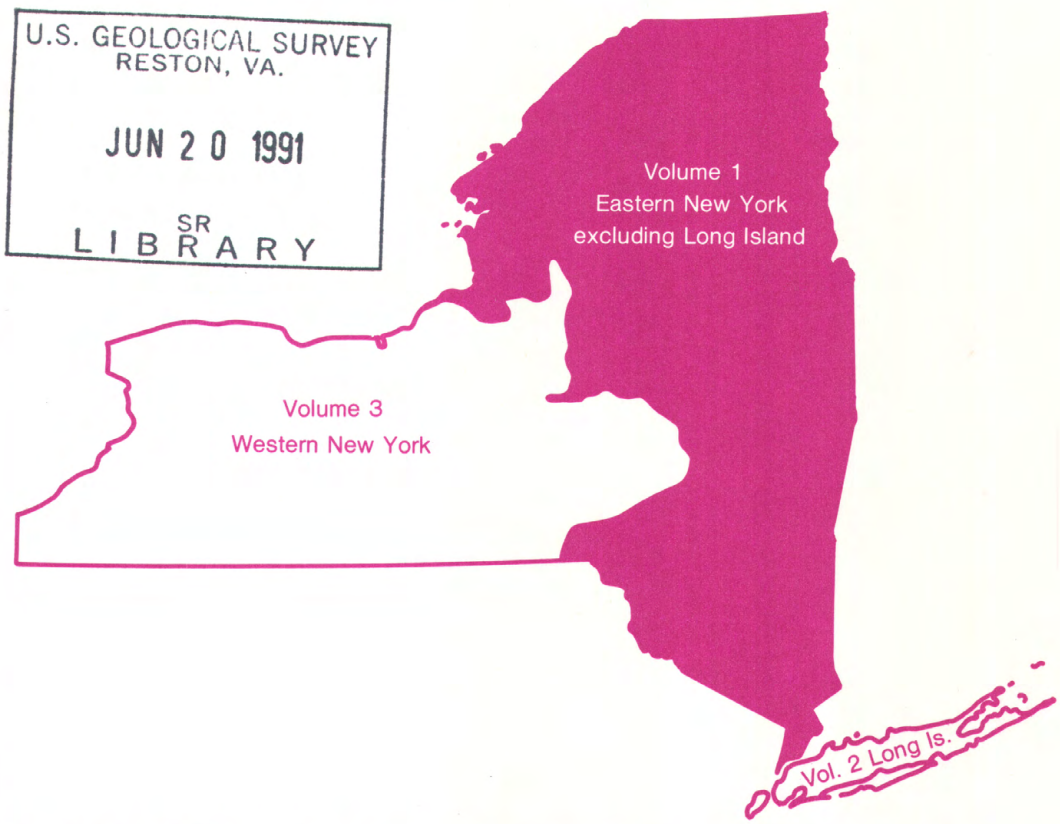
Water Resources Data New York Water Year 1989

Volume 1. Eastern New York excluding Long Island



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT NY-89-1
Prepared in cooperation with the State of New York
and with other agencies

CALENDAR FOR WATER YEAR 1989

1988

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1989

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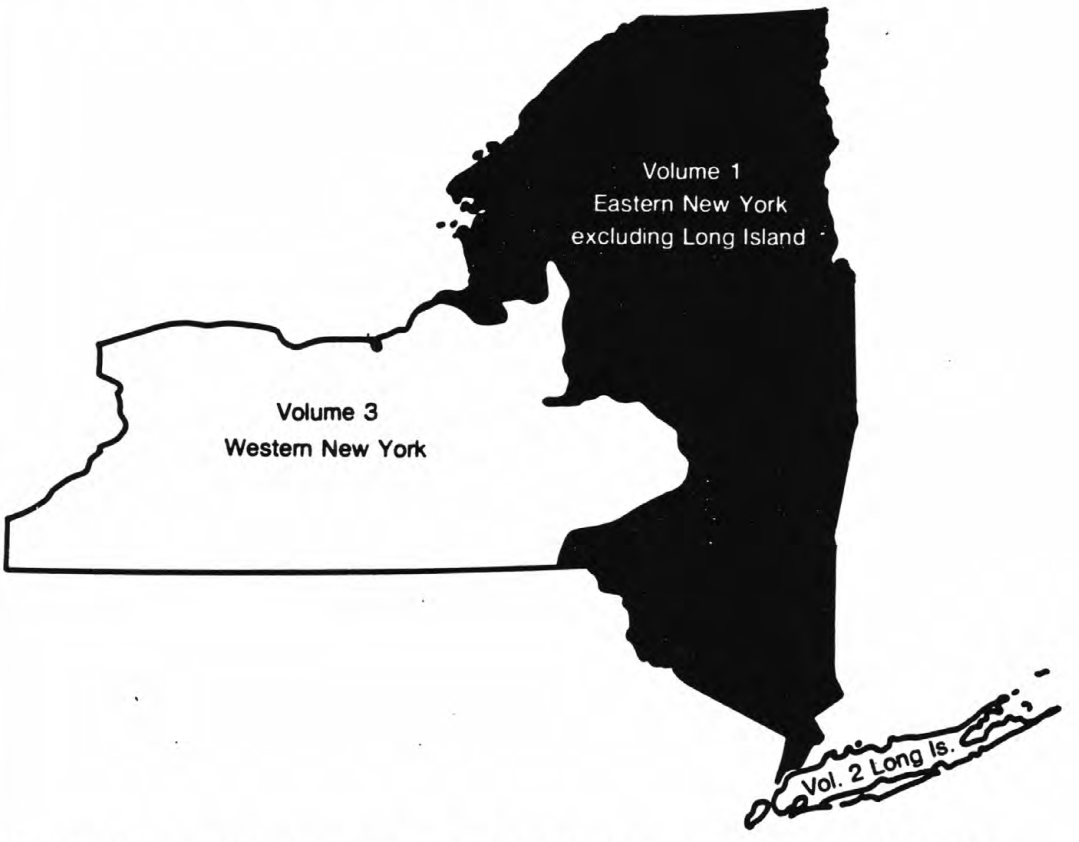
Water Resources Data New York Water Year 1989

Volume 1. Eastern New York excluding Long Island

by Gary D. Firda, Richard Lumia, and Patricia M. Murray



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT NY-89-1
Prepared in cooperation with the State of New York
and with other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

MANUEL LUJAN, JR., Secretary

GEOLOGICAL SURVEY

Dallas L. Peck, Director

For information on the water program in New York write to:

District Chief, Water Resources Division
U.S. Geological Survey
U.S. Post Office and Courthouse
P.O. Box 1669
Albany, New York 12201

1990

PREFACE

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

Volume 1. Eastern New York excluding Long Island
Volume 2. Long Island
Volume 3. Western New York

In addition to the authors, who had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to Geological Survey policy and established guidelines, the following individuals contributed significantly to the collection, processing, and tabulation of the data:

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15. Supplementary Notes

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16. Abstract (Limit: 200 words)

Water resources data for the 1989 water year for New York consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and water levels in observation wells. This volume contains records if water discharge at 93 gaging stations; stage only at 4 gaging stations; and stage and contents at 4 gaging stations, and 19 other lakes and reservoirs; water quality at 38 gaging stations; and water levels at 25 observation wells. Locations of these sites are shown on figures 7A and 7B. Also included are data for 37 crest-stage partial-record stations. Additional water data were collected at various sites not in the systematic data-collection program and are published as miscellaneous measurements. These data, together with the data in volumes 2 and 3, represent that part of the National Water Data System collected collected by the U.S. Geological Survey and cooperating State and Federal agencies in New York.

17. Document Analysis a. Descriptors

*New York, *Hydrologic, *Surface water, *Ground water, *Water quality, *Streamflow, Flow rates, Gaging stations, Lakes, Reservoirs, Chemical analysis, Sediments, Water analysis, Water Temperatures, Water levels, Water wells, Data collection sites

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DUTCHESS COUNTY
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Well 414128073475201 Local number Du 1009 233
GREENE COUNTY
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HAMILTON COUNTY
Well 432832074122201 Local number H 3 235
JEFFERSON COUNTY
Well 440331075423901 Local number Jf 123 236
Well 440416075422901 Local number Jf 124 237
MONTGOMERY COUNTY
Well 430141074423501 Local number Mt 1 238
ONEIDA COUNTY
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ULSTER COUNTY
Well 414948074035101 Local number U 405 251
WASHINGTON COUNTY
Well 431030073192101 Local number W 533 252
WESTCHESTER COUNTY
Well 411421073481201 Local number We 3 253

WATER RESOURCES DATA FOR NEW YORK, 1989
Volume 1.--Eastern New York excluding Long Island

INTRODUCTION

Water resources data for the 1989 water year for New York consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and ground-water levels. This volume contains records for water discharge at 93 gaging stations; stage only at 4 gaging stations; stage and contents at 4 gaging stations, and 19 other lakes and reservoirs; water quality at 38 gaging stations; and water levels at 25 observation wells. Also included are data for 37 crest-stage partial-record stations. Additional water data were collected at various sites not involved in the systematic data-collection program, and are published as miscellaneous measurements in this volumn. These data together with the data in Volumes 2 and 3 represent that part of the National Water Data System operated by the U.S. Geological Survey in cooperation with State, Municipal, and Federal agencies in New York.

Records of discharge and stage of streams, and contents and stage of lakes and reservoirs, were first published in a series of U.S. Geological Survey water-supply papers entitled, "Surface Water Supply of the United States." Through September 30, 1960, these water-supply papers were in an annual series and then in a 5-year series for 1961-65 and 1966-70. Records of chemical quality, water temperatures, and suspended sediment were published from 1941 to 1970 in an annual series of water-supply papers entitled "Quality of Surface Waters of the United States." Records of ground-water levels were published from 1935 to 1974 in a series of water-supply papers entitled "Ground-Water Levels in the United States." Water-supply papers may be consulted in the libraries of the principal cities and universities in the United States or may be purchased from the U.S. Geological Survey, Branch of Distribution, 604 South Pickett Street, Alexandria, VA 22304.

Since the 1961 water year, streamflow data and since the 1964 water year, water-quality data have been released by the Geological Survey in annual reports on a State-boundary basis. These reports provided rapid release of water data in each state shortly after the end of the water year. Through 1970 the data were also released in the water-supply paper series mentioned above.

Streamflow and water-quality data beginning with the 1971 water year, and ground-water data beginning with the 1975 water year are published only in reports on a State-boundary basis. Beginning with the 1975 water year, these Survey reports carry 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 NY-89-1." Water-data reports are for sale in paper copy or in microfiche by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.

Additional information, including current prices for ordering specific reports, may be obtained from the District Chief at the address given on the back of the title page or by telephone (518) 472-3107.

COOPERATION

The U.S. Geological Survey and organizations of the State of New York and other agencies have had cooperative agreements for the systematic collection of water records since 1900. Organizations that assisted in collecting data included in Volume 1, water year 1989, through cooperative agreement with the Survey are:

New York State Department of Environmental Conservation
New York State Department of Transportation
County of Ulster, County Legislature
County of Westchester, Department of Public Works
City of New York, Department of Environmental Protection
Village of Nyack
Board of Hudson River-Black River Regulating District
New York Power Authority

Assistance in the form of funds for collecting records at gaging stations published in this report was also given by the U.S. Army Corps of Engineers and the Environmental Protection Agency.

The following municipalities and organizations aided in collecting records:

Plattsburgh, Tarrytown, and Yonkers; Indian River Co.; New York State Electric and Gas Corp.; Niagara Mohawk Power Corp.; Orange and Rockland Utilities, Inc.; Oswegatchie River-Cranberry Reservoir Commission; Spring Valley Water Co.; and Utica Board of Water Supply.

Organizations that supplied data are acknowledged in station descriptions.

WATER RESOURCES DATA FOR NEW YORK, 1989

SUMMARY OF HYDROLOGIC CONDITIONS

Surface Water

Precipitation over eastern New York during water year 1989 generally was average to above average during the fall, below average through the winter and early spring, and above average from May through most of the summer. This rainfall distribution, in conjunction with below-average winter snowfalls throughout most of the area, cool spring temperatures, and severe localized thunderstorms during the summer, resulted in highly variable monthly runoff of streams in eastern New York. Despite this large variation in monthly runoff, the annual runoff of streams in eastern New York during water year 1989 generally was average, except in extreme southeastern New York, where it was above average (100 to 120 percent of average, fig. 1). The lowest annual runoffs occurred in the southern Lake Champlain Valley and throughout the Schoharie Creek and Delaware River basins, where streamflows were 80 to 90 percent of average. Annual runoff in northern New York was generally 100 to 110 percent of average.

Average month-end reservoir contents and month-end contents of the New York City reservoir system during 1989 are shown in figure 2A; 1989 month-end storage in Great Sacandaga Lake at Conklingville (in the upper Hudson River basin) is compared with the average month-end storage for the period of record (1931-87) in figure 2B. Storage in the New York City Reservoir system remained much below normal through April but recovered to normal or slightly above normal throughout the remainder of water year 1989. Storage in Great Sacandaga Lake was generally slightly above normal for most of the water year.

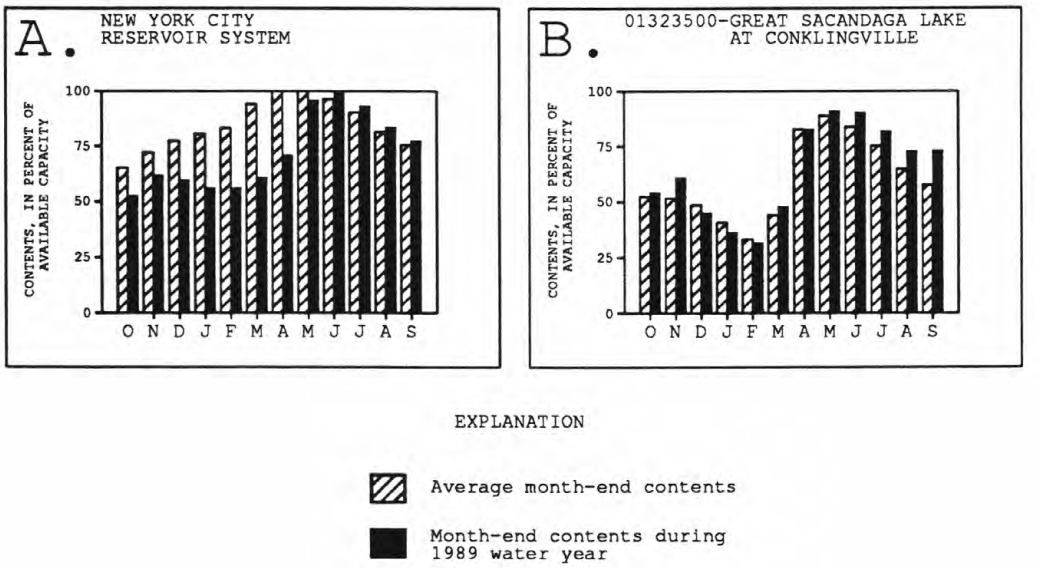


Figure 2.--Comparison of average month-end reservoir contents and month-end contents during 1989 water year for two selected reservoir systems in eastern New York.

The 1989 monthly runoff at selected stations in eastern New York is compared with each site's 1960-84 average monthly runoff in figure 3. October and November 1988 streamflows ranged from above average to average in most of eastern New York, except in southeastern New York, where October streamflows were generally below average. A large storm throughout northern New York on November 5-6, 1988 also left nearly 4 inches of rain over the Catskill Mountain region. Many streams in northern New York experienced their maximum discharge for the year on November 6. A second storm over the lower Hudson River Valley during November 20-23 dropped 1 to 4 inches of rain over the area, which contributed to the above-average streamflows for the month.

Monthly streamflow throughout eastern New York during the winter was generally below average because precipitation was much below normal. Eastern New York received less than 50 percent of its normal precipitation during December and January (driest December in the last 28 years), and through February, the precipitation station at Albany recorded its second lowest seasonal snowfall total, 14.2 inches. (Lowest was 13.8 inches during 1912-13). The Delaware River Basin Commission declared a drought alert as the New York City Reservoir system fell to 56 percent of capacity by the end of February (normally at 83 percent). A few days of wet weather on February 20-21 caused significant runoffs and ice jams on some streams, but monthly flows remained below average. The maximum recorded snow depth in eastern New York by the end of February was 47 inches at Boonville, in the western Adirondack Mountains region.

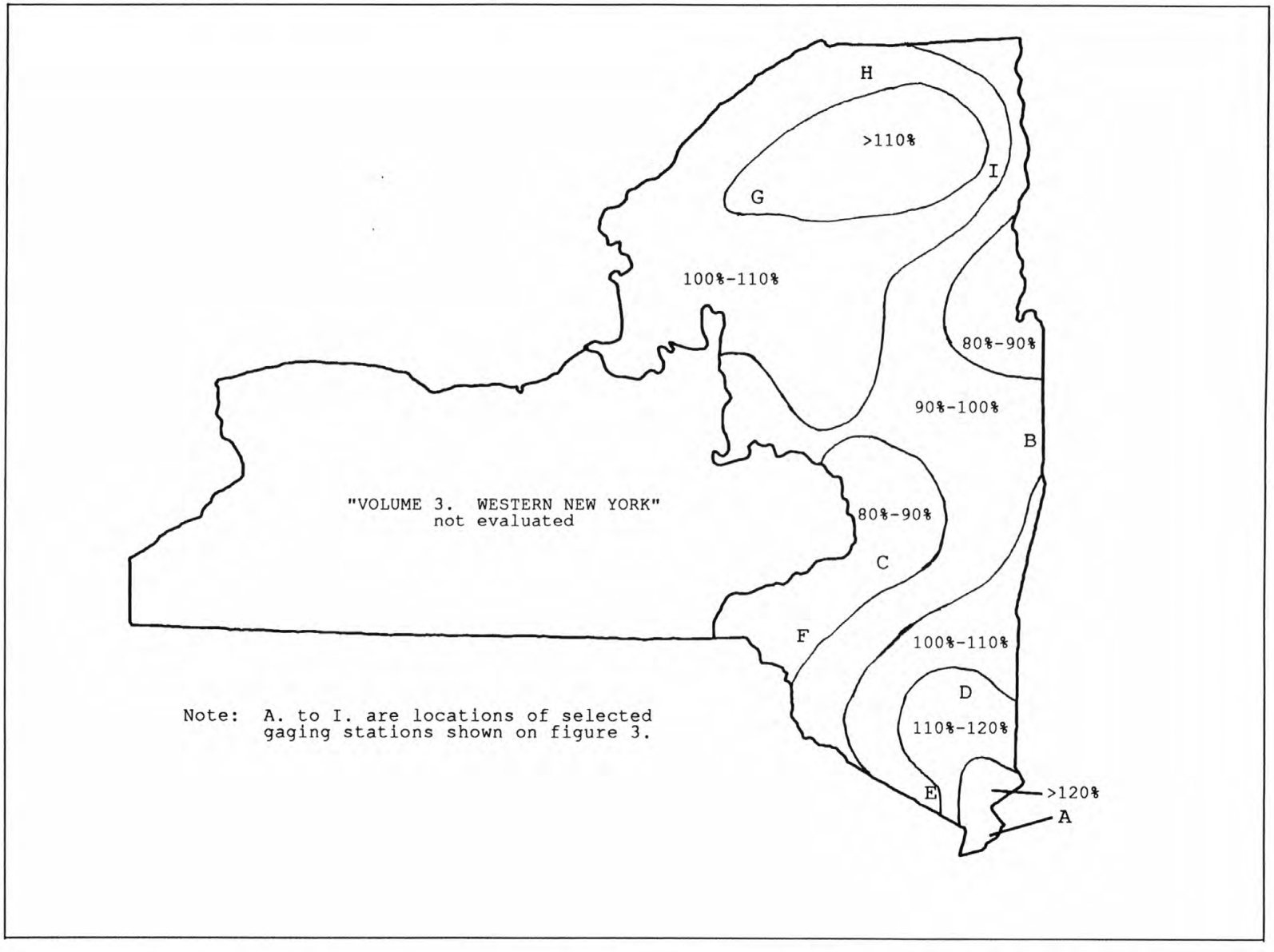


Figure 1.--1989 water year runoff as a percentage of the average annual runoff for 1960-84 for eastern New York excluding Long Island.

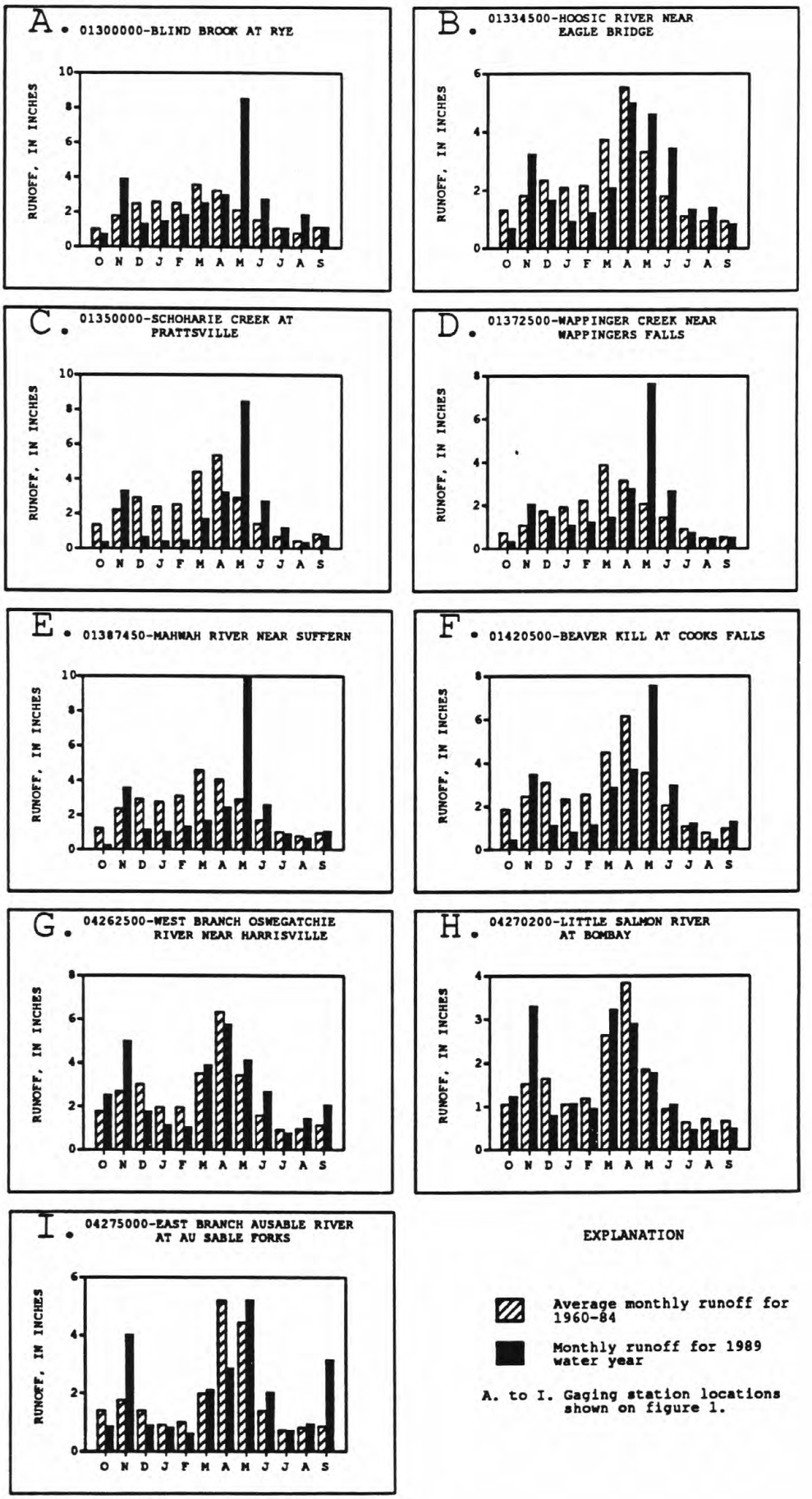


Figure 3.--Comparison of monthly runoff for 1989 water year and average monthly runoff for 1960-84 for selected gaging stations in eastern New York (site locations are shown on figure 1).

March and April brought generally below-normal precipitation to most of eastern New York. Most of the rain fell during the end of March and early April. Mild temperatures and heavy rains on March 28-30 resulted in flood warnings for St. Lawrence, Herkimer, and Lewis Counties. The precipitation station at Slide Mountain in the Catskill Mountains, recorded 2.4 inches of rain during the storm. Little or no snow was left on the ground by the end of March (a maximum of 13 inches was reported at Boonville). The heavy rains and snowmelt near the end of March resulted in slightly above-average streamflows throughout northern New York for the month, while the remainder of eastern New York experienced below-average runoff. Several streams in northern New York recorded their maximum flows for the year on March 29. April was generally cool and dry and streamflows throughout eastern New York remained below average.

May 1989 was the second wettest May, statewide, since 1895, with more than 9 inches of rain recorded throughout most of southeastern New York and up to 15 inches in the Catskill Mountain region. Many areas within the lower Hudson River Valley reported monthly rainfalls of as much as 10 inches above normal. Several large storms caused above-average streamflows throughout eastern New York, especially in southeastern New York. A storm on May 6 caused small-stream flooding in Ulster County, and a major storm on May 16-17 resulted in flood warnings for several counties throughout southeastern New York. Several roads in Dutchess and Rockland Counties were closed because of flooding, as were parts of the Bronx and Saw Mill River Parkways in Westchester County. Many gaging stations in southeastern New York recorded their maximum flows for water year 1989 during May. Storage in the New York City Reservoir system returned to normal levels during May (fig. 2A). The following table shows the ranking of May 1989 flows in relation to all May flows during each selected site's period of record.

Maximum mean flows of selected streams for May 1989 in relation to the May maximums for the period of record
[Locations are shown in figures 1 and 7]

Station number and name	Years of May record	Rank of May 1989 highest mean flow in relation to long-term May values: Number of consecutive days 1	3	7	15	31	Year of highest recorded May flow: 7-day	31-day
01300000* Blind Brook at Rye	45(1945-89)	1	2	1	1	1	**1984	**1984
01318500 Hudson River at Hadley	68(1922-89)	19	19	18	12	19	1972	1972
01334500* Hoosic River near Eagle Bridge	79(1911-89)	9	7	7	6	10	1984	1984
01350000* Schoharie Creek at Prattsville	82(1908-89)	3	6	1	1	1	**1924	**1924
01357500 Mohawk River at Cohoes	72(1918-89)	12	11	7	8	13	1983	1943
01358000 Hudson River at Green Island	44(1946-89)	9	9	8	6	9	1983	1972
01371500 Wallkill River at Gardiner	65(1925-89)	2	2	1	1	1	**1978	**1984
01372500* Wappinger Creek nr Wappingers Falls	61(1929-89)	2	2	2	1	1	1984	**1984
01387450* Mahwah River near Suffern	31(1959-89)	2	3	1	1	1	**1984	**1978
01420500* Beaver Kill at Cooks Falls	76(1914-89)	3	3	3	1	1	1984	**1943
04262500* West Branch Oswegatchie River near Harrisville	73(1917-89)	16	15	11	9	14	1971	1971
04270200* Little Salmon River at Bombay	31(1959-89)	11	11	8	8	11	1971	1971
04275000* East Branch Ausable River at Au Sable Forks	65(1925-89)	15	16	10	10	15	1972	1972

* May 1989 runoff is shown in fig. 3.
** Prior to 1989.

The ranks in the table above are based on the highest mean flow for the indicated number of consecutive days during May of each year. For example, Wappinger Creek near Wappingers Falls had its second highest 7-day and highest 31-day May flows during 1989, whereas the previous highest recorded flows were in 1984. Generally, the tabulated data indicates that streams throughout southeastern New York experienced more extreme and extended periods of May high flow than those in northern areas of eastern New York. All of the southeastern New York sites listed in the table experienced their highest mean May flow of record during 1989.

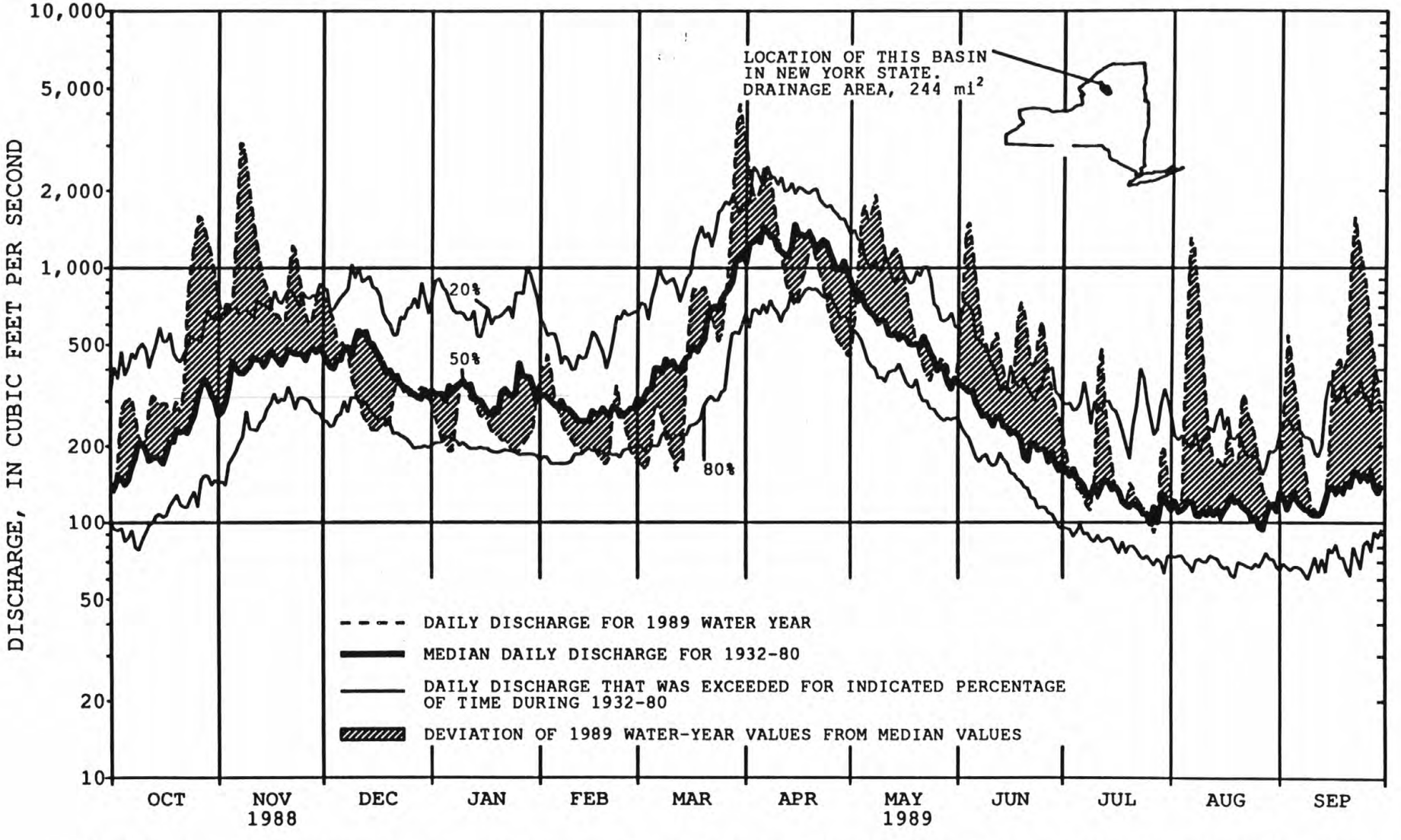


Figure 4.--Hydrographic comparisons, West Branch Oswegatchie River near Harrisville, N.Y.

