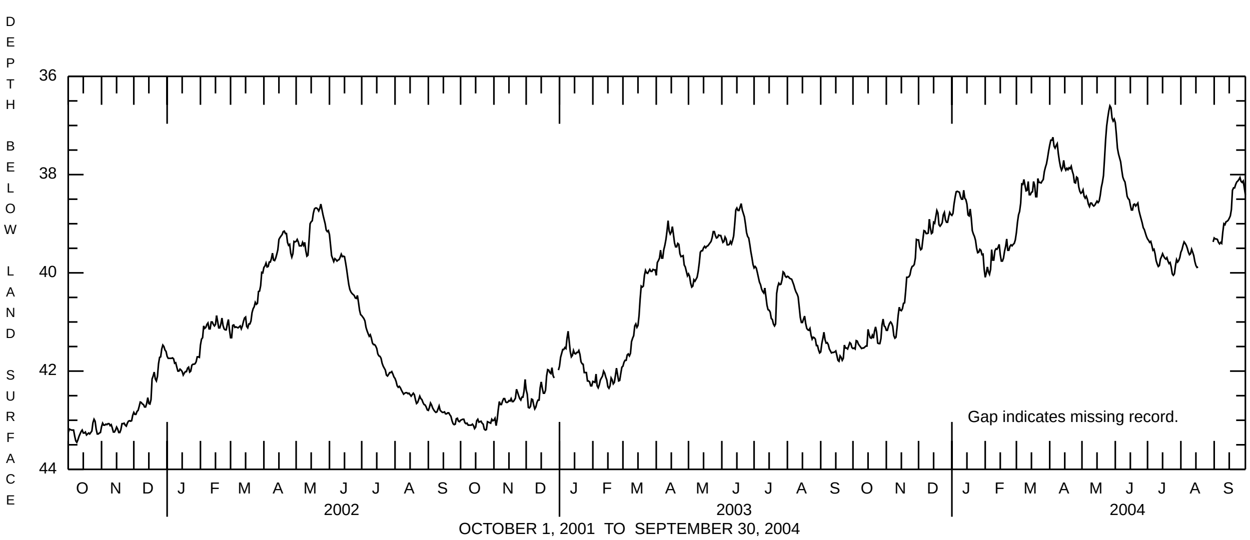
WARREN COUNTY

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.--Data collection platform with 60-minute recording interval. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 1,170 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 2.00 ft above land-surface datum.
REMARKS.--In addition to the daily maximum water level table shown below, daily minimum and mean water levels, since October 1987, are available from the USGS Pennsylvania Water Science Center Office.
PERIOD OF RECORD.--August 1972 to current year.
EXTREMES FOR PERIOD OF RECORD.--Prior to October 2000, the extremes were based on extremes of the daily maximum depth below land-surface datum. Since that date, the extremes are based on the instantaneous depth below land-surface datum.
Highest water level, 36.52 ft below land-surface datum, May 28, 2004; lowest, 45.42 ft below land-surface datum, Nov. 2, 1983.
EXTREMES FOR CURRENT YEAR.--Highest water level, 36.52 ft below land-surface datum, May 28; lowest, 41.55 ft below land-surface datum, Oct. 3.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41.54	41.17	39.33	38.83	40.09	39.18	37.40	38.36	36.94	39.31	39.58	39.29
2	41.53	41.17	39.47	38.79	40.01	38.97	37.30	38.31	37.18	39.34	39.53	39.31
3	41.55	41.09	39.53	38.60	39.88	38.82	37.30	38.44	37.46	39.38	39.44	39.31
4	41.38	41.03	39.51	38.46	39.98	38.75	37.24	38.48	37.58	39.36	39.37	39.32
5	41.39	41.00	39.32	38.35	40.03	38.58	37.42	38.44	37.66	39.44	39.40	39.38
6	41.45	41.03	39.14	38.34	39.93	38.19	37.46	38.50	37.74	39.54	39.44	39.41
7	41.48	41.09	39.15	38.35	39.53	38.20	37.41	38.60	37.91	39.52	39.50	39.38
8	41.51	41.28	39.20	38.36	39.74	38.10	37.37	38.65	38.05	39.61	39.58	39.40
9	41.54	41.33	39.20	38.45	39.74	38.22	37.57	38.58	38.11	39.75	39.63	39.17
10	41.53	41.31	39.19	38.50	39.55	38.33	37.72	38.58	38.15	39.82	39.61	39.00
11	41.53	41.11	38.91	38.50	39.51	38.32	37.84	38.62	38.28	39.87	39.52	39.02
12	41.51	40.87	39.09	38.32	39.52	38.14	37.91	38.64	38.44	39.85	39.58	38.96
13	41.49	40.70	39.20	38.48	39.48	38.41	37.86	38.62	38.49	39.72	39.65	38.95
14	41.49	40.76	39.18	38.51	39.42	38.41	37.71	38.58	38.51	39.67	39.77	38.93
15	41.15	40.77	38.97	38.60	39.63	38.36	37.86	38.54	38.62	39.61	39.85	38.89
16	41.25	40.73	38.99	38.82	39.76	38.35	37.91	38.57	38.72	39.66	39.89	38.84
17	41.32	40.62	38.86	38.84	39.76	38.14	37.87	38.54	38.72	39.70	39.88	38.71
18	41.33	40.61	38.73	38.70	39.70	38.22	37.90	38.42	38.61	39.72	---	38.32
19	41.27	40.37	38.78	38.88	39.56	38.45	37.86	38.26	38.60	39.69	---	38.27
20	41.33	40.09	39.02	39.14	39.46	38.45	37.88	38.16	38.64	39.76	---	38.27
21	41.19	40.09	39.05	39.21	39.31	38.08	37.83	38.02	38.61	39.81	---	38.20
22	41.10	40.08	39.02	39.26	39.54	38.16	37.93	37.67	38.58	39.79	---	38.15
23	41.21	40.04	38.98	39.34	39.54	38.16	38.00	37.29	38.73	39.88	---	38.13
24	41.43	39.93	38.82	39.50	39.46	38.17	38.16	37.01	38.82	40.02	---	38.10
25	41.44	39.87	38.77	39.59	39.43	38.13	38.17	36.84	38.90	40.05	---	38.06
26	41.44	39.86	38.92	39.58	39.45	38.10	38.05	36.70	38.98	40.02	---	38.14
27	41.34	39.83	38.97	39.52	39.42	37.94	38.07	36.60	39.08	39.85	---	38.16
28	41.06	39.70	38.97	39.54	39.40	37.85	38.25	36.64	39.12	39.73	---	38.13
29	40.94	39.32	38.86	39.63	39.33	37.78	38.34	36.85	39.19	39.78	---	38.26
30	41.08	39.33	38.77	39.62	---	37.66	38.38	36.91	39.26	39.75	---	38.41
31	41.10	---	38.81	39.92	---	37.52	---	36.87	---	39.69	39.37	---
MEAN	41.35	40.54	39.06	38.92	39.63	38.26	37.80	37.98	38.39	39.70	39.59	38.73
MAX	41.55	41.33	39.53	39.92	40.09	39.18	38.38	38.65	39.26	40.05	39.89	39.41
MIN	40.94	39.32	38.73	38.32	39.31	37.52	37.24	36.60	36.94	39.31	39.37	38.06