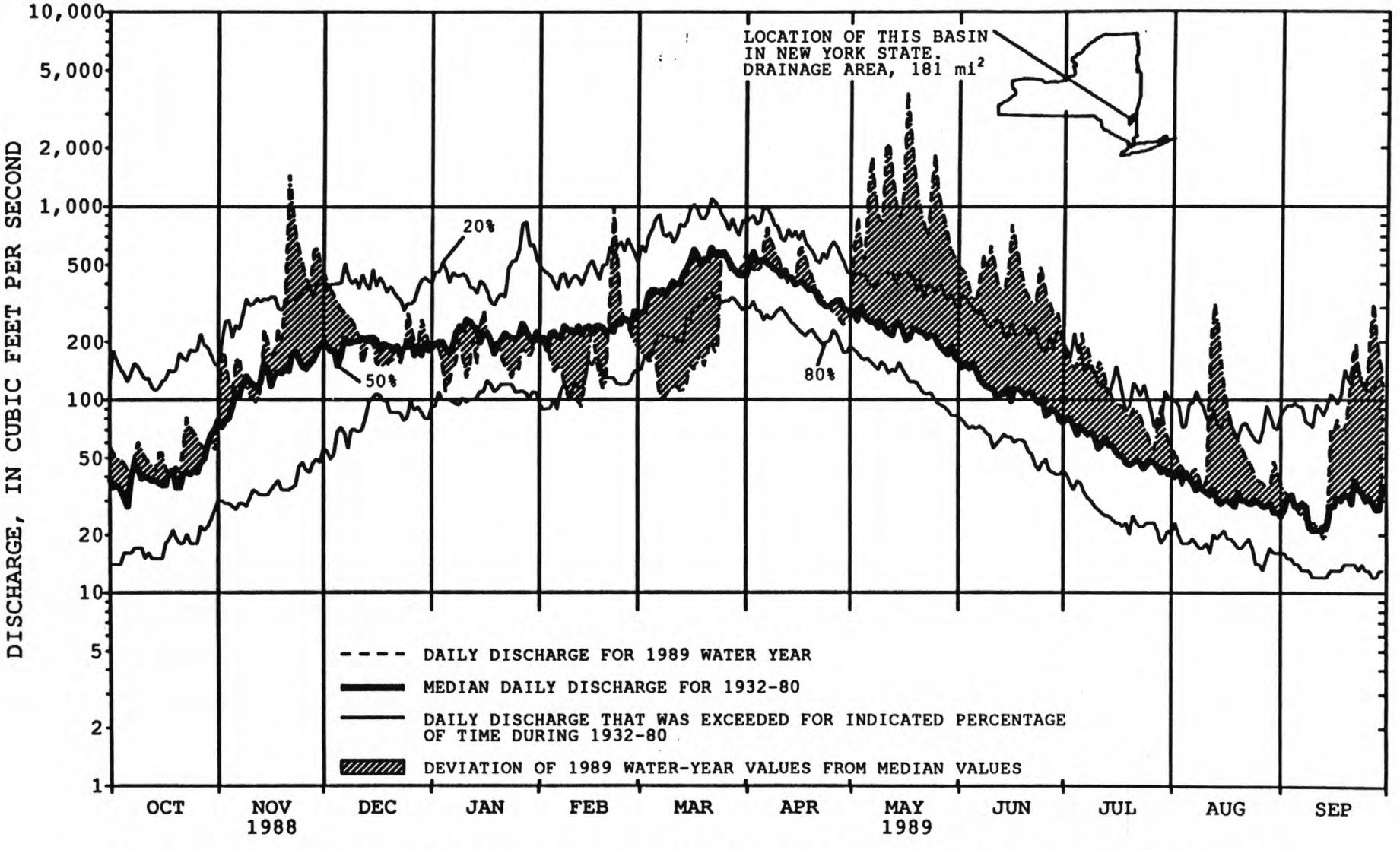


Figure 5.--Hydrographic comparisons, Wappinger Creek near Wappingers Falls, N.Y.

The wet-weather pattern of May persisted into June, which was the wettest June, statewide, since 1972; only 1903, 1922, and 1972 had June rainfalls exceeding those of 1989. The total 2-month May-June 1989) rainfall, statewide, was the second greatest since 1890 (maximum was 1972). Several thunderstorm-related events and steady, heavy rains during June 9-10 resulted in above-average streamflows throughout eastern New York for the month. Some flooding on small streams was reported in Delaware County on June 23 as a result of localized thunderstorms.

Streamflows for July 1989 returned to near average as a result of normal to below-normal precipitation during the month. Several thunderstorms throughout eastern New York during July caused some significant runoff and a few tornados were reported around the Mohawk River Valley region on July 10.

August precipitation was above normal in the lower Hudson River Valley and throughout northern New York and close to normal elsewhere. Summer precipitation (June-August) averaged 0 to 3 inches below normal in areas adjacent to Lake Ontario, 1 to 6 inches above normal for the rest of eastern New York except in extreme southeastern New York where it was 6 to 9 inches above normal. August runoffs throughout eastern New York ranged from average to slightly above average.

September streamflows were generally above average as a result of moderate to heavy rains September 1-2, 14-17, and 19-20. The Adirondack Mountain region experienced its wettest September since 1981; Highmarket in the western Adirondacks recorded 8.77 inches, the largest monthly precipitation total for the State. The Black River Valley experienced some flooding. By the end of September streamflows throughout eastern New York were generally receding. Daily streamflows throughout the 1989 water year at two representative gaging stations are plotted in figures 4 and 5.

Surface-Water Quality

Water-quality data for the Hydrologic Benchmark station and the seven NASQAN stations in eastern upstate New York generally were within the historic extremes for each station's period of record. Some new extremes were measured, and although most changes were minor, notable changes occurred at five sites during the year.

For Hudson River at Green Island the previous maximum of 50 NTU (Nephelometric Turbidity Unit) of turbidity was exceeded on June 29 with a measurement of 67 NTU.

For St. Lawrence River at Cornwall, Ontario--near Massena, the previous maximum of 3.3 µg/L (micrograms per liter) dissolved gross alpha radioactivity reported as radioactivity of natural uranium was exceeded on February 13 with a measurement of 6.7 µg/L.

For the Raquette River at Raymondville, two new maximum concentrations were observed on February 15. New maximums were 1,600 fecal coliform colonies/100mL (per 100 milliliters) increased from 930 colonies/100mL, and 0.91 mg/L (milligrams per liter) dissolved nitrate plus nitrite, increased from 0.49 mg/L.

For the St. Regis River at Brasher Center the previous maximum of 0.73 mg/L dissolved nitrate plus nitrite was exceeded on February 14 with a measurement of 1.30 mg/L.

For Richelieu River (Lake Champlain) at Rouses Point, the previous maximum of 790 µg/L total recoverable iron was exceeded on November 16 with a measurement of 920 µg/L.

Water-quality data for fifteen sites in eastern upstate New York, which are part of a statewide network, are included in this report. Other data from short term sites in the network will be included in project data reports.

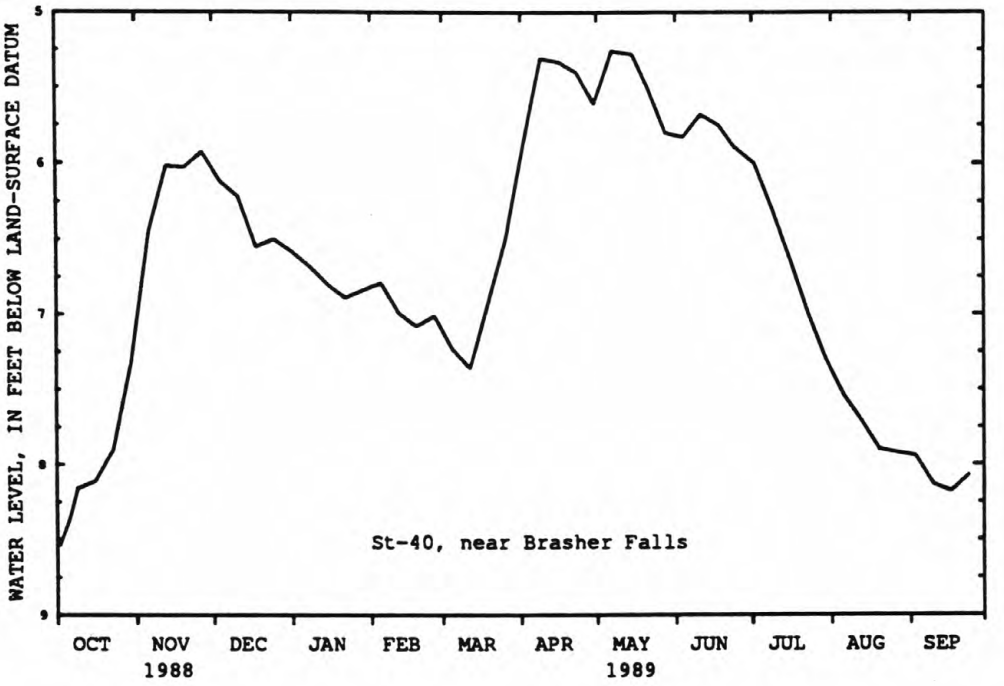
Ground Water

Ground-water levels among shallow, unconfined aquifers in eastern New York typically show similar patterns of change during the course of the water year. Recharge during the year varies locally and reflects a variety of factors including timing and amount of precipitation, season (because evapotranspiration declines during the nongrowing season), soil moisture, and temperature (frozen soil prevents recharge; high temperatures increase evaporation). Water levels generally rise during the fall as the growing season ends and evapotranspiration decreases, and decline during the winter when frozen ground prevents infiltration of water and precipitation is in the form of snow. The spring months are characterized by significant ground-water recharge before and during the early part of the growing season, and recharge may be supplemented by snowmelt during this time of year. The water-level increases that occur during the spring usually exceed those that occur in the fall. Ground-water levels decline during the summer, when plant growth and warm temperatures cause the rate of evapotranspiration to increase. Storms may result in minor recharge to shallow aquifers during summer if they are of sufficient intensity and duration.

The hydrograph of the 1989 water year from well St-40 in St. Lawrence County (extreme northern New York) shown on the next page illustrates a typical ground-water-level cycle under natural (nonpumping) conditions. The well is finished in a shallow, unconfined sand aquifer.

Ground-water levels in shallow unconfined aquifers over most of eastern New York were below average from October, the start of the water year, through April, probably because precipitation was less than average during the fall and spring recharge periods of the preceding year. Water levels generally followed the typical annual cycle, rising from their lowest point at the start of the water year to a peak somewhere between November and January (depending on local conditions), which was accentuated by above-average precipitation in November throughout eastern New York. They then remained stable or declined until late March or April, but then increased toward the annual high as warmer temperatures thawed the soil and melted the remaining snow.

Above-average amounts of precipitation fell during May and June; the greatest amounts fell in the southern half of eastern New York. As a result, water levels in this part of the state generally remained above average over the remainder of the year, while those in the northern part of eastern New York stayed below-average or average through May, and shifted to above or slightly above average during June and July. Water levels decreased in the western foothills of the Adirondack Mountains to the average or slightly above-average range for the remainder of the water year, partly because precipitation was above average in September. Extreme northern New York experienced below-average ground-levels in August and September because precipitation was average during those months.



SPECIAL NETWORKS AND PROGRAMS

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

National Stream Quality Accounting Network (NASQAN) is a data collection network designed by the U.S. Geological Survey to meet many of the information demands of agencies or groups involved in national or regional water-quality planning and management. Both accounting and broad-scale monitoring objectives have been incorporated into the network design. Areal configuration of the network is based on river-basin accounting units (identified by 8-digit hydrologic-unit numbers) designated by the Office of Water Data Coordination in consultation with the Water Resources Council. Primary objectives of the network are (1) to depict areal variability of streamflow and water-quality conditions nationwide on a year-by-year basis and (2) to detect and assess long-term changes in streamflow and stream quality.

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

EXPLANATION OF THE RECORDS

The surface-water and ground-water records published in this report are for the 1989 water year that began October 1, 1988, and ended September 30, 1989. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and content data for lakes and reservoirs, water-quality data for surface water, and ground-water level data. The locations of the stations and wells where the data were collected are shown in figures 7A and B. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

Station Identification Numbers

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

Downstream Order System

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a mainstream station are listed before that station. A station on a tributary that enters between two mainstream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary with respect to the stream to which it is immediately tributary is indicated by an indention in the "List of Stations" in the front of this report. Each indention represents one rank. This downstream order and system of indention show which stations are on tributaries between any two stations and the rank of the triburary on which each station is situated.

The station identification number is assigned according to downstream order. In assigning station numbers, no distinction is made between partial-record stations, miscellaneous sites, and other stations; therefore, the station number for a partial-record station or a miscellaneous site indicates downstream-order position in a list made up of all types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete 8-digit number for each station, such as 01300500, includes the 2-digit part number "01" plus the 6-digit downstream-order number "300500". The Part number designates the major river basin. In a few instances where no gaps were left in the 8-digit numbering sequence, one or two digits were added (making a 9- or 10-digit station number) and (or) a latitude-longitude number was used for identification.

Latitude-Longitude System

The identification numbers for wells are assigned according to the grid system of latitude and longitude. The number consists of 15 digits. The first 6 digits denote the degrees, minutes, and seconds of latitude, the next 7 digits denote degrees, minutes, and seconds of longitude, and the

last 2 digits (assigned sequentially) identify the wells within a 1-second grid. In the rare instance where the initial determination of latitude and longitude are found to be in error, the station will retain its initial identification number; however, its true latitude and longitude will be listed in the LOCATION paragraph of the station description. (See figure 6 below.)

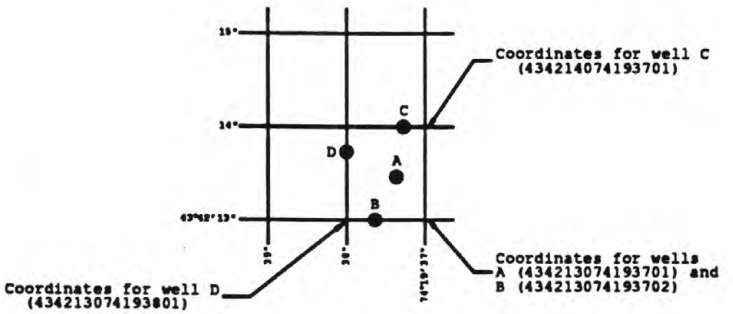


Figure 6. System for numbering wells (latitude and longitude)

Records of Stage and Water Discharge

Records of stage and water discharge may be complete or partial. Complete records of discharge are those obtained using a continuous stage-recording device through which either instantaneous or mean daily discharges may be computed for any time, or any period of time, during the period of record. Complete records of lake or reservoir content, similarly, are those for which stage or content may be computed or estimated with reasonable accuracy for any time, or period of time. They may be obtained using a continuous stage-recording device, but need not be. Because daily mean discharges and end-of-day contents commonly are published for such stations, they are referred to as "daily stations."

By contrast, partial records are obtained through discrete measurements without using a continuous stage-recording device and pertain only to a few flow characteristics, or perhaps only one. The nature of the partial record is indicated by table titles such as "Crest-stage partial records," or "Low-flow partial records." Records of miscellaneous discharge measurements or of measurements from special studies, such as low-flow seepage studies, may be considered as partial records, but they are presented separately in this report. Locations of all gaging stations and observation wells in this report are shown in figures 7A and 7B.

Data Collection and Computation

The base data collected at gaging stations consist of records of stage and measurements of discharge of streams or canals, and stage, surface area, and contents 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 either direct readings on a nonrecording gage or from a water-stage recorder that gives either a continuous graph of the fluctuations or a tape punched at selected time intervals. Measurements of discharge are made with a current meter, using the general methods adopted by the Geological Survey. These methods are described in standard textbooks, in Water-Supply Paper 2175, and in U.S. Geological Survey Techniques of Water-Resources Investigations, Book 3, Chapter A6.

In computing discharge records, results of individual measurements are plotted against the corresponding stages, and stage-discharge relation curves are then constructed. For stream-gaging stations, rating tables giving the discharge for any stage are prepared from stage-discharge relation curves. If extensions to the rating curves are necessary to express discharge greater than measured, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, computation of flow-over-dams or 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 figures. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is computed by the shifting-control method, in which correction factors based on individual discharge measurements and notes by hydrographers and observers are used in 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 control, the daily mean discharge is computed by what is basically the shifting-control method. For some stations, formation of ice in the winter may so obscure the stage-discharge relations that daily mean discharges must be estimated from other information such as temperature and precipitation records, notes of observations, and records for other stations in the same or nearby basins for comparable periods.

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

For a lake or reservoir station, capacity tables giving the 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 change in contents is 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. Discharges over lake or reservoir spillways are computed from stage-discharge relationships much as other stream discharges are computed.

For some gaging stations there are periods when no gage-height record is obtained, or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods, the daily discharges are estimated from the recorded range in stage, prior and subsequent record, discharge measurements, weather records, and comparison with records for other stations in the same or nearby basins. Likewise, daily contents may be estimated from operator's log, prior and subsequent records, inflow-outflow studies, and other information. Information explaining how estimated daily-discharge values are identified in station records is included in the next two sections, "Data Presentation" (REMARKS paragraph) and "Identifying Estimated Daily Discharge."

Data Presentation

The records published for each gaging station consist of two parts, the manuscript or station description and the data table for the current water year. The manuscript provides, under various headings, descriptive information, such as station location; period of record; average discharge; historical extremes; record accuracy; and other remarks pertinent to station operation and regulation. The following information, as appropriate, is provided with each continuous record of discharge or lake content. Comments to follow clarify information presented under the various headings of the station description.

LOCATION.--Information on locations is obtained from the most accurate maps available. The location of the gage with respect to the cultural and physical features in the vicinity and with respect to the reference place mentioned in the station name is given. River mileages, given for some stations, were determined and used by the U.S. Army Corps of Engineers or other agencies.

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

PERIOD OF RECORD.--This indicates the period for which there are published records for the station or for an equivalent station. An equivalent station is one that was in operation at a time that the present station was not, and whose location was such that records from it can reasonably be considered equivalent with records from the present station.

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

GAGE.--The type of gage in current use, the datum of the current gage referred to National Geodetic Vertical Datum of 1929 (see glossary), and a condensed history of the types, locations, and datums of previous gages are given under this heading.

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

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

AVERAGE DISCHARGE.--The discharge value given is the arithmetic mean of the water-year mean discharges. It is computed only for stations having at least 5 water years of complete record, and only water years of complete record are included in the computation. It is not computed for stations where diversions, storage, or other water-use practices cause the value to be meaningless. If water developments significantly altering flow at a station are put into use after the station has been in operation for a period of years, a new average is computed as soon as 5 water years of record have accumulated following the development. The median of yearly mean discharges also is given under this heading for stations having 10 or more water years of record, if the median differs from the average given by more than 10 percent.

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

EXTREMES OUTSIDE PERIOD OF RECORD.--Included here is information concerning major floods or unusually low flows that occurred outside the stated period of record. The information may or may not have been obtained by the U.S. Geological Survey.

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

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

Although rare, occasionally the records of a discontinued gaging station may need revision. Because, for these stations, there would be no current or, possibly, future station manuscript published to document the revision in a "Revised Records" entry, users of data for these stations who obtained the record from previously published data reports may wish to contact the District office to determine if the published records were ever revised after the station was discontinued. Of course, if the data were obtained by computer retrieval, the data would be current and there would be no need to check because any published revision of data is always accompanied by revision of the corresponding data in computer storage.

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

The daily table for stream-gaging stations gives the mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discharge for the month also may be expressed in cubic feet per second per square mile (line headed "CFSM"), or in inches (line headed "IN."), or in acre-feet (line headed "AC-FT"). Figures for cubic feet per second per square mile and runoff in inches are omitted if there is extensive regulation or diversion, if the drainage area includes large noncontributing areas, or if the average annual rainfall over the drainage basin is usually less than 20 inches. In the yearly summary below the monthly summary, the figures shown are the appropriate daily discharges for the calendar and water years. At some stations monthly and(or) yearly observed discharges are adjusted for reservoir storage or diversion, or diversions or reservoir contents are given. These figures are identified by a symbol and corresponding footnote.

Data collected at partial-record stations follow the information for continuous-record sites. Data for partial-record discharge stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage 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 are called measurements at miscellaneous sites. Occasionally, a series of discharge measurements are made within a short time period to investigate the seepage gains or losses along a reach of a stream or to determine the low-flow characteristics of an area. Such measurements are also given in special tables following the tables of partial-record stations.

Identifying Estimated Daily Discharge

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

Accuracy of the Records

The accuracy of streamflow 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 interpretation of records.

The degree of accuracy of the records is indicated under "REMARKS." "Excellent" means that about 95 percent of the daily discharges are within 5 percent; "good," within 10 percent; and "fair," within 15 percent. "Poor" means that daily discharges have less than "fair" accuracy. Different accuracies may be attributed to different parts of a given record.

Figures 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 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 figure. The same rounding rules apply to discharge figures listed for partial-record stations and miscellaneous sites.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic feet per second per square mile and of runoff, in inches, are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the observed discharge.

Other Records Available

Information of a more detailed nature than that published for most of the gaging stations such as observations of water temperatures, discharge-measurement notes, gage-height records, and rating tables is on file in the district office. Also, most gaging-station records are available in computer-usable form and many statistical analyses have been made. Information on the availability of unpublished data or statistical analyses of the published records may be obtained from the district office.

Records of Surface-Water Quality

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

Classification of Records

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

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

Arrangement of Records

Water-quality records collected at a surface-water daily record station are published immediately following that record, unless otherwise footnoted under "REMARKS". 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. Data for precipitation-quality stations appear next. The table of ground-water quality data follow the ground-water level records. Data for quality of ground water are listed alphabetically by County, and are identified by well number.

On-site Measurements and Sample Collection

In obtaining water-quality data, a major concern needs to be assuring that the data obtained represent the in situ quality of the water. To assure this, certain measurements, such as water temperature, pH, and dissolved oxygen, need to be made onsite when the samples are taken. To assure that measurements made in the laboratory also represent the in situ water, carefully prescribed procedures need to be followed in collecting the samples, in treating the samples to prevent changes in quality pending analysis, and in shipping the samples to the laboratory. Procedures for onsite measurements and for collecting, treating, and shipping samples are given in publications on "Techniques of Water-Resources Investigations," Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4. Also, detailed information on collecting, treating, and shipping samples may be obtained from the Geological Survey District office.

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

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

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum, minimum, and mean values for each constituent measured and are based upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the District office.

Water Temperature

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

At stations where recording instruments are used, either mean temperatures and/or maximum and minimum temperatures for each day are published. Water temperatures measured at the time of water-discharge measurements are on file in the District office.

Sediment

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

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

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

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

Laboratory Measurements

Samples for indicator bacteria and daily samples for specific conductance are analyzed locally. Sediment samples are analyzed in the Geological Survey laboratory in Harrisburg, Pa. All other samples are analyzed in the Geological Survey laboratories in Arvada, Colo., or Doraville, Ga. Methods used in analyzing sediment samples and computing sediment records are given in TWRI, Book 5, Chap. C1. Methods used by the Geological Survey laboratories are given in TWRI, Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4.

Data Presentation

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

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

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

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

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

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

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

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

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

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

The surface-water-quality records for miscellaneous sampling sites are published in a separate table 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.

Categories of Water-Quality Data

There is a broad range of water-quality parameters available for most stations whose record exceeds more than a few years operation. Sampling schedules are often intermittent for certain types of data, with analyses available for some but not all years within a station's period of record. An acurate description of the variety of data available is shown by grouping similar parameters into a few general categories, which are listed in the "PERIOD OF RECORD" paragraph. Each category of data is followed by a notation of the water year(s) for which data is available and a letter code describing the frequency of sampling (see following section, "Frequency-of-Sampling Notation"). Thus, "CHEMICAL DATA: 1972-74(c), 1977-81(a).", shows there are at least six analyses each year for the first three years of record, no data for this category in 1975 and 1976, and 1 or 2 samples for each year, 1977-81.

The "PERIOD OF RECORD" paragraph lists the following categories of data to describe information available.

CHEMICAL DATA: Usually includes most of the "major ions", and may often include some of the following physical properties: specific conductance, pH, temperature, color, turbidity, dissolved oxygen.
MINOR ELEMENT DATA: Comprises the "heavy metals" and some of the "alkaline earth" groups. Determinations often include some but not all of the following: Al, As, Ba, Cd, Cr, Co, Cu, Hg, Li, Ni, Pb, Se, Sn, Sr, Zn.
RADIOCHEMICAL DATA: The determinations of the concentration of individual radioactive elements, such as radium 226, cobalt 60, strontium 90, and tritium. This category also includes the gross measurement of radioactivity (alpha, beta, gamma) without regard to the radiochemical species that produce the radioactivity.
PESTICIDE DATA: The organic compounds (insecticides and herbicides) used to control insects and plants. Routinely, the analyses searches for traces of between 12 to 22 compounds.
ORGANIC DATA: Organic data (other than pesticides) such as, OC, PCB, PCN.
NUTRIENT DATA: Constituents containing nitrogen or phosphorus. Results usually include several of the following: nitrate plus nitrate, phosphorus, ammonia nitrogen, organic nitrogen, ammonia nitrogen plus organic nitrogen (Kjeldahl nitrogen).
BIOLOGICAL DATA: The identification and concentration of microscopic plant organisms (phytoplankton, periphyton), or enteric bacteria (total coliform, fecal coliform, or fecal streptococcal) living in aquatic habitats.
SEDIMENT DATA: Suspended-sediment concentration, suspended-sediment discharge, and particle-size data for discrete samples.

Frequency-of-Sampling Notation

The categories of data given in the "PERIOD OF RECORD" paragraph are followed by the water year(s) for which that kind of data was collected. The amount of data available is specified by the following letter codes:

(a) 1 or 2 samples per year.
(b) 3 to 5 samples per year.
(c) 6 to 9 samples per year.
(d) 10 to 20 samples per year.
(e) more than 20 samples per year.

Records of Ground-Water Levels

Ground-water level data consist of water-level measurements made in observation wells. 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 provided for local needs. (See figure 6.)

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.

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; National Geodetic Vertical Datum of 1929 is the datum plane on which the national network of precise levels is based. If known, the elevation of the land-surface datum above National Geodetic Vertical Datum of 1929 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 as mean daily values, and the extremes are instantaneous values selected from the digital record. Water levels in wells not equipped with recording gages are read periodically or measured periodically with a weighted tape by U.S. Geological Survey personnel and/or an observer.

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 to 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.

Data Presentation

Each well record consists of three parts, the station description, the data table of water levels observed during the water year, and the 10-year hydrograph. The description of the well is presented first through use of descriptive headings preceding the tabular data. The comments to follow clarify information presented under the various headings.

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

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

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

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

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

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

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

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

A table of water levels follows the station description for each well. Water levels are reported in feet below land-surface datum and all taped measurements of water level are listed for wells without recorders. The highest and lowest water levels of the water year and their dates of occurrence are shown on a line below the table for wells with recorders. Because all values are not published for wells with recorders, the extremes may be values that are not listed in the table. Missing records are indicated by dashes in place of the water level.

A hydrograph of water levels follows the data table for each well. The current year and the previous 9 years of record are plotted in feet below land-surface datum. If the period of record is less than 10 years, the water levels for the entire record are plotted.

Records of Ground-Water Quality

Records of ground-water quality in this report differ from other types of records in that for most sampling sites they consist of only one set of measurements for the water year. The quality of ground water ordinarily changes only slowly; therefore, for most general purposes one annual sampling, or only a few samples taken at infrequent intervals during the year, is sufficient. Frequent measurement of the same constituents is not necessary unless one is concerned with a particular problem, such as monitoring for trends in nitrate concentration. In the special cases where the quality of ground water may change more rapidly, more frequent measurements are made to identify the nature of the changes.

Data Collection and Computation

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

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

Data Presentation

The records of ground-water quality are published in a section titled QUALITY OF GROUND WATER immediately following the ground-water-level records. Data for quality of ground water are listed alphabetically by County, and are identified by well number. The prime identification number for wells sampled is the 15-digit number derived from the latitude-longitude locations. No descriptive statements are given for ground-water-quality records; however, the well number, date of sampling, and other pertinent data are given in the table containing the chemical analyses of the ground water. The REMARK codes listed for surface-water-quality records are also applicable to ground-water-quality records.

ACCESS TO WATSTORE DATA

The National WATer Data STOrage and REtrieval System (WATSTORE) was established for handling water data collected through the activities of the U.S. Geological Survey and to provide for more effective and efficient means of releasing the data to the public. The system is operated and maintained on the central computer facilities of the Survey at its National Center in Reston, Virginia.

WATSTORE can provide a variety of useful products ranging from simple data tables to complex statistical analyses. A minimal fee, plus the actual computer costs incurred in producing a desired product, is charged to the requester. Information about the availability of specific types of data, the acquisition of data or products, and user charges can be obtained locally from each of the Water Resources Division's district offices (see address given on the back of the title page).

General inquiries about WATSTORE may be directed to:

Chief Hydrologist
U.S. Geological Survey
437 National Center
Reston, Virginia 22092

DEFINITION OF TERMS

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

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

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

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

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

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

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

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

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

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

Bed material See Bottom material.

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

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

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

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

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

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

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

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

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

Total in bottom material is the total 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".

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

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

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

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

Colloid is any substance with particles in such a fine state of subdivision dispersed in a medium, for example water, that they do not settle out; but not in so fine a state of subdivision that they can be said to be truly dissolved.

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

Confined aquifer is a term used to describe an aquifer containing water between two relatively impermeable boundaries. 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 (it can also be above ground level). Formerly called artesian aquifer.

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

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

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

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

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

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

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

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

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

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

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

Where *ni* 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. Diversity 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, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the river above the specified point. Figures of drainage area given herein include all closed basins, or noncontribution areas, within the area unless otherwise noted.

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

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

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

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate ($CaCO_3$).

High tide is the maximum tidal peak reached each day.

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

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

Low tide is the minimum tidal trough reached each day.

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

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

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

Micrograms per gram (µg/g) is a unit expressing the concentration of a chemical element as the mass (micrograms) of the element sorbed per unit mass (gram) of sediment.

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

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

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

Organic carbon (OC) is a measure of the organic matter present in aqueous solution and(or) suspension. May be reported in any of three categories (DOC, dissolved organic carbon; SOC, suspended organic carbon; TOC, total organic carbon).

Organism is any living entity, such as an insect, phytoplankter, or zooplankter.

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 meters (m^2), acres, or hectares. 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 milliliters (mL) or liters (L). Numbers of planktonic organisms can be expressed in these terms.

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

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

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

Particle size is the diameter, in millimeters (mm), of suspended sediment or bed material Particle size is the diameter, in millimeters (mm), of suspended sediment or bed material determined by either sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in distilled water (chemically dispersed).

Particle-size classification used in this report agrees with 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.....	.004 - .062	Sedimentation
Sand.....	.062 - 2.0	Sedimentation or sieve
Gravel.....	2.0 - 64.0	Sieve

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

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

Periphyton is the assemblage of algae, fungi, and bacteria which are attached to or live upon submerged objects in lakes and rivers.

Pesticides are chemical compounds used to control undesirable plants and animals. Major categories of pesticides include insecticides, miticides, fungicides, herbicides and rodenticides. Insecticides and herbicides, which control insects and plants respectively, are the two categories reported.

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

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

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

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

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

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.

Fire algae (Pyrrhophyta) are free-swimming unicells characterized by a red spot.

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

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

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.

Aroclor is the registered trade mark for a group of polychlorinated biphenyls which were manufactured by the Monsanto Company prior to 1976. Aroclors are assigned specific four-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 weight percent of the hydrogen substituted chlorine.

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

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

Milligrams of carbon per area or volume per unit time [mg C/(m^2.time)] for periphyton and macrophytes and [mg C/(m^3.time)] for phytoplankton are units for expressing primary productivity. They define the amount of carbon dioxide consumed as measured by radioactive carbon (carbon 14). The carbon 14 method is of greater sensitivity than the oxygen light and dark bottle method, and is preferred for use in unenriched waters. Unit time may be either the hour or day, depending on the incubation period.

Milligrams of oxygen per area or volume per unit time [mg O_2/(m^2.time)] for periphyton and macrophytes and [mg O_2/(m^3.time)] for phytoplankton are units for expressing primary productivity. They define production and respiration rates as estimated from changes in the measured dissolved oxygen concentration. The oxygen light and dark bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period.

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

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

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

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

Suspended-sediment discharge (tons/day) is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight or volume, that passes a section in a given time. It is computed by multiplying discharge times mg/L times 0.0027.

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

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

Solute is any substance derived from the atmosphere, vegetation, soil, or rocks that is dissolved in water.

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

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

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

Substrate is the physical surface upon which an organism lived.

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

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

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

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

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of the total concentration in a water-sediment mixture. The water-sediment mixture is associated with (or sorbed on) that material retained on a 0.45-micrometer filter.

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that is retained on a 0.45-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 precedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

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

Suspended, total is the total amount of a given constituent in the part of a water-suspended 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. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total".

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

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

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

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

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

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

Total load (tons) is the total quantity of any individual constituent, as measured by dry mass or volume, that is dissolved in a specific amount of water (discharge) during a given time. It is computed by multiplying the total discharge, times the mg/L of the constituent, times the factor 0.0027, times the number of days.

Total (as used in tables of chemical analyses):

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

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

Water table is the surface of a ground-water body at which the water is at atmospheric pressure. It is defined by the levels at which water stands in wells that penetrate the water body just far enough to hold standing water.

Water-table aquifer is an unconfined aquifer whose upper boundary is the water table.

Water year in Geological Survey reports dealing with surface-water supply is the 12-month period, October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 1980, is called the "1980 water year".

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

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

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

DISCONTINUED GAGING STATIONS

The following continuous-record streamflow or stage stations in eastern New York excluding Long Island have been discontinued or converted to partial-record stations. Daily streamflow or stage records were collected and published for the period of record shown for each station.

Station number	Station name	Drainage area (mi^2)	Period of record
	Housatonic River Basin		
01199420	Tenmile River near Wassaic, NY	120	1959-60
01199490	Swamp River near Dover Plains, NY	46.6	1961-68
01199500	Tenmile River at Dover Plains, NY	189	1902-04

Station number	Station name	Drainage area (mi^2)	Period of record
	Mianus River Basin		
01210000	Mianus River at Bedford, NY	10.4	1903-04
	Bryam River Basin		
01211500	West Branch Byram River near Port Chester, NY	11.2	1903-04
	Hudson River Basin		
01311900	Opalescent River below Flowedland near Tahawus, NY	9.02	1921-23
01312000	Hudson River near Newcomb, NY	192	1926-87
01313000	Cedar River near Indian Lake, NY	85.3	1911-18
01313500	Cedar River below Chain Lakes near Indian Lake, NY	160	1931-61
01314000	Hudson River at Gooley near Indian Lake, NY	419	1916-68
01316000	North Creek at North Creek, NY	21.9	1924-32
01317000	Schroon River at Riverbank, NY	527	1926-70
01317500	Schroon River at Warrensburg, NY	567	1896-1902
01318000	Hudson River at Thurman, NY	1,533	1907-20
01319000	East Branch Sacandaga River at Griffin, NY	114	1933-78
01319500	Sacandaga River at Wells, NY	260	1907-11
01320500	West Branch Sacandaga River at Blackbridge near Wells, NY	210	1911-16
01321500	West Stony Creek near Northville, NY	88.0	1933-37
01322000	East Stony Creek near Northville, NY	88.7	1933-37
01322500	Sacandaga River at Northville, NY	712	1907-11
01323000	Kennyetto Creek near Broadalbin, NY	28.3	1939-46
01326500	Hudson River at Spier Falls, NY	2,779	1899-1923
01327000	Glens Falls Feeder at Glens Falls, NY		1919-21 1924-25 1927-63
01327500	Glens Falls Feeder at Dunham Basin, NY		1945-80
01328000	Bond Creek at Dunham Basin, NY	14.7	1947-82
01329500	Batten Kill at Battenville, NY	394	1923-68
01330000	Glowegee Creek at West Milton, NY	26.0	1948-63
01335000	Hoosic River at Buskirk, NY	577	1904-09
01335500	Hudson River at Mechanicville, NY	4,500	1888-1956
01336500	Mohawk River at Ridge Mills near Rome, NY	155	1899-1901
01338500	Oriskany Creek at State Dam at Oriskany, NY	140	1899-1901
01339000	Sauquoit Creek at New York Mills, NY	47.2	1899-1900
01340000	Mohawk River at Utica, NY	510	1901-03
01340500	Reall Creek near Utica, NY	5.68	1901-05
01341000	Johnston Brook near Utica, NY	0.62	1903-05
01341500	Sylvan Glen Creek near New Hartford, NY	1.03	1903-07
01342000	Graefenburg Creek near New Hartford, NY	0.35	1903-07
01342500	Starch Factory Creek near New Hartford, NY	3.66	1903-07
01342730	Steele Creek at Ilion, NY	26.2	1967-68
01342800	West Canada Creek at Nobleboro, NY	193	1967-68
01343000	West Canada Creek at Wilmurt, NY	196	1909-15
01343500	West Canada Creek at Twin Rock Bridge near Hinckley, NY	360	1901-10
01344000	West Canada Creek at Hinckley, NY	375	1919-59
01344500	Ninemile Feeder near Holland Patent, NY		1919-68
01345000	West Canada Creek at Poland, NY	463	1913
01345500	West Canada Creek at Middleville, NY	522	1899-1901
01346500	Mohawk River at Little Falls, NY	1,288	1899-1914
01347500	East Canada Creek at Dolgeville, NY	258	1899-1913 1928-46
01349500	Cayadutta Creek near Johnstown, NY	38.4	1899-1900
01349858	Silver Lake Outlet at Hensonville, NY	6.66	1976-77
01350200	West Kill at North Blenheim, NY	44.6	1976-87
01350500	Schoharie Creek at Middleburg, NY	534	1906-18 1927-39
01351000	Fox Creek at West Berne, NY	67.2	1924-32 1962-68
01352000	Schoharie Creek near Fort Hunter, NY	900	1900-01
01355000	Alplaus Kill near Charlton, NY	23.7	1913-16
01356000	Mohawk River at Vischer Ferry Dam, NY	3,371	1899-1911 1913-19
01358400	Quacken Kill at Quacken Kill, NY	17.6	1893-95
01358500	Poesten Kill near Troy, NY	89.4	1923-68
01359150	Mill Creek near East Greenbush, NY	9.74	1975-77
01359500	Normans Kill at Frenchs Mill, NY	121	1891
01359513	Hunger Kill at Guilderland, NY	8.16	1967-77
01359519	Normans Kill near Westmere, NY	131	1968-79
01359528	Normans Kill at Albany, NY	168	1979-83
01359902	Coeymans Creek near Selkirk, NY	35.1	1967-77
01359918	Silver Creek at Dormansville, NY	2.90	1978-81
01359924	Hannicrois Creek near New Baltimore, NY	61.6	1968-77

Station number	Station name	Drainage area (mi^2)	Period of record
	Hudson River Basin--Continued		
01360000	Kinderhook Creek at Wilsons Dam near Garfield, NY	62.8	1893-95
01360500	Kinderhook Creek at East Nassau, NY	116	1892
01361000	Kinderhook Creek at Rossman, NY	329	1906-14, 1929-68
01361200	Claverack Creek at Claverack, NY	60.6	1960-68
01361500	Catskill Creek at Oak Hill, NY	98.0	1910-77
01361570	Tenmile Creek at Oak Hill, NY	35.3	1969-78
01362000	Catskill Creek at South Cairo, NY	270	1901-07
01362100	Roeliff Jansen Kill near Hillsdale, NY	27.4	1958-60
01363500	Esopus Creek near Olive Bridge, NY	239	1903-04, 1907-14
01364000	Esopus Creek at Kingston, NY	317	1901-09
01364800	Saw Kill at Red Hook, NY	20.9	1959-66
01365450	Chestnut Creek above Red Brook at Grahamsville, NY	12.2	1937-39
01365500	Chestnut Creek at Grahamsville, NY	20.9	1939-87
01366500	Rondout Creek near Lackawack, NY	100	1906-67
01366650	Sandburg Creek at Ellenville, NY	56.7	1957-77
01368000	Wallkill River near Unionville, NY	140	1938-81
01368500	Rutgers Creek at Gardnerville, NY	59.7	1943-68
01369000	Pochuck Creek near Pine Island, NY	98.0	1937-77
01369500	Quaker Creek at Florida, NY	9.69	1938-79
01370000	Wallkill River at Pellets Island Mountain, NY	385	1920-68
01370500	Wallkill River near Phillipsburg, NY	419	1937-59
01370600	Crystal Brook near Middletown, NY	8.4	1964-68
01372000	Wallkill River at New Paltz, NY	739	1901-04
01372040	Crum Elbow Creek at Hyde Park, NY	17.3	1959-62
01372065	Casper Creek near Wappingers Falls, NY	10.1	1969-76
01372100	East Branch Wappinger Creek near Clinton Corners, NY	33.6	1956-63
01372200	Wappinger Creek near Clinton Corners, NY	92.4	1956-76
01372300	Little Wappinger Creek at Salt Point, NY	32.9	1956-76
01372400	Great Spring Creek at Pleasant Valley, NY	15.5	1960-66
01372800	Fishkill Creek at Hopewell Junction, NY	57.3	1958-75
01372850	Whortlekill Creek at Hopewell Junction, NY	7.37	1959-68
01373500	Fishkill Creek at Beacon, NY	190	1945-68
01373600	Seely Brook near Chester, NY	12.8	1964-68
01373690	Woodbury Creek near Highland Mills, NY	11.2	1966-68
01374000	Foundry Brook near Cold Spring, NY	1.33	1903
01374420	Lake Tiorati Brook at Cedar Flats, NY	10.5	1960-63
01374440	Cedar Pond Brook at Stony Point, NY	17.4	1960-62
01374480	Minisceongo Creek at Thiells, NY	15.0	1960-63
01374990	Croton River at Old Croton Dam near Croton Heights, NY	354	1868-1906
01375500	Bird Brook near Croton, NY	0.40	1933-41
01376270	Sparkill Creek at Tappan, NY	4.90	1960-63, 1965-66
01376275	Sparkill Creek at Tappan Station, NY	9.50	1965-66
01376280	Sparkill Creek at Sparkill, NY	11.1	1960-68, 1976-78
	Hackensack River Basin		
01376600	Hackensack River at Brookside Park, NY	13.2	1960-63
01376850	Nauraushaun Brook at Nauraushaun, NY	5.89	1960-63
01376900	Hackensack River at Nauraushaun, NY	44.6	1960-62
01377200	Pascack Brook Tributary at Spring Valley, NY	4.19	1960-62
01377300	Pascack Brook at Pearl River, NY	9.83	1960-63
	Passaic River Basin		
01387250	Ramapo River at Sloatsburg, NY	60.1	1960-63
01387300	Stony Brook at Sloatsburg, NY	18.3	1960-62
01387480	Mahwah River at Suffern, NY	20.8	1959-62
01390200	Saddle River near Spring Valley, NY	2.46	1960-63
01390300	Pine Brook near Spring Valley, NY	2.17	1959-62
	Delaware River Basin		
01414000	Platte Kill at Dunraven, NY	35.0	1942-62
01415500	Terry Clove Kill near Pepacton, NY	13.6	1937-62
01416000	Fall Clove Kill near Pepacton, NY	11.3	1942-43
01416500	Coles Clove Kill near Pepacton, NY	28.0	1945-53
01418000	Beaver Kill near Turnwood, NY	40.8	1949-59
01418500	Beaver Kill at Craigie Clair, NY	81.9	1937-70
01419000	Willowemoc Creek at Debruce, NY	41.2	1949-52
01419500	Willowemoc Creek near Livingston Manor, NY	62.6	1937-70

Station number	Station name	Drainage area (mi^2)	Period of record
	Delaware River Basin--Continued		
01420000	Little Beaver Kill near Livingston Manor, NY	20.1	1924-81
01421500	East Branch Delaware River at Hancock, NY	839	1903-13
01422000	West Branch Delaware River at Delhi, NY	142	1937-70
01422500	Little Delaware River near Delhi, NY	49.7	1938-70
01422700	West Branch Delaware River near Hamden, NY	256	1959-67
01423500	Dryden Creek near Granton, NY	8.10	1952-67
01424000	Trout Creek near Rock Royal, NY	20.0	1952-67
01424500	Trout Creek at Cannonsville, NY	49.5	1941-63
01425500	Cold Spring Brook at China, NY	1.49	1935-68
01425642	Butler Brook at Deposit, NY	8.46	1976-77
01425675	Oquaga Creek near North Sanford, NY	4.69	1970-81
01426000	Oquaga Creek at Deposit, NY	67.6	1941-73
01427000	West Branch Delaware River at Hancock, NY	650	1903-13
01427405	Delaware River near Callicoon, NY	1,708	1967-75
01427500	Callicoon Creek at Callicoon, NY	110	1941-82
01428000	Tenmile River at Tusten, NY	45.6	1946-73
01433400	Mongaup River near Rio, NY	191	1909-13
01434500	Neversink River at Claryville, NY	61.9	1949-50
01435500	Neversink River at Halls Mills near Curry, NY	68.7	1938-49
01437000	Neversink River at Oakland Valley, NY	223	1928-73
	Streams tributary to Lake Ontario		
04249500	Salmon River near Redfield, NY	188	1911-14
04249910	Beaverdam Brook at Altmar, NY	14.6	1974-76
04250000	Orwell Brook near Altmar, NY	22.3	1911-16
04250500	Salmon River near Pulaski, NY	257	1901-14
04251000	Forestport Feeder near Boonville, NY		1915-33
04251500	Mill Creek Sluiceway at Boonville, NY		1934-40
04252000	Black River Canal (flowing south) near Boonville, NY		1916-80
04253000	Sugar River at Talcottsville, NY	43.1	1926-32 1967-68
04253500	Middle Branch Moose River at Old Forge, NY	55.0	1912-73
04254000	Middle Branch Moose River near McKeever, NY	151	1926-68
04254375	Panther Lake Outlet near Old Forge, NY	0.51	1978-82
04254500	Moose River at McKeever, NY	363	1923-70
04255000	Otter Creek near Glenfield, NY	64.5	1924-33
04255500	Independence River at Sperryville, NY	81.8	1928-42
04256460	Cranberry Pond Outlet near Big Moose, NY	0.60	1984-86
04256480	Woods Lake Tributary near Big Moose, NY	0.12	1980-81 1985-86
04256484	Woods Lake near Big Moose, NY	0.80	1979-82
04257000	Beaver River below Stillwater Dam, near Beaver River, NY	171	1909-87
04257500	Beaver River near Number Four, NY	225	1921-25
04257955	Beaver River near Croghan, NY		1901-03
04258500	Deer River at Copenhagen, NY	86.6	1930-57
04258700	Deer River at Deer River, NY	94.8	1957-68
04259500	Black River at Black River, NY	1,842	1897-1920
	Streams tributary to St. Lawrence River		
04261000	Oswegatchie River at Cranberry Lake, NY	140	1923-82
04261500	Oswegatchie River at Newton Falls, NY	170	1913-23
04263500	Oswegatchie River near Ogdensburg, NY	1,562	1903-17
04264050	St. Lawrence River near Waddington, NY	298,500	1978-86
04264100	Sucker Brook near Waddington, NY	25.6	1961-64
04264200	Little Sucker Brook at Waddington, NY	19.9	1959-60
04264300	Brandy Brook near Waddington, NY	27.0	1959-63
04264400	Middle Branch Grass River near Clare, NY	63.0	1959-60
04264500	North Branch Grass River near South Colton, NY	28.1	1925-32
04264700	North Branch Grass River near Clare, NY	46.3	1958-63
04264800	Plumb Brook at Russell, NY	35.3	1958-60
04265000	Grass River at Pyrites, NY	333	1924-77
04265100	Elm Creek near Hermon, NY	32.6	1959-68
04265200	Tanner Creek at Stellaville, NY	30.3	1958-60
04265300	Little River near Canton, NY	42.4	1958-60
04265400	Grannis Brook at Crary Mills, NY	20.9	1959-60
0426545290	Lost Brook near Raquette Lake, NY	17.0	1978-80
0426545295	Sagamore Lake Outlet near Raquette Lake, NY	19.1	1978-82
04265500	Raquette River near Coreys, NY	418	1908-13
04265605	Little Simon Pond Outlet near Tupper Lake, NY	2.95	1984-88
04266000	Bog River at mouth near Tupper Lake, NY	132	1908-12
04267000	Raquette River near South Colton, NY	927	1904-05
04267700	Parkhurst Brook near Potsdam, NY	16.8	1958-63
04267800	Trout Brook at Allen Corners, NY	54.2	1958-63

Station number	Station name	Drainage area (mi^2)	Period of record
	Streams tributary to St. Lawrence River--Continued		
04268200	Plum Brook near Grantville, NY	43.9	1959-63
04268300	Squeak Brook near Massena, NY	39.1	1958-60
04268390	St. Regis River near Paul Smiths, NY	22.0	1973-75
04268500	Raquette River at Massena Springs, NY	1,197	1904-17
04268600	East Branch St. Regis River near Meacham Lake, NY	52.2	1958-68
04268700	St. Regis River at St. Regis Falls, NY	234	1958-68
04268710	Lake Ozonia Outlet near St. Regis Falls, NY	28.3	1961-63
04268720	Hopkinton Brook at Hopkinton, NY	20.0	1961-62
04268800	West Branch St. Regis River near Parishville, NY	171	1959-68
04268900	Trout Brook at Stockholm Center, NY	42.4	1958-60
04269043	Deer River at North Lawrence, NY	78.0	1973-79
04269050	Allen Brook near Brasher Falls, NY	16.0	1961-66
04269100	Lawrence Brook near Moira, NY	25.7	1958-60
04269500	Deer River at Brasher Iron Works, NY	182	1912-16 1958-68
04270150	East Branch Deer Creek at Fort Covington Center, NY	23.9	1961-62
04270180	Farrington Brook near Moira, NY	17.7	1961-66
04270500	Chateaugay River near Chateaugay, NY	112	1909 1927-66
04270600	Little Trout River near Burke, NY	27.6	1961-63
04270700	Trout River at Trout River, NY	107	1960-66
04270800	English River near Mooers Forks, NY	40.8	1960-68
04271000	Great Chazy River at Mooers, NY	204	1908
04271500	Great Chazy River at Perry Mills, NY	247	1929-68
04272500	Saranac River near Saranac Lake, NY	146	1902-03
04273000	Saranac River at Saranac, NY	521	1931-43
04273700	Salmon River at South Plattsburgh, NY	61.9	1959-68
04273900	Lake Placid at Lake Placid, NY	20.1	1960-82
04274000	West Branch Ausable River near Lake Placid, NY	116	1928-68
04274500	Black Brook at Black Brook, NY	49.4	1925-61
04275500	Ausable River near Au Sable Forks, NY	448	1910-68
04276500	Bouquet River at Willsboro, NY	275	1924-68
04276895	West Brook at Lake George, NY	8.4	1980-83
04276920	English Brook at Lake George, NY	7.8	1980-83
04279000	La Chute at Ticonderoga, NY	234	1904-06 1943-79
04280500	Mettawee River at Grays Corner near Whitehall, NY		1909

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

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

The reports listed below are for sale by the U.S. Geological Survey, Books and Open-File Reports Section, Federal Center, Box 25425, Denver, Colorado 80225 (authorized agent of the Superintendent of Documents, Government Printing Office). Prepayment is required. Remittance should be sent by check or money order payable to the U.S. Geological Survey. Prices are not included because they are subject to change. Current prices can be obtained by writing to the above address. When ordering or inquiring about prices for any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations."

1-D1. *Water temperature--influential factors, field measurement, and data presentation*, by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.

1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W. W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.

2-D1. *Application of surface geophysics to ground-water investigations*, by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages.

2-D2. *Application of seismic-refraction techniques to hydrologic studies*, by F. P. Haeni: USGS--TWRI Book 2, Chapter D2. 1988. 86 pages.

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

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

3-A1. *General field and office procedures for indirect discharge measurements*, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.

3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.

3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.

3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages.

3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.

3-A6. *General procedure for gaging streams*, by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.

3-A7. *Stage measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3. Chapter A7. 1968. 28 pages.

3-A8. *Discharge measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.

3-A9. *Measurement of time of travel in streams by dye tracing*, by F. A. Kilpatrick and J. F. Wilson, Jr.: USGS--TWRI Book 3, Chapter A9. 1989. 27 pages.

3-A10. *Discharge ratings at gaging stations*, by E. J. Kennedy: USGS--TWRI Book 3, Chapter A10. 1984. 59 pages.

3-A11. *Measurement of discharge by moving-boat method*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.

3-A12. *Fluorometric procedures for dye tracing*, by J. F. Wilson, Jr., E. D. Cobb, and F. A. Kilpatrick: USGS--TWRI Book 3, Chapter A12. 1986. 41 pages.

3-A13. *Computation of continuous records of streamflow*, by E. J. Kennedy: USGS--TWRI Book 3, Chapter A13. 1983. 53 pages.

3-A14. *Use of flumes in measuring discharge*, by F. A. Kilpatrick and V. R. Schneider: USGS--TWRI Book 3, Chapter A14. 1983. 46 pages.

3-A15. *Computation of water-surface profiles in open channels*, by Jacob Davidian: USGS--TWRI Book 3, Chapter A15. 1984. 48 pages.

3-A16. *Measurement of discharge using tracers*, by F. A. Kilpatrick and E. D. Cobb: USGS--TWRI Book 3, Chapter A16. 1985. 52 pages.

3-A17. *Acoustic velocity meter systems*, by Antonius Laenen: USGS--TWRI Book 3, Chapter A17. 1985. 38 pages.

3-A18. *Determination of stream reaeration coefficients by use of tracers*, by F. A. Kilpatrick, R. E. Rathbun, N. Yotsukura, G. W. Parker, and L. L. DeLong: USGS--TWRI Book 3, Chapter A18. 1989. 52 pages.

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS--Continued

3-B1. *Aquifer-test design, observation, and data analysis*, by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages.

3-B2. *Introduction to ground-water hydraulics, a programmed text for self-instruction*, by G. D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages.

3-B3. *Type curves for selected problems of flow to wells in confined aquifers*, by J. E. Reed: USGS--TWRI Book 3, Chapter B3. 1980. 106 pages.

3-B5. *Definition of boundary and initial conditions in the analysis of saturated ground-water flow systems--An introduction*, by O. L. Franke, T. E. Reilly, and G. D. Bennett: USGS--TWRI Book 3, Chapter B5. 1987. 15 pages.

3-B6. *The principle of superposition and its application in ground-water hydraulics*, by T. E. Reilly, O. L. Franke, and G. D. Bennett: USGS--TWRI Book 3, Chapter B6. 1987. 28 pages.

3-C1. *Fluvial sediment concepts*, by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages.

3-C2. *Field methods for measurement of fluvial sediment*, by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 pages.

3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages.

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

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

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

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

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

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

5-A1. *Methods for determination of inorganic substances in water and fluvial sediments*, by M. J. Fishman and L. C. Friedman: USGS--TWRI Book 5, Chapter A1. 1989. 545 pages.

5-A2. *Determination of minor elements in water by emission spectroscopy*, by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages.

5-A3. *Methods for the determination of organic substances in water and fluvial sediments*, edited by R. L. Wershaw, M. J. Fishman, R. R. Grabbe, and L. E. Lowe: USGS--TWRI Book 5, Chapter A3. 1987. 80 pages.

5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples*, by L. J. Britton and P. E. Greeson, editors: USGS--TWRI Book 5, Chapter A4. 1989. 363 pages.

5-A5. *Methods for determination of radioactive substances in water and fluvial sediments*, by L. L. Thatcher, V. J. Janzer, and K. W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages.

5-A6. *Quality assurance practices for the chemical and biological analyses of water and fluvial sediments*, by L. C. Friedman and D. E. Erdmann: USGS--TWRI Book 5, Chapter A6. 1982. 181 pages.

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

6-A1. *A modular three-dimensional finite-difference ground-water flow model*, by M. G. McDonald and A. W. Harbaugh: USGS--TWRI Book 6, Chapter A1. 1988. 586 pages.

7-C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments*, by P. C. Trescott, G. F. Pinder, and S. P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages.

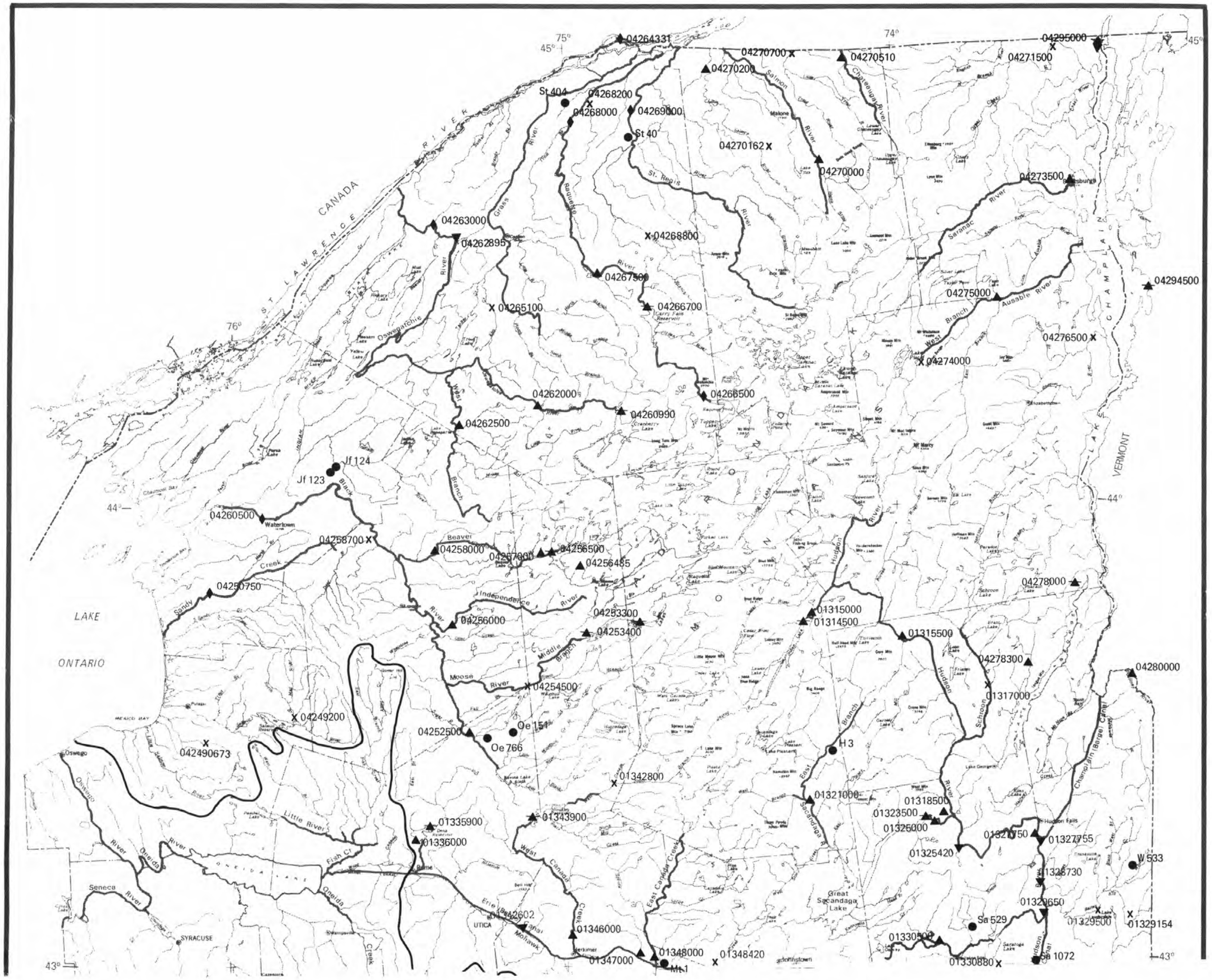
7-C2. *Computer model of two-dimensional solute transport and dispersion in ground water*, by L. F. Konikow and J. D. Bredehoeft: USGS--TWRI Book 7, Chapter C2. 1978. 90 pages.

7-C3. *A model for simulation of flow in singular and interconnected channels*, by R. W. Schaffrannek, R. A. Baltzer, and D. E. Goldberg: USGS--TWRI Book 7, Chapter C3. 1981. 110 pages.

8-A1. *Methods of measuring water levels in deep wells*, by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages.

8-A2. *Installation and service manual for U.S. Geological Survey manometers*, by J. D. Craig: USGS--TWRI Book 8, Chapter A2. 1983. 57 pages.