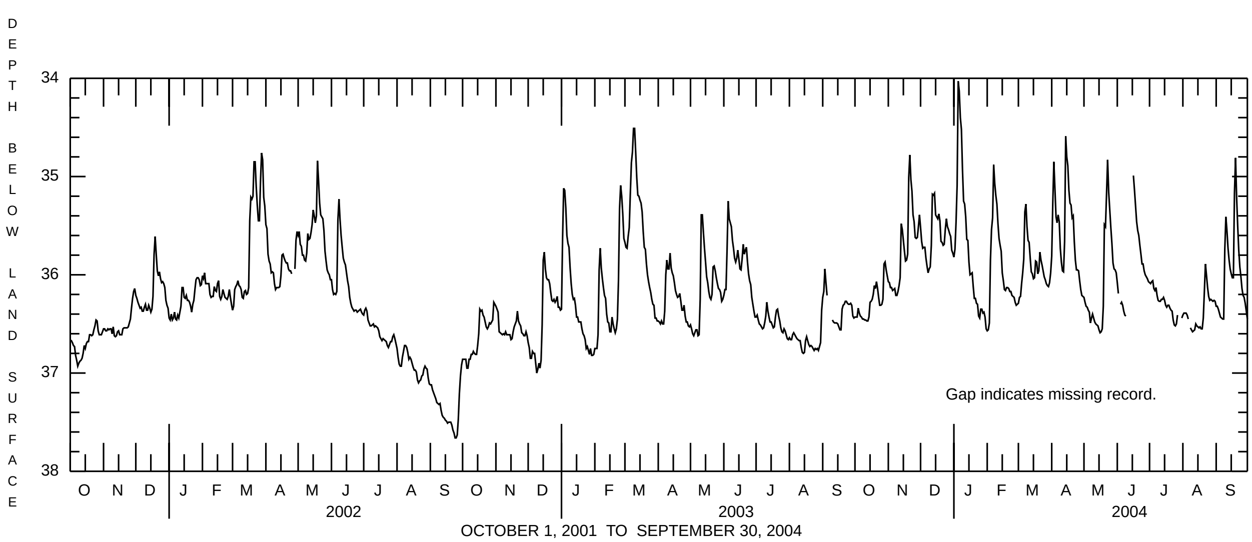
WASHINGTON COUNTY

400233080261301. Local number, WS 155.

LOCATION.--Lat 40°02'33", long 80°26'13", Hydrologic Unit 05030106, at State Game Land Number 245, 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.--Data collection platform with 60-minute recording interval since Aug. 23, 2001. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 1,110 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 2.00 ft above land-surface datum.
REMARKS.--In addition to the daily maximum water level table shown below, daily minimum and mean water levels, since October 1987, are available from the USGS Pennsylvania Water Science Center Office.
PERIOD OF RECORD.--July 1971 to current year.
EXTREMES FOR PERIOD OF RECORD.--Prior to October 2000, the extremes were based on extremes of the daily maximum depth below land-surface datum. Since that date, the extremes are based on the instantaneous depth below land-surface datum.
Highest water level, 32.25 ft below land-surface datum, Jan. 14, 1974; lowest, 39.01 ft below land-surface datum, July 11, 1971.
EXTREMES FOR CURRENT YEAR.--Highest water level, 33.83 ft below land-surface datum, Jan. 5; lowest, 36.59 ft below land-surface datum, May 16.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36.43	36.07	35.52	35.82	36.57	36.29	35.81	36.23	36.08	36.08	36.41	36.32
2	36.43	36.08	35.66	35.74	36.56	36.23	35.27	36.28	36.19	36.09	36.39	36.32
3	36.43	36.13	35.73	35.47	36.49	36.22	34.85	36.32	---	36.07	36.39	36.35
4	36.34	36.13	35.72	35.09	35.85	36.09	35.13	36.33	36.30	36.06	36.39	36.39
5	36.39	36.16	35.72	34.03	35.54	35.98	35.41	36.36	36.28	36.14	36.41	36.43
6	36.42	36.15	35.83	34.13	35.42	35.84	35.47	36.38	36.31	36.16	36.45	36.44
7	36.43	36.14	35.91	34.40	34.88	35.36	35.39	36.49	36.37	36.13	---	36.45
8	36.45	36.21	35.98	34.52	35.07	35.28	35.46	36.44	36.41	36.21	36.54	36.45
9	36.45	36.21	35.94	34.93	35.19	35.51	35.73	36.40	36.42	36.26	36.56	35.74
10	36.46	36.17	35.92	35.25	35.28	35.65	35.87	36.44	---	36.27	36.58	35.41
11	36.46	36.11	35.70	35.28	35.48	35.67	35.96	36.48	---	36.27	36.57	35.55
12	36.47	36.03	35.18	35.41	35.63	35.83	35.97	36.50	---	36.25	36.56	35.73
13	36.47	35.48	35.19	35.64	35.70	35.97	35.66	36.51	---	36.25	36.50	35.85
14	36.43	35.54	35.17	35.65	35.76	35.99	34.59	36.52	---	36.23	36.52	35.94
15	36.28	35.65	35.39	35.87	35.98	36.04	34.80	36.56	---	36.26	36.53	35.99
16	36.27	35.76	35.41	36.00	36.06	36.03	34.89	36.59	34.99	36.31	36.54	36.03
17	36.25	35.86	35.43	35.99	36.15	35.86	35.14	36.58	35.14	36.33	36.53	36.03
18	36.20	35.85	35.38	35.98	36.16	35.87	35.27	36.55	35.30	36.31	36.55	35.17
19	36.11	35.79	35.45	36.12	36.13	35.99	35.29	36.32	35.46	36.31	36.55	34.81
20	36.14	35.01	35.66	36.24	36.13	35.96	35.42	35.49	35.55	36.34	36.44	35.21
21	36.07	34.78	35.67	36.24	36.14	35.77	35.40	35.51	35.60	36.36	36.17	35.50
22	36.14	35.03	35.70	36.29	36.17	35.85	35.66	35.18	35.70	36.37	35.89	35.75
23	36.23	35.15	35.69	36.30	36.17	35.90	35.85	34.83	35.79	36.46	36.01	35.92
24	36.31	35.39	35.54	36.42	36.21	35.96	35.95	35.16	35.89	36.51	36.13	36.02
25	36.31	35.46	35.43	36.44	36.22	36.02	35.95	35.34	35.89	36.52	36.22	36.14
26	36.30	35.62	35.51	36.35	36.23	36.05	35.96	35.52	35.96	36.50	36.26	36.21
27	36.25	35.63	35.54	36.35	36.28	36.09	36.06	35.68	36.00	36.41	36.25	36.23
28	35.89	35.62	35.58	36.39	36.31	36.11	36.15	35.88	36.02	---	36.26	36.29
29	35.87	35.51	35.61	36.38	36.30	36.12	36.21	35.94	36.04	---	36.27	36.37
30	35.95	35.39	35.75	36.43	---	36.08	36.22	35.95	36.07	---	36.26	36.45
31	36.01	---	35.78	36.55	---	35.98	---	35.98	---	36.44	36.27	---
MEAN	36.28	35.74	35.60	35.73	35.93	35.92	35.56	36.09	35.90	36.28	36.38	35.98
MAX	36.47	36.21	35.98	36.55	36.57	36.29	36.22	36.59	36.42	36.52	36.58	36.45
MIN	35.87	34.78	35.17	34.03	34.88	35.28	34.59	34.83	34.99	36.06	35.89	34.81