8-B2. *Calibration and maintenance of vertical-axis type current meters*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.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Sa 1072
Oswego
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UTICA
Herkimer
Malone
Great Sacandaga Lake
ONEIDA LAKE
Grass River
Raquette River
St. Regis River
Salmon River
Chateaugay River
Saranac River
Ausable River
West Branch
Oswegatchie River
West Branch
Black River
Beaver River
Independence River
Moose River
Middle Branch
Sandy Creek
Little River
Oneida River
Oswego River
Seneca River
Fish Cr
Oneida Creek
Erie Canal
Mohawk
West Canada Creek
East Canada Creek
Hudson River
Schroon River
East Branch Sacandaga
Champlain (Barge) Canal
Hudson Falls
Hudson River Canal

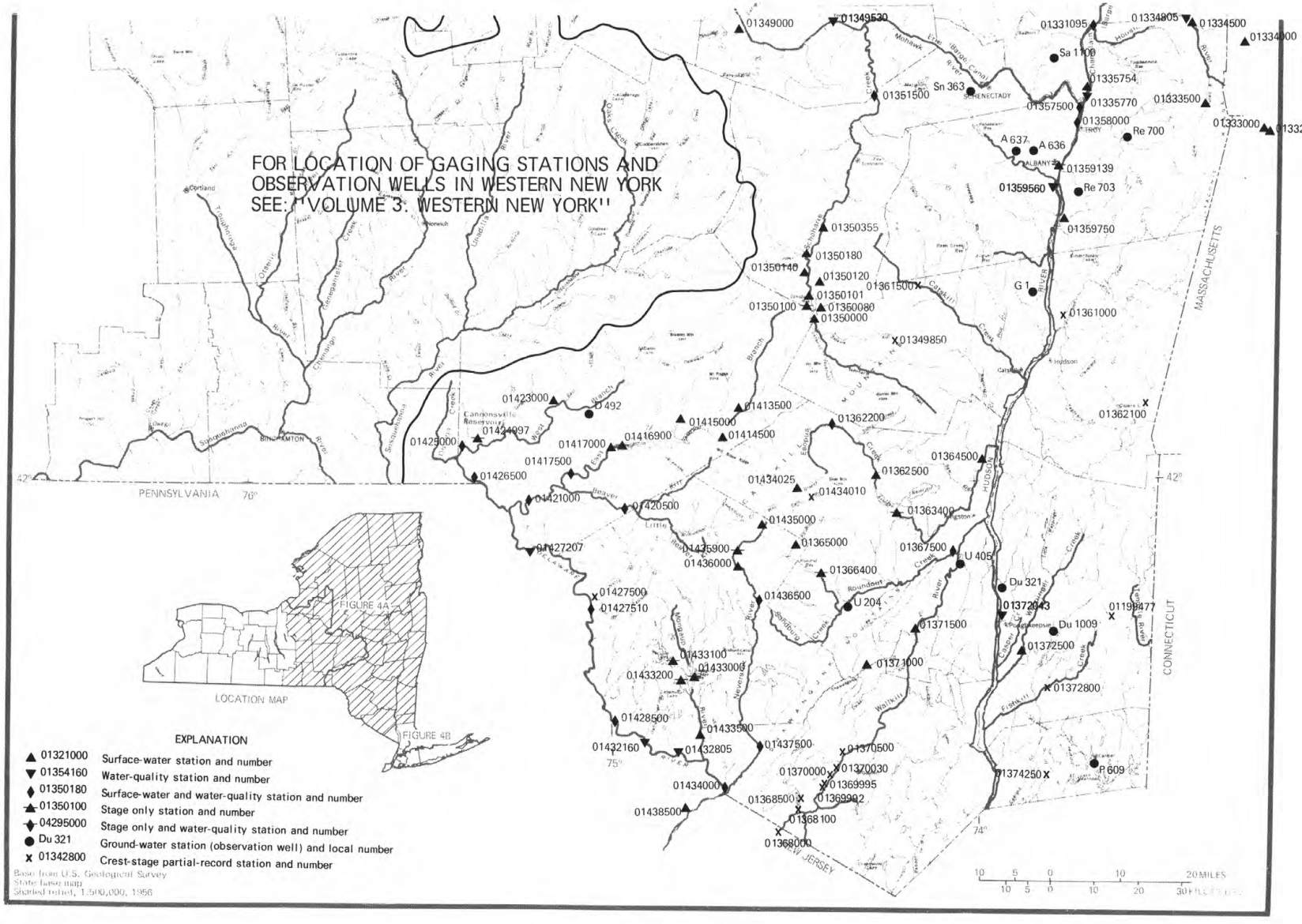


FIGURE 7A-- LOCATION OF GAGING STATIONS AND OBSERVATION WELLS

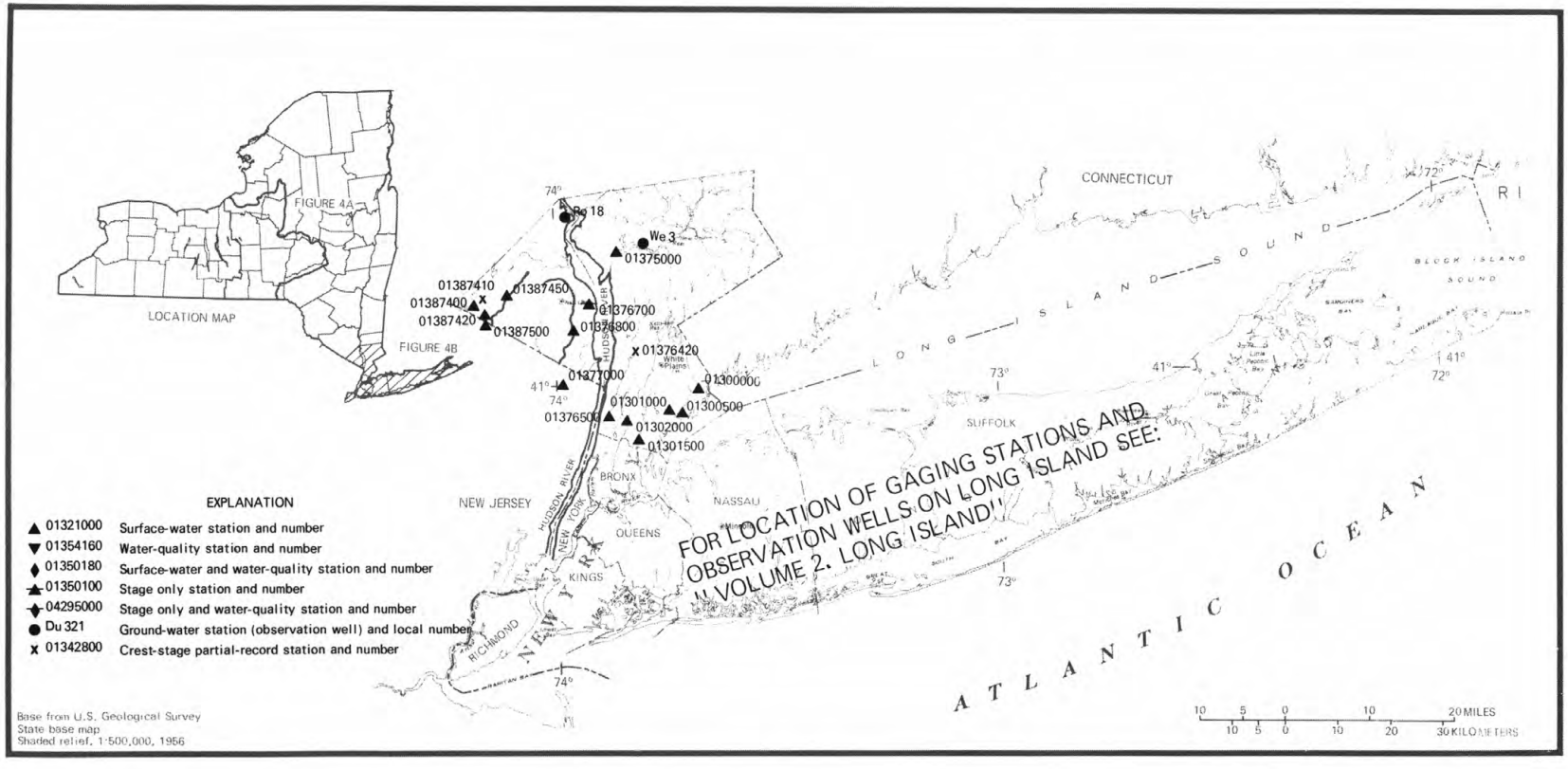


FIGURE 7B-- LOCATION OF GAGING STATIONS AND OBSERVATION WELLS

BLIND BROOK BASIN

01300000 BLIND BROOK AT RYE, NY

LOCATION.--Lat 40°59'00", long 73°41'14", Westchester County, Hydrologic Unit 02030102, on left bank at Rye, just upstream from bridge on Theodore Fremd Avenue, 0.25 mi southwest of Penn Central Transportation Co. railroad station, and 0.85 mi upstream from mean high tide in Milton Harbor.

DRAINAGE AREA.--9.20 mi^2.

PERIOD OF RECORD.--November 1943 to September 1989 (discontinued).

GAGE.--Water-stage recorder, crest stage gage, and concrete control. Datum of gage is 13.05 ft above National Geodetic Vertical Datum of 1929 (levels by City of Rye).

REMARKS.--Records fair. Medium and high flows affected by detention reservoir 2 mi upstream (capacity, about 26 acre-ft at spillway level or 50 acre-ft at crest of concrete dam). Radio gage-height telemeter at station.

AVERAGE DISCHARGE.--45 years (water years 1945-89), 15.7 ft^3/s, 23.17 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,320 ft^3/s, June 19, 1972, gage height, 12.44 ft, from floodmark in gage house, from rating curve extended above 800 ft^3/s on basis of computation of peak flow through culvert; minimum discharge, 0.12 ft^3/s, July 5, 1953, gage height, 0.80 ft, result of temporary regulation.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 406 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	1730	438	4.40	June 10	0215	407	4.22
May 17	0515	*980	*6.90				

Minimum discharge, 1.4 ft^3/s, Sept. 13, gage height, 1.00 ft.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	*1.8	48	17	8.1	10	11	51	18	14	5.5	11	3.1
2	3.9	49	15	8.0	9.4	11	23	160	13	5.0	4.9	2.8
3	9.7	14	14	8.1	12	10	25	35	11	4.7	5.4	2.5
4	3.5	7.4	12	7.5	11	10	24	21	9.7	4.2	4.6	2.4
5	2.4	20	11	5.6	8.5	11	28	27	8.9	40	3.5	2.4
6	2.0	36	11	5.6	8.1	16	61	134	13	18	2.8	2.3
7	2.4	11	10	5.9	8.2	12	33	33	14	9.0	2.7	2.4
8	19	8.2	9.6	14	7.7	9.2	41	22	17	6.7	2.7	2.2
9	6.4	7.1	9.1	17	6.9	10	27	19	55	5.4	2.2	2.1
10	3.9	6.1	8.7	9.9	6.0	11	22	61	161	6.6	2.1	2.1
11	3.1	6.4	8.2	8.2	6.0	10	18	142	24	5.7	45	2.0
12	2.6	5.9	6.6	22	5.9	11	16	40	16	4.1	184	1.8
13	2.3	25	6.3	28	5.7	9.8	15	27	44	3.8	43	1.6
14	2.1	18	7.0	12	15	9.1	16	22	22	4.0	22	29
15	2.2	9.5	7.5	33	17	9.4	24	19	42	3.5	18	26
16	2.0	7.5	7.3	17	22	8.8	92	237	36	4.3	18	7.6
17	2.0	50	6.4	12	11	6.2	29	504	28	34	18	12
18	2.3	19	5.9	11	9.0	13	21	63	18	8.8	9.5	6.4
19	2.2	11	5.7	12	8.2	19	19	39	14	5.7	8.0	35
20	2.0	226	5.6	11	7.9	11	16	30	12	17	8.8	31
21	2.8	107	7.7	9.2	106	23	15	24	13	23	7.5	33
22	67	27	9.3	7.4	62	15	13	20	13	8.7	6.3	12
23	9.8	20	10	7.6	29	11	12	30	12	6.9	5.5	8.8
24	5.5	16	19	7.8	18	68	11	205	12	5.3	4.8	7.2
25	4.0	14	23	7.8	14	112	11	53	9.5	4.4	4.3	6.2
26	3.5	13	11	10	13	27	10	31	9.4	3.9	3.9	23
27	3.3	13	8.5	17	14	20	10	27	19	6.3	3.6	11
28	3.2	121	16	10	13	17	9.6	23	8.9	12	3.5	7.4
29	2.8	33	20	8.8	---	16	9.1	18	8.2	5.9	5.6	6.5
30	2.6	20	11	14	---	23	42	16	6.4	4.1	4.6	6.0
31	3.3	---	9.3	13	---	80	---	15	---	4.9	3.6	---
TOTAL	185.6	969.1	328.7	368.5	464.5	630.5	743.7	2115	684.0	281.4	469.4	297.8
MEAN	5.99	32.3	10.6	11.9	16.6	20.3	24.8	68.2	22.8	9.08	15.1	9.93
MAX	67	226	23	33	106	112	92	504	161	40	184	35
MIN	1.8	5.9	5.6	5.6	5.7	6.2	9.1	15	6.4	3.5	2.1	1.6
CFSM	.65	3.51	1.15	1.29	1.80	2.21	2.69	7.42	2.48	.99	1.65	1.08
IN.	.75	3.92	1.33	1.49	1.88	2.55	3.01	8.55	2.77	1.14	1.90	1.20

CAL YR 1988 TOTAL 5010.7 MEAN 13.7 MAX 226 MIN 1.2 CFSM 1.49 IN. 20.26
WTR YR 1989 TOTAL 7538.2 MEAN 20.7 MAX 504 MIN 1.6 CFSM 2.24 IN. 30.48

BEAVER SWAMP BROOK BASIN

01300500 BEAVER SWAMP BROOK AT MAMARONECK, NY

LOCATION.--Lat 40°57'21", long 73°43'07", Westchester County, Hydrologic Unit 02030102, on right bank just downstream from bridge on Short Street, in Mamaroneck, 0.2 mi downstream from Brentwood Brook, and 0.2 mi upstream from tidal barrier in Guion Creek, Mamaroneck Harbor.

DRAINAGE AREA.--4.71 mi^2.

PERIOD OF RECORD.--November 1943 to September 1989 (discontinued). Prior to October 1967, published as "near Harrison

GAGE.--Water-stage recorder and concrete control. Datum of gage is 24.99 ft above National Geodetic Vertical Datum of 1929. Prior to June 8, 1946, nonrecording gage at same site and datum.

REMARKS.--Records fair. Flow affected by natural storage in swampy areas upstream from station. Several measurements of water temperature were made during the year. Radio gage-height telemeter at station.

AVERAGE DISCHARGE.--45 years (water years 1945-89), 6.51 ft^3/s, 18.77 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 288 ft^3/s, Jan. 21, 1979, gage height, 4.28 ft; minimum, no flow at times during 1944, 1953, 1959, 1964, 1965, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 86 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	2100	106	2.01	June 9	2245	93	1.86
May 17	0830	*184	*2.98	Aug. 12	1500	96	1.89
May 24	0245	101	1.95				

Minimum discharge, 0.50 ft^3/s, Oct. 1, 2, Aug. 9, 10, 11.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.53	15	8.3	2.7	4.0	5.9	20	7.7	5.3	1.8	1.9	1.3
2	2.2	16	7.0	2.7	3.4	5.4	11	45	4.5	1.6	1.4	1.3
3	2.6	4.6	6.4	2.5	4.6	5.1	11	21	3.6	1.4	1.5	1.0
4	1.1	2.7	5.8	e2.2	3.8	4.9	10	9.7	3.2	1.4	1.1	.86
5	.92	5.1	5.3	2.0	3.2	5.2	11	10	2.9	16	.88	.95
6	.79	7.2	5.0	1.6	3.1	7.0	20	27	8.4	9.6	.69	1.1
7	1.3	3.8	4.8	1.8	3.0	5.3	14	14	9.7	3.5	.71	1.0
8	7.1	2.6	4.3	5.5	2.6	4.6	16	9.0	7.5	2.6	.73	.89
9	2.4	2.2	3.9	5.6	2.1	4.5	12	7.3	23	2.0	.61	.85
10	1.5	2.1	3.6	3.2	1.9	4.5	9.4	18	67	3.6	.53	.85
11	1.2	1.9	3.4	2.6	1.8	4.1	7.9	41	19	7.6	23	.70
12	1.3	1.6	3.2	8.6	1.7	4.2	7.0	19	9.1	2.4	53	.65
13	.96	5.4	e3.1	9.8	1.6	4.2	6.7	12	26	1.9	36	.64
14	.89	4.7	3.0	4.4	5.1	3.7	6.4	9.3	12	1.6	12	13
15	.78	2.7	3.0	12	5.5	3.7	11	7.8	16	1.3	9.5	13
16	.78	2.1	2.8	6.4	6.5	3.4	36	55	14	1.9	11	4.5
17	.78	12	2.4	4.4	3.7	3.3	19	163	11	16	12	6.3
18	.85	7.6	2.3	3.7	3.0	8.6	12	73	7.8	4.4	5.0	3.0
19	.78	4.0	2.1	4.4	2.4	8.7	9.8	24	5.9	2.5	3.8	13
20	.67	56	2.2	3.6	2.2	5.9	6.7	16	4.9	7.2	3.6	16
21	1.6	62	3.4	3.1	30	9.9	5.8	12	6.7	13	4.8	16
22	20	20	3.2	2.6	30	6.5	5.0	9.5	5.1	4.2	4.7	6.4
23	4.8	11	4.7	2.6	15	5.2	4.4	14	4.2	2.8	2.5	4.2
24	2.1	9.0	7.0	2.6	9.8	22	4.1	79	4.0	2.2	2.0	3.2
25	1.6	7.4	7.4	2.4	7.7	42	3.9	39	3.4	1.6	1.6	2.7
26	1.3	6.5	4.5	3.1	7.0	16	3.7	16	3.5	1.2	1.4	11
27	1.2	6.7	3.6	4.0	6.9	9.9	3.5	12	3.8	1.5	1.4	5.3
28	1.1	34	7.4	2.8	6.4	8.2	3.4	8.5	3.1	1.9	1.2	3.2
29	1.0	18	6.8	2.6	---	6.9	3.3	5.8	2.8	1.3	5.7	2.8
30	.86	10	4.0	6.1	---	10	8.4	5.2	2.1	1.1	4.8	2.4
31	.71	---	3.1	5.2	---	22	---	5.0	---	2.0	1.8	---
TOTAL	65.70	343.9	137.0	126.8	178.0	260.8	302.4	794.8	299.5	123.1	210.85	138.09
MEAN	2.12	11.5	4.42	4.09	6.36	8.41	10.1	25.6	9.98	3.97	6.80	4.60
MAX	20	62	8.3	12	30	42	36	163	67	16	53	16
MIN	.53	1.6	2.1	1.6	1.6	3.3	3.3	5.0	2.1	1.1	.53	.64
CFSM	.45	2.43	.94	.87	1.35	1.79	2.14	5.44	2.12	.84	1.44	.98
IN.	.52	2.72	1.08	1.00	1.41	2.06	2.39	6.28	2.37	.97	1.67	1.09

CAL YR 1988 TOTAL 2030.72 MEAN 5.55 MAX 62 MIN .33 CFSM 1.18 IN. 16.04
WTR YR 1989 TOTAL 2980.94 MEAN 8.17 MAX 163 MIN .53 CFSM 1.73 IN. 23.54

e Estimated

MAMARONECK RIVER BASIN

01301000 MAMARONECK RIVER AT MAMARONECK, NY

LOCATION.--Lat 40°57'14", long 73°44'06", Westchester County, Hydrologic Unit 02030102, on left bank in Mamaroneck, 113 ft downstream from bridge on Halstead Avenue, 700 ft downstream from Sheldrake River, and 0.3 mi upstream from mean high tide in Mamaroneck Harbor.

DRAINAGE AREA.--23.4 mi^2.

PERIOD OF RECORD.--November 1943 to July 1953, September 1954 to September 1989 (discontinued).

REVISED RECORDS.--WSP 1502: 1944(M), 1951(M). WDR NY-76-1; 1972(M), 1973(M), 1974(M), 1975(M).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 11.46 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 10, 1954, water-stage recorder at same site at datum 0.41 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Storage in former water-supply reservoir on Mamaroneck River, effect unknown. Radio gage-height telemeter at station.

AVERAGE DISCHARGE.--43 years (water years 1945-52, 1955-89), 35.9 ft^3/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,700 ft^3/s, Sept. 26, 1975, gage height, 10.15 ft, from rating curve extended above 2,000 ft^3/s on basis of flow-through-culvert measurement of peak flow at 10.15 ft; minimum discharge, 0.06 ft^3/s, Sept. 30, 1965; minimum daily, 0.10 ft^3/s, Sept. 29, 30, 1965; minimum gage height since Sept. 9, 1954, 0.10 ft, July 21, 22, Aug. 18, 19, 1957, Aug. 14, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Backwater from hurricane wave reached a stage of about 11.5 ft, present datum, Sept. 21, 1938, from information by officials of village of Mamaroneck.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,470 ft^3/s, May 17, gage height, 5.01 ft; minimum, 3.1 ft^3/s, Oct. 21, gage height, 0.30 ft; minimum daily, 3.8 ft^3/s, Oct. 20.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	94	66	17	32	27	114	42	39	14	30	7.5
2	7.3	73	38	17	19	24	68	267	32	13	10	7.2
3	25	23	33	16	25	23	65	109	26	12	11	6.4
4	6.4	15	28	e15	25	22	60	62	25	12	8.7	5.8
5	4.7	28	25	e14	21	23	69	70	22	118	7.5	5.6
6	4.2	54	24	12	18	36	124	237	35	62	6.8	5.8
7	5.3	20	23	13	18	30	86	95	38	23	6.2	5.8
8	44	15	21	34	17	26	96	68	51	17	6.1	5.4
9	23	13	20	32	15	26	76	56	119	13	5.3	5.3
10	22	12	19	19	12	21	65	142	325	12	4.9	5.0
11	6.7	19	18	17	13	20	57	284	81	38	113	4.7
12	5.4	40	e17	47	13	20	51	124	52	11	466	4.3
13	4.6	75	15	61	12	19	49	82	107	10	145	4.1
14	4.3	48	16	36	35	18	50	68	62	10	88	53
15	4.1	18	17	65	48	19	63	59	94	9.1	83	47
16	4.1	15	15	34	55	26	183	364	82	10	55	17
17	4.0	92	14	28	23	25	82	874	75	82	50	40
18	4.1	39	13	32	18	41	62	215	49	19	26	13
19	4.0	24	12	30	17	40	52	148	38	13	32	68
20	3.8	366	12	37	16	24	44	113	29	31	21	89
21	8.5	231	17	30	174	56	40	101	39	69	18	109
22	148	78	18	e17	125	38	36	67	31	21	22	69
23	33	56	23	17	81	32	33	78	27	14	13	27
24	16	59	37	18	67	126	31	317	28	13	11	15
25	9.3	39	49	27	e50	204	30	122	23	10	10	12
26	7.4	64	28	26	46	80	28	82	21	11	22	54
27	6.6	61	22	39	34	63	27	89	34	15	24	21
28	6.5	232	47	20	30	55	25	60	19	25	10	14
29	6.6	104	48	18	---	50	25	47	18	10	22	12
30	5.7	80	29	31	---	62	89	41	15	8.5	17	11
31	5.4	---	19	30	---	148	---	39	---	9.5	8.9	---
TOTAL	459.0	2087	783	849	1059	1424	1880	4522	1636	735.1	1353.4	743.9
MEAN	14.8	69.6	25.3	27.4	37.8	45.9	62.7	146	54.5	23.7	43.7	24.8
MAX	148	366	66	65	174	204	183	874	325	118	466	109
MIN	3.8	12	12	12	12	18	25	39	15	8.5	4.9	4.1

CAL YR 1988 TOTAL 11857.7 MEAN 32.4 MAX 366 MIN 3.1
WTR YR 1989 TOTAL 17531.4 MEAN 48.0 MAX 874 MIN 3.8

e Estimated

HUTCHINSON RIVER BASIN

01301500 HUTCHINSON RIVER AT PELHAM, NY

LOCATION.--Lat 40°54'41", long 73°48'55", Westchester County, Hydrologic Unit 02030102, on right bank in Pelham, just upstream from Penn Central Transportation Co. bridge, 100 ft downstream from Pelham Lake, and 1.5 mi west of New Rochelle.

DRAINAGE AREA.--5.76 mi^2.

PERIOD OF RECORD.--November 1943 to September 1989 (discontinued).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 12.92 ft above National Geodetic Vertical Datum of 1929 (levels by county of Westchester).

REMARKS.--Records fair. Flow controlled by Pelham Lake and three reservoirs upstream from station. Radio gage-height telemeter at station.

AVERAGE DISCHARGE.--45 years, 7.17 ft^3/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 526 ft^3/s, Aug. 28, 1971, gage height, 5.18 ft, from rating curve extended above 260 ft^3/s; maximum gage height, 5.38 ft, Jan. 21, 1979; minimum, 0.01 ft^3/s, July 27, 1957; minimum gage height, 1.86 ft, Aug. 2, 5, 1955; minimum daily discharge, 0.02 ft^3/s, Aug. 2-6, 1955, July 26, 27, 1957, Oct. 26-30, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 236 ft^3/s, Aug. 12, gage height, 5.12 ft; minimum, 0.48 ft^3/s, Oct. 1, gage height, 2.11 ft; minimum daily, 0.64 ft^3/s, Oct. 1.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.64	17	6.6	3.2	3.7	4.0	21	14	8.0	2.7	1.7	3.3
2	3.1	27	5.4	3.0	3.0	3.6	11	53	7.3	2.5	1.5	2.1
3	6.1	8.8	5.0	2.8	3.9	3.3	9.8	23	5.7	2.2	1.6	1.7
4	4.3	4.6	4.5	e2.4	3.4	3.1	9.2	9.8	4.6	2.3	1.4	1.5
5	2.6	7.0	4.4	e2.3	3.0	3.5	12	12	4.0	35	1.3	1.4
6	1.7	8.7	3.7	2.3	2.8	6.1	19	32	9.8	30	1.3	2.5
7	1.6	6.2	3.5	2.5	2.5	5.0	13	16	11	12	1.3	1.2
8	14	4.0	3.7	7.0	2.2	3.7	15	8.8	11	7.0	1.2	1.2
9	6.9	5.8	3.6	7.2	2.0	3.3	12	6.7	32	4.3	1.2	1.0
10	3.6	3.7	3.2	4.8	1.9	3.1	9.2	23	85	7.9	1.0	.97
11	2.5	2.6	3.0	3.5	1.8	2.9	7.6	47	21	7.8	24	.94
12	1.8	1.9	2.8	9.9	1.7	2.9	6.5	19	9.9	3.9	111	.87
13	1.4	7.9	2.9	10	1.6	2.7	6.4	11	29	2.8	45	.90
14	1.1	10	2.9	5.9	5.1	2.7	6.2	8.5	14	2.4	25	14
15	.91	6.6	3.1	12	7.0	2.8	13	7.3	14	2.2	20	14
16	.78	4.4	2.9	7.4	7.3	2.7	36	73	18	3.4	17	8.6
17	.77	19	2.6	4.9	4.7	2.6	16	158	19	22	9.4	11
18	1.0	15	2.5	4.0	3.4	9.8	10	43	11	9.4	6.1	5.2
19	.98	6.9	2.5	4.4	2.8	11	8.1	21	7.3	5.0	4.9	19
20	.82	77	2.8	3.7	2.4	5.9	6.6	14	6.0	12	4.3	29
21	1.2	55	4.1	3.2	32	8.7	5.9	11	17	15	4.4	31
22	32	15	3.7	2.6	29	6.2	5.3	9.6	9.1	8.2	3.8	11
23	12	8.2	6.3	2.3	14	4.2	5.2	15	6.3	4.9	3.2	6.3
24	5.3	5.5	8.6	2.3	7.6	25	4.6	44	5.8	3.4	2.5	4.2
25	3.0	5.1	8.4	2.2	5.4	47	4.4	22	4.8	2.7	2.0	2.7
26	1.9	4.8	5.5	3.1	4.6	17	4.3	12	5.9	2.3	1.8	12
27	1.3	5.3	4.0	3.7	4.7	10	4.0	11	6.4	2.1	1.6	6.8
28	1.1	42	8.0	3.3	4.4	7.9	3.8	9.3	5.3	2.4	1.5	4.4
29	1.3	19	8.5	2.7	---	7.2	3.9	7.2	4.1	2.5	12	3.2
30	1.1	9.4	5.5	6.0	---	12	16	6.2	3.1	1.9	12	2.5
31	.87	---	3.9	4.8	---	30	---	6.1	---	2.0	5.6	---
TOTAL	117.67	413.4	138.1	139.4	167.9	259.9	305.0	753.5	395.4	224.2	330.6	204.48
MEAN	3.80	13.8	4.45	4.50	6.00	8.38	10.2	24.3	13.2	7.23	10.7	6.82
MAX	32	77	8.6	12	32	47	36	158	85	35	111	31
MIN	.64	1.9	2.5	2.2	1.6	2.6	3.8	6.1	3.1	1.9	1.0	.87

CAL YR 1988 TOTAL 2567.71 MEAN 7.02 MAX 77 MIN .56
WTR YR 1989 TOTAL 3449.55 MEAN 9.45 MAX 158 MIN .64

e Estimated

BRONX RIVER BASIN

01302000 BRONX RIVER AT BRONXVILLE, NY

LOCATION.--Lat 40°56'09", long 73°50'10", Westchester County, Hydrologic Unit 02030102, on right bank in Bronxville, just upstream from Penn Central Transportation Co. bridge, and 800 ft downstream from Grassy Sprain Brook.

DRAINAGE AREA.--26.5 mi^2, not including 18.1 mi^2, from which the entire flow is diverted for municipal water supply and drainage purposes.

PERIOD OF RECORD.--November 1943 to September 1989 (discontinued).

REVISED RECORDS.--WSP 1382: Drainage area. WDR NY-71-1: 1961-67(P), 1968(M), 1970(M). WDR NY-72-1: 1969(M).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 73.74 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records fair. Diversions from 18.1 mi^2 for municipal water supply and flood control use. Included in these diversions is drainage from 12.8 mi^2 from Kensico Reservoir for City of New York, 4.58 mi^2 from Grassy Sprain Reservoir for Yonkers, 0.67 mi^2 from White Plains Reservoirs 1 and 2 for White Plains, and 0.1 mi^2 for flood control from outflow from Grassy Sprain Reservoir. Radio gage-height telemeter at station.

AVERAGE DISCHARGE.--45 years (water years 1945-89), 42.7 ft^3/s, 21.88 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,500 ft^3/s, June 19, 1972, gage height, 9.63 ft from rating curve extended above 1,600 ft^3/s on basis of flow through culvert computation of peak flow; minimum discharge, 1.0 ft^3/s, Sept. 10, 1944, gage height, 0.14 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 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	1530	747	4.38	July 5	1645	664	4.04
May 17	0645	*1,180	*6.03	Aug. 12	0815	641	3.94
June 9	2345	664	4.04				

Minimum discharge, 6.6 ft^3/s, Oct. 7, 19, gage height, 0.39 ft.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.5	139	52	23	25	32	127	56	68	27	32	17
2	17	81	45	23	23	31	77	279	59	25	17	17
3	29	23	42	22	32	31	82	100	49	24	20	16
4	8.9	17	39	21	26	34	76	68	45	23	16	15
5	7.8	53	34	18	22	37	104	92	42	215	15	15
6	7.1	60	33	20	22	53	156	243	57	100	14	15
7	8.5	22	32	22	22	35	108	102	64	47	16	15
8	58	17	30	50	20	28	106	79	92	36	17	15
9	14	16	29	39	19	28	83	70	153	29	14	16
10	10	15	27	26	18	27	71	187	257	38	13	15
11	8.7	15	26	23	18	27	71	285	81	58	148	14
12	7.7	14	24	62	18	27	57	131	59	26	384	14
13	7.5	74	23	62	17	26	56	103	133	24	140	14
14	7.5	39	24	32	41	25	58	89	72	27	103	79
15	7.6	20	24	83	42	28	84	80	118	24	105	63
16	8.0	17	23	41	49	33	186	424	124	26	69	29
17	7.5	121	21	32	27	24	86	782	90	100	62	48
18	7.5	41	20	29	23	67	71	270	64	33	35	22
19	6.9	26	20	36	22	56	64	184	53	26	36	104
20	7.0	379	20	29	21	30	56	149	48	67	32	125
21	15	251	27	25	188	62	52	127	78	72	29	115
22	173	87	26	23	127	37	49	108	52	30	34	41
23	22	60	36	24	70	31	45	117	44	27	25	32
24	15	48	53	23	48	147	44	314	50	23	22	27
25	12	41	51	23	39	192	42	149	39	24	20	22
26	11	36	28	28	37	78	40	106	41	21	19	77
27	10	39	24	38	39	62	39	104	57	21	18	33
28	10	283	52	25	35	62	37	87	38	26	18	23
29	10	93	46	24	---	57	38	74	33	18	33	21
30	9.7	63	27	41	---	85	111	70	28	16	23	20
31	9.9	---	24	30	---	214	---	67	---	18	19	---
TOTAL	541.3	2190	982	997	1090	1706	2276	5096	2188	1271	1548	1079
MEAN	17.5	73.0	31.7	32.2	38.9	55.0	75.9	164	72.9	41.0	49.9	36.0
MAX	173	379	53	83	188	214	186	782	257	215	384	125
MIN	6.9	14	20	18	17	24	37	56	28	16	13	14
CFSM	.66	2.75	1.20	1.21	1.47	2.08	2.86	6.20	2.75	1.55	1.88	1.36
IN.	.76	3.07	1.38	1.40	1.53	2.39	3.19	7.15	3.07	1.78	2.17	1.51

CAL YR 1988 TOTAL 14328.6 MEAN 39.1 MAX 379 MIN 6.4 CFSM 1.48 IN. 20.11
WTR YR 1989 TOTAL 20964.3 MEAN 57.4 MAX 782 MIN 6.9 CFSM 2.17 IN. 29.43

HUDSON RIVER BASIN

01314500 INDIAN LAKE NEAR INDIAN LAKE, NY

LOCATION.--Lat 43°45'20", long 74°16'35", Hamilton County, Hydrologic Unit 02020001, at Indian Lake Dam on Indian River, and 2.0 mi south of village of Indian Lake.

DRAINAGE AREA.--131 mi^2.

PERIOD OF RECORD.--July 1900 to current year. Prior to October 1956, published as "Indian Lake Reservoir near Indian Lake."

GAGE.--Nonrecording gage read once daily. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by masonry dam, completed in 1898. Usable capacity, about 4.500 bil ft^2 at elevation, 1,651.29 ft (crest of spillway). Sills of double sluice gates at lowest outlet at elevation 1,615.50 ft. Dead storage unknown. Water is used for power development, for improvement of navigation in lower Hudson River, and to compensate for flow diverted from Hudson River at Glens Falls into Champlain (Barge) Canal.

COOPERATION.--Gage-height record provided by Indian River Co.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation observed, 1,656.71 ft, Mar. 28, 1913, contents, 5.781 bil ft^3; minimum observed, 1,616.81 ft, estimated, Feb. 13, 1948, contents, 0.20 bil ft^3.