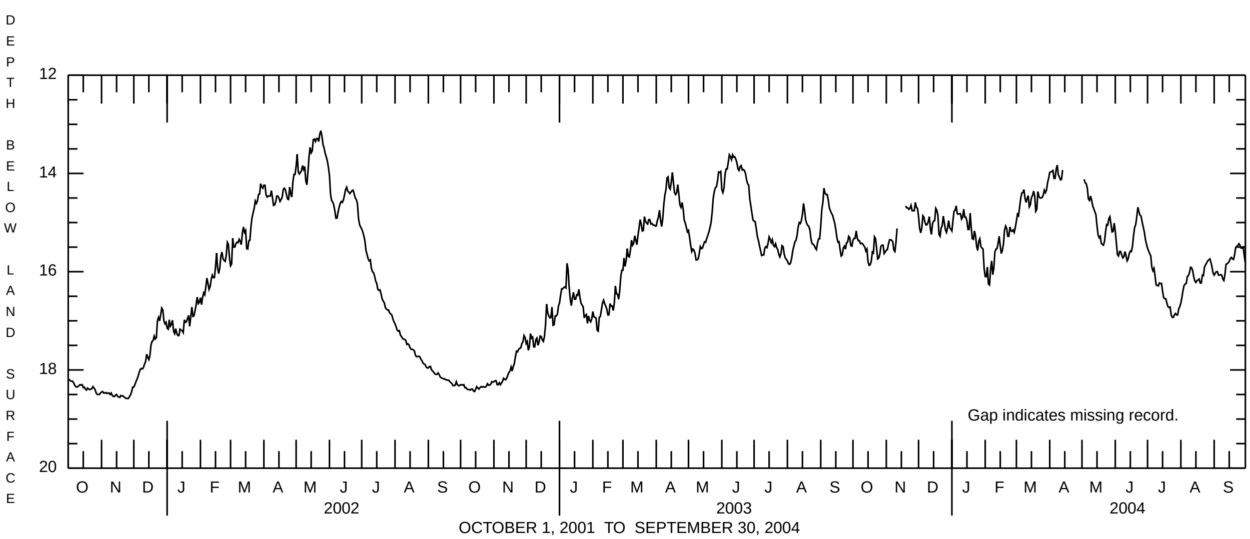
WESTMORELAND COUNTY

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.--Data collection platform with 60-minute recording interval since Sept. 19, 2001. Satellite telemetry at station.
DATUM.--Elevation of land-surface datum is 1,270 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of metal cover, 3.02 ft above land-surface datum. Prior to Sept. 19, 2001, top of plywood cover, 3.05 ft above land-surface datum.
PERIOD OF RECORD.--February 1968 to current year.
EXTREMES FOR PERIOD OF RECORD.--Prior to October 2000, the extremes were based on extremes of the daily maximum depth below land-surface datum. Since that date, the extremes are based on the instantaneous depth below land-surface datum.
Highest water level, 13.00 ft below land-surface datum, May 23, 24, 2002; lowest, 29.22 ft below land-surface datum, July 3, 1968.
EXTREMES FOR CURRENT YEAR.--Highest water level, 13.57 ft below land-surface datum, Apr. 13; lowest, 16.93 ft below land-surface datum, July 24, 25.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.36	15.56	14.88	15.17	16.10	14.97	13.98	---	15.18	15.52	16.64	16.07
2	15.32	15.55	15.12	14.96	16.10	14.83	13.97	---	15.41	15.58	16.52	16.03
3	15.32	15.44	15.21	14.77	15.91	14.86	13.96	14.12	15.65	15.63	16.38	16.00
4	15.17	15.35	15.11	14.75	16.25	14.69	13.94	14.19	15.68	15.68	16.28	16.00
5	15.32	15.35	14.86	14.66	16.27	14.51	14.10	14.21	15.59	15.91	16.25	16.07
6	15.37	15.36	14.89	14.82	15.95	14.40	14.10	14.30	15.59	15.98	16.24	16.07
7	15.37	15.39	15.00	14.83	15.78	14.39	13.92	14.52	15.66	15.93	16.10	16.06
8	15.43	15.56	15.05	14.82	16.06	14.33	13.83	14.55	15.72	16.09	16.08	16.07
9	15.42	15.59	15.04	14.82	15.93	14.50	14.03	14.46	15.70	16.27	16.02	16.15
10	15.43	15.40	14.98	14.93	15.60	14.59	14.07	14.54	15.59	16.28	15.91	16.18
11	15.47	15.12	14.88	14.89	15.54	14.51	14.13	14.66	15.67	16.29	15.92	16.06
12	15.50	---	15.13	14.73	15.53	14.45	14.12	14.72	15.78	16.23	15.98	15.85
13	15.58	---	15.24	14.89	15.42	14.68	13.93	14.78	15.74	16.24	16.11	15.84
14	15.54	---	15.02	14.89	15.28	14.64	---	14.84	15.63	16.24	16.19	15.82
15	15.80	---	14.97	14.97	15.48	14.49	---	15.07	15.58	16.40	16.22	15.79
16	15.87	---	14.96	15.14	15.63	14.45	---	15.25	15.59	16.53	16.18	15.73
17	15.86	---	14.71	15.14	15.56	14.36	---	15.31	15.48	16.55	16.17	15.71
18	15.79	---	14.75	14.81	15.43	14.45	---	15.28	15.26	16.55	16.15	15.74
19	15.60	14.66	14.85	15.10	15.15	14.77	---	15.42	15.10	16.64	16.23	15.75
20	15.62	14.70	15.24	15.33	15.07	14.73	---	15.45	15.04	16.71	16.23	15.65
21	15.29	14.70	15.28	15.34	15.12	14.37	13.93	15.46	14.88	16.73	16.07	15.51
22	15.33	14.73	15.11	15.17	15.28	14.47	---	15.38	14.69	16.72	16.08	15.48
23	15.53	14.71	15.06	15.27	15.28	14.50	---	15.18	14.78	16.88	15.90	15.47
24	15.74	14.65	14.87	15.48	15.09	14.50	---	15.04	14.85	16.93	15.86	15.43
25	15.72	14.76	15.01	15.57	15.17	14.49	---	15.05	14.87	16.93	15.82	15.46
26	15.64	14.76	15.15	15.38	15.18	14.44	---	14.92	14.99	16.88	15.78	15.52
27	15.48	14.76	15.20	15.33	15.15	14.34	---	14.88	15.09	16.85	15.76	15.52
28	15.46	14.59	15.10	15.49	15.20	14.39	---	15.04	15.19	16.88	15.74	15.50
29	15.46	14.69	14.96	15.52	15.10	14.34	---	15.19	15.34	16.88	15.81	15.68
30	15.63	14.71	15.11	15.54	---	14.19	---	15.18	15.44	16.76	15.91	15.83
31	15.60	---	15.13	15.94	---	14.10	---	15.01	---	16.71	16.03	---
MEAN	15.52	15.05	15.03	15.11	15.54	14.51	14.00	14.90	15.36	16.40	16.08	15.80
MAX	15.87	15.59	15.28	15.94	16.27	14.97	14.13	15.46	15.78	16.93	16.64	16.18
MIN	15.17	14.59	14.71	14.66	15.07	14.10	13.83	14.12	14.69	15.52	15.74	15.43



GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
GROUND WATER PESTICIDES NETWORK PROJECT

The following tables contain water-quality data from wells sampled in Pennsylvania during the second year of the Ground Water Pesticides Network project. The 5-year study is being conducted by the U.S. Geological Survey in cooperation with the Pennsylvania Department of Agriculture. Sites were selected to meet project objectives in the Annual Baseline Network, the Baseline Trends Network, and Hot-Spot Trends Networks. Twenty Annual Baseline Network sites were selected in the Eastern Lake hydrogeologic setting in Erie County to fill an existing data gap in ground-water quality; sites in this network are only sampled one time as part of an occurrence survey. Sixteen Baseline Trend Network sites were selected in four hydrogeologic settings (4 sites per setting) of predominantly carbonate bedrock where wells had previous detections of pesticides. The wells in this network are sampled yearly to evaluate trends. The three Hot-Spot Trend Network sites have well water with recorded pesticide concentrations at or above the Pennsylvania Pesticides and Ground Water Strategy action levels. These wells are sampled four times per year at: 1) declining water levels; 2) stable water levels; 3) rising water levels due to spring/summer flush; and 4) rising water levels due to winter recharge. Samples are identified by network in the third column heading within the table: Annual Baseline = AB and Annual Baseline Quality Assurance = AB-QA. Well locations are shown in Figure 6. The following analytical methods were used to determine results for the samples listed: PA Department of Environmental Protection Laboratory (PADEP)(Analyzing Agency Code 9813), pesticides - SAC USGS1 (EPA 525.2) solid phase extraction gas chromatography/mass spectrometry and (EPA 531.1) reverse phase high performance liquid chromatography column with post-column derivatization and fluorescence detection, nitrate/nitrite - colorimetry (cadmium reduction), total coliform and E. coli bacteria - Colilert Quantitray. Pesticides analyzed for this study are identified in the table which follows quality-control data. Other data for this project can be found in the annual Water Data Report PA-04-1 (Delaware River Basin) and PA-04-2 (Susquehanna and Potomac River Basins). For additional information, contact Connie Loper at the U.S. Geological Survey, 215 Limekiln Road, New Cumberland, PA 17070; 717-730-6976 (email caloper@usgs.gov).

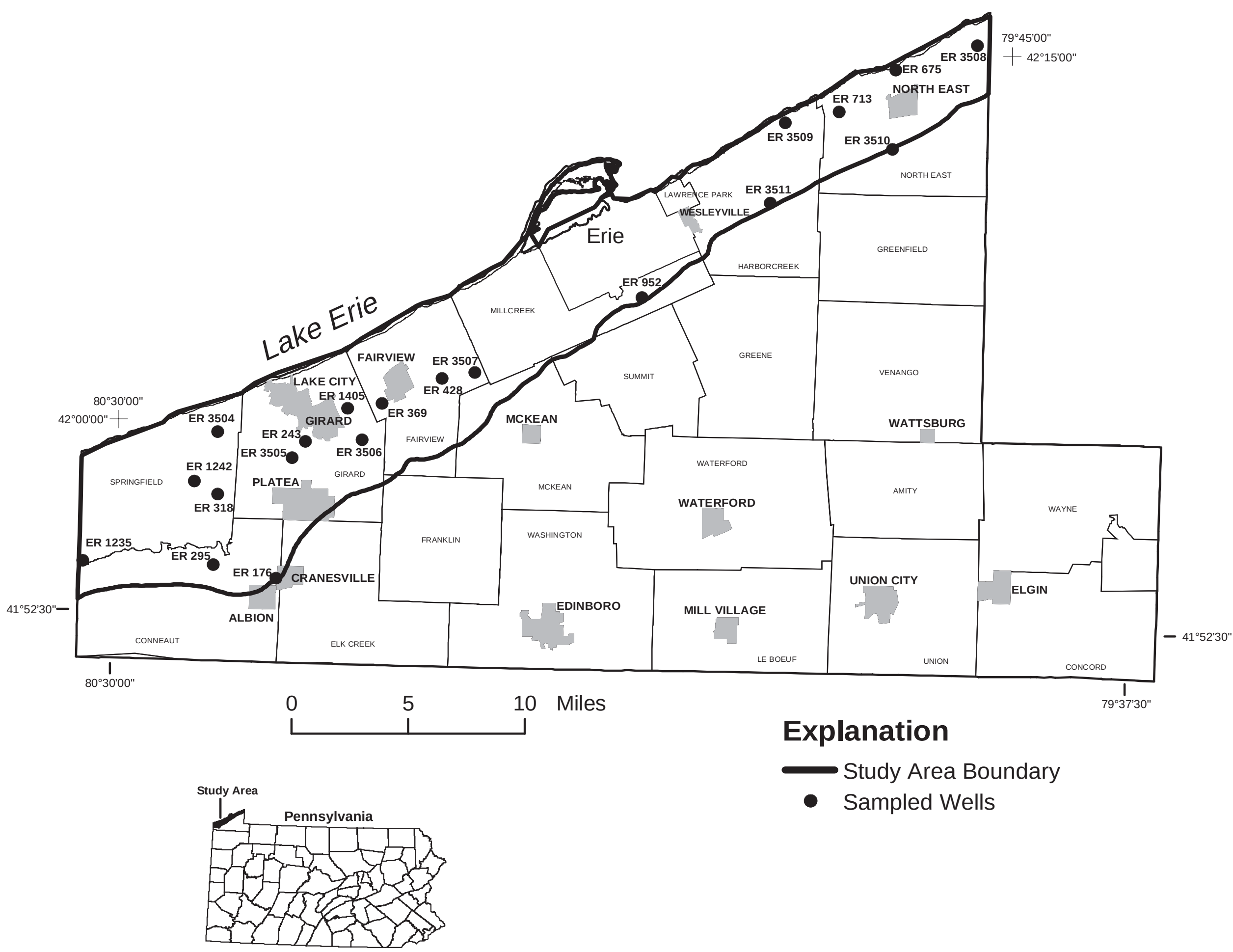


Figure 6.--Location of the Annual Baseline Network wells, in Erie County, Pennsylvania, sampled as part of the Ground Water Pesticides Network project.

GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
GROUND WATER PESTICIDES NETWORK PROJECT

REMARKS.--Explanation of column headings--Station number: 15-digit unique identifier based on site latitude (first six digits), longitude (digits seven through thirteen), and a 2-digit sequence number suffix; Altitude of land surface: land-surface at well site in feet above sea level; µS/cm: microsiemens per centimeter at 25 degrees Celsius; deg C: degrees Celsius; µg/L: micrograms per liter (parts per billion); mg/L = milligrams per liter (parts per million); "<" = less than; ">" = more than; "E" = estimated; Network Identifier Annual Baseline = AB and Annual Baseline Quality Assurance = AB-QA. Quality-control data for replicate samples are shown for Local Well ID ER 3604 (bacteria) on August 5, 2004 at 0946 and 0947, Local Well ID ER 369 ([nitrate + nitrite] and nitrite) on June 22, 2004 at 1121 and 1122, and Local Well ID ER 3510 (bacteria) on August 4, 2004 at 0821 and 0822. The pesticide sample collected at Local Well ID ER 3506 was ruined at the lab due to an instrument malfunction and was subsequently recollected October 21, 2004.

WATER-QUALITY DATA, WATER YEARS OCTOBER 2003 TO SEPTEMBER 2004

Station number	Local Well ID	Network Identifier	Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Depth of well, feet below LSD (72008)	Depth to water level, feet below LSD (72019)	Altitude of land surface feet (72000)	Pump or flow period prior to sampling, minutes (72004)	Sampling method, code (82398)	Turbidity, water, unfltrd field, NTU (61028)
ERIE COUNTY												
415409080211201	ER 176	AB	07-22-04	0735	1028	9813	30	--	895	20	4040	1.1
415437080242301	ER 295	AB	07-29-04	1030	1028	9813	80	26.80	915	25	4040	12
415438080305801	ER 1235	AB	07-22-04	1105	1028	9813	52	38.20	850	20	4040	.7
415718080241501	ER 318	AB	07-29-04	0800	1028	9813	86	59.11	790	30	4040	7.4
415746080252701	ER 1242	AB	08-05-04	1230	1028	9813	34	--	735	20	4040	1.6
415845080203301	ER 3505	AB	08-04-04	1120	1028	9813	89	37.14	840	30	4040	3.3
415924080195301	ER 243	AB	07-21-04	1050	1028	9813	88	61.00	826	25	4040	6.7
415931080170201	ER 3506	AB	08-19-04	0830	1028	9813	111.8	77.34	875	20	4040	1.9
	ER 3506	AB	10-21-04	0940	1028	9813	111.8	84.92	875	20	4040	--
415941080242101	ER 3604	AB	08-05-04	0945	1028	9813	18	4.78	720	30	4040	.6
	ER 3604	AB-QA	08-05-04	0946	1028	9813	18	--	720	30	4040	--
	ER 3604	AB-QA	08-05-04	0947	1028	9813	18	--	720	30	4040	--
420042080174901	ER 1405	AB	06-23-04	0840	1028	9813	45	23.15	784	30	4040	2.7
420055080160501	ER 369	AB	06-22-04	1120	1028	9813	49	12.86	840	50	4040	4.0
	ER 369	AB-QA	06-22-04	1121	1028	9813	49	--	840	50	4040	--
	ER 369	AB-QA	06-22-04	1122	1028	9813	49	--	840	50	4040	--
420156080130501	ER 428	AB	06-10-04	0930	1028	9813	41	--	826	40	4040	1.1
420211080112501	ER 3607	AB	06-24-04	0910	1028	9813	33	7.88	860	30	4040	3.3
420511080030401	ER 952	AB	06-09-04	1230	1028	9813	40	24.45	970	30	4040	0.0
420854079564001	ER 3511	AB	08-18-04	1225	1028	9813	39	4.85	885	25	4040	2.0
421102079503301	ER 3510	AB	08-04-04	0820	1028	9813	15	7.51	1040	20	4040	3.6
	ER 3510	AB-QA	08-04-04	0821	1028	9813	15	--	1040	20	4040	--
	ER 3510	AB-QA	08-04-04	0822	1028	9813	15	--	1040	20	4040	--
421158079560101	ER 3509	AB	05-19-04	1050	1028	9813	80	15.41	673	30	4040	5.5
421225079531701	ER 713	AB	06-08-04	1100	1028	9813	32	8.20	740	35	4040	.8
421403079502901	ER 675	AB	06-09-04	0845	1028	9813	94	--	710	30	4040	.1
421503079462201	ER 3508	AB	08-05-04	0700	1028	9813	20	12.50	710	30	4040	3.3

GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
GROUND WATER PESTICIDES NETWORK PROJECT

WATER-QUALITY DATA, WATER YEARS OCTOBER 2003 TO SEPTEMBER 2004

Date	Baro-metric pres-sure, mm Hg (00025)	Dis-solved oxygen, mg/L (00300)	Dis-solved oxygen, percent of sat-uration (00301)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, wat unf uS/cm 25 degC (00095)	Temper-ature, air, deg C (00020)	Temper-ature, water, deg C (00010)	Nitrate water, fltrd, mg/L (71851)	Nitrate water, fltrd, mg/L as N (00618)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L (71856)	Nitrite water, fltrd, mg/L as N (00613)	E coli, Defined Substr. Tech., water, MPN/ 100 mL (50468)
ERIE COUNTY													
07-22-04	736	.6	6	7.2	271	23.0	13.0	--	--	1.34	--	<.010	<1
07-29-04	741	.3	3	7.6	772	26.5	11.6	--	--	<.040	--	<.010	<1
07-22-04	743	.3	3	7.2	643	27.0	15.6	--	--	<.040	--	<.010	<1
07-29-04	745	.3	3	7.8	536	21.5	12.3	--	--	<.040	--	<.010	<1
08-05-04	743	5.3	52	7.2	678	24.5	13.0	--	--	6.36	--	<.010	6
08-04-04	737	8.5	84	7.2	521	21.5	13.2	--	--	8.34	--	<.010	<1
07-21-04	740	.4	4	7.7	488	28.0	14.4	--	--	.080	--	<.010	<1
08-19-04	738	.3	3	7.5	673	20.5	13.4	--	--	<.040	--	<.010	<1
10-21-04	743	.2	2	7.8	661	11.0	11.8	--	--	--	--	--	--
08-05-04	744	.8	8	7.0	501	22.0	16.0	--	--	9.85	--	<.010	<1
08-05-04	--	--	--	--	--	--	--	--	--	--	--	--	<1
08-05-04	--	--	--	--	--	--	--	--	--	--	--	--	<1
06-23-04	741	6.1	56	6.9	405	--	10.0	--	--	3.78	--	<.010	<1
06-22-04	731	.2	2	7.4	454	22.5	12.5	--	--	<.040	--	<.010	<1
06-22-04	--	--	--	--	--	--	--	--	--	<.040	--	<.010	--
06-22-04	--	--	--	--	--	--	--	--	--	<.040	--	<.010	--
06-10-04	741	.3	3	7.8	445	25.0	11.5	--	--	<.040	--	<.010	6
06-24-04	739	.2	2	7.4	441	24.0	10.8	--	--	<.040	--	<.010	<1
06-09-04	739	3.9	37	7.3	694	27.5	11.9	--	--	.480	--	<.010	<1
08-18-04	738	.3	3	7.7	496	25.0	13.3	--	--	.130	--	<.010	<1
08-04-04	736	3.7	34	7.1	471	21.0	10.6	--	--	2.79	--	<.010	<1
08-04-04	--	--	--	--	--	--	--	--	--	--	--	--	<1
08-04-04	--	--	--	--	--	--	--	--	--	--	--	--	<1
05-19-04	--	2.1	--	8.1	857	18.3	16.6	--	--	<.040	--	<.010	<1
06-08-04	748	.4	3	7.2	508	26.2	10.7	6.37	1.44	1.52	.263	.080	<1
06-09-04	739	.3	3	8.0	250	24.0	14.2	--	--	<.040	--	<.010	<1
08-05-04	742	7.5	75	7.0	736	18.5	14.1	--	--	7.56	--	<.010	1