EXTREMES FOR CURRENT YEAR.--Maximum elevation observed, 1,652.43 ft, May 13, 14, 15, contents, 4.894 bil ft^3; minimum observed, 1,637.15 ft, Mar. 18, contents, 2.286 bil ft^3.

Capacity table, current water year
(elevation, in feet and capacity, in billions of cubic feet)

1,635.0	1.958	1,643.0	3.221
1,636.0	2.110	1,648.0	4.068
1,638.0	2.417	1,653.0	5.007

ELEVATION, IN FEET, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
INSTANTANEOUS OBSERVATIONS AT 0800

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1645.78	1644.17	1645.39	1640.39	1639.07	1638.02	1642.46	1649.60	1650.53	1649.82	1649.40	1647.90
2	1645.70	1644.19	1645.20	1640.36	1639.04	1637.99	1642.94	1649.76	1650.49	1649.76	1649.32	1647.96
3	1645.61	1644.17	1644.99	1640.32	1639.01	1637.95	1643.49	1649.98	1650.45	1649.76	1649.24	1647.93
4	1645.51	1644.10	1644.84	1640.27	1638.91	1637.91	1643.86	1650.28	1650.36	1649.76	1649.15	1647.88
5	1645.48	1644.04	1644.45	1640.17	1638.87	1637.86	1644.56	1650.41	1650.26	1649.74	1649.36	1647.80
6	1645.46	1644.49	1644.26	1640.08	1638.83	1637.81	1645.36	1650.91	1650.09	1649.73	1649.52	1647.68
7	1645.38	1645.18	1643.98	1640.04	1638.79	1637.76	1646.16	1651.76	1650.01	1649.70	1649.53	1647.52
8	1645.29	1645.53	1643.78	1640.06	1638.76	1637.72	1646.89	1652.16	1649.91	1649.72	1649.51	1647.40
9	1645.25	1645.73	1643.53	1640.04	1638.72	1637.68	1647.05	1652.27	1649.89	1649.74	1649.46	1647.27
10	1645.22	1645.84	1643.32	1640.02	1638.66	1637.63	1647.20	1652.25	1650.08	1649.74	1649.37	1647.10
11	1645.18	1645.83	1643.09	1639.96	1638.66	1637.56	1647.40	1652.23	1650.18	1650.08	1649.25	1646.99
12	1645.18	1645.93	1642.76	1639.93	1638.57	1637.49	1647.51	1652.33	1650.23	1650.05	1649.25	1646.83
13	1644.98	1645.95	1642.46	1639.90	1638.52	1637.42	1647.60	1652.43	1650.25	1650.11	1649.23	1646.66
14	1644.92	1646.07	1642.16	1639.82	1638.44	1637.36	1647.73	1652.43	1650.23	1650.11	1649.20	1646.52
15	1644.70	1646.21	1642.04	1639.78	1638.40	1637.30	1647.83	1652.43	1650.19	1650.10	1649.20	1646.59
16	1644.31	1646.29	1641.86	1639.75	1638.36	1637.25	1647.91	1652.42	1650.46	1650.06	1649.16	1646.60
17	1644.16	1646.33	1641.53	1639.75	1638.32	1637.20	1648.01	1652.22	1650.35	1650.07	1649.09	1646.61
18	1644.06	1646.30	1641.29	1639.68	1638.28	1637.15	1648.15	1652.14	1650.48	1650.08	1648.99	1646.56
19	1644.28	1646.32	1640.98	1639.63	1638.28	1637.36	1648.41	1652.00	1650.43	1650.03	1648.91	1646.50
20	1644.17	1646.42	1640.78	1639.61	1638.18	1637.41	1648.61	1651.81	1650.38	1649.96	1648.84	1646.71
21	1643.99	1646.51	1640.71	1639.56	1638.15	1637.47	1648.86	1651.67	1650.36	1649.98	1648.78	1647.37
22	1644.03	1646.64	1640.80	1639.52	1638.11	1637.50	1649.01	1651.54	1650.25	1649.94	1648.71	1647.73
23	1644.09	1646.73	1640.87	1639.47	1638.07	1637.46	1649.11	1651.39	1650.22	1649.91	1648.64	1647.81
24	1644.13	1646.53	1640.66	1639.36	1638.03	1637.47	1649.22	1651.26	1650.08	1649.86	1648.57	1648.79
25	1644.34	1646.42	1640.61	1639.31	1638.05	1637.46	1649.31	1651.21	1649.98	1649.84	1648.48	1648.06
26	1644.42	1646.22	1640.57	1639.33	1638.07	1637.48	1649.39	1651.09	1649.93	1649.80	1648.39	1647.97
27	1644.43	1646.13	1640.57	1639.28	1638.09	1637.54	1649.45	1651.06	1649.83	1649.76	1648.29	1647.82
28	1644.40	1645.89	1640.52	1639.15	1638.06	1637.73	1649.53	1650.94	1649.81	1649.73	1648.15	1647.64
29	1644.40	1645.69	1640.49	1639.14	---	1638.66	1649.53	1650.86	1649.82	1649.66	1648.03	1647.42
30	1644.31	1645.56	1640.45	1639.11	---	1640.17	1649.59	1650.78	1649.81	1649.56	1648.05	1647.86
31	1644.23	---	1640.42	1639.09	---	1641.44	---	1650.63	---	1649.47	1648.00	---
MEAN	1644.75	1645.71	1642.24	1639.74	1638.47	1637.81	1647.40	1651.43	1650.18	1649.86	1648.94	1647.38
MAX	1645.78	1646.73	1645.39	1640.39	1639.07	1641.44	1649.59	1652.43	1650.53	1650.11	1649.53	1648.79
MIN	1643.99	1644.04	1640.42	1639.09	1638.03	1637.15	1642.46	1649.60	1649.81	1649.47	1648.00	1646.50
‡	3.423	3.625	2.800	2.592	2.419	3.075	4.350	4.517	4.385	4.315	4.053	3.933
‡‡	-120	+77.9	-308	-77.6	-71.5	+245	+492	+62.4	-50.9	-26.1	-97.8	-46.3

CAL YR 1988 MEAN 1644.57 MAX 1650.46 MIN 1637.41 ‡‡ +4.58
WTR YR 1989 MEAN 1645.36 MAX 1652.43 MIN 1637.15 ‡‡ +5.99

‡ Contents, in billions of cubic feet, at 2400 hours on last day of month, by interpolation.
‡‡ Change in contents, equivalent in cubic feet per second.

HUDSON RIVER BASIN

01315000 INDIAN RIVER NEAR INDIAN LAKE, NY

LOCATION.--Lat 43°45'30", long 74°16'05", Hamilton County, Hydrologic Unit 02020001, on right bank 0.8 mi downstream from Indian Lake Dam, 1.0 mi upstream from Big Brook, and 2.0 mi south of village of Indian Lake.

DRAINAGE AREA.--132 mi^2.

PERIOD OF RECORD.--July 1912 to June 1914, June 1915 to current year. Monthly discharge only for some periods published in WSP 1302.

GAGE.--Water-stage recorder. Datum of gage is 1,604.23 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 30, 1916, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Indian Lake (see station 01314500). Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--75 years (water years 1913, 1916-89), 295 ft^3/s, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,460 ft^3/s, Mar. 28, 1913, gage height, 7.8 ft; minimum, less than 1 ft^3/s frequently, when entire flow of river is being stored in Indian Lake.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 769 ft^3/s, May 14, gage height, 3.51 ft; minimum, 41 ft^3/s, Dec. 20, 21, 22, 23, Mar. 30, gage height, 0.91 ft; minimum daily discharge, 41 ft^3/s, Dec. 21, 22.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	208	438	666	186	179	173	45	204	456	107	204	206
2	207	439	661	184	180	172	42	210	457	107	204	204
3	207	438	658	184	179	171	43	207	456	107	203	204
4	207	437	655	184	178	171	47	207	456	107	204	203
5	207	439	652	184	178	171	49	207	454	108	211	289
6	205	450	650	184	178	171	47	235	455	107	209	347
7	204	445	647	184	178	171	82	411	456	107	209	347
8	204	445	646	184	178	171	120	591	295	107	209	346
9	204	445	643	184	177	171	120	627	222	107	209	344
10	204	442	639	184	177	169	120	604	226	112	209	343
11	204	432	636	184	177	169	120	618	223	109	209	341
12	371	431	633	184	176	168	120	680	222	108	209	341
13	446	431	629	182	176	168	121	731	252	108	209	340
14	445	430	626	182	176	167	121	750	356	108	209	338
15	444	429	624	182	175	168	121	693	357	108	209	346
16	442	430	620	182	175	169	122	638	360	108	209	341
17	440	431	618	182	175	167	122	583	359	108	209	341
18	442	430	616	182	174	169	122	588	359	108	209	339
19	439	429	614	182	173	169	123	696	358	107	209	337
20	438	432	287	182	173	169	123	622	359	108	209	353
21	436	434	41	182	174	169	123	565	357	108	207	344
22	437	432	41	182	173	169	123	525	356	108	204	474
23	438	586	350	182	173	169	123	491	356	108	205	653
24	439	676	338	182	173	168	123	481	356	108	204	654
25	438	681	186	181	173	168	123	477	356	107	204	658
26	441	681	186	181	173	170	123	474	356	107	204	657
27	440	676	186	180	173	172	123	471	286	128	204	655
28	441	674	186	180	173	138	157	467	108	205	204	654
29	439	672	186	180	---	48	204	464	107	204	204	650
30	439	669	186	179	---	45	204	460	107	204	205	648
31	439	---	186	179	---	47	---	458	---	204	204	---
TOTAL	10995	14904	14492	5654	4917	4857	3356	15435	9883	3747	6410	12297
MEAN	355	497	467	182	176	157	112	498	329	121	207	410
MAX	446	681	666	186	180	173	204	750	457	205	211	658
MIN	204	429	41	179	173	45	42	204	107	107	203	203
ADJUSTED FOR CHANGE IN CONTENTS OF INDIAN LAKE												
MEAN	235	575	159	104	104	402	604	560	278	94.9	109	364
CFSM	1.78	4.36	1.20	0.79	0.79	3.05	4.58	4.24	2.11	0.72	0.83	2.76
IN	2.05	4.86	1.39	0.91	0.82	3.51	5.10	4.89	2.35	0.83	0.95	3.08

		OBSERVED						ADJUSTED				
CAL YR 1988	TOTAL	83487	MEAN	228	MAX	681	MIN	41	MEAN	233	CFSM	1.77	IN	24.02
WTR YR 1989	TOTAL	106947	MEAN	293	MAX	750	MIN	41	MEAN	299	CFSM	2.27	IN	30.74

HUDSON RIVER BASIN

01315500 HUDSON RIVER AT NORTH CREEK, NY

LOCATION.--Lat 43°42'03", long 73°59'02", Warren County, Hydrologic Unit 02020001, on left bank 125 ft upstream from bridge on State Highway 28N in village of North Creek, 500 ft upstream from North Creek, and 26 mi downstream from Indian Lake.

DRAINAGE AREA.--792 mi^2.

PERIOD OF RECORD.--September 1907 to current year.

REVISED RECORDS.--WSP 621: Drainage area. WSP 1432: 1908-18, 1920, 1922. WDR NY-78-1: 1977.

GAGE.--Water-stage recorder. Datum of gage is 987.51 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 15, 1930, nonrecording gages at sites 80 ft and 125 ft downstream at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Appreciable regulation by Indian Lake (see station 01314500) and other reservoirs upstream from station. Several measurements of water temperature were made during the year. Telephone gage-height telemeter at station.

AVERAGE DISCHARGE.--82 years, 1,561 ft^3/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,900 ft^3/s, Dec. 31, 1948, gage height, 12.14 ft; minimum, 112 ft^3/s, July 26, 1934, gage height, 1.96 ft; minimum daily, 114 ft^3/s, July 26, 1934.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,220 ft^3/s, Nov. 6, gage height, 7.73 ft; minimum, 335 ft^3/s, July 27; minimum gage height, 2.63 ft, Jan. 13, 14; minimum daily discharge, 351 ft^3/s, July 27.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	536	1710	1790	662	e540	e520	6460	1360	1470	527	587	419
2	485	1590	1730	658	e600	e500	4960	3020	1510	458	560	650
3	401	2100	1680	645	e540	e490	4130	4630	1610	406	531	1240
4	439	1840	1620	617	e500	e480	3840	4240	1680	369	511	1140
5	468	1800	1510	552	e520	e470	5790	3420	1530	362	1610	878
6	553	7230	1560	544	e540	e460	7270	5890	1440	380	2870	773
7	611	8240	1590	587	e540	e450	6660	7220	1350	378	2630	702
8	645	6520	e1400	632	e540	e450	5080	5920	1220	384	1940	647
9	570	4940	e1300	633	e540	e460	3830	4500	963	437	1480	606
10	544	3750	e1100	417	e520	e480	3070	3580	1400	884	1150	560
11	496	3290	e1000	429	e520	e440	2480	3880	1810	3090	968	530
12	584	3050	e960	395	e520	e420	2090	4730	1750	2230	883	517
13	803	2860	550	400	e500	e420	1860	5250	1500	1620	954	466
14	849	3390	e900	e500	e500	e420	1740	4830	1420	1230	1130	474
15	828	3100	e1000	e540	e500	e490	1640	4070	1390	990	1130	1190
16	800	2720	e800	e540	e490	e580	1710	3750	1590	806	1020	2150
17	795	2230	e800	e560	e490	e700	1560	3290	1840	703	918	1850
18	847	1780	e760	e560	e480	e820	2120	3070	1850	737	862	1490
19	1100	2060	e900	e560	e480	e1000	2700	2780	1750	754	772	1230
20	1360	2050	e1100	e540	e490	1230	2630	2460	1600	669	710	3730
21	1260	3420	969	e500	e500	1080	2400	2400	1430	585	682	6660
22	1190	4110	780	e520	e540	e1000	2190	2110	1260	538	623	5220
23	1410	3260	677	e540	e580	e960	1910	2060	1120	517	583	4050
24	1590	2610	892	e540	e600	929	1630	1940	1100	476	550	4150
25	2140	2270	808	e520	e600	833	1500	2030	1020	413	514	3030
26	2150	2050	736	e500	e580	1010	1380	1820	882	372	486	2300
27	1860	2120	711	e500	e560	1350	1330	1950	833	351	455	1870
28	1660	2260	729	e520	e540	2470	1340	1930	838	448	431	1590
29	1670	2170	714	e540	---	6430	1420	1750	748	684	395	1390
30	1620	2150	728	e520	---	7650	1350	1580	633	684	383	1170
31	1640	---	713	e520	---	7030	---	1470	---	639	385	---
TOTAL	31904	92670	32507	16691	14850	42022	88070	102930	40537	23121	28703	52672
MEAN	1029	3089	1049	538	530	1356	2936	3320	1351	746	926	1756
MAX	2150	8240	1790	662	600	7650	7270	7220	1850	3090	2870	6660
MIN	401	1590	550	395	480	420	1330	1360	633	351	383	419

CAL YR 1988 TOTAL 445883 MEAN 1218 MAX 8240 MIN 186
WTR YR 1989 TOTAL 566677 MEAN 1553 MAX 8240 MIN 351

e Estimated

HUDSON RIVER BASIN

01318500 HUDSON RIVER AT HADLEY, NY

LOCATION.--Lat 43°19'08", long 73°50'41", Saratoga County, Hydrologic Unit 02020001, on right bank at Hadley, 400 ft downstream from outlet of Lake Luzerne, and 0.3 mi upstream from Sacandaga River.

DRAINAGE AREA.--1,664 mi^2.

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

REVISED RECORDS.--WSP 561: 1921-22. WSP 756: Drainage area. WSP 1432: 1931 (m).

GAGE.--Water-stage recorder. Datum of gage is 563.99 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Some diurnal fluctuation caused by powerplant on Schroon River. Flow regulated by Indian Lake (see station 01314500) and other reservoirs upstream from station. Telephone gage-height telemeter and satellite gage-height telemeter at station.

AVERAGE DISCHARGE.--68 years, 2,904 ft^3/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,700 ft^3/s, Jan. 1, 1949, gage height, 21.21 ft; minimum, 281 ft^3/s, Sept. 3, 1934, gage height, 0.94 ft; minimum daily, 292 ft^3/s, July 24, 1934.

EXTREMES OUTSIDE PERIOD OF RECORD.--Discharge for the flood of March 27, 1913, was about 49,000 ft^3/s, based on peak runoff comparison with a station 12.7 mi upstream (drainage area 1,533 mi^2).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 15,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 6	1515	*14,300	*9.55				

Minimum discharge, 581 ft^3/s, Oct. 3, 4, Jan. 15, gage height, 1.84 ft; minimum daily, 601 ft^3/s, Oct. 4.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	770	2530	3530	1160	e800	937	12000	2580	2670	1380	979	676
2	761	2940	3130	1100	e840	895	9390	4340	2680	1240	915	782
3	677	3700	3110	1120	e880	835	8090	7650	2780	1120	878	1170
4	601	3450	2980	1080	e880	831	7780	6790	2860	1040	838	1620
5	661	3130	2750	857	e820	804	10000	6280	2770	1060	1330	1350
6	710	8120	2670	790	e840	830	12200	11600	2640	1050	3090	1140
7	800	11800	2680	795	e840	811	12400	13200	2610	989	3410	1060
8	822	10000	2540	921	e840	759	10700	11600	2410	930	2800	994
9	836	8170	2350	1100	806	757	8800	9910	2160	910	2200	938
10	772	6700	2240	1050	867	748	7440	8200	2980	1140	1800	880
11	768	5790	1730	808	799	768	6350	9010	3580	3460	1510	823
12	728	5370	1390	763	812	743	5580	10200	3460	3420	1400	793
13	832	5110	1400	709	702	734	4960	10800	3060	2660	1480	768
14	1030	6110	1210	770	e720	714	4600	9950	2920	2130	1590	789
15	1060	5690	1880	759	e720	861	4240	8710	2960	1810	1690	964
16	1020	5140	e1800	977	e700	1220	4250	7570	4100	1520	1580	2700
17	993	4680	e1600	984	e700	e1300	4220	6560	4280	1310	1470	2900
18	1070	3950	e1500	939	685	e1400	4080	5840	4020	1210	1350	2560
19	1260	3800	e1500	987	703	1590	4810	5380	3750	1220	1250	2190
20	1550	4010	e1600	972	704	1710	4760	4850	3490	1300	1170	3920
21	1700	5740	e1700	e960	786	1760	4540	4260	3140	1190	1090	8650
22	1630	6990	e1500	753	e1000	1670	4190	4070	2800	1070	1020	7920
23	1860	6160	1210	815	e1100	1570	3860	3670	2500	1020	957	6630
24	2290	5160	1120	836	e1200	1510	3490	3290	2280	974	905	6740
25	2860	4620	1420	869	e1100	1470	3180	3620	2160	915	850	6000
26	3120	4210	1470	780	1100	1820	2950	3350	1980	858	798	4880
27	2810	3960	1270	694	1040	2530	2770	3210	1730	803	744	4230
28	2530	4230	1180	e800	987	4340	2690	3280	1790	857	706	3690
29	2460	4020	1310	e780	---	9390	2640	2910	1750	946	674	3290
30	2440	3730	1260	e780	---	12200	2640	2800	1580	1090	687	2960
31	2280	---	1160	e820	---	12500	---	2560	---	1070	697	---
TOTAL	43701	159010	58190	27528	23971	70007	179600	198040	83890	41692	41858	84007
MEAN	1410	5300	1877	888	856	2258	5987	6388	2796	1345	1350	2800
MAX	3120	11800	3530	1160	1200	12500	12400	13200	4280	3460	3410	8650
MIN	601	2530	1120	694	685	714	2640	2560	1580	803	674	676

CAL YR 1988 TOTAL 793104 MEAN 2167 MAX 12100 MIN 377
WTR YR 1989 TOTAL 1011494 MEAN 2771 MAX 13200 MIN 601

e Estimated

HUDSON RIVER BASIN

01321000 SACANDAGA RIVER NEAR HOPE, NY

LOCATION.--Lat 43°21'10", long 74°16'15", Hamilton County, Hydrologic Unit 02020002, on left bank 1.5 mi downstream from West Branch Sacandaga River, on State Highway 30, and 4.5 mi upstream from Hope.

DRAINAGE AREA.--491 mi^2.

PERIOD OF RECORD.--September 1911 to current year.

GAGE.--Water-stage recorder. Datum of gage is 881.31 ft above National Geodetic Vertical Datum of 1929. Prior to July 24, 1929, nonrecording gage at site 300 ft upstream at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Some seasonal regulation at Piseco Lake Outlet and, since 1959, intermittent regulation by Lake Algonquin at Wells, 4 mi upstream. Infrequent minor fluctuations by mill upstream. Satellite gage-height telemeter at station.

AVERAGE DISCHARGE.--78 years, 1,099 ft^3/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,000 ft^3/s, Mar. 27, 1913, gage height, 11.0 ft, from floodmarks at site then in use; maximum gage height, 13.32 ft, Mar. 1, 1955 (ice jam); minimum discharge, about 16 ft^3/s, Sept. 30, 1913, gage height, 1.17 ft; minimum daily discharge, 18 ft^3/s, Sept. 20, 1913.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 9,100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 29	0930	*12,300	*7.33	May 6	1000	10,900	7.00
Mar. 30	1900	10,600	6.92				

Minimum discharge, 111 ft^3/s, July 21, gage height, 1.58 ft; minimum daily discharge, 117 ft^3/s, Sept. 13.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	209	992	996	e330	e320	e280	6740	930	1270	342	187	155
2	164	1560	909	e300	e350	e260	4420	2440	1240	301	166	348
3	179	1460	850	e280	e370	e240	4050	3070	1090	206	156	275
4	200	1210	787	e250	e350	e240	4480	2370	1060	233	152	257
5	237	1330	651	e230	e310	e260	7040	2010	989	348	616	280
6	301	5990	706	e230	e290	e290	6440	7920	1040	359	531	238
7	285	4230	667	e250	e270	e270	5560	5770	1080	262	422	205
8	281	3340	653	e300	e250	e250	4430	4330	924	320	356	180
9	254	2670	557	e400	e240	e230	3630	3310	831	256	293	163
10	248	2270	e490	e440	e230	e210	3000	2690	2230	422	270	151
11	398	2060	e400	e320	e210	e190	2440	3730	2060	930	230	138
12	581	1760	e350	e270	e200	e180	2180	4220	1480	575	228	126
13	520	1770	e330	e260	e190	e190	1940	4080	1350	456	414	117
14	500	2540	e320	e270	e200	e200	1710	3430	1400	388	344	118
15	411	2170	e420	e280	e210	e360	1680	2780	1580	305	274	340
16	380	1780	e380	e310	e200	e700	1840	2320	3170	282	265	348
17	370	1770	e350	e290	e190	e660	1970	1950	2830	298	250	379
18	619	1670	e340	e280	e180	e680	2290	1610	2400	255	205	427
19	1310	1440	e340	e280	e180	e740	2330	1350	2020	210	189	339
20	982	1590	e400	e270	e190	e800	2190	1150	1630	158	195	3980
21	815	3870	e440	e250	e220	e840	2030	1040	1320	190	202	2720
22	956	2750	e430	e220	e290	e700	1870	934	1190	194	189	1950
23	1740	2270	e360	e230	e450	e620	1640	809	982	172	186	2180
24	1780	1900	e340	e220	e540	e580	1480	858	848	171	180	2180
25	2360	1610	e400	e210	e450	e600	1320	903	744	165	166	1660
26	1780	1390	e450	e210	e400	e700	1190	818	632	152	157	1340
27	1450	1240	e480	e200	e360	e1600	1130	862	554	149	144	1110
28	1340	1240	e400	e220	e320	e3500	1060	786	690	259	133	907
29	1500	1200	e390	e230	---	9980	994	688	606	218	127	766
30	1290	1080	e370	e260	---	8290	939	615	422	229	142	652
31	1110	---	e360	e300	---	7660	---	649	---	219	168	---
TOTAL	24550	62152	15316	8390	7960	42300	84013	70422	39662	9024	7537	24029
MEAN	792	2072	494	271	284	1365	2800	2272	1322	291	243	801
MAX	2360	5990	996	440	540	9980	7040	7920	3170	930	616	3980
MIN	164	992	320	200	180	180	939	615	422	149	127	117

CAL YR 1988 TOTAL 299132 MEAN 817 MAX 6880 MIN 46
WTR YR 1989 TOTAL 395355 MEAN 1083 MAX 9980 MIN 117

e Estimated

01323500 GREAT SACANDAGA LAKE AT CONKLINGVILLE, NY

LOCATION.--Lat 43°18'57", long 73°55'39", Saratoga County, Hydrologic Unit 02020002, 800 ft upstream from right end of Conklingville Dam on Sacandaga River at Conklingville.

DRAINAGE AREA.--1,044 mi^2.

PERIOD OF RECORD.--January 1930 to current year. Prior to October 1969, published as "Sacandaga Reservoir at Conklingville."

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum, adjustment of 1912. Prior to Apr. 23, 1930, nonrecording gage at same datum in outlet channel 800 ft downstream.

REMARKS.--Reservoir is formed by earth and concrete dam; storage began in March 1930; dam completed in 1930. Usable capacity for stream regulation, 29.670 bil ft^3 between elevations 735.0 ft and 768.0 ft. Between elevations 768.0 ft and 771.0 ft (spillway crest) an additional 3.450 bil ft^3 is available exclusively for flood storage. Elevation of inverts of three Dow valves is 699.0 ft. Capacity of 4.600 bil ft^3 below elevation 735.0 ft is considered dead storage, except for extraordinary emergencies or for necessary inspection of structures. Purpose of reservoir is to provide flood control and low-water stream regulation for sanitary improvement, navigation, and power, as required by the public welfare, including public health and safety. Area of water surface of reservoir filled to capacity, elevation, 771.0 ft, is 41.7 mi^2. Discharge over spillway May 1-10, 1983 (only spillage since dam completion in 1930).

COOPERATION.--Records provided by Board of Hudson River-Black River Regulating District.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 773.29 ft, May 4, 1983, contents, 40.418 bil ft^3; minimum since first filling, 729.55 ft, Mar. 30, 1940, contents, 2.100 bil ft^3.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 770.52 ft, May 14, contents, 37.160 bil ft^3; minimum, 743.55 ft, Mar. 15, contents, 10.480 bil ft^3.

Capacity table, current water year
(elevation, in feet, and contents, in billions of cubic feet)

738	6.43	760	25.61
740	7.80	764	29.85
745	11.64	768	34.27
750	15.94	771	37.72
755	20.61	774	41.26

ELEVATION, IN FEET, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	755.58	754.88	757.30	751.18	747.46	745.31	752.81	765.35	768.14	767.88	764.92	761.66
2	755.50	755.04	757.12	751.09	747.31	745.17	753.73	765.69	768.22	767.80	764.78	761.59
3	755.39	755.22	756.99	750.98	747.21	745.05	754.35	766.29	768.30	767.66	764.61	761.48
4	755.24	755.22	756.76	750.83	747.07	744.91	755.10	766.53	768.35	767.50	764.49	761.30
5	755.11	755.30	756.46	750.68	746.99	744.88	756.23	766.79	768.30	767.45	764.55	761.15
6	755.02	755.70	756.19	750.53	746.99	744.84	757.45	767.89	768.26	767.40	764.54	761.04
7	754.84	756.48	755.96	750.39	746.78	744.70	758.50	769.38	768.30	767.33	764.46	760.92
8	754.74	757.02	755.70	750.23	746.43	744.58	759.25	769.83	768.28	767.25	764.38	760.81
9	754.65	757.39	755.42	750.10	746.57	744.43	759.82	769.89	768.28	767.16	764.25	760.69
10	754.59	757.51	755.16	750.00	746.40	744.26	760.32	769.86	768.55	767.09	764.20	760.59
11	754.54	757.54	754.86	749.87	746.26	744.10	760.65	769.83	768.79	767.04	764.10	760.45
12	754.41	757.43	754.53	749.71	746.16	744.03	760.94	770.23	768.93	766.94	764.06	760.32
13	754.31	757.36	754.22	749.66	746.14	744.05	761.19	770.37	768.84	766.87	764.05	760.19
14	754.27	757.50	753.93	749.53	745.99	743.93	761.50	770.38	768.85	766.79	763.98	759.96
15	754.12	757.67	753.65	749.39	745.85	743.85	761.71	770.07	768.90	766.77	763.90	759.88
16	754.01	757.83	753.33	749.26	745.74	743.94	762.03	769.64	769.18	766.68	763.87	759.77
17	753.97	757.98	753.02	749.12	745.58	743.98	762.40	769.17	769.60	766.56	763.70	759.78
18	753.88	758.05	752.74	748.96	745.46	744.14	762.82	768.73	769.71	766.50	763.55	759.75
19	753.93	757.96	752.42	748.85	745.39	744.35	763.14	768.44	769.68	766.42	763.45	759.70
20	753.91	757.87	752.22	748.75	745.29	744.60	763.42	768.30	769.62	766.25	763.42	760.09
21	753.86	758.04	752.14	748.67	745.18	744.80	763.74	768.17	769.47	766.19	763.35	760.79
22	753.85	758.27	752.01	748.51	745.21	744.80	763.96	768.00	769.45	766.11	763.20	761.11
23	754.06	758.32	751.90	748.37	745.25	744.85	764.20	767.92	769.21	766.00	763.06	761.45
24	754.21	758.27	751.83	748.22	745.28	744.88	764.38	767.90	769.00	765.90	762.90	761.66
25	754.48	758.20	751.81	748.09	745.31	744.96	764.54	767.98	768.81	765.78	762.75	761.84
26	754.58	758.09	751.72	747.98	745.39	745.13	764.71	767.96	768.59	765.65	762.61	761.92
27	754.71	757.91	751.58	747.87	745.49	745.48	764.84	768.00	768.48	765.50	762.45	762.02
28	754.81	757.78	751.52	747.77	745.40	746.08	764.96	767.96	768.31	765.39	762.31	762.01
29	754.90	757.67	751.50	747.68	---	747.61	765.10	767.97	768.06	765.25	762.14	762.05
30	754.94	757.47	751.43	747.68	---	749.59	765.25	768.05	767.94	765.13	762.08	761.91
31	754.90	---	751.32	747.58	---	751.63	---	768.05	---	765.05	761.82	---
MEAN	754.56	757.23	753.77	749.28	746.06	745.13	761.10	768.41	768.75	766.56	763.61	760.93
MAX	755.58	758.32	757.30	751.18	747.46	751.63	765.25	770.38	769.71	767.88	764.92	762.05
MIN	753.85	754.88	751.32	747.58	745.18	743.85	752.81	765.35	767.94	765.05	761.82	759.70
‡	20.48	22.96	17.07	13.76	11.95	18.03	31.27	34.32	34.14	30.92	27.44	27.60
‡‡	-258	+957	-2199	-1236	-748	+2270	+5108	+1139	-69	-1202	-1299	+62

CAL YR 1988 MEAN 755.96 MAX 765.36 MIN 742.48 ‡‡ -205
WTR YR 1989 MEAN 758.00 MAX 770.38 MIN 743.85 ‡‡ +204

‡ Contents, in billions of cubic feet, at 2400 hours on last day of month.
‡‡ Change in contents, equivalent in cubic feet per second.

NOTE: Mean elevations for Oct. 1 to Mar. 6, June 13-16, and July 19 computed based on observations at 0900 hours.

01325000 SACANDAGA RIVER AT STEWARTS BRIDGE, NEAR HADLEY, NY

LOCATION.--Lat 43°18'41", long 73°52'04", Saratoga County, Hydrologic Unit 02020002, on left bank 1.0 mi downstream from Stewarts Bridge, 1.1 mi west of Hadley, 1.4 mi upstream from mouth, and 1.5 mi downstream from Stewarts Bridge hydroelectric plant.

DRAINAGE AREA.--1,055 mi^2.

PERIOD OF RECORD.--September 1907 to current year. Published as "near Hadley" 1907-1910, "at Hadley" 1911-32 and "at Conklingville" 1932-52. Records published for both sites October 1951 to September 1952.

REVISED RECORDS.--WSP 1302: 1908. WSP 1432: 1910-12, 1916-21, WDR NY-83-1: 1968(M), 1971-72(M), 1976-77(M), 1979(M).