Date	Total coli-form, Defined Tech., MPN/ 100 mL (50569)	Aceto-chlor, water, fltrd, μg/L (49260)	Ala-chlor, water, fltrd, μg/L (46342)	Atra-zine, water, fltrd, μg/L (39632)	Azin-phos-methyl, water, fltrd 0.7μ GF μg/L (82686)	Captan, water, fltrd, μg/L (61582)	Car-baryl, water, fltrd 0.7μ GF μg/L (82680)	Chloro-thalo-nil, water, fltrd 0.7μ GF μg/L (49306)	Chlor-pyrifos water, fltrd, μg/L (38933)	Dichlo-benil, water, fltrd, μg/L (63009)	Diuron, water, fltrd 0.7μ GF μg/L (49300)	Fen-propa-thrin, water, fltrd, μg/L (64044)	Hexa-chloro-cyclo-penta-diene, wat unf μg/L (34386)
ERIE COUNTY													
07-22-04	200	<.100	<.10	<.10	<.100	<.10	<2.00	<.10	<.10	<.10	<.10	<.10	<.10
07-29-04	9	<.100	<.10	<.10	<.100	<.10	<2.00	<.10	<.10	<.10	<.10	<.10	<.10
07-22-04	48	<.100	<.10	<.10	<.100	<.10	<2.00	<.10	<.10	<.10	<.10	<.10	<.10
07-29-04	43	<.100	<.10	<.10	<.100	<.10	<2.00	<.10	<.10	<.10	<.10	<.10	<.10
08-05-04	200	<.100	<.10	<.10	<.100	<.10	<2.00	<.10	<.10	<.10	<.10	<.10	<.10
08-04-04	<1	<.100	<.10	<.10	<.100	<.10	<2.00	<.10	<.10	<.10	<.10	<.10	<.10
07-21-04	<1	<.100	<.10	<.10	<.100	<.10	<2.00	<.10	<.10	<.10	<.10	<.10	<.10
08-19-04	200	--	--	--	--	--	--	--	--	--	--	--	--
10-21-04	--	<.100	<.10	<.10	<.100	<.10	<5.00	<.10	<.10	<.10	<.10	<.10	<.10
08-05-04	14	<.100	<.10	<.10	<.100	<.10	<2.00	<.10	<.10	<.10	<.10	<.10	<.10
08-05-04	9	--	--	--	--	--	--	--	--	--	--	--	--
08-05-04	15	--	--	--	--	--	--	--	--	--	--	--	--
06-23-04	<1	<.100	<.10	<.10	<.500	<.10	<2.00	<.10	<.10	<.10	<.10	<.10	<.10
06-22-04	130	<.100	<.10	<.10	<.500	<.10	<2.00	<.10	<.10	<.10	<.10	<.10	<.10
06-22-04	--	--	--	--	--	--	--	--	--	--	--	--	--
06-22-04	--	--	--	--	--	--	--	--	--	--	--	--	--
06-10-04	89	<.100	<.10	<.10	<.500	<.10	<2.00	<.10	<.10	<.10	<.10	<.10	<.10
06-24-04	2	<.100	<.10	<.10	<.500	<.10	<2.00	<.10	<.10	<.10	<.10	<.10	<.10
06-09-04	3	<.100	<.10	<.10	<.500	<.10	<2.00	<.10	<.10	<.10	<.10	<.10	<.10
08-18-04	<1	<.100	<.10	<.10	<.100	<.10	<2.00	<.10	<.10	<.10	<.10	<.10	<.10
08-04-04	50	<.100	<.10	<.10	<.100	<.10	<2.00	<.10	<.10	<.10	<.10	<.10	<.10
08-04-04	48	--	--	--	--	--	--	--	--	--	--	--	--
08-04-04	41	--	--	--	--	--	--	--	--	--	--	--	--
05-19-04	5	<.100	<.10	<.10	<.500	<.10	--	<.10	<.10	<.10	<.10	<.10	<.10
06-08-04	83	<.100	<.10	<.10	<.500	<.10	<2.00	<.10	<.10	<.10	<.10	<.10	<.10
06-09-04	32	<.100	<.10	<.10	<.500	<.10	<2.00	<.10	<.10	<.10	<.10	<.10	<.10
08-05-04	200	<.100	<.10	<.10	<.100	<.10	<2.00	<.10	<.10	<.10	<.10	<.10	<.10

GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
GROUND WATER PESTICIDES NETWORK PROJECT

WATER-QUALITY DATA, WATER YEARS OCTOBER 2003 TO SEPTEMBER 2004

Date	Meth-omyl, water, fltrd 0.7µ GF µg/L (49296)	Methyl para-thion, water, fltrd 0.7µ GF µg/L (82667)	Metola-chlor, water, fltrd, µg/L (39415)	Metri-buzin, water, fltrd, µg/L (82630)	Oxamyl, water, fltrd 0.7µ GF µg/L (38866)	Pendi-meth-alin, water, fltrd 0.7µ GF µg/L (82683)	Phosmet water, fltrd, µg/L (61601)	Phos-pham-idon, water, fltrd, µg/L (63736)	Sima-zine, water, fltrd, µg/L (04035)	Terba-cil, water, fltrd 0.7µ GF µg/L (82665)	Tri-flur-alin, water, fltrd, µg/L (04023)	Purpose site visit, code (50280)	Sample purpose code (71999)
						ERIE COUNTY							
07-22-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<.100	<.25	<.10	<.100	<.10	2001	50.00
07-29-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<.100	<.25	<.10	<.100	<.10	2001	50.00
07-22-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<.100	<.25	<.10	<.100	<.10	2001	50.00
07-29-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<.100	<.25	<.10	<.100	<.10	2001	50.00
08-05-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<.100	<.25	<.10	<.100	<.10	2001	50.00
08-04-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<.100	<.25	<.10	<.100	<.10	2001	50.00
07-21-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<.100	<.25	<.10	<.100	<.10	2001	50.00
08-19-04	--	--	--	--	--	--	--	--	--	--	--	2001	50.00
10-21-04	<5.00	<.100	<.10	<.10	<5.00	<.100	<.100	<.25	<.10	<.100	<.10	2001	50.00
08-05-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<.100	<.25	<.10	<.100	<.10	2001	50.00
08-05-04	--	--	--	--	--	--	--	--	--	--	--	2098	50.00
08-05-04	--	--	--	--	--	--	--	--	--	--	--	2098	50.00
06-23-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<1.00	<.25	<.10	<.100	<.10	2001	50.00
06-22-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<1.00	<.25	<.10	<.100	<.10	2001	50.00
06-22-04	--	--	--	--	--	--	--	--	--	--	--	2098	50.00
06-22-04	--	--	--	--	--	--	--	--	--	--	--	2098	50.00
06-10-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<1.00	<.25	<.10	<.100	<.10	2001	50.00
06-24-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<1.00	<.25	<.10	<.100	<.10	2001	50.00
06-09-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<1.00	<.25	<.10	<.100	<.10	2001	50.00
08-18-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<.100	<.25	<.10	<.100	<.10	2001	50.00
08-04-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<.100	<.25	<.10	<.100	<.10	2001	50.00
08-04-04	--	--	--	--	--	--	--	--	--	--	--	2098	50.00
08-04-04	--	--	--	--	--	--	--	--	--	--	--	2098	50.00
05-19-04	--	<.100	<.10	<.10	--	<.100	<1.00	<.25	<.10	<.100	<.10	2001	50.00
06-08-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<1.00	<.25	<.10	<.100	<.10	2001	50.00
06-09-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<1.00	<.25	<.10	<.100	<.10	2001	50.00
08-05-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<.100	<.25	<.10	<.100	<.10	2001	50.00

Date	Sam-pling condi-tion, code (72006)	Type of sample related QA data, code (99111)	Type of repli-cate, code (99105)	County	Data base number	Medium code
			ERIE COUNTY			
07-22-04	8.00	1	--	049	01	6
07-29-04	8.00	10	--	049	01	6
07-22-04	8.00	1	--	049	01	6
07-29-04	8.00	1	--	049	01	6
08-05-04	8.00	1	--	049	01	6
08-04-04	8.00	10	--	049	01	6
07-21-04	8.00	1	--	049	01	6
08-19-04	8.00	1	--	049	01	6
10-21-04	9.00	1	--	049	01	6
08-05-04	8.00	30	20.00	049	01	6
08-05-04	8.00	--	20.00	049	02	S
08-05-04	8.00	--	20.00	049	02	S
06-23-04	8.00	10	--	049	01	6
06-22-04	8.00	30	30.00	049	01	6
06-22-04	8.00	--	30.00	049	02	S
06-22-04	8.00	--	30.00	049	02	S
06-10-04	8.00	1	--	049	01	6
06-24-04	8.00	1	--	049	01	6
06-09-04	8.00	1	--	049	01	6
08-18-04	8.00	10	--	049	01	6
08-04-04	8.00	30	20.00	049	01	6
08-04-04	8.00	--	20.00	049	02	S
08-04-04	8.00	--	20.00	049	02	S
05-19-04	8.00	1	--	049	01	6
06-08-04	8.00	40	--	049	01	6
06-09-04	8.00	1	--	049	01	6
08-05-04	8.00	10	--	049	01	6

GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
GROUND WATER PESTICIDES NETWORK PROJECT

REMARKS.--The following are quality-control samples (blanks) processed during the 2004 water year. "Blanks" are defined in the explanation of records section entitled, "Water Quality-Control Data"; "<" = less than; µg/L: micrograms per liter (parts per billion); mg/L = milligrams per liter (parts per million).

QUALITY-CONTROL DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Station number	Local well ID	Quality assurance sample type	Date	Time	Agency col-lecting sample, code (00027)	Agency ana-lyzing sample, code (00028)	Depth of well, feet below LSD (72008)	Alti-tude of land surface feet (72000)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	E coli, Defined Substr. Tech., water, MPN/ 100 mL (50468)	Total coli-form, Defined Tech., MPN/ 100 mL (50569)
401435076540910	--	E. blk	05-10-04	1530	1028	9813	--	--	<.040	<.010	--	--
420042080174901	ER 1405	F. blk	06-23-04	0841	1028	9813	45	784	.200	<.010	--	--
415437080242301	ER 295	F. blk	07-29-04	1035	1028	9813	80	915	--	--	--	--
415845080203301	ER 3505	F. blk	08-04-04	1121	1028	9813	89	840	--	--	--	--
421503079462201	ER 3508	F. blk	08-05-04	0701	1028	9813	20	710	--	--	<1	<1
420854079564001	ER 3511	F. blk	08-18-04	1226	1028	9813	39	885	<.040	<.010	--	--

Date	Aceto-chlor, water, fltrd, µg/L (49260)	Ala-chlor, water, fltrd, µg/L (46342)	Atra-zine, water, fltrd, µg/L (39632)	Azin-phos-methyl, water, fltrd 0.7µ GF µg/L (82686)	Captan, water, fltrd, µg/L (61582)	Car-baryl, water, fltrd 0.7µ GF µg/L (82680)	Chloro-thalo-nil, water, fltrd 0.7µ GF µg/L (49306)	Chlor-pyrifos water, fltrd, µg/L (38933)	Dichlo-benil, water, fltrd, µg/L (63009)	Diuron, water, fltrd 0.7µ GF µg/L (49300)	Fen-propa-thrin, water, fltrd, µg/L (64044)	Hexa-chloro-cyclo-penta-diene, wat unf µg/L (34386)	Meth-omyl, water, fltrd 0.7µ GF µg/L (49296)
05-10-04	--	--	--	--	--	--	--	--	--	--	--	--	--
06-23-04	--	--	--	--	--	--	--	--	--	--	--	--	--
07-29-04	<.100	<.10	<.10	<.100	<.10	<2.00	<.10	<.10	<.10	<.10	<.10	<1	<2.00
08-04-04	<.100	<.10	<.10	<.100	<.10	<2.00	<.10	<.10	<.10	<.10	<.10	<1	<2.00
08-05-04	--	--	--	--	--	--	--	--	--	--	--	--	--
08-18-04	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	Methyl para-thion, water, fltrd 0.7µ GF µg/L (82667)	Metola-chlor, water, fltrd, µg/L (39415)	Metri-buzin, water, fltrd, µg/L (82630)	Oxamyl, water, fltrd 0.7µ GF µg/L (38866)	Pendi-meth-alin, water, fltrd 0.7µ GF µg/L (82683)	Phosmet water, fltrd, µg/L (61601)	Phos-pham-idon, water, fltrd, µg/L (63736)	Sima-zine, water, fltrd, µg/L (04035)	Terba-cil, water, fltrd 0.7µ GF µg/L (82665)	Tri-flur-alin, water, fltrd, µg/L (04023)	Purpose site visit, code (50280)	Sample purpose code (71999)	Source of blank solu-tion, code (99101)
05-10-04	--	--	--	--	--	--	--	--	--	--	2098	15.00	80.00
06-23-04	--	--	--	--	--	--	--	--	--	--	2098	50.00	80.00
07-29-04	<.100	<.10	<.10	<2.00	<.100	<.100	<.25	<.10	<.100	<.10	2098	50.00	10.00
08-04-04	<.100	<.10	<.10	<2.00	<.100	<.100	<.25	<.10	<.100	<.10	2098	50.00	10.00
08-05-04	--	--	--	--	--	--	--	--	--	--	2098	50.00	--
08-18-04	--	--	--	--	--	--	--	--	--	--	2098	50.00	80.00

Date	Refer-ence mater-ial or spike lot number (99104)	Type of blank sample, code (99102)	Type of blank solu-tion, code (99100)
05-10-04	3267	200.00	10.00
06-23-04	3267	100.00	10.00
07-29-04	80301	100.00	40.00
08-04-04	80301	100.00	40.00
08-05-04	--	100.00	200.00
08-18-04	3267	100.00	10.00

GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
GROUND WATER PESTICIDES NETWORK PROJECT

401435076540910 - QUALITY-ASSURANCE RESULTS

REMARKS.--A commercially-available mixture of pesticides and herbicides was spiked into three 3-liter bottles of organic-free blank water June 8, 2004 at 13:00, 13:10, and 13:20 to create triplicate quality-assurance samples (2 1-liter bottles for EPA 525.2 and 1 40-mL bottle for EPA 531.1 per sample) which were analyzed at the Pennsylvania Department of Environmental Protection Bureau of Laboratories. An additional 1-L spiked sample (June 8, 2004 at 12:45) was sent to the USGS National Water Quality Laboratory lab as an interlab quality-assurance sample. Triplicate spiked samples are used to determine both precision and accuracy. Concentrations of analytes in blank water were assumed to be less than the reporting limits for purposes of calculations. Concentrations of pesticides and herbicides (in µg/L) and calculated recoveries (in percent) are shown in the table below for estimation of accuracy. Less-than values were set equal to zero for calculations; "<" = less than.

QUALITY-CONTROL DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

		Concentration, in micrograms per liter			
Parameter code	Constituent	Assumed concentration of blank A	Laboratory results for spiked sample (06/08/04 at 1300) B	Calculated[a] concentration in spiked sample C	Recovery in percent [(B-A)/C] x 100
49260	Acetochlor	<0.10	0.37	.40	92
46342	Alachlor	<0.10	0.38	.40	95
39632	Atrazine	<0.10	0.43	.40	108
61582	Captan	<0.10	<0.10	.40	0
49306	Chlorothalonil	<0.10	0.35	.40	88
38933	Chlorpyrifos (Dursban)	<0.10	0.33	.40	82
49300	Diuron	<0.10	0.41	.40	102
34386	Hexachlorocyclopentadiene	<0.10	0.12	.40	30
82686	Methyl azinphos	<0.50	E0.44	.40	110
82667	Methyl parathion	<0.10	0.35	.40	88
39415	Metolachlor	<0.10	0.36	.40	90
82630	Metribuzin	<0.10	0.29	.40	72
82683	Pendimethalin	<0.10	0.40	.40	100
check	Phosphamidon	<0.25	0.49	.40	122
04035	Simazine	<0.10	0.39	.40	98
82665	Terbacil	<0.10	0.44	.40	110
82661	Trifluralin	<0.10	0.33	.40	82
Carbamates:					
49310	Carbaryl	<2.0	2.42	3.2	76
49296	Methomyl	<2.0	2.61	3.2	82
38866	Oxamyl	<2.0	2.69	3.2	84

a Calculated concentration of spike in sample equals the concentration of the spike solution, in micrograms per milliliter x amount of spike added, in milliliters, divided by the spiked sample volume, in liters.

GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
GROUND WATER PESTICIDES NETWORK PROJECT

401435076540910 - QUALITY-ASSURANCE RESULTS

REMARKS.--A commercially-available mixture of pesticides and herbicides was spiked into three 3-liter bottles of organic-free blank water June 8, 2004 at 13:00, 13:10, and 13:20 to create triplicate quality-assurance samples (2 1-liter bottles for EPA 525.2 and 1 40-mL bottle for EPA 531.1 per sample) which were analyzed at the Pennsylvania Department of Environmental Protection Bureau of Laboratories. An additional 1-L spiked sample (6/8/04 at 12:45) was sent to the USGS National Water Quality Laboratory as an interlab quality-assurance sample. Triplicate spiked samples are used to determine both precision and accuracy. Concentrations of analytes in blank water were assumed to be less than the reporting limits for purposes of calculations. Concentrations of pesticides and herbicides(in µg/L) and calculated recoveries (in percent) are shown in the table below for estimation of accuracy. Less-than values were set equal to zero for calculations; "<" = less than.

QUALITY-CONTROL DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004--Continued

		Concentration, in micrograms per liter			
Parameter code	Constituent	Assumed concentration of blank A	Laboratory results for spiked sample (06/08/04 at 1310) B	Calculated[a] concentration in spiked sample C	Recovery in percent [(B-A)/C] x 100
49260	Acetochlor	<0.10	0.34	.40	85
46342	Alachlor	<0.10	0.32	.40	80
39632	Atrazine	<0.10	0.34	.40	85
61582	Captan	<0.10	<0.10	.40	0
49306	Chlorothalonil	<0.10	0.31	.40	78
38933	Chlorpyrifos (Dursban)	<0.10	0.33	.40	82
49300	Diuron	<0.10	0.36	.40	90
34386	Hexachlorocyclopentadiene	<0.10	0.12	.40	30
82686	Methyl azinphos	<0.50	E0.39	.40	98
82667	Methyl parathion	<0.10	0.34	.40	85
39415	Metolachlor	<0.10	0.34	.40	85
82630	Metribuzin	<0.10	0.28	.40	70
82683	Pendimethalin	<0.10	0.36	.40	90
check	Phosphamidon	<0.25	0.46	.40	115
04035	Simazine	<0.10	0.41	.40	102
82665	Terbacil	<0.10	0.42	.40	105
82661	Trifluralin	<0.10	0.27	.40	68
Carbamates					
49310	Carbaryl	<2.0	2.60	3.2	81
49296	Methomyl	<2.0	3.14	3.2	98
38866	Oxamyl	<2.0	2.45	3.2	77

a Calculated concentration of spike in sample equals the concentration of the spike solution, in micrograms per milliliter x amount of spike added, in milliliters, divided by the spiked sample volume, in liters.

GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
GROUND WATER PESTICIDES NETWORK PROJECT

401435076540910 - QUALITY-ASSURANCE RESULTS

REMARKS.--A commercially-available mixture of pesticides and herbicides was spiked into three 3-liter bottles of organic-free blank water June 8, 2004 at 13:00, 13:10, and 13:20 to create triplicate quality-assurance samples (2 1-liter bottles for EPA 525.2 and 1 40-mL bottle for EPA 531.1 per sample) which were analyzed at the Pennsylvania Department of Environmental Protection Bureau of Laboratories. An additional 1-L spiked sample(6/8/04 at 12:45) was sent to the USGS National Water Quality Laboratory as an interlab quality-assurance sample. Triplicate spiked samples are used to determine both precision and accuracy. Concentrations of analytes in blank water were assumed to be less than the reporting limits forpurposes of calculations. Concentrations of pesticides and herbicides (in µg/L) and calculated recoveries (in percent) are shown in the table below for estimation of accuracy. Less-than values were set equal to zero for calculations; "<" = less than.