GAGE.--Water-stage recorder. Datum of gage is 582.00 ft above National Geodetic Vertical Datum of 1929. Prior to Jan. 1, 1911, nonrecording gage at site about 1 mi upstream at different datum. Jan. 1, 1911 to Sept. 30, 1932, water-stage recorder at site 0.8 mi downstream at datum 8.82 ft lower than present datum. Oct. 1, 1932 to Sept. 30, 1952, water-stage recorder at site 3.6 mi upstream at datum 85.47 ft higher than present datum.

REMARKS.--No estimated daily discharges. Records good except for those below about 50 ft^3/s, which are fair. Flow regulated by Great Sacandaga Lake since Mar. 27, 1930 (see station 01323500); discharge over spillway only May 1-10, 1983. Extensive diurnal fluctuation caused by release of water from Great Sacandaga Lake, through Elmer J. West hydroelectric station as directed by Board of Hudson River-Black River Regulating District and through Stewarts Bridge hydroelectric station. Satellite gage-height telemeter at station.

COOPERATION.--From Oct. 1, 1932, to Dec. 4, 1979, discharge computed by Board of Hudson River-Black River Regulating District from rating developed by Geological Survey. Since Dec. 4, 1979, discharge computed by U.S. Geological Survey.

AVERAGE DISCHARGE.--82 years, 2,140 ft^3/s, adjusted for storage since 1930.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 35,500 ft^3/s, Mar. 28, 1913, gage height, 12.36 ft, site and datum then in use; minimum, 4.2 ft^3/s, May 4, 1985; minimum daily, 4.7 ft^3/s, Apr. 28 to May 5, 1985. Maximum discharge since construction of Conklingville Dam in 1930, 13,300 ft^3/s, May 4, 1983, gage height, 9.68 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,900 ft^3/s, May 10, gage height, 8.75 ft; minimum, 5.2 ft^3/s, Apr. 27, 28-30, May 1; minimum daily, 5.2 ft^3/s, Apr. 28-30.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1860	2000	4080	2040	2110	1970	45	11	1570	1790	2110	2210
2	1040	2030	4020	2060	2050	2090	42	34	1610	1980	2060	2300
3	2010	2460	4030	2130	2040	2170	43	33	1560	1990	2050	2300
4	1860	2400	4030	2090	2100	1960	49	548	2140	1980	2050	2210
5	1830	2340	4030	2120	50	55	52	206	2070	2060	2060	1710
6	1820	1590	4070	2050	2090	2020	49	275	1990	1880	1980	1680
7	1850	46	4030	2060	2110	2010	49	1070	1980	1880	2110	1700
8	1820	134	4070	2060	2130	1980	46	4750	1910	1920	1250	1840
9	1030	1340	4030	2040	2070	2040	45	5620	1990	1900	1010	1800
10	1850	3820	4090	1990	2040	2070	44	6530	2130	2460	1060	1020
11	1840	4030	4140	2010	2010	2010	44	6700	1990	2070	1600	1920
12	1880	4030	4150	2020	52	57	43	6150	2550	1550	1490	2220
13	1250	4090	4100	2040	2030	1560	43	7660	2170	1580	1570	2180
14	1850	3210	4050	2030	2090	1640	43	8610	3690	1600	1550	2230
15	1900	2060	4080	2020	2070	1600	43	9700	4070	1630	1620	2210
16	1040	2270	4100	2000	2100	1570	44	9800	4090	1530	1570	2150
17	1810	2170	4060	2050	2050	1600	197	9860	4070	1570	1640	48
18	1880	2090	4050	1850	2090	1180	42	8630	4060	1730	1570	1780
19	1910	3450	3990	1840	56	1260	104	5890	4020	1710	1590	1440
20	1730	3660	2040	1900	2150	18	38	3850	4010	1740	1600	1510
21	1540	4040	2070	2010	2090	17	38	3200	4010	1700	1670	37
22	1710	4030	2060	1760	2100	24	37	2360	3980	1710	1890	34
23	1760	4050	2060	1850	2070	819	37	2060	3980	1760	1880	33
24	1720	4040	2060	1800	1740	1020	1690	1680	3920	1750	1880	32
25	1750	4130	2020	1890	1650	1070	920	1560	4030	1850	2040	32
26	1090	4080	2020	1900	50	38	18	2040	4040	2080	2040	33
27	1050	4100	2100	2030	2020	37	5.5	1840	4020	2060	2040	2000
28	2060	4090	1870	2100	2070	42	5.2	1930	4030	2100	2040	1990
29	2020	3670	1950	45	---	48	5.2	46	4050	1760	2210	2610
30	2040	4090	2110	1040	---	55	5.2	51	2080	2110	2230	2250
31	2040	---	2080	2230	---	50	---	1910	---	2080	2220	---
TOTAL	52840	89540	101640	59055	49278	34080	3866.1	114604	91810	57510	55680	45509
MEAN	1705	2985	3279	1905	1760	1099	129	3697	3060	1855	1796	1517
MAX	2060	4130	4150	2230	2150	2170	1690	9860	4090	2460	2230	2610
MIN	1030	46	1870	45	50	17	5.2	11	1560	1530	1010	32

Adjusted for change in contents in Great Sacandaga Lake and Stewarts Bridge Pool

MEAN	1449	3940	1080	641	1042	3358	5156	4927	2988	655	496	1498
CFSM	1.37	3.73	1.02	0.61	0.99	3.18	4.89	4.67	2.83	0.62	0.47	1.42
IN.	1.58	4.17	1.18	0.70	1.03	3.67	5.45	5.38	3.16	0.72	0.54	1.58

	OBSERVED						ADJUSTED				
CAL YR 1988	TOTAL 679533.4	MEAN 1857	MAX 4230	MIN 7.0		MEAN 1652	CFSM 1.57	IN. 21.31			
WTR YR 1989	TOTAL 755412.1	MEAN 2070	MAX 9860	MIN 5.2		MEAN 2267	CFSM 2.15	IN. 29.17			

HUDSON RIVER BASIN

01325420 HUDSON RIVER AT CORINTH, NY

LOCATION.--Lat 43°14'53", long 73°49'49", Saratoga County, Hydrologic Unit 0202003, at River Street bridge.

DRAINAGE AREA.--2,755 mi^2.

PERIOD OF RECORD.--Water years 1969-75, 1986 to current year.
CHEMICAL DATA: 1969 (c), 1970-74 (d), 1975 (c), 1986 (b), 1987 (e), 1988-89 (c).
MINOR ELEMENTS DATA: 1969 (c), 1970-74 (d), 1975 (c), 1986 (b), 1987 (e), 1988-89 (c).
NUTRIENT DATA: 1969 (c), 1970-74 (d), 1975 (c).
SEDIMENT DATA: 1988 (b), 1989 (c).

REMARKS.--Water-quality samples were collected by personnel of the New York State Department of Environmental Conservation, and were analyzed in USGS laboratories. Water-discharge data based on records obtained for Hudson River at Hadley (station 01318500) and Sacandaga River at Stewarts Bridge, near Hadley (station 01325000).

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT												
06...	1045	767	58	6.50	15.5	--	9.7	--	20	5.7	1.4	2.6
NOV												
07...	1000	12400	45	7.20	6.5	754	13.7	112	16	4.7	0.92	1.7
APR												
17...	1000	4400	67	7.40	6.0	750	13.7	112	21	6.4	1.1	3.1
MAY												
10...	1000	13900	59	7.10	9.5	750	12.7	112	16	4.9	1.0	3.7
JUN												
15...	1000	7100	66	--	16.0	751	--	--	18	5.2	1.1	2.5
AUG												
09...	1100	2360	63	7.30	22.0	753	8.2	95	19	5.6	1.1	1.1

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)
OCT											
06...	0.50	14	7.4	4.0	0.10	30	--	<1	--	10	--
NOV											
07...	0.60	7.0	13	2.4	0.10	670	130	<1	2	4	4
APR											
17...	0.60	12	7.0	4.9	0.10	90	--	<1	--	5	--
MAY											
10...	0.50	9.0	7.0	3.8	0.10	140	--	<1	--	11	--
JUN											
15...	0.40	10	6.0	4.9	0.10	90	--	<1	--	10	--
AUG											
09...	0.40	11	7.0	3.8	0.10	90	--	<1	--	4	--

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT											
06...	130	--	<5	--	20	--	<0.10	2	--	<10	--
NOV											
07...	980	120	<5	<5	160	15	<0.10	4	1	20	13
APR											
17...	120	--	<5	--	10	--	<0.10	4	--	20	--
MAY											
10...	200	52	4	--	20	--	<0.10	4	--	10	--
JUN											
15...	170	--	3	--	30	--	<0.10	2	--	100	--
AUG											
09...	160	--	2	--	30	--	<0.10	<1	--	10	--

HUDSON RIVER BASIN

01325420 HUDSON RIVER AT CORINTH, NY--Continued

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
OCT				
06...	1045	767	1	2.1
NOV				
07...	1000	12400	28	937
APR				
17...	1000	4400	1	12
MAY				
10...	1000	13900	2	75
JUN				
15...	1000	7100	2	38
AUG				
09...	1100	2360	1	6.4

HUDSON RIVER BASIN

01327750 HUDSON RIVER AT FORT EDWARD, NY

LOCATION.--Lat 43°16'10", long 73°35'47", Washington County, Hydrologic Unit 02020003, on left bank 40 ft upstream from Scott Paper Mill, 150 ft south of River Street in Fort Edward, and 0.4 mi upstream from bridge on State Highway 197.

DRAINAGE AREA.--2,817 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is 100.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Flow regulated appreciably by Great Sacandaga Lake (see station 01323500) and Indian Lake (see station 01314500). Diurnal fluctuation caused by powerplants upstream from station. Water is diverted into St. Lawrence River basin through Glens Falls feeder, Bond Creek, and Champlain (Barge) Canal, and occasionally may be received from that basin through summit level of Champlain (Barge) Canal at Dunham Basin. Telephone gage-height telemeter at station.

AVERAGE DISCHARGE.--12 years, 5,077 ft^3/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,200 ft^3/s, May 3, 1983, gage height, 28.34 ft; maximum gage height, 28.71 ft, Jan. 11, 1978, ice jam; minimum discharge, 234 ft^3/s, July 25, 1983; minimum gage height, 19.33 ft, Sept. 4, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 19,300 ft^3/s, May 13, gage height, 24.96 ft; minimum, 625 ft^3/s, Oct. 9, gage height, 20.00 ft.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2300	4370	7750	3020	3960	2950	12600	2730	4470	3080	3400	2930
2	2170	4590	6840	3020	2860	3050	10100	3890	4280	3280	2920	2810
3	3300	4740	6680	3140	3110	3120	7840	6460	4480	3260	2810	3110
4	1300	5170	6550	e3100	2600	2810	8100	7520	4180	3300	2910	3790
5	2280	5400	6600	e2900	1620	1330	9230	6770	4670	3270	3110	3240
6	2490	6960	6120	e2700	2370	2460	13000	11000	4610	3190	4000	2790
7	3020	11600	6330	2500	2920	2990	13100	15000	4630	3220	5700	2360
8	2600	10100	6310	2790	3200	2940	12000	16100	4280	2990	4630	2360
9	962	8530	6270	3210	3070	2790	9410	16000	4230	3170	3250	2540
10	2260	9260	6040	3250	e3000	2710	7950	14300	4080	2190	3160	2040
11	2430	9290	5820	2730	2510	2880	6700	16200	4820	4820	3020	2630
12	2390	8470	5250	2800	1630	944	5950	16200	5380	5640	2830	2750
13	1910	8390	e5200	2400	2440	2240	e5500	18900	6170	5060	2830	2810
14	2570	8960	5230	2690	2520	2390	e5000	18400	5420	4200	3290	2740
15	2610	7790	5110	2650	2770	2510	4470	18600	6390	2440	3140	2880
16	2250	6920	5600	3020	2820	2960	3790	17400	7290	2630	3120	3900
17	2320	6550	5340	2980	2900	3080	4620	16400	8710	2730	3130	4150
18	3280	6380	5370	2740	2720	2970	e4300	15100	7500	2890	3050	3690
19	2340	6230	5270	2570	1500	2600	e5000	12100	7150	3010	2730	3810
20	2990	6720	4360	3080	1930	1840	e4900	8450	7380	2910	2610	3880
21	2990	8280	3860	2840	3250	2040	e4700	7370	6840	2940	2680	7180
22	3460	9940	3590	2710	3770	1980	e4400	7160	6460	2420	2740	8000
23	3470	9690	3320	2120	3440	2100	e4000	5130	6270	2490	2780	7180
24	3250	8440	2920	2490	2750	2440	e5200	4930	5990	2950	2810	6170
25	4150	8290	3300	2980	2880	2580	e4300	4990	5910	3030	2670	6170
26	4440	7880	3740	2430	1320	2140	e3200	4960	5890	2850	2550	5140
27	3750	7470	3250	2550	2790	2980	e3000	5230	5640	2860	2490	4670
28	3400	7410	3340	2420	2860	4160	e2900	5110	5520	2900	2580	5380
29	4350	7610	3210	1960	---	7020	2820	3840	5590	2890	2520	5320
30	4130	6640	3230	1970	---	12300	2810	3080	4920	2810	2810	5160
31	4140	---	3320	2370	---	13700	---	3090	---	3060	2800	---
TOTAL	89302	228070	155120	84130	75510	105004	190890	312410	169150	98480	95070	121580
MEAN	2881	7602	5004	2714	2697	3387	6363	10080	5638	3177	3067	4053
MAX	4440	11600	7750	3250	3960	13700	13100	18900	8710	5640	5700	8000
MIN	962	4370	2920	1960	1320	944	2810	2730	4080	2190	2490	2040

CAL YR 1988 TOTAL 1428262 MEAN 3902 MAX 12000 MIN 962
WTR YR 1989 TOTAL 1724716 MEAN 4725 MAX 18900 MIN 944

e Estimated

01327755 HUDSON RIVER AT ROGERS ISLAND AT FORT EDWARD, NY

LOCATION.--Lat 43°15'52", long 73°35'28", Saratoga-Washington Counties, Hydrologic Unit 02020003, at bridges on State Highway 197 over Rogers Island in Fort Edward, 0.4 mi downstream from discharge station (01327750, Hudson River at Fort Edward), and 0.6 mi upstream from Champlain Canal.

DRAINAGE AREA.--2,817 mi^2, at gage.

PERIOD OF RECORD.--Water years 1975 to current year.
CHEMICAL DATA: 1975-76 (a), 1980 (b), 1981 (d), 1982-84 (e), 1985 (d), 1986-87 (e), 1988 (a).
MINOR ELEMENT DATA: 1975 (b), 1976-77 (a), 1978-79 (e), 1980 (d), 1986 (b), 1987 (e), 1988 (a).
PESTICIDE DATA: 1975, 1977 (a), 1978-79 (e), 1980 (a).
ORGANIC DATA: OC--1975 (a).
PCB--1975, 1977 (a), 1978-84 (e), 1985 (d), 1986 (e), 1987 (d), 1988-89 (e).
PCN--1977 (a), 1978-79 (e), 1980 (a).
NUTRIENT DATA: 1975-77 (a), 1978 (e).
SEDIMENT DATA: 1975 (b), 1980-84 (e), 1985 (d), 1986-89 (e).

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: March 1978 to September 1979.

REMARKS.--Water-discharge data is that for Hudson River at Fort Edward (station 01327750). Samples for PCB analysis are collected from both the navigation canal (east channel) and river (west channel). Composite samples are from both the main channel and the navigation canal.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	STREAM-FLOW INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	PCB, TOTAL (UG/L)	IDENTIFIED AROCLOR(S)	LOCATION
OCT							
13...	1130	1210	2	6.5	0.01	1248	CANAL
13...	1210	1030	2	5.6	0.01	1248	RIVER
26...	1030	4570	3	37	0.04	1242,1248,1254	CANAL
26...	1115	4570	2	25	0.07	1242,1248,1254	RIVER
NOV							
10...	1120	9210	5	124	0.14	1242,1248,1254	CANAL
10...	1215	9350	5	126	0.04	1242,1248,1254	RIVER
22...	1000	9870	9	240	0.06	1248	CANAL
22...	1045	9780	2	53	0.05	1248	RIVER
DEC							
08...	0940	5730	1	15	0.01	1248	CANAL
08...	1030	5620	2	30	<0.01	1248	RIVER
FEB							
01...	1020	4430	1	12	0.06	1242,1248,1254	CANAL
22...	0945	3590	3	29	0.06	1242,1248,1254	CANAL
22...	1040	3620	2	20	0.05	1242,1248,1254	RIVER
MAR							
30...	1100	12700	8	274	0.02	1242,1248,1254	CANAL
30...	1140	13900	18	676	0.04	1242,1248,1254	RIVER
APR							
05...	1310	8850	4	96	--		CANAL
05...	1345	9260	2	50	0.01	1242,1248,1254	RIVER
28...	1315	E3410	2	18	0.01	1242,1248,1254	CANAL
28...	1350	E3410	2	18	0.01	1242,1248,1254	RIVER
MAY							
08...	1250	15800	8	341	0.04	1242,1248,1254	CANAL
08...	1340	16800	13	590	0.05	1242,1248,1254	RIVER
12...	1030	15200	4	164	0.05	1242,1248,1254	CANAL
12...	1110	15200	4	164	0.02	1242,1248,1254	RIVER
JUN							
16...	1245	7040	4	76	0.02	1242,1248,1254	CANAL
16...	1320	7080	4	76	0.02	1242,1248,1254	RIVER
30...	1025	5100	3	41	0.02	1248	CANAL
30...	1105	4960	2	27	0.02	1248	RIVER
JUL							
21...	1200	4530	4	49	0.04	1248	CANAL
21...	1225	4670	5	63	0.02	1248	RIVER
AUG							
15...	0910	2790	3	23	0.03	1248	CANAL
15...	0935	2790	3	23	0.03	1248	RIVER
SEP							
01...	0920	2550	3	21	0.03	1248	CANAL
01...	0950	2530	4	27	0.03	1248	RIVER

E Estimated

HUDSON RIVER BASIN

01328730 HUDSON RIVER NEAR FORT MILLER, NY

LOCATION.--Lat 43°10'03", long 73°35'22", Washington County, Hydrologic Unit 02020003, about 0.2 mi upstream from Tuttle Brook, 1.6 mi downstream from Thompson Island dam, and 0.7 mi northwest of Fort Miller.

DRAINAGE AREA.--2,920 mi^2, approximately.

PERIOD OF RECORD.--Water years 1986 to current year.
ORGANIC DATA: PCB--1986 (c), 1987 (b), 1988-89 (d).
SEDIMENT DATA: 1986-87 (b), 1988-89 (d).

REMARKS.--Water discharge estimated, based on records obtained for Hudson River at Fort Edward (station 01327750).

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	STREAM-FLOW INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	PCB, TOTAL (UG/L)	IDENTIFIED AROCLOR(S)
OCT						
12...	1440	E2150	2	12	0.02	1248
26...	1245	E4530	4	49	0.02	1248
NOV						
10...	1345	E9260	8	200	0.16	1248
22...	1215	E9780	5	132	0.12	1248
DEC						
08...	1220	E5990	1	16	0.01	1248
FEB						
01...	1255	E4290	6	69	0.10	1242,1248,1254
22...	1230	E4530	28	342	0.06	1242,1248,1254
APR						
05...	1500	E8400	12	272	0.01	1248
28...	1210	E2900	2	16	0.01	1242,1248,1254
JUN						
16...	1410	E6880	12	223	0.03	1242,1248,1254
30...	0845	E5840	6	95	0.05	1242,1248,1254
JUL						
21...	1320	E2060	3	17	0.05	1248
AUG						
15...	1045	E3620	4	39	0.04	1248
SEP						
01...	1105	E2760	3	22	0.04	1248

E Estimated

HUDSON RIVER BASIN

01329650 HUDSON RIVER AT SCHUYLERVILLE, NY

LOCATION.--Lat 43°05'54", long 73°34'25", at Saratoga-Washington County line, Hydrologic Unit 02020003, at bridge on State Highway 29, 0.2 mi east of Schuylerville, 0.8 mi downstream from Batten Kill, and 1.0 mi downstream from Champlain (Barge) Canal lock 5.

DRAINAGE AREA.--3,440 mi^2, approximately.

PERIOD OF RECORD.--Water years 1976 to current year.
CHEMICAL DATA: 1976 (a), 1980 (b), 1981 (c), 1982-84 (e), 1985-87 (d), 1988 (c).
MINOR ELEMENTS DATA: 1976 (a), 1977 (e), 1978-79 (d), 1980, 1987 (b), 1988 (c).
PESTICIDE DATA: 1977 (e), 1978-79 (d).
ORGANIC DATA: PCB--1977 (e), 1978-80 (d), 1981-84 (e), 1985-88 (d), 1989 (e).
PCN--1977 (e), 1978-79 (d).
NUTRIENT DATA: 1977 (e), 1978 (d).
SEDIMENT DATA: 1976 (b), 1977 (e), 1978-80 (d), 1981-84 (e), 1985 (d), 1986 (e), 1987-88 (d), 1989 (e).

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: March 1977 to September 1979.

REMARKS.--Streamflow affected by regulation for power generation and diversion for canal operations.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	STREAM-FLOW INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	PCB, TOTAL (UG/L)	IDENTIFIED AROCLOR(S)
OCT						
13...	1320	--	1	--	0.03	1248
26...	1345	7560	4	82	0.03	1248
NOV						
10...	1515	11600	10	313	0.04	1248
16...	0910	9220	4	100	0.02	1248
29...	0907	10800	2	58	0.01	1248
DEC						
08...	1355	7380	1	20	0.02	1248
15...	0926	6940	1	19	0.03	1242,1248,1254
FEB						
01...	1150	5440	4	59	0.06	1242,1248,1254
MAR						
24...	0910	2450	3	20	0.01	1242,1248,1254
30...	1415	14700	44	1750	0.05	1242.1248,1254
APR						
05...	1605	12500	14	473	0.01	1242,1248,1254
28...	1055	4110	1	11	0.02	1248
MAY						
08...	1510	18600	16	804	0.07	1242,1248,1254
12...	1300	19700	16	851	0.04	1242,1248,1254
JUN						
02...	0915	6060	14	229	0.01	1242,1248,1254
16...	1530	10300	14	389	0.03	1242,1248,1254
23...	0930	8300	4	90	0.05	1242,1248,1254
30...	1300	6360	4	69	0.04	1248
JUL						
07...	1525	4620	4	50	0.04	1248
14...	1410	5840	4	63	0.04	1248
21...	1030	3700	4	40	0.03	1248
28...	1615	3500	2	19	0.05	1248
AUG						
01...	1635	3920	2	21	0.04	1248
09...	1530	3580	2	19	0.05	1248
15...	1155	4590	4	50	0.04	1248
SEP						
01...	1220	3220	2	17	0.03	1248
15...	1500	3180	2	17	0.04	1248

HUDSON RIVER BASIN

01330500 KAYADEROSSERAS CREEK NEAR WEST MILTON, NY

LOCATION.--Lat 43°02'18", long 73°54'35", Saratoga County, Hydrologic Unit 02020003, on left bank 600 ft downstream from Glowegee Creek, 1.0 mi east of West Milton, and 3.5 mi northwest of Ballston Spa.

DRAINAGE AREA.--90.0 mi^2.

PERIOD OF RECORD.--July 1927 to current year.

REVISED RECORDS.--WSP 741: Drainage area. WSP 1202: 1935-40.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 376.06 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Slight occasional diurnal fluctuation at low flow caused by mills upstream from station.

AVERAGE DISCHARGE.--62 years, 137 ft^3/s, 20.67 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,710 ft^3/s, Mar. 18, 1936, gage height, 10.78 ft, from floodmarks; maximum gage height, 11.20 ft, Mar. 14, 1977, from floodmarks; minimum discharge, 6.1 ft^3/s, Aug. 23, 1927, gage height, 0.86 ft; minimum daily discharge, 12 ft^3/s, Aug. 5-9, Sept. 8, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 30	2130	1,320	5.42	May 6	1530	*1,380	*5.53

Minimum discharge, 28 ft^3/s, July 25, 26, 27; minimum daily discharge, 29 ft^3/s, July 25-26, Aug. 28.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	84	112	e68	e58	e56	573	81	162	70	41	36
2	46	351	105	e72	e54	e50	355	502	147	59	38	91
3	50	278	e98	e74	e49	e48	355	499	129	54	37	58
4	51	173	e94	e62	e44	e46	551	288	146	55	45	42
5	58	138	e92	e58	e45	e62	633	193	122	163	237	36
6	55	312	e90	e58	e50	e48	568	1010	178	162	112	34
7	52	260	e88	e66	e58	e42	631	722	210	95	66	33
8	56	183	e86	e98	e58	e38	416	391	137	103	49	30
9	49	164	e82	e72	e60	e36	305	295	125	62	43	30
10	49	132	e78	e56	e47	e34	238	260	722	66	40	35
11	62	142	e72	e76	e50	e33	193	675	392	116	38	37
12	71	125	e66	e70	e54	e36	162	605	199	66	48	33
13	64	137	e66	e76	e47	e37	146	504	215	56	121	31
14	57	279	e78	e70	e70	e40	164	386	279	51	94	31
15	56	192	e98	e66	e100	e100	158	297	436	50	67	47
16	54	144	e74	e62	e90	e250	361	227	692	40	57	50
17	53	155	e64	e60	e70	e170	297	184	492	36	51	139
18	56	158	e58	e56	e60	e110	234	149	316	33	49	104
19	82	128	e58	e52	e58	e90	191	124	211	31	43	75
20	69	173	e64	e47	e56	e80	160	104	154	38	44	427
21	65	511	e74	e38	e800	e74	138	95	119	44	53	310
22	112	324	e68	e39	e220	e70	122	88	102	40	46	183
23	174	204	e62	e40	e170	e72	108	75	91	36	45	152
24	146	167	e66	e43	e110	e80	99	125	94	32	43	140
25	157	140	e74	e46	e50	e130	93	148	86	29	36	128
26	116	127	e68	e43	e52	e190	87	145	165	29	34	120
27	97	124	e64	e41	e56	e280	85	208	331	30	30	115
28	89	140	e72	e40	e52	e290	81	130	184	59	29	110
29	108	142	e82	e41	---	686	74	90	129	49	30	108
30	96	123	e78	e48	---	783	76	78	91	44	35	105
31	86	---	e68	e54	---	892	---	101	---	49	33	---
TOTAL	2382	5710	2399	1792	2688	4953	7654	8779	6856	1847	1734	2870
MEAN	76.8	190	77.4	57.8	96.0	160	255	283	229	59.6	55.9	95.7
MAX	174	511	112	98	800	892	633	1010	722	163	237	427
MIN	46	84	58	38	44	33	74	75	86	29	29	30
CFSM	.85	2.11	.86	.64	1.07	1.78	2.83	3.15	2.54	.66	.62	1.06
IN.	.98	2.36	.99	.74	1.11	2.05	3.16	3.63	2.83	.76	.72	1.19

CAL YR 1988 TOTAL 41825 MEAN 114 MAX 861 MIN 18 CFSM 1.27 IN. 17.29
WTR YR 1989 TOTAL 49664 MEAN 136 MAX 1010 MIN 29 CFSM 1.51 IN. 20.53

e Estimated

HUDSON RIVER BASIN

01331095 HUDSON RIVER AT STILLWATER, NY

LOCATION.--Lat 42°56'08", long 73°39'08", Rensselaer County, Hydrologic Unit 02020003, at dam, 0.15 mi downstream from bridge on State Highway 67 in Stillwater, and 0.75 mi upstream from Hoosic River. Water-quality sampling site at bridge on State Highway 67, 0.15 mi upstream from discharge station.

DRAINAGE AREA.--3,773 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1977 to December 1977 (discharge measurements and fragmentary gage-height record), January 1978 to current year. Daily discharge records prior to October 1981 are unpublished and available in files of the Geological Survey.

GAGE.--Water-stage recorder. Datum of gage is 78.99 ft above National Geodetic Vertical Datum of 1929. Prior to January 1978, nonrecording gages in upper pool of Champlain (Barge) Canal lock 4, at Barge Canal datum.

REMARKS.--Records good except those for periods below 3,000 ft^3/s and those for estimated daily discharges, which are fair. Streamflow affected by regulation for power generation and diversion for canal operations.

AVERAGE DISCHARGE.--12 years, 6,322 ft^3/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 44,600 ft^3/s, May 4, 1983, gage height, 8.69 ft; minimum daily, 900 ft^3/s, July 25, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 24,200 ft^3/s, May 13, gage height, 7.12 ft; minimum daily, 1,940 ft^3/s, Oct. 10.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2960	5290	9260	3940	4910	e4010	18200	4000	5830	3860	3920	3390
2	2960	6490	8490	3980	4070	e3890	15200	6020	5910	4080	3490	3440
3	3770	7180	8080	4160	4050	e4040	11300	9670	5850	4170	3310	3580
4	2320	6510	7900	3910	3490	e3750	12500	10400	5510	4050	3380	4300
5	2420	6660	7700	3660	2720	e2910	13000	9240	5890	4340	4930	3900
6	3150	7850	7380	3510	2680	e3590	17500	14000	6110	5300	5190	3470
7	3610	13300	7430	2950	3490	e4070	20800	20700	6730	4580	6360	2860
8	3480	12300	7340	3730	3930	e3770	18600	19700	6210	4940	5920	2680
9	2050	10400	7340	3890	3720	e3450	14600	19900	6130	4730	3770	2880
10	1940	10500	6950	4040	3530	e3400	12200	17400	7500	4260	3880	2480
11	3300	10900	6690	3790	3190	e3800	10200	20800	7450	6730	3670	2910
12	3090	10100	5930	3190	2560	e2740	8980	21600	7320	7260	3900	2960
13	3140	9840	5880	3420	2690	e2040	8220	23500	8000	6610	4650	3100
14	2590	11300	6090	3300	3080	e3250	7820	22500	7210	5830	4960	3270
15	3640	10100	5880	3840	4170	e3940	7250	22100	8390	3680	4530	3180
16	3140	8660	6280	4180	4260	e5170	6950	20600	10300	3620	4290	4110
17	3030	8360	6050	4050	3820	e4630	7980	19000	11600	3700	4080	4890
18	3630	8240	6070	3760	3510	e4240	7530	17600	10500	3700	3910	4470
19	3400	7680	6000	3430	2590	e3620	7370	14800	9420	3670	3530	4670
20	3620	8110	5440	3610	2140	e3110	7560	11300	9400	3700	3370	4680
21	3680	12000	4940	3830	5730	e2900	7110	9110	8810	3940	3280	8000
22	3980	13300	4480	3470	10200	e2800	6550	8730	8280	3860	3380	9370
23	4330	12900	4490	2700	7100	e2950	5900	7210	7950	2810	3400	8640
24	4280	11100	3960	2890	e5310	e3310	6180	6290	7760	3810	3380	7620
25	4960	10500	4680	3550	e4180	4050	6080	6380	7440	3600	3290	7470
26	5540	9770	5130	3240	e2490	4020	5130	6210	7160	3310	3210	6580
27	4970	9230	4380	3070	e3510	4460	4150	6630	7050	3340	3000	5770
28	4410	9680	4580	3380	e4280	5670	4280	6500	7050	3560	3090	5960
29	5060	10600	4960	3100	---	8200	3820	5680	6880	3670	3100	6230
30	5190	8920	4650	2420	---	15900	3840	4220	6580	3350	3250	6050
31	5040	---	4420	3030	---	19100	---	4020	---	3570	3390	---
TOTAL	112680	287770	188850	109020	111400	146780	286800	395810	226220	131630	120810	142910
MEAN	3635	9592	6092	3517	3979	4735	9560	12770	7541	4246	3897	4764
MAX	5540	13300	9260	4180	10200	19100	20800	23500	11600	7260	6360	9370
MIN	1940	5290	3960	2420	2140	2040	3820	4000	5510	2810	3000	2480

CAL YR 1988 TOTAL 1840930 MEAN 5030 MAX 14800 MIN 1500
WTR YR 1989 TOTAL 2260680 MEAN 6194 MAX 23500 MIN 1940

e Estimated

HUDSON RIVER BASIN

01331095 HUDSON RIVER AT STILLWATER, NY--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969 to 1975, 1977 to current year.
CHEMICAL DATA: 1969 (c), 1970-74 (d), 1975 (c), 1980 (b), 1981 (c), 1982-85 (e), 1986-88 (d).
MINOR ELEMENTS DATA: 1972 (b), 1973-75 (a), 1977-79 (e), 1980 (c).
PESTICIDE DATA: 1977-79 (e), 1980 (a).
ORGANIC DATA: OC--1974 (a), 1975 (c).
PCB--1977-85 (e), 1986-88 (d), 1989 (e).
PCN--1977-79 (e), 1980 (a).
NUTRIENT DATA: 1969 (c), 1970-74 (d), 1975 (c), 1977-78 (e).
SEDIMENT DATA: 1977 (d), 1978 (a), 1981-89 (e).

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: March 1977 to current year.

REMARKS.--Interruptions of sediment record were due to problems with observers.

EXTREMES FOR PERIOD OF DAILY RECORD (Water years 1977-89).--
SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum daily mean, 202 mg/L, Dec. 14, 1983; minimum daily mean, 1 mg/L on many days each year.
SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 14,800 tons, Dec. 14, 1983, Apr. 1, 1987; minimum daily, 4.0 tons, Sept. 7, 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	STREAM-FLOW INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	PCB, TOTAL (UG/L)	IDENTIFIED AROCLOR(S)
OCT						
13...	1500	3200	2	17	0.02	1248
26...	1400	5600	8	121	0.03	1248
NOV						
10...	0850	10500	8	227	0.06	1248
16...	1225	8700	5	117	0.02	1248
29...	1005	10900	4	118	0.06	1242,1248,1254
DEC						
08...	1455	7170	1	19	0.02	1248
15...	1031	5920	1	16	0.03	1242,1248,1254
FEB						
01...	1510	5390	4	58	0.05	1242,1248,1254
MAR						
24...	1030	2850	4	31	0.01	1242,1248,1254
31...	1710	18600	92	4620	0.03	1242,1248,1254
APR						
03...	1510	11000	11	327	0.01	1242,1248,1254
14...	1200	8110	6	131	0.01	1242,1248,1254
MAY						
08...	1600	19900	28	1500	0.06	1242,1248,1254
12...	1410	21300	28	1610	0.03	1242,1248,1254
JUN						
02...	1005	5920	8	128	0.02	1242,1248,1254
23...	1055	8110	7	153	0.05	1242,1248,1254
30...	1425	6350	8	137	0.06	1248
JUL						
07...	1625	4530	6	73	0.05	1248
14...	1525	5700	6	92	0.05	1248
21...	1520	3610	4	39	0.04	1248
28...	1510	3610	4	39	0.05	1248
AUG						
01...	1725	3940	3	32	0.06	1248
09...	1625	3480	3	28	0.05	1248
15...	1250	4280	5	58	0.04	1248
SEP						
01...	1325	3070	2	17	0.04	1248
15...	1610	3290	2	18	0.03	1248

HUDSON RIVER BASIN

01331095 HUDSON RIVER AT STILLWATER, NY--Continued

SEDIMENT, SUSPENDED CONCENTRATION (MG/L), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	6	48	9	129	---	---	---	---	4	53	---	---
2	4	32	10	175	---	---	---	---	---	---	---	---
3	8	81	13	252	---	---	---	---	---	---	---	---
4	4	25	15	264	---	---	---	---	---	---	---	---
5	7	46	3	54	---	---	---	---	---	---	---	---
6	3	26	6	127	---	---	---	---	---	---	---	---
7	5	49	5	180	---	---	---	---	---	---	---	---
8	6	56	---	---	1	20	---	---	---	---	---	---
9	5	28	---	---	---	---	---	---	---	---	---	---
10	15	79	8	227	---	---	---	---	---	---	---	---
11	7	62	---	---	---	---	---	---	---	---	---	---
12	7	58	---	---	---	---	---	---	---	---	---	---
13	5	42	---	---	---	---	---	---	---	---	---	---
14	4	28	---	---	---	---	---	---	---	---	---	---
15	6	59	---	---	1	16	---	---	---	---	---	---
16	11	93	5	117	---	---	---	---	---	---	---	---
17	7	57	---	---	---	---	---	---	---	---	---	---
18	5	49	---	---	---	---	---	---	---	---	---	---
19	5	46	---	---	---	---	---	---	---	---	---	---
20	4	39	---	---	---	---	---	---	---	---	---	---
21	3	30	---	---	---	---	---	---	---	---	---	---
22	8	86	---	---	---	---	---	---	---	---	---	---
23	7	82	---	---	---	---	---	---	---	---	---	---
24	16	185	---	---	---	---	1	7.8	---	---	4	36
25	3	40	---	---	---	---	1	9.6	---	---	---	---
26	8	120	---	---	---	---	3	26	---	---	---	---
27	4	54	---	---	---	---	28	232	---	---	---	---
28	3	36	---	---	---	---	7	64	---	---	---	---
29	6	82	4	114	---	---	4	33	---	---	---	---
30	4	56	---	---	---	---	1	6.5	---	---	---	---
31	10	136	---	---	---	---	2	16	---	---	92	4740

DAY	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	---	---	---	---	---	---	3	32	2	18
2	---	---	---	---	8	128	---	---	---	---	2	19
3	11	336	---	---	---	---	---	---	---	---	2	19
4	---	---	---	---	---	---	---	---	---	---	2	23
5	---	---	---	---	---	---	---	---	---	---	1	11
6	---	---	---	---	---	---	---	---	---	---	2	19
7	---	---	---	---	---	---	6	74	---	---	3	23
8	---	---	28	1490	---	---	---	---	---	---	3	22
9	---	---	---	---	---	---	---	---	3	31	9	70
10	---	---	---	---	---	---	---	---	---	---	4	27
11	---	---	---	---	---	---	---	---	---	---	3	24
12	---	---	28	1630	---	---	---	---	---	---	1	8.0
13	---	---	---	---	---	---	---	---	---	---	2	17
14	6	127	---	---	---	---	6	94	---	---	2	18
15	---	---	---	---	---	---	---	---	5	61	2	17
16	---	---	---	---	---	---	---	---	---	---	2	22
17	---	---	---	---	---	---	---	---	---	---	1	13
18	---	---	---	---	---	---	---	---	2	21	3	36
19	---	---	---	---	---	---	---	---	4	38	1	13
20	---	---	---	---	---	---	---	---	2	18	2	25
21	---	---	---	---	---	---	4	43	2	18	11	238
22	---	---	---	---	---	---	---	---	6	55	9	228
23	---	---	---	---	7	150	---	---	2	18	12	280
24	---	---	---	---	---	---	---	---	2	18	7	144
25	---	---	---	---	---	---	---	---	3	27	6	121
26	---	---	---	---	---	---	---	---	3	26	6	107
27	---	---	---	---	---	---	---	---	2	16	5	78
28	---	---	---	---	---	---	4	38	4	33	4	64
29	---	---	---	---	---	---	---	---	5	42	2	34
30	---	---	---	---	8	142	---	---	2	18	3	49
31	---	---	---	---	---	---	---	---	3	27	---	---

HUDSON RIVER BASIN

01332500 HOOSIC RIVER NEAR WILLIAMSTOWN, MA

LOCATION.--Lat 42°42'01", long 73°09'34", Berkshire County, Hydrologic Unit 02020003, on left bank 0.3 mi downstream from Sherman Brook, 2.7 mi east of junction of U.S. Highway 7 and State Highway 2, in Williamstown.

DRAINAGE AREA.--126 mi^2.

PERIOD OF RECORD.--Discharge: July 1940 to current year.
Water-quality records: Water years 1953-54, 1957-58, 1967-69.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 616.11 ft above National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers benchmark). Prior to June 6, 1979, at site 1.2 mi downstream at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Prior to 1966, slight diurnal fluctuation at low flow caused by mills upstream. Some regulation by Cheshire Reservoir 16 mi upstream.

AVERAGE DISCHARGE.--49 years, 273 ft^3/s, 29.42 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,000 ft^3/s, Dec. 31, 1948, gage height, 14.85 ft, former site and datum, from rating curve extended above 4,300 ft^3/s on basis of contracted-opening measurement of peak flow; minimum, 5.8 ft^3/s, Aug. 30, 31, Oct. 26, 1940; minimum daily, 24 ft^3/s, Sept. 9, 1980.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 29	unknown	3,000	unknown	May 6	1145	*3,040	*8.68

Minimum discharge, 73 ft^3/s, Feb. 17, Sept. 14; minimum daily, 76 ft^3/s, Feb. 13.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	85	239	322	e140	151	114	e850	277	261	149	111	104
2	84	1140	287	e135	172	111	e560	1370	575	140	100	132
3	87	511	265	e125	128	109	e620	1020	521	126	100	113
4	83	341	234	e95	107	106	e900	597	317	122	98	100
5	86	351	216	e100	97	120	e1200	468	266	219	104	90
6	85	767	213	e130	99	137	e1800	1850	378	271	139	89
7	85	436	213	e120	96	96	e1300	1100	394	183	137	89
8	86	316	212	e110	91	100	e750	692	610	156	115	86
9	89	270	195	e130	79	95	e580	549	440	131	97	85
10	94	273	184	118	87	96	e500	523	1170	318	91	83
11	110	254	159	105	94	100	e390	1300	621	501	103	79
12	114	222	e100	124	78	103	e320	960	420	227	666	82
13	104	332	e110	148	76	95	296	769	459	179	1260	77
14	95	468	e120	115	195	108	297	600	467	164	572	77
15	91	312	e130	184	272	302	331	505	526	156	323	93
16	89	261	122	142	165	264	850	447	784	130	247	91
17	88	383	e115	122	102	185	719	409	686	126	212	147
18	92	371	e110	113	104	343	638	305	449	123	208	119
19	114	293	e105	116	102	268	527	267	369	114	183	95
20	106	681	e120	116	84	176	433	248	303	122	166	267
21	96	1290	132	93	665	163	380	237	256	175	173	283
22	318	627	140	95	651	137	343	237	250	142	141	169
23	339	461	116	98	267	133	298	211	391	126	163	198
24	227	376	145	92	180	139	276	536	726	117	153	217
25	209	328	258	92	165	175	258	550	358	112	127	158
26	175	292	174	98	149	587	242	343	271	100	110	340
27	158	278	140	136	154	e660	235	341	229	105	106	290
28	150	622	232	100	117	e1000	232	279	202	236	104	196
29	165	485	271	96	---	e2000	219	242	190	234	107	166
30	147	364	190	105	---	e1000	293	228	168	143	128	145
31	142	---	159	120	---	e700	---	227	---	118	109	---
TOTAL	3993	13344	5489	3613	4727	9722	16637	17687	13057	5265	6453	4260
MEAN	129	445	177	117	169	314	555	571	435	170	208	142
MAX	339	1290	322	184	665	2000	1800	1850	1170	501	1260	340
MIN	83	222	100	92	76	95	219	211	168	100	91	77
CFSM	1.02	3.53	1.41	.92	1.34	2.49	4.40	4.53	3.45	1.35	1.65	1.13
IN.	1.18	3.94	1.62	1.07	1.40	2.87	4.91	5.22	3.85	1.55	1.91	1.26

CAL YR 1988 TOTAL 87715 MEAN 240 MAX 2120 MIN 52 CFSM 1.90 IN. 25.90
WTR YR 1989 TOTAL 104247 MEAN 286 MAX 2000 MIN 76 CFSM 2.27 IN. 30.78

e Estimated

HUDSON RIVER BASIN

01333000 GREEN RIVER AT WILLIAMSTOWN, MA

LOCATION.--Lat 42°42'32", long 73°11'50", Berkshire County, Hydrologic Unit 02020003, on left bank 0.1 mi upstream from bridge on State Highway 2, at Williamstown, and 0.8 mi upstream from mouth.

DRAINAGE AREA.--42.6 mi^2.

PERIOD OF RECORD.--Discharge: September 1949 to current year.
Water-quality records: Water years 1967-69.

REVISED RECORDS.--WDR MA-RI-84-1: 1977-78(P), 1979, 1980-83(P).

GAGE.--Water-stage recorder. Elevation of gage is 615 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for winter period, which are fair. Slight diurnal fluctuation at times caused by mill upstream.

AVERAGE DISCHARGE.--40 years, 82.3 ft^3/s, 26.24 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,060 ft^3/s, Dec. 21, 1973, gage height, 5.68 ft in gage well, from rating curve extended above 750 ft^3/s on basis of slope-area measurement at gage height 4.94 ft; maximum gage height, 6.35 ft, Mar. 13, 1977, from floodmarks, gage height in well unknown; minimum discharge, 3.1 ft^3/s, Sept. 20, 22, 24, 25, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 31, 1948, reached a stage of about 7.5 ft, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 850 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 21	1530	1,020	3.84	May 6	1045	*1,460	*4.36

Minimum discharge, 11 ft^3/s, Sept. 13, 14.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	59	112	51	47	e34	325	77	88	58	28	21
2	15	219	102	49	47	e32	182	318	201	53	26	33
3	17	123	95	47	40	30	195	250	162	47	24	21
4	15	97	85	e39	32	29	234	183	125	45	22	19
5	15	98	79	e45	e35	44	236	154	104	80	24	17
6	17	145	75	e41	e35	e35	455	685	150	67	33	16
7	15	118	73	e38	34	29	409	396	135	54	35	15
8	16	101	69	e36	34	e30	276	292	183	52	28	14
9	17	88	64	e40	30	33	214	220	160	44	23	13
10	18	82	60	36	e29	e27	183	214	367	132	20	13
11	22	80	45	32	e28	e30	154	413	229	137	23	13
12	20	70	e32	56	26	27	133	357	167	83	105	13
13	19	134	e43	53	e24	27	125	289	169	70	121	12
14	18	130	e41	38	100	34	126	227	147	61	85	12
15	17	106	e39	79	94	81	139	191	160	55	62	16
16	16	95	e36	42	46	51	310	168	232	49	52	14
17	16	148	e35	36	30	41	248	146	223	47	45	29
18	18	124	e34	34	33	82	211	129	162	43	40	17
19	20	110	e36	41	36	54	172	116	144	40	36	16
20	17	274	e38	48	32	39	144	102	124	44	35	49
21	17	369	e45	34	307	40	129	102	110	53	56	50
22	39	212	e45	46	127	35	121	92	108	41	38	35
23	40	168	e40	48	64	35	112	80	121	38	40	47
24	37	141	e60	42	47	37	103	134	196	34	33	49
25	37	122	78	32	e45	77	94	131	123	31	29	36
26	33	112	54	60	e43	249	85	106	103	28	27	74
27	30	106	e50	52	e40	233	79	115	89	28	25	59
28	32	177	78	36	e36	278	75	93	82	68	23	47
29	33	133	69	33	---	339	73	83	73	50	23	41
30	30	119	55	40	---	234	86	76	64	35	28	36
31	28	---	54	39	---	274	---	78	---	31	22	---
TOTAL	699	4060	1821	1343	1521	2620	5428	6017	4501	1698	1211	847
MEAN	22.5	135	58.7	43.3	54.3	84.5	181	194	150	54.8	39.1	28.2
MAX	40	369	112	79	307	339	455	685	367	137	121	74
MIN	15	59	32	32	24	27	73	76	64	28	20	12
CFSM	.53	3.18	1.38	1.02	1.28	1.98	4.25	4.56	3.52	1.29	.92	.66
IN.	.61	3.55	1.59	1.17	1.33	2.29	4.74	5.25	3.93	1.48	1.06	.74

CAL YR 1988 TOTAL 25660.3 MEAN 70.1 MAX 706 MIN 9.3 CFSM 1.65 IN. 22.41
WTR YR 1989 TOTAL 31766 MEAN 87.0 MAX 685 MIN 12 CFSM 2.04 IN. 27.74

e Estimated

HUDSON RIVER BASIN

01333500 LITTLE HOOSIC RIVER AT PETERSBURG, NY

LOCATION.--Lat 42°45'50", long 73°20'16", Rensselaer County, Hydrologic Unit 02020003, on left bank 100 ft downstream from highway bridge on dirt road, 1.0 mi downstream from Petersburg, and 4.9 mi upstream from mouth.

DRAINAGE AREA.--56.1 mi^2.

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

REVISED RECORDS.--WSP 1702: 1959.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 587.40 ft above National Geodetic Vertical Datum of 1929.

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

AVERAGE DISCHARGE.--38 years, 94.2 ft^3/s, 22.81 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,000 ft^3/s, June 30, 1973, gage height, 9.20 ft; minimum, 1.9 ft^3/s, Sept. 11, 12, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 31, 1948, reached a stage of 9.4 ft, from floodmarks, discharge, 7,470 ft^3/s, from contracted-opening measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,250 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 31	2250	*1,300	a*5.05	No other peak greater than base discharge.			

a Recorded in well; outside gage height was 5.13 ft, from crest-stage gage.

Minimum discharge, 7.2 ft^3/s, Sept. 14, gage height, 1.40 ft.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.2	25	157	e43	e30	e27	550	75	64	37	22	11
2	8.3	251	139	e44	e28	e25	312	278	171	33	20	15
3	9.1	143	125	e46	e25	e24	307	258	122	29	19	11
4	8.5	105	110	e38	e23	e23	320	206	92	27	18	10
5	8.3	104	e94	e35	e23	e30	321	170	81	57	19	9.7
6	8.2	193	e88	e36	e26	e24	655	661	209	47	19	9.5
7	8.2	145	e82	e40	e30	e21	697	462	170	35	19	9.0
8	8.3	123	e72	e60	e30	e19	450	333	318	35	17	8.7
9	8.5	104	e64	e45	e31	e18	336	256	239	28	16	8.5
10	8.7	92	e56	e35	e25	e17	280	240	564	112	15	8.3
11	10	88	e48	e39	e26	e18	223	438	339	150	15	8.2
12	10	75	e40	e37	e28	e18	182	428	235	80	48	8.1
13	9.6	142	e41	e41	e25	e20	165	381	238	62	64	7.9
14	9.0	157	e50	e36	e35	23	168	308	194	54	47	8.0
15	8.9	119	e60	e35	e50	79	171	251	195	46	29	9.1
16	8.7	106	e45	e32	e44	43	353	211	234	39	23	8.8
17	8.6	167	e40	e28	e36	32	287	179	259	36	19	17
18	8.8	144	e35	e26	e31	72	252	148	198	32	17	11
19	9.9	123	e35	e25	e29	e40	213	125	169	29	16	10
20	9.3	252	e40	e25	e28	e30	181	108	135	32	15	43
21	9.0	441	e45	e20	e300	e28	157	98	112	44	22	36
22	15	274	e42	e20	e110	e26	138	91	102	32	17	22
23	18	219	e38	e21	e60	e27	121	79	93	29	18	27
24	18	178	e40	e23	e32	e30	109	90	107	26	16	32
25	19	148	e45	e24	e25	e150	98	92	83	24	14	24
26	18	127	e42	e23	e26	251	89	78	72	22	13	44
27	17	120	e40	e21	e28	209	82	88	64	21	12	41
28	17	312	e44	e21	e26	208	76	80	58	51	11	32
29	20	214	e50	e22	---	396	72	71	50	37	11	28
30	18	178	e48	e26	---	422	82	62	42	27	12	24
31	17	---	e42	e28	---	502	---	57	---	25	11	---
TOTAL	363.1	4869	1897	995	1210	2852	7447	6402	5009	1338	634	541.8
MEAN	11.7	162	61.2	32.1	43.2	92.0	248	207	167	43.2	20.5	18.1
MAX	20	441	157	60	300	502	697	661	564	150	64	44
MIN	8.2	25	35	20	23	17	72	57	42	21	11	7.9
CFSM	.21	2.89	1.09	.57	.77	1.64	4.42	3.68	2.98	.77	.36	.32
IN.	.24	3.23	1.26	.66	.80	1.89	4.94	4.25	3.32	.89	.42	.36

CAL YR 1988 TOTAL 27656.5 MEAN 75.6 MAX 897 MIN 7.8 CFSM 1.35 IN. 18.34
WTR YR 1989 TOTAL 33557.9 MEAN 91.9 MAX 697 MIN 7.9 CFSM 1.64 IN. 22.25

e Estimated

HUDSON RIVER BASIN

01334000 WALLOOMSAC RIVER NEAR NORTH BENNINGTON, VT.

LOCATION.--Lat 42°54'47", long 73°15'25", Bennington County, Hydrologic Unit 02020003, on left bank 0.6 mi downstream from Paran Creek and 1.4 mi south of North Bennington.

DRAINAGE AREA.--111 mi².

PERIOD OF RECORD.--Discharge: June 1931 to current year.
Water-quality records: Water years 1953-54.

REVISED RECORDS.--WSP 781: 1933(M).

GAGE.--Water-stage recorder. Elevation of gage is 525 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Occasional diurnal fluctuation at low flow caused by mills upstream; diurnal fluctuation greater prior to 1960. Diversion upstream for municipal supply of Bennington and North Bennington since 1961. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--58 years, 222 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,450 ft³/s, Sept. 21, 1938, gage height, 12.04 ft, from rating curve extended above 2,800 ft³/s on basis of contracted-opening measurements at gage heights 10.13 ft, 10.49 ft, 11.50 ft, and 12.04 ft and slope-area measurement and computation of flow over dam at gage height 12.04 ft; minimum, 4 ft³/s, Sept. 27, 1932; minimum daily, 21 ft³/s, Sept. 22, 23, 1964, July 12, 1965.

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

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
May 26	1215	*2,715	*6.58	No other peak greater than base discharge			

Minimum discharge, 43 ft³/s, Mar. 13.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	68	123	281	112	100	85	841	236	210	116	83	75
2	65	887	247	114	132	79	472	825	329	106	75	94
3	70	432	225	109	99	76	471	671	375	97	82	77
4	66	281	204	e105	e90	76	669	445	229	91	161	69
5	61	335	176	e100	e80	111	861	364	183	291	462	64
6	59	602	171	e96	e75	135	1530	1460	424	263	254	60
7	58	379	166	e92	e72	e80	1140	810	421	196	183	58
8	58	286	159	e86	e70	e74	659	526	482	276	140	56
9	60	248	142	e82	e68	e66	506	424	352	161	111	55
10	63	220	131	104	e66	69	446	383	740	373	96	54
11	87	210	118	78	e66	69	370	898	454	379	98	52
12	94	180	e98	85	e64	69	320	685	320	210	527	54
13	78	258	e86	94	e62	65	297	614	315	160	658	52
14	70	440	e82	80	110	72	304	483	309	137	505	54
15	67	275	e86	112	169	211	325	404	324	126	294	69
16	64	222	e90	99	131	231	665	350	420	109	213	67
17	62	283	e120	86	e100	149	594	304	432	102	169	140
18	63	288	e130	82	e75	249	674	268	329	95	140	100
19	84	223	e110	83	e66	218	552	238	253	89	123	77
20	74	331	e100	e82	e60	143	466	214	214	98	118	253
21	67	794	e94	e82	445	135	409	211	186	146	215	251
22	161	424	133	e80	482	116	371	210	206	113	154	138
23	236	317	104	76	217	107	309	179	296	96	148	188
24	171	271	140	74	134	111	279	247	438	85	143	236
25	182	236	249	71	122	211	260	262	259	78	115	146
26	141	211	151	79	121	304	249	226	198	71	100	211
27	123	213	119	100	97	366	243	215	169	79	91	216
28	118	615	185	80	89	600	230	175	180	243	83	148
29	133	491	238	78	---	1160	216	148	157	164	79	122
30	115	334	154	82	---	682	227	134	132	110	84	107
31	104	---	126	87	---	586	---	154	---	92	76	---
TOTAL	2922	10409	4615	2770	3462	6705	14955	12763	9336	4752	5780	3343
MEAN	94.3	347	149	89.4	124	216	498	412	311	153	186	111
MAX	236	887	281	114	482	1160	1530	1460	740	379	658	253
MIN	58	123	82	71	60	65	216	134	132	71	75	52

CAL YR 1988 TOTAL 72335 MEAN 198 MAX 1510 MIN 35
WTR YR 1989 TOTAL 81812 MEAN 224 MAX 1530 MIN 52

e Estimated

HUDSON RIVER BASIN

01334500 HOOSIC RIVER NEAR EAGLE BRIDGE, NY

LOCATION.--Lat 42°56'19", long 73°22'39", Rensselaer County, Hydrologic Unit 02020003, on right bank 0.5 mi upstream from Case Brook, 1.2 mi downstream from Walloomsac River, and 1.2 mi southeast of Eagle Bridge.

DRAINAGE AREA.--510 mi^2.

PERIOD OF RECORD.--August 1910 to March 1922, July 1923 to current year.

REVISED RECORDS.--WSP 741: Drainage area. WSP 756: 1913(m). WSP 1302: 1922(M). WSP 1432: 1913 (minimum gage height). WSP 1502: 1911-12, 1914, 1920-21, 1928(M), 1936(M).

GAGE.--Water-stage recorder. Datum of gage is 355.41 ft above National Geodetic Vertical Datum of 1929. Prior to March 1922, nonrecording gage and July 24, 1923 to July 18, 1936, water-stage recorder, at site 0.2 mi upstream at different datums.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Diurnal fluctuation at medium and low flow caused by powerplants upstream from station. Telephone gage-height telemeter at station.

AVERAGE DISCHARGE.--77 years (water years 1911-21, 1924-89), 946 ft^3/s, 25.18 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 55,400 ft^3/s, Dec. 31, 1948, gage height, 21.15 ft, from highwater mark in gage house, from rating curve extended above 13,000 ft^3/s on basis of peak flow over downstream dams and contracted-opening measurements at gage heights 17.8 ft and 21.15 ft; minimum discharge, 24 ft^3/s, Sept. 14, 1913; minimum daily, 30 ft^3/s, Sept. 14, 1913.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 7,400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr. 7	0330	8,230	9.14	May 6	1715	*10,500	*10.11

Minimum discharge recorded, 110 ft^3/s, Sept. 10, but may have been less during period of ice effect Mar. 7-15; minimum daily discharge, 189 ft^3/s, Sept. 10.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	218	359	1370	607	429	e370	4490	955	861	573	372	278
2	222	2660	1220	572	606	e340	2400	3010	1220	523	313	328
3	222	1800	1120	554	471	e320	2350	3560	2140	471	331	319
4	222	1140	1030	429	389	e310	2820	2200	1190	439	350	269
5	207	1060	911	340	364	e340	3290	1760	984	836	836	250
6	203	1900	862	e400	e350	e320	5840	5990	1450	1080	593	228
7	203	1470	846	e380	e330	e310	6280	4730	1830	709	564	220
8	200	1150	810	e440	e320	e300	3650	2940	2260	766	442	222
9	200	976	740	e460	e310	e300	2710	2320	1810	569	381	207
10	203	869	667	e440	e310	e320	2390	2000	3840	804	324	189
11	235	850	594	e410	e300	e300	1940	4230	2690	1760	318	204
12	287	755	410	e390	e300	e280	1640	3720	1880	952	1160	195
13	261	816	497	e390	e290	e250	1510	3200	1730	686	2590	191
14	241	1770	588	e400	e350	e270	1530	2580	1800	608	1900	191
15	230	1210	604	e470	e900	e600	1530	2160	1730	564	1080	225
16	222	1010	581	e450	e800	1000	3110	1860	2340	487	807	241
17	218	1200	535	e390	e430	580	2930	1650	2490	451	670	365
18	218	1400	509	e360	e380	782	2690	1390	1900	413	589	385
19	253	1100	493	e370	e340	934	2290	1210	1540	383	538	286
20	257	1440	493	e390	e310	568	1920	1070	1290	364	485	440
21	233	4350	567	e360	e2100	558	1670	984	1110	568	596	928
22	325	2430	605	e330	2720	482	1510	1010	1000	458	546	552
23	822	1820	552	e380	1120	429	1310	861	1090	398	523	476
24	575	1520	532	e350	701	473	1210	1060	1900	354	534	739
25	559	1300	1030	e340	e600	1220	1100	1530	1260	322	432	526
26	475	1150	730	e340	e520	1690	1020	1140	976	e286	370	579
27	423	1080	577	556	e460	1850	971	1080	860	e300	344	915
28	390	2260	731	423	e410	2520	920	942	793	711	302	601
29	425	2170	1140	371	---	4260	859	811	728	795	319	506
30	394	1580	760	376	---	3390	959	724	633	497	316	425
31	362	---	655	431	---	2990	---	719	---	407	311	---
TOTAL	9505	44595	22759	12899	16910	28656	68839	63396	47325	18534	19236	11480
MEAN	307	1486	734	416	604	924	2295	2045	1577	598	621	383
MAX	822	4350	1370	607	2720	4260	6280	5990	3840	1760	2590	928
MIN	200	359	410	330	290	250	859	719	633	286	302	189
CFSM	.60	2.91	1.44	.82	1.18	1.81	4.50	4.01	3.09	1.17	1.22	.75
IN.	.69	3.25	1.66	.94	1.23	2.09	5.02	4.62	3.45	1.35	1.40	.84

CAL YR 1988 TOTAL 309693 MEAN 846 MAX 7470 MIN 149 CFSM 1.66 IN. 22.59
WTR YR 1989 TOTAL 364134 MEAN 998 MAX 6280 MIN 189 CFSM 1.96 IN. 26.56

e Estimated

HUDSON RIVER BASIN

01334805 HOOSIC RIVER AT EAGLE BRIDGE, NY

LOCATION.--Lat 42°57'05", long 73°23'28", Rensselaer County, Hydrologic Unit 02020003, at Route 67 bridge in Eagle Bridge, 2 mi east of Buskirk.

DRAINAGE AREA.--571 mi^2.

PERIOD OF RECORD.--April 1987 to current year. Records prior to October 1988 are unpublished and available in files of the Geological Survey.
CHEMICAL DATA: 1987 (b), 1988-89 (c).
MINOR ELEMENTS DATA: 1987 (b), 1988-89 (c).
SEDIMENT DATA: 1988 (b), 1989 (c).

REMARKS.--Water-quality samples were collected by personnel of the New York State Department of Environmental Conservation, and were analyzed in USGS laboratories. Water-discharge data based on records obtained for Hoosic River near Eagle Bridge (station 01334500).

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT												
03...	1130	222	303	8.70	17.0	763	10.8	112	130	33	11	14
NOV												
01...	1200	345	224	7.60	4.5	764	13.6	105	98	26	8.1	9.5
APR												
18...	0900	2780	150	7.70	7.5	751	12.2	103	61	17	4.4	6.3
MAY												
11...	1000	5040	149	7.70	8.5	747	12.8	112	56	16	4.0	6.2
JUN												
15...	1000	1750	197	7.80	15.0	758	10.7	107	78	22	5.7	7.1
AUG												
09...	1300	383	278	8.50	19.5	760	10.9	119	110	30	7.6	9.5

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)
OCT											
03...	1.8	112	15	19	0.10	70	--	<1	--	7	--
NOV											
01...	1.3	81	15	13	0.10	70	20	<1	1	13	7
APR											
18...	1.0	47	10	10	0.10	800	--	1	--	4	--
MAY											
11...	1.1	47	10	8.3	0.10	2400	--	<1	--	15	--
JUN											
15...	1.0	65	10	10	0.10	310	--	<1	--	4	--
AUG											
09...	1.5	95	13	12	0.10	120	--	<1	--	12	--

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT											
03...	230	--	<5	--	30	--	<0.10	3	--	30	--
NOV											
01...	120	22	<5	<5	20	8	<0.10	6	2	<10	11
APR											
18...	1400	--	<5	--	50	--	<0.10	1	--	20	--
MAY											
11...	4400	31	8	--	180	--	<0.10	5	--	30	--
JUN											
15...	510	--	2	--	40	--	<0.10	3	--	20	--
AUG											
09...	210	--	--	--	40	--	<0.10	3	--	10	--

HUDSON RIVER BASIN

01334805 HOOSIC RIVER AT EAGLE BRIDGE, NY--Continued

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
OCT				
03...	1130	222	1	0.60
NOV				
01...	1200	345	1	0.93
APR				
18...	0900	2780	31	233
MAY				
11...	1000	5040	138	1880
JUN				
15...	1000	1750	14	66
AUG				
09...	1300	383	5	5.2

HUDSON RIVER BASIN

01335754 HUDSON RIVER ABOVE LOCK 1 NEAR WATERFORD, NY

LOCATION.--Lat 42°49'45", long 73°40'00", Saratoga County, Hydrologic Unit 02020003, 0.4 mi upstream from dam at Lock 1c and 3.4 mi downstream from dam at Lock 2c Champlain (Barge) Canal.