QUALITY-CONTROL DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004--Continued

Parameter code	Constituent	Assumed concentration of blank A	Concentration, in micrograms per liter: Laboratory results for spiked sample (06/08/04 at 1320) B	Concentration, in micrograms per liter: Calculated[a] concentration in spiked sample C	Recovery in percent [(B-A)/C] x 100
49260	Acetochlor	<0.10	0.30	.40	75
46342	Alachlor	<0.10	0.34	.40	85
39632	Atrazine	<0.10	0.36	.40	90
61582	Captan	<0.10	<0.10	.40	0
49306	Chlorothalonil	<0.10	0.30	.40	75
38933	Chlorpyrifos (Dursban)	<0.10	0.30	.40	75
49300	Diuron	<0.10	0.35	.40	88
34386	Hexachlorocyclopentadiene	<0.10	0.12	.40	30
82686	Methyl azinphos	<0.50	E0.39	.40	98
82667	Methyl parathion	<0.10	0.35	.40	88
39415	Metolachlor	<0.10	0.34	.40	85
82630	Metribuzin	<0.10	0.27	.40	68
82683	Pendimethalin	<0.10	0.36	.40	90
check	Phosphamidon	<0.25	0.47	.40	118
04035	Simazine	<0.10	0.38	.40	95
82665	Terbacil	<0.10	0.39	.40	98
82661	Trifluralin	<0.10	0.26	.40	65
Carbamates					
49310	Carbaryl	<2.0	2.68	3.2	84
49296	Methomyl	<2.0	2.92	3.2	91
38866	Oxamyl	<2.0	2.78	3.2	87

a Calculated concentration of spike in sample equals the concentration of the spike solution, in micrograms per milliliter x amount of spike added, in milliliters, divided by the spiked sample volume, in liters.

GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
GROUND WATER PESTICIDES NETWORK PROJECT

401435076540910 - QUALITY-ASSURANCE RESULTS

REMARKS.--A commercially-available mixture of pesticides and herbicides was spiked into three 3-liter bottles of organic-free blank water June 8, 2004 at 13:00, 13:10, and 13:20 to create triplicate quality-assurance samples (2 1-liter bottles for EPA 525.2 and 1 40-mL bottle for EPA 531.1 per sample) which were analyzed at the Pennsylvania Department of Environmental Protection Bureau of Laboratories. One liter of the same spiked sample (time = 12:45) and was sent to the U.S. Geological Survey (USGS) National Water Quality Laboratory (NWQL) in Denver, Colorado as an interlab quality-assurance check. Concentrations of analytes in blank water were assumed to be less than the reporting limits for purposes of calculations. Concentrations of pesticides and herbicides (in µg/L) and calculated recoveries (in percent) are shown in the table below for estimation of accuracy. Less-than values were set equal to zero for calculations; "<" = less than.

QUALITY-CONTROL DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004--Continued

		Concentration, in micrograms per liter			
Parameter code	Constituent	Assumed concentration of blank A	Laboratory results for spiked sample (06/08/04 at 1245) B	Calculated concentration in spiked sample C [a]	Recovery in percent [(B-A)/C] x 100
49260	Acetochlor	<0.10	0.44	.40	110
46342	Alachlor	<0.10	0.46	.40	115
39632	Atrazine	<0.10	0.60	.40	151
61582	Captan	<0.10	Not analyzed in USGS NWQL SH2001		
49306	Chlorothalonil	<0.10	Not analyzed in USGS NWQL SH2001		
38933	Chlorpyrifos (Dursban)	<0.10	0.39	.40	98
49300	Diuron	<0.10	Not analyzed in USGS NWQL SH2001		
34386	Hexachlorocyclopentadiene	<0.10	Not analyzed in USGS NWQL SH2001		
82686	Methyl azinphos	<0.50	E0.59	.40	148
82667	Methyl parathion	<0.10	0.46	.40	115
39415	Metolachlor	<0.10	0.45	.40	113
82630	Metribuzin	<0.10	0.38	.40	95
82683	Pendimethalin	<0.10	0.46	.40	115
check	Phosphamidon	<0.25	Not analyzed in USGS NWQL SH2001		
04035	Simazine	<0.10	0.49	.40	122
82665	Terbacil	<0.10	0.48	.40	120
82661	Trifluralin	<0.10	0.30	.40	75

a Calculated concentration of spike in sample equals the concentration of the spike solution, in micrograms per milliliter x amount of spike added, in milliliters, divided by the spiked sample volume, in liters.

GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
GROUND WATER PESTICIDES NETWORK PROJECT

401435076540910 - QUALITY-ASSURANCE RESULTS

REMARKS.--A commercially-available mixture of pesticides and herbicides was spiked into three 3-liter bottles of organic-free blank water July 21, 2004 at 12:50, 13:00, and 13:10 to create triplicate quality-assurance samples (2 1-liter bottles for EPA 525.2 and 1 40-mL bottle for EPA 531.1 per sample) which were analyzed at the Pennsylvania Department of Environmental Protection Bureau of Laboratories. An additional 1-L spiked sample(7/21/04 at 1250) was sent to the USGS National Water Quality Laboratory as an interlab quality-assurance sample. Triplicate spiked samples are used to determine both precision and accuracy. Concentrations of analytes in blank water were assumed to be less than the reporting limits forpurposes of calculations. Concentrations of pesticides and herbicides (in µg/L) and calculated recoveries (in percent) are shown in the table below for estimation of accuracy. Less-than values were set equal to zero for calculations; "<" = less than.

QUALITY-CONTROL DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004--Continued

Parameter code	Constituent	Assumed concentration of blank A	Concentration, in micrograms per liter: Laboratory results for spiked sample (07/21/04 at 1250) B	Concentration, in micrograms per liter: Calculated concentration in spiked sample[a] C	Recovery in percent [(B-A)/C] x 100
49260	Acetochlor	<0.10	0.43	.40	108
46342	Alachlor	<0.10	0.43	.40	108
39632	Atrazine	<0.10	0.45	.40	112
61582	Captan	<0.10	<0.10	.40	0
49306	Chlorothalonil	<0.10	0.36	.40	90
38933	Chlorpyrifos (Dursban)	<0.10	0.38	.40	95
49300	Diuron	<0.10	0.47	.40	118
34386	Hexachlorocyclopentadiene	<0.10	0.32	.40	80
82686	Methyl azinphos	<0.50	0.86	.40	215
82667	Methyl parathion	<0.10	0.40	.40	100
39415	Metolachlor	<0.10	0.45	.40	112
82630	Metribuzin	<0.10	0.38	.40	95
82683	Pendimethalin	<0.10	0.50	.40	125
check	Phosphamidon	<0.25	0.48	.40	120
04035	Simazine	<0.10	0.47	.40	118
82665	Terbacil	<0.10	0.44	.40	110
82661	Trifluralin	<0.10	0.36	.40	90
Carbamates					
49310	Carbaryl	<2.0	2.67	3.3	81
49296	Methomyl	<2.0	3.33	3.3	100
38866	Oxamyl	<2.0	3.28	3.3	99

a Calculated concentration of spike in sample equals the concentration of the spike solution, in micrograms per milliliter x amount of spike added, in milliliters, divided by the spiked sample volume, in liters.

GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
GROUND WATER PESTICIDES NETWORK PROJECT

401435076540910 - QUALITY-ASSURANCE RESULTS

REMARKS.--A commercially-available mixture of pesticides and herbicides was spiked into three 3-liter bottles of organic-free blank water (July 21, 2004 at 1250, 1300, and 1310) to create triplicate quality-assurance samples (2 1-liter bottles for EPA 525.2 and 1 40-mL bottle for EPA 531.1 per sample) which were analyzed at the Pennsylvania Department of Environmental Protection Bureau of Laboratories. An additional 1-L spiked sample (7/21/04 at 1250) was sent to the USGS National Water Quality Laboratory as an interlab quality-assurance sample. Triplicate spiked samples are used to determine both precision and accuracy. Concentrations of analytes in blank water were assumed to be less than the reporting limits forpurposes of calculations. Concentrations of pesticides and herbicides (in µg/L) and calculated recoveries (in percent) are shown in the table below for estimation of accuracy. Less-than values were set equal to zero for calculations; "<" = less than.

QUALITY-CONTROL DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004 --Continued

		Concentration, in micrograms per liter			
Parameter code	Constituent	Assumed concentration of blank A	Laboratory results for spiked sample (07/21/04 at 1300) B	Calculated[a] concentration in spiked sample C	Recovery in percent [(B-A)/C] x 100
49260	Acetochlor	<0.10	0.46	.40	115
46342	Alachlor	<0.10	0.47	.40	118
39632	Atrazine	<0.10	0.54	.40	135
61582	Captan	<0.10	<0.10	.40	0
49306	Chlorothalonil	<0.10	0.27	.40	68
38933	Chlorpyrifos (Dursban)	<0.10	0.50	.40	125
49300	Diuron	<0.10	0.40	.40	100
34386	Hexachlorocyclopentadiene	<0.10	0.25	.40	62
82686	Methyl azinphos	<0.50	1.04	.40	260
82667	Methyl parathion	<0.10	0.44	.40	110
39415	Metolachlor	<0.10	0.57	.40	142
82630	Metribuzin	<0.10	0.39	.40	98
82683	Pendimethalin	<0.10	0.82	.40	205
check	Phosphamidon	<0.25	0.60	.40	150
04035	Simazine	<0.10	0.52	.40	130
82665	Terbacil	<0.10	0.56	.40	140
82661	Trifluralin	<0.10	0.38	.40	95
Carbamates					
49310	Carbaryl	<2.0	2.86	3.3	87
49296	Methomyl	<2.0	3.00	3.3	91
38866	Oxamyl	<2.0	2.81	3.3	85

a Calculated concentration of spike in sample equals the concentration of the spike solution, in micrograms per milliliter x amount of spike added, in milliliters, divided by the spiked sample volume, in liters

GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
GROUND WATER PESTICIDES NETWORK PROJECT

401435076540910 - QUALITY-ASSURANCE RESULTS

REMARKS.--A commercially-available mixture of pesticides and herbicides was spiked into three 3-liter bottles of organic-free blank water July 21, 2004 at 1250, 1300, and 1310 to create triplicate quality-assurance samples (2 1-liter bottles for EPA 525.2 and 1 40-mL bottle for EPA 531.1 per sample) which were analyzed at the Pennsylvania Department of Environmental Protection Bureau of Laboratories. An additional 1-L spiked sample(7/21/04 at 1250) was sent to the USGS National Water Quality Laboratory as an interlab quality-assurance sample. Triplicate spiked samples are used to determine both precision and accuracy. Concentrations of analytes in blank water were assumed to be less than the reporting limits for purposes of calculations. Concentrations of pesticides and herbicides (in µg/L) and calculated recoveries (in percent) are shown in the table below for estimation of accuracy. Less-than values were set equal to zero for calculations; “<“ = less than.

QUALITY-CONTROL DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004--Continued

		Concentration, in micrograms per liter			
Parameter code	Constituent	Assumed concentration of blank A	Laboratory results for spiked sample (07/21/04 at 1310) B	Calculated concentration in spiked sample[a] C	Recovery in percent [(B-A)/C] x 100
49260	Acetochlor	<0.10	0.49	.40	122
46342	Alachlor	<0.10	0.48	.40	120
39632	Atrazine	<0.10	0.43	.40	108
61582	Captan	<0.10	<0.10	.40	0
49306	Chlorothalonil	<0.10	0.40	.40	100
38933	Chlorpyrifos (Dursban)	<0.10	0.47	.40	118
49300	Diuron	<0.10	0.53	.40	132
34386	Hexachlorocyclopentadiene	<0.10	0.30	.40	75
82686	Methyl azinphos	<0.50	0.97	.40	242
82667	Methyl parathion	<0.10	0.43	.40	108
39415	Metolachlor	<0.10	0.57	.40	142
82630	Metribuzin	<0.10	0.42	.40	105
82683	Pendimethalin	<0.10	0.68	.40	170
check	Phosphamidon	<0.25	0.59	.40	148
04035	Simazine	<0.10	0.40	.40	100
82665	Terbacil	<0.10	0.56	.40	140
82661	Trifluralin	<0.10	0.44	.40	110
Carbamates					
49310	Carbaryl	<2.0	3.04	3.3	92
49296	Methomyl	<2.0	2.91	3.3	88
38866	Oxamyl	<2.0	3.12	3.3	94

a Calculated concentration of spike in sample equals the concentration of the spike solution, in micrograms per milliliter x amount of spike added, in milliliters, divided by the spiked sample volume, in liters.

GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
GROUND WATER PESTICIDES NETWORK PROJECT

401435076540910 - QUALITY-ASSURANCE RESULTS

REMARKS.--A commercially-available mixture of pesticides and herbicides was spiked into three 3-liter bottles of organic-free blank water July 21, 2004 at 1250, 1300, and 1310 to create triplicate quality-assurance samples (2 1-liter bottles for EPA 525.2 and 1 40-mL bottle for EPA 531.1 per sample) which were analyzed at the Pennsylvania Department of Environmental Protection Bureau of Laboratories. One liter of the same spiked sample (time = 1320) and was sent to the U.S. Geological Survey (USGS) National Water Quality Laboratory (NWQL) in Denver, Colorado as an interlab quality-assurance check. Concentrations of analytes in blank water were assumed to be less than the reporting limits for purposes of calculations. Concentrations of pesticides and herbicides (in µg/L) and calculated recoveries (in percent) are shown in the table below for estimation of accuracy. Less-than values were set equal to zero for calculations; "<" = less than.

QUALITY-CONTROL DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004--Continued

		Concentration, in micrograms per liter			
Parameter code	Constituent	Assumed concentration of blank A	Laboratory results for spiked sample (07/21/04 at 1320) B	Calculated[a] concentration in spiked sample C	Recovery in percent [(B-A)/C] x 100
49260	Acetochlor	<0.10	0.42	.40	105
46342	Alachlor	<0.10	0.41	.40	102
39632	Atrazine	<0.10	0.48	.40	120
61582	Captan	<0.10	Not analyzed in USGS NWQL SH2001		
49306	Chlorothalonil	<0.10	Not analyzed in USGS NWQL SH2001		
38933	Chlorpyrifos (Dursban)	<0.10	0.34	.40	85
49300	Diuron	<0.10	Not analyzed in USGS NWQL SH2001		
34386	Hexachlorocyclopentadiene	<0.10	Not analyzed in USGS NWQL SH2001		
82686	Methyl azinphos	<0.50	E0.52	.40	130
82667	Methyl parathion	<0.10	0.36	.40	90
39415	Metolachlor	<0.10	0.41	.40	102
82630	Metribuzin	<0.10	0.35	.40	88
82683	Pendimethalin	<0.10	0.35	.40	88
check	Phosphamidon	<0.25	Not analyzed in USGS NWQL SH2001		
04035	Simazine	<0.10	0.40	.40	100
82665	Terbacil	<0.10	E0.38	.40	95
82661	Trifluralin	<0.10	0.25	.40	62

a Calculated concentration of spike in sample equals the concentration of the spike solution, in micrograms per milliliter x amount of spike added, in milliliters, divided by the spiked sample volume, in liters.

GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
GROUND WATER PESTICIDES NETWORK PROJECT

Compounds analyzed at the Pennsylvania Department of Environmental Protection Laboratory

Pesticide Schedule used for Annual Baseline Network
(SAC USGS1)

Analyte	NWIS Parameter Code
EPA 525.2	
Acetochlor	49260
Alachlor	46342
Atrazine	39632
Captan	61582
Chlorothalonil	49306
Chlorpyriphos (Dursban)	38933
Dichlobenil (added after April 2004)	63009
Fenpropathrin (added after April 2004)	64044
Diuron	49300
Hexachlorocyclopentadiene	34386
Methyl parathion	82667
Metolachlor	39415
Metribuzin	82630
Pendimethalin	82683
Phosmet (added after April 2004)	61601
Phosphamidon	63736
Simazine	04035
Terbacil	82665
Trifluralin (added after April 2004)	04023
EPA 531.1	
Carbaryl	49310
Methomyl	49296
Oxamyl	38866

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Calendar for Water Year 2004

2003

October

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

November

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

December

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

2004

January

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

February

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

March

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

April

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

May

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

June

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

July

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

August

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

September

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

Conversion Factors

Multiply	By	To obtain
	Length	
inch (in.)	2.54×10^{1}	millimeter (mm)
	2.54×10^{-2}	meter (m)
foot (ft)	3.048×10^{-1}	meter (m)
mile (mi)	1.609×10^{0}	kilometer (km)
	Area	
acre	4.047×10^{3}	square meter (m^2)
	4.047×10^{-1}	square hectometer (hm^2)
	4.047×10^{-3}	square kilometer (km^2)
square mile (mi^2)	2.590×10^{0}	square kilometer (km^2)
	Volume	
gallon (gal)	3.785×10^{0}	liter (L)
	3.785×10^{-3}	cubic meter (m^3)
	3.785×10^{0}	cubic decimeter (dm^3)
million gallons (Mgal)	3.785×10^{3}	cubic meter (m^3)
	3.785×10^{-3}	cubic hectometer (hm^3)
cubic foot (ft^3)	2.832×10^{-2}	cubic meter (m^3)
	2.832×10^{1}	cubic decimeter (dm^3)
cubic-foot-per-second day [(ft^3/s) d]	2.447×10^{3}	cubic meter (m^3)
	2.447×10^{-3}	cubic hectometer (hm^3)
acre-foot (acre-ft)	1.233×10^{3}	cubic meter (m^3)
	1.233×10^{-3}	cubic hectometer (hm^3)
	1.233×10^{-6}	cubic kilometer (km^3)
	Flow	
cubic foot per second (ft^3/s)	2.832×10^{1}	liter per second (L/s)
	2.832×10^{-2}	cubic meter per second (m^3/s)
	2.832×10^{1}	cubic decimeter per second (dm^3/s)
gallon per minute (gal/min)	6.309×10^{-2}	liter per second (L/s)
	6.309×10^{-5}	cubic meter per second (m^3/s)
	6.309×10^{-2}	cubic decimeter per second (dm^3/s)
million gallons per day (Mgal/d)	4.381×10^{-2}	cubic meter per second (m^3/s)
	4.381×10^{1}	cubic decimeter per second (dm^3/s)
	Mass	
ton (short)	9.072×10^{-1}	megagram (Mg) or metric ton

Temperature in degrees Celsius (°C) may be converted to degrees Fahrenheit (°F) as follows:

$°F = (1.8 \times °C) + 32$