DRAINAGE AREA.--4,611 mi^2.

PERIOD OF RECORD.--October 1976 to current year. Prior to October 1981 published as 01335770 Hudson River at Waterford, NY.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to February 1978, nonrecording gage 200 ft downstream of this site.

REMARKS.--Records fair. Streamflow affected by regulation for power generation and diversion for canal operations.

AVERAGE DISCHARGE.--13 years, 7,897 ft^3/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 71,800 ft^3/s, Mar. 15, 1977; minimum daily, 1,170 ft^3/s, July 25, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, about 33,000 ft^3/s, Apr. 7, gage height, about 26.6 ft; maximum gage height, 33.70 ft, May 7; minimum daily discharge, about 2,200 ft^3/s, Oct. 10.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2860	5810	11100	e4780	5160	4460	26500	4980	6650	4630	4290	3700
2	2830	7600	10400	e4760	4600	4300	21900	7630	7310	4650	3980	3800
3	3260	9610	9590	e4870	4470	4430	15500	14000	8150	4690	3600	4040
4	2670	7760	9160	e4510	4110	4110	17200	13000	7090	4490	3770	4520
5	e2660	7640	8810	e4100	3260	3260	e18400	11500	7140	5100	5540	4320
6	e3350	9120	8380	e3960	e3200	3990	e23700	16700	7360	7050	6220	3820
7	e3700	14800	8440	e3440	e3900	4470	e31000	27500	9480	5780	6960	3250
8	e3590	14100	8330	e4270	e4400	4150	26800	23200	8750	5940	6600	2940
9	e2290	12100	8180	e4500	e4200	3810	20800	22700	8640	5650	4320	3130
10	e2200	11600	7680	e4640	e4000	3770	e16200	20100	11900	5240	4420	2990
11	e3530	11900	7270	e4360	e3700	4190	12700	25300	11700	8390	4100	3120
12	e3380	11200	e6590	e3730	e2900	3040	11000	e27000	10100	8740	4610	3270
13	e3440	10800	e6480	e3940	e3100	2260	9880	27700	10300	7660	6540	3170
14	e2920	13000	e6910	e3820	3420	3530	9420	26100	9920	6650	7380	3630
15	e3850	12100	e6830	e4410	5010	4540	8740	25000	10900	4600	6250	3470
16	e3360	10200	e7210	e4810	5290	6460	9580	23300	13500	4310	5380	4260
17	e3220	9590	e6950	e4590	4650	5700	11700	21500	15200	4290	4880	5280
18	e3810	10100	e6850	e4240	4140	5140	10500	19800	14000	4220	4620	5100
19	e3640	9200	e6730	e3920	3150	e4600	9990	16900	12100	4030	4290	5120
20	e3890	9570	e6170	e4110	2460	e3800	9700	13500	11600	4250	4110	5020
21	e3950	15900	e5760	e4310	6610	e3400	8730	10600	10600	4340	3940	8640
22	4300	16800	e5390	e3900	16000	e3300	8020	10100	9780	4540	4040	10300
23	4870	15500	e5370	e3170	9680	3390	7070	8580	9370	3150	4070	9110
24	5010	13300	e4740	e3380	6470	3780	7180	7290	9700	4520	3840	8280
25	5310	12300	e5790	e3990	e5000	4800	7140	7960	9140	3930	4020	8180
26	5880	11400	e6380	e3640	e2900	5780	6380	7590	8100	3710	3650	7320
27	5400	10600	e5270	e3660	3950	6290	5110	8030	7980	3660	3150	6580
28	4660	11600	e5490	e4050	4770	7630	5120	7660	7750	4190	3440	6580
29	5270	13800	6200	e3620	---	11300	4550	6810	7540	4810	3410	6820
30	5540	11300	e5850	e2870	---	20800	4660	5130	7130	4080	3640	6330
31	5390	---	e5370	e3570	---	26700	---	4960	---	4100	3720	---
TOTAL	120030	340300	219670	125920	134500	181180	385170	472120	288880	155390	142780	156090
MEAN	3872	11340	7086	4062	4804	5845	12840	15230	9629	5013	4606	5203
MAX	5880	16800	11100	4870	16000	26700	31000	27700	15200	8740	7380	10300
MIN	2200	5810	4740	2870	2460	2260	4550	4960	6650	3150	3150	2940

CAL YR 1988 TOTAL 2218670 MEAN 6062 MAX 23400 MIN 1630
WTR YR 1989 TOTAL 2722030 MEAN 7458 MAX 31000 MIN 2200

e Estimated

01335770 HUDSON RIVER AT WATERFORD, NY

LOCATION.--Lat 42°47'19", long 73°40'28", at Saratoga-Rensselaer County line, Hydrologic Unit 02020003, at bridge on U.S. Highway 4 in Waterford, 0.4 mi upstream from first branch of Mohawk River, and 2.8 mi downstream from dam at lock 1 of the Champlain (Barge) Canal.

DRAINAGE AREA.--4,620 mi^2.

PERIOD OF RECORD.--Water years 1952, 1969 to current year.
CHEMICAL DATA: 1952 (a), 1969 (d), 1970-71 (e), 1972-76 (d), 1977 (c), 1978-79 (d), 1980-84 (e), 1985 (c), 1986-87 (e), 1988-89 (c).
MINOR ELEMENTS DATA: 1952 (a), 1969 (d), 1970-71 (e), 1972-76 (d), 1977-79 (e), 1980-81 (d), 1982 (a), 1983 (b), 1987-89(c).
PESTICIDE DATA: 1975 (b), 1976 (d), 1977-79 (e), 1980, 1982 (a).
ORGANIC DATA: OC--1975-77 (c), 1978 (d), 1979 (c).
PCB--1975 (b), 1976 (d), 1977-84 (e), 1985 (c), 1986-87 (e), 1988 (d), 1989 (e).
PCN--1977-79 (e), 1980, 1982 (a).
NUTRIENT DATA: 1952 (a), 1969 (d), 1970-71 (e), 1972-76 (d), 1977-78 (e), 1979-81 (d).
BIOLOGICAL DATA: Bacteria--1977 (c), 1978 (d), 1979 (e), 1980-81 (d).
SEDIMENT DATA: 1975 (b), 1976-77 (e), 1978 (a), 1979 (b), 1980 (c), 1981-89 (e).

PERIOD OF DAILY RECORD.--SUSPENDED-SEDIMENT DISCHARGE: October 1976 to current year.

REMARKS.--Water discharge data based on records obtained above Lock 1 near Waterford (station 01335754), 3.2 mi upstream. PCB samples were collected and analyzed by USGS; all other samples were collected by personnel of the New York State Department of Environmental Conservation and were analyzed in USGS laboratories.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT CONCENTRATION: Maximum daily mean (water years 1977-89), 810 mg/L March 14, 1977; minimum daily mean, 1 mg/L on many days.
SUSPENDED-SEDIMENT DISCHARGE: Maximum daily (water years 1977-89), 119,000 tons March 14, 1977; minimum daily, 3.9 tons Sept. 7, 1981.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	BAROMETRIC PRESSURE (MM OF HG)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
OCT												
06...	1300	E3350	240	7.20	16.0	--	9.4	--	65	20	3.6	8.8
NOV												
09...	1000	12200	163	7.20	8.0	--	11.8	--	37	11	2.2	4.2
APR												
17...	1200	12000	174	7.20	6.0	764	13.2	106	62	18	4.1	6.7
MAY												
10...	1100	20400	107	7.50	11.0	762	9.4	85	37	11	2.3	6.2
JUN												
19...	1100	12400	181	7.40	19.0	769	--	--	51	15	3.4	5.6
AUG												
10...	1000	4830	168	7.80	24.0	772	8.3	97	51	15	3.2	6.1

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)	ALUMINUM, DISSOLVED (UG/L AS AL)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)
OCT											
06...	1.4	38	20	17	0.10	150	--	<1	--	10	--
NOV											
09...	0.70	23	15	7.2	0.10	370	50	<1	1	7	3
APR											
17...	1.1	48	13	13	0.10	590	--	1	--	47	--
MAY											
10...	0.90	26	10	7.1	0.10	420	--	<1	--	4	--
JUN											
19...	0.80	39	10	9.1	0.10	340	--	<1	--	4	--
AUG											
10...	0.90	36	12	9.4	0.10	160	--	<1	--	8	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, DISSOLVED (UG/L AS NI)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)
OCT											
06...	280	--	<5	--	40	--	<0.10	2	--	<10	--
NOV											
09...	580	84	<5	<5	80	9	<0.10	4	2	10	10
APR											
17...	860	--	6	--	50	--	<0.10	8	--	450	--
MAY											
10...	660	61	3	--	60	--	<0.10	2	--	10	--
JUN											
19...	660	--	4	--	60	--	<0.10	4	--	350	--
AUG											
10...	260	--	1	--	40	--	<0.10	1	--	10	--

E Estimated daily discharge.

01335770 HUDSON RIVER AT WATERFORD, NY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	STREAM-FLOW INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	PCB, TOTAL (UG/L)	IDENTIFIED AROCLOR(S)
OCT						
13...	1600	E3440	3	28	0.01	1248
26...	1335	6010	5	81	0.01	1248
NOV						
10...	1645	11300	16	488	0.03	1248
16...	1610	9880	6	160	0.02	1248
29...	1115	14100	6	228	0.02	1248
DEC						
08...	1600	6610	1	18	0.02	1248
15...	1215	E6830	2	37	0.03	1242,1248,1254
FEB						
01...	1615	5870	6	95	0.04	1242,1248,1254
MAR						
24...	1135	3640	6	59	0.01	1242,1248,1254
31...	1515	27000	124	9040	0.03	1242,1248,1254
APR						
01...	1542	27300	114	8400	0.02	1242,1248,1254
02...	1037	22400	49	2960	0.01	1242,1248,1254
03...	1700	15000	16	648	0.01	1242,1248,1254
14...	1010	9880	8	213	0.01	1242,1248,1254
28...	0900	4900	5	66	0.01	1242,1248,1254
MAY						
06...	1740	20000	34	1840	0.01	1242,1248,1254
07...	0030	29700	141	11300	0.01	1242,1248,1254
07...	0810	28700	198	15300	0.02	1242,1248,1254
07...	2040	24900	74	4980	0.04	1242,1248,1254
08...	1715	23100	34	2120	0.02	1242,1248,1254
10...	0950	20500	20	1110	0.03	1242,1248,1254
12...	1540	26100	45	3170	0.02	1242,1248,1254
26...	1610	6170	8	133	0.01	1242,1248,1254
JUN						
02...	1120	7170	8	155	0.01	1242,1248,1254
23...	1210	11100	13	390	0.01	1242,1248,1254
30...	1535	7050	9	171	0.05	1242,1248,1254
JUL						
14...	1635	6730	10	182	0.04	1248
21...	1630	3500	6	57	0.04	1248
AUG						
01...	1845	2470	4	27	0.04	1248
09...	1730	2730	5	37	0.04	1248
15...	1430	5970	10	161	0.03	1248
SEP						
01...	1430	3850	4	42	0.05	1248
15...	1345	4420	4	48	0.02	1248

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
OCT				
06...	1300	E3350	3	--
NOV				
09...	1000	12200	14	461
APR				
17...	1200	12000	17	551
MAY				
10...	1100	20400	20	1100
JUN				
19...	1100	12400	19	636
AUG				
10...	1000	4830	5	65

E Estimated daily discharge.

HUDSON RIVER BASIN

01335770 HUDSON RIVER AT WATERFORD, NY--Continued

SEDIMENT, SUSPENDED CONCENTRATION (MG/L), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	2	15	10	157	10	300	---	---	6	84	9	108
2	2	15	10	205	13	365	---	---	7	87	5	58
3	4	35	18	467	---	---	---	---	8	97	8	96
4	3	22	10	210	---	---	---	---	4	44	11	122
5	2	14	10	206	---	---	---	---	4	35	7	62
6	2	18	3	74	---	---	---	---	8	69	6	65
7	10	100	6	240	8	182	---	---	16	168	5	60
8	3	29	15	571	1	22	---	---	1	12	5	56
9	2	12	22	719	---	---	---	---	2	23	33	339
10	4	24	16	501	---	---	---	---	2	22	5	51
11	2	19	16	514	15	294	---	---	12	120	10	113
12	11	100	6	181	---	---	---	---	2	16	19	156
13	3	28	8	233	---	---	---	---	2	17	17	104
14	4	32	10	351	---	---	---	---	2	18	15	143
15	4	42	8	261	2	37	---	---	2	27	15	184
16	3	27	6	165	7	136	---	---	1	14	18	314
17	6	52	8	207	11	206	---	---	3	38	20	308
18	6	62	10	273	---	---	---	---	9	101	15	208
19	5	49	15	373	---	---	---	---	3	26	12	149
20	17	179	4	103	---	---	---	---	3	20	11	113
21	10	107	5	215	---	---	---	---	4	71	19	174
22	10	116	5	227	---	---	---	---	16	691	17	151
23	11	145	5	209	---	---	---	---	2	52	17	156
24	10	135	6	215	5	64	---	---	3	52	6	61
25	7	100	5	166	5	78	---	---	3	40	4	52
26	10	159	3	92	---	---	---	---	2	16	34	531
27	7	102	4	114	---	---	---	---	3	32	30	509
28	7	88	5	157	23	341	---	---	3	39	25	515
29	7	100	6	224	9	151	---	---	---	---	22	671
30	7	105	10	305	15	237	---	---	---	---	81	4550
31	9	131	---	---	10	145	---	---	---	---	128	9230

DAY	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS/ DAY)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	112	8010	12	161	8	144	7	88	4	46	4	40
2	57	3370	10	206	8	158	31	389	6	64	5	51
3	16	670	6	227	16	352	8	101	7	68	5	55
4	28	1300	8	281	14	268	8	97	10	102	6	73
5	28	1390	9	279	12	231	20	275	13	194	5	58
6	30	1920	47	2120	9	179	21	400	21	353	7	72
7	127	10600	142	10500	14	358	25	390	8	150	5	44
8	27	1950	42	2630	14	331	14	225	5	89	4	32
9	15	842	23	1410	17	397	20	305	5	58	4	34
10	5	219	20	1090	31	996	9	127	6	72	8	65
11	4	137	66	4510	23	727	9	204	5	55	3	25
12	6	178	60	4370	19	518	7	165	8	100	2	18
13	8	213	55	4110	13	362	2	41	12	212	5	43
14	8	203	47	3310	10	268	10	180	12	239	3	29
15	8	189	44	2970	12	353	10	124	10	169	4	37
16	7	181	40	2520	15	547	8	93	4	58	4	46
17	8	253	41	2380	22	903	7	81	4	53	3	43
18	1	28	17	909	13	491	7	80	12	150	5	69
19	7	189	38	1730	29	947	9	98	10	116	4	55
20	7	183	36	1310	7	219	9	103	10	111	5	68
21	6	141	36	1030	10	286	6	70	9	96	12	280
22	12	260	24	654	12	317	8	98	5	55	11	306
23	12	229	30	695	13	329	7	60	6	66	11	271
24	13	252	13	256	15	393	7	85	7	73	11	246
25	43	829	27	580	17	420	5	53	6	65	11	243
26	10	172	11	225	8	175	5	50	5	49	10	198
27	8	110	17	369	4	86	11	109	5	43	10	178
28	5	69	13	269	8	167	9	102	5	46	12	213
29	9	111	14	257	10	204	12	156	6	55	6	110
30	10	126	17	235	9	173	3	33	5	49	8	137
31	---	---	12	161	---	---	6	66	5	50	---	---

HUDSON RIVER BASIN

01336000 MOHAWK RIVER BELOW DELTA DAM, NEAR ROME, NY

LOCATION.--Lat 43°15'52", long 75°26'12", Oneida County, Hydrologic Unit 02020004, on right bank at Rome Fish Hatchery, 1.0 mi downstream from Delta Dam, and 4.0 mi north of Rome.

DRAINAGE AREA.--152 mi^2.

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

REVISED RECORDS.--WDR NY-85-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 474.00 ft above Barge Canal datum. Prior to Jan. 24, 1937, nonrecording gage at site 200 ft downstream at same datum.

REMARKS.--No estimated daily discharges. Records good. During canal navigation season, water is diverted from Black River through Forestport feeder and Black River Canal (flowing south) into basin above Delta Reservoir. Flow regulated by Delta Reservoir (usable capacity, 2,800 mil ft^3). Small quantity of water diverted from Delta Reservoir for fish hatchery use and later returned to river, part upstream and part downstream from station. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--68 years, 374 ft^3/s, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,560 ft^3/s, Oct. 2, 1945, gage height, 11.18 ft; minimum, 18 ft^3/s, July 21, 27, Oct. 24, 25, 1983, minimum gage height, 0.63 ft, Oct. 24, 25, 1983; minimum daily discharge, 45 ft^3/s, Jan. 17, 1931.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,730 ft^3/s, Mar. 31, gage height, 6.58 ft; minimum, 147 ft^3/s, July 2, 3, gage height, 1.67 ft; minimum daily discharge, 156 ft^3/s, July 2.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	196	193	250	433	205	192	2270	165	236	168	187	221
2	196	201	257	429	207	192	1390	266	299	156	188	247
3	196	206	256	430	199	192	1190	468	291	174	187	240
4	196	198	276	432	195	343	1460	495	325	193	201	240
5	196	214	240	432	193	431	1970	406	318	194	236	240
6	196	280	231	429	192	433	1730	624	276	193	192	238
7	194	222	225	427	191	431	1260	1050	241	193	190	237
8	193	215	225	407	191	479	992	913	208	193	189	237
9	193	224	217	385	192	501	772	834	187	192	189	237
10	192	216	215	380	191	496	630	642	405	192	189	237
11	195	225	213	378	190	492	528	901	448	192	188	237
12	203	215	302	377	189	491	461	1030	341	191	189	237
13	198	210	425	382	190	492	424	856	299	191	188	237
14	196	208	427	379	196	490	408	632	323	191	187	238
15	195	207	432	385	205	534	395	484	364	191	186	287
16	193	206	433	358	198	524	440	385	460	191	186	250
17	192	218	432	331	196	407	453	323	547	191	186	258
18	193	211	432	329	194	344	459	267	583	191	186	245
19	194	208	432	248	192	328	440	229	451	191	187	243
20	193	221	429	194	190	320	377	198	342	192	189	377
21	193	246	439	195	209	314	329	187	292	191	188	264
22	237	218	435	192	228	311	295	244	272	190	186	253
23	220	215	430	190	211	311	249	225	239	189	190	280
24	250	217	432	190	205	311	222	228	224	189	187	270
25	219	213	440	191	201	320	264	228	207	189	186	255
26	209	211	436	191	195	338	253	215	175	189	186	251
27	207	209	434	196	193	313	218	216	159	189	185	248
28	213	217	435	193	192	282	195	201	233	189	184	248
29	212	241	439	191	---	293	176	177	240	189	184	246
30	201	244	436	194	---	859	168	161	193	188	184	245
31	194	---	434	202	---	2370	---	164	---	187	184	---
TOTAL	6255	6529	11139	9670	5530	14134	20418	13414	9178	5839	5864	7543
MEAN	202	218	359	312	197	456	681	433	306	188	189	251
MAX	250	280	440	433	228	2370	2270	1050	583	194	236	377
MIN	192	193	213	190	189	192	168	161	159	156	184	221

CAL YR 1988 TOTAL 98377 MEAN 269 MAX 1930 MIN 116
WTR YR 1989 TOTAL 115513 MEAN 316 MAX 2370 MIN 156

HUDSON RIVER BASIN

01342602 MOHAWK RIVER NEAR UTICA, NY

LOCATION.--Lat 43°05'18", long 75°09'45", Herkimer County, Hydrologic Unit 02020004, at bridge on Upper Dyke Road, 2.0 mi east of city line of Utica.

DRAINAGE AREA.--553 mi^2.

PERIOD OF RECORD.--Water years 1972-73, April 1988 to current year.
CHEMICAL DATA: 1988 (b), 1989 (c).
MINOR ELEMENTS DATA: 1972-73, 1988 (b), 1989 (c).
SEDIMENT DATA: 1989 (c).

REMARKS.--Water-quality samples were collected by personnel of the New York State Department of Environmental Conservation, and were analyzed in USGS laboratories.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT												
06...	0900	254	--	7.55	14.0	--	11.0	--	140	43	9.1	18
MAR												
22...	1200	--	364	6.20	3.0	763	13.6	101	140	42	8.3	22
APR												
04...	1100	3770	290	7.30	4.0	744	12.4	97	120	36	6.8	12
25...	1100	--	378	7.90	7.0	749	10.1	85	150	45	10	15
MAY												
17...	1000	3130	320	8.30	13.5	753	10.4	101	160	49	10	14
JUN												
06...	1100	1200	231	8.00	14.5	749	11.0	110	150	45	9.9	18
27...	1100	--	--	7.90	24.0	--	--	--	180	52	12	17
AUG												
01...	0900	232	462	8.30	22.0	756	8.4	97	170	49	11	21
SEP												
06...	1000	368	421	7.90	19.0	758	8.5	92	150	45	9.5	19

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)
OCT											
06...	1.9	107	31	23	0.10	290	--	1	--	46	--
MAR											
22...	1.6	100	29	35	0.10	250	--	<1	--	14	--
APR											
04...	1.6	87	22	19	0.10	770	20	1	<1	13	4
25...	1.5	113	34	25	0.10	7600	--	<1	--	29	--
MAY											
17...	1.6	127	28	21	0.10	520	20	<1	<1	14	5
JUN											
06...	1.7	127	28	27	0.20	470	--	<1	--	17	--
27...	1.8	148	36	25	0.20	3200	--	<1	--	21	--
AUG											
01...	2.2	125	46	29	0.30	1100	--	<1	--	19	--
SEP											
06...	2.0	113	40	27	0.20	330	--	<1	--	16	--

HUDSON RIVER BASIN

01342602 MOHAWK RIVER NEAR UTICA, NY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT											
06...	800	--	<5	--	110	--	<0.10	3	--	90	--
MAR											
22...	650	--	<5	--	80	--	<0.10	1	--	10	--
APR											
04...	1600	46	6	<5	70	22	<0.10	8	1	20	6
25...	23000	--	8	--	190	--	<0.10	18	--	60	--
MAY											
17...	1200	41	4	<1	110	70	<0.10	6	3	20	15
JUN											
06...	1200	--	5	--	100	--	<0.10	5	--	40	--
27...	6200	--	8	--	140	--	<0.10	10	--	40	--
AUG											
01...	3700	--	5	--	130	--	<0.10	3	--	20	--
SEP											
06...	740	--	4	--	90	--	<0.10	4	--	20	--

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
MAR				
22...	1200	--	14	--
APR				
04...	1100	3770	46	468
25...	1100	--	13	--
MAY				
17...	1000	3130	34	287
JUN				
06...	1100	1200	31	100
27...	1100	--	21	--
AUG				
01...	0900	232	19	12

ANALYSIS OF BOTTOM MATERIAL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SOLIDS, VOLA-TILE IN BOTTOM MA-TERIAL (MG/KG)	ALUM-INUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G)	CADMIUM RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CD)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU)	IRON, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS FE)	LEAD, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS PB)
AUG							
01...	0900	27000	4000	<1	50	11000	20

DATE	MANGA-NESE, RECOV. FM BOT-TOM MA-TERIAL (UG/G)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG)	NICKEL, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS NI)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN)	BED MAT. FALL DIAM. % FINER THAN .004 MM	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM
AUG							
01...	240	0.07	20	80	2	7	100

HUDSON RIVER BASIN

01346000 WEST CANADA CREEK AT KAST BRIDGE, NY

LOCATION.--Lat 43°04'08", long 74°59'26", Herkimer County, Hydrologic Unit 02020004, on right bank 600 ft downstream from bridge on old State Highway 28 at Kast Bridge, 1.2 mi downstream from North Creek, 2.2 mi north of Herkimer, and 4.0 mi upstream from mouth. Prior to Oct. 23, 1985, at site on left bank.

DRAINAGE AREA.--560 mi^2.

PERIOD OF RECORD.--January 1907, April to December 1907, March 1908 to December 1909, April 1910 to December 1913, April to December 1914, April 1915 to January 1917, April to November 1917, April to June 1918, October 1920 to current year. Monthly discharge only for some periods, published in WSP 1302. Gage height and discharge measurements only, May 1905 to December 1906.

REVISED RECORDS.--WDR NY-85-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 438.99 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 18, 1920, nonrecording gage at former highway bridge 500 ft upstream at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Since March 1914, flow regulated by Hinckley Reservoir, 31 mi upstream from station (usable capacity, 3,320 mil ft^3). Diurnal fluctuation at low and medium flow caused by powerplants upstream from station. Diversion at Trenton Falls, 26 mi upstream from station, by Ninemile feeder since 1915 during canal navigation season. Diversion from Hinckley Reservoir for Utica water supply returned to Mohawk River.

AVERAGE DISCHARGE.--69 years (water years 1921-89), 1,313 ft^3/s, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,300 ft^3/s, Mar. 26, 1913, from reports of State Engineer and Surveyor; maximum gage height, 10.47 ft, probably Feb. 17, 1943, from floodmark in gage well (ice jam); minimum discharge, 20 ft^3/s, Sept. 3, 1929, gage height, 0.90 ft; minimum daily, 59 ft^3/s, Sept. 2, 1929.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,920 ft^3/s, Mar. 30, gage height, 5.23 ft; minimum, 189 ft^3/s, Aug. 2; minimum daily, 452 ft^3/s, Aug. 1.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	649	1080	1940	575	1160	603	3360	1450	1190	786	452	595
2	717	1740	1920	565	991	536	2450	2090	1190	773	453	851
3	671	1980	1950	538	796	599	2700	2620	1820	753	487	610
4	662	1730	1930	473	732	594	2980	2440	1560	722	562	564
5	704	1740	1890	e460	709	600	3200	2330	1640	860	1680	548
6	759	3650	1860	e500	636	597	4710	3980	1240	774	661	556
7	760	2230	1340	683	e640	594	5400	5580	1180	713	579	549
8	725	2050	1870	780	e620	594	4300	4570	1010	733	478	554
9	693	2200	1810	831	e520	577	3230	3630	1090	656	455	545
10	695	2050	1340	751	e560	557	2760	2870	2120	706	478	570
11	795	2230	e1000	689	e580	622	2250	3610	1900	674	490	569
12	916	2180	e800	724	e580	535	2030	3130	1130	626	568	548
13	1030	2040	e840	900	e580	560	2010	2820	1230	607	597	549
14	889	2060	e940	790	965	692	1620	2430	1270	602	555	578
15	868	1910	1030	1090	965	2040	1430	2480	1450	598	528	1110
16	857	1910	1010	827	717	1460	1470	2050	2240	593	655	738
17	843	2170	964	710	640	1150	1350	1920	2310	599	572	823
18	858	2100	846	655	568	1460	1640	1850	2080	582	527	761
19	955	2000	586	636	570	1200	2420	1270	1910	592	554	498
20	883	2210	869	672	552	968	2730	1130	1130	623	569	1950
21	855	3220	1220	546	1200	1150	2580	1170	1100	642	588	1040
22	1260	2250	720	e540	1690	1100	2470	1090	1090	671	576	624
23	1450	2090	532	e540	943	1130	2250	1050	1060	729	572	1250
24	2190	2020	701	e520	795	1190	1970	1150	1070	606	558	1540
25	2120	2000	766	e520	e790	1440	1850	1140	999	572	590	1230
26	1700	1970	631	598	610	1890	1830	1010	893	505	576	1250
27	1630	1960	568	765	609	2200	1600	964	853	569	577	1190
28	1380	2080	1030	683	638	2600	1270	867	1030	646	572	1180
29	1270	2050	1240	642	---	3700	1440	828	922	538	574	1140
30	1120	1960	995	744	---	4540	1440	837	790	525	459	1080
31	1090	---	920	880	---	4170	---	973	---	509	646	---
TOTAL	31994	62860	36058	20827	21356	41648	72740	65329	40497	20084	18188	25590
MEAN	1032	2095	1163	672	763	1343	2425	2107	1350	648	587	853
MAX	2190	3650	1950	1090	1690	4540	5400	5580	2310	860	1680	1950
MIN	649	1080	532	460	520	535	1270	828	790	505	452	498

CAL YR 1988 TOTAL 364192 MEAN 995 MAX 4830 MIN 250
WTR YR 1989 TOTAL 457171 MEAN 1253 MAX 5580 MIN 452

e Estimated

01347000 MOHAWK RIVER NEAR LITTLE FALLS, NY

LOCATION.--Lat 43°00'52", long 74°46'48", Herkimer County, Hydrologic Unit 02020004, on left bank 1,800 ft downstream from Rocky Rift Dam, 2.1 mi upstream from East Canada Creek, and 4.5 mi southeast of city of Little Falls.

DRAINAGE AREA.--1,342 mi^2.

PERIOD OF RECORD.--October 1927 to current year.

REVISED RECORDS.--WSP 741: 1929(M). WSP 1302: 1901, 1932(M). WSP 1432: 1928-30. WDR NY-85-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 308.84 ft above National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Records good except those for estimated daily discharges, which are poor. Records of daily discharge do not include diversion at Rocky Rift Dam into Erie (Barge) Canal for lockages at lock 16, near St. Johnsville. Monthly and annual figures of diversion at Rocky Rift Dam are published separately below. During canal navigation season, water is received from Black River basin through Black River Canal flowing south, and from Chenango River basin through Oriskany Creek feeder. Water is diverted into (or may occasionally be received from) Oswego River basin through summit level of Erie (Barge) Canal between New London and Utica. Diurnal fluctuation caused by powerplants and locks and dams on Erie (Barge) Canal. Regulation by Delta and Hinckley Reservoirs (combined usable capacity, 6,120 mil ft^3) (see Reservoirs in Hudson River Basin). Telephone gage-height telemeter at station.

COOPERATION.--Figures of diversions at Rocky Rift Dam into Erie (Barge) Canal provided by New York State Department of Transportation.

AVERAGE DISCHARGE.--62 years, 2,793 ft^3/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (river channel only), 33,100 ft^3/s, Mar. 14, 1977, gage height, 19.17 ft, from floodmark in gage house; minimum discharge (river channel only), 214 ft^3/s, Aug. 18, 1949, gage height, 3.75 ft; minimum daily discharge (including canal), probably not less than 463 ft^3/s, Sept. 2, 1934.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 16,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 30	1815	*14,600	*12.90				

Minimum discharge (river channel only), 456 ft^3/s, Oct. 10, gage height, 4.34 ft; minimum daily (river channel only), 805 ft^3/s, Aug. 2.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1030	1840	3230	1890	3390	1530	11600	2260	2840	1590	884	1020
2	1090	3180	4570	1860	3990	1290	9730	3730	2770	1460	805	1310
3	1040	4680	3610	1780	2930	1340	9170	4960	3680	1360	892	1200
4	1070	3990	3280	e1530	2010	1340	8820	4590	3190	1280	921	1050
5	1160	3330	3180	e1330	1960	1600	9230	4080	3930	1750	3480	944
6	1230	8870	3030	e1400	1940	2040	10600	8230	2900	1780	2440	951
7	1220	7160	2640	e1550	1670	1790	12000	12000	2740	1460	1420	982
8	1170	5460	2820	1770	1560	1570	9780	10300	2340	1470	1140	992
9	1080	4240	3060	2090	1370	1640	7260	8120	2090	1320	1030	999
10	1070	4240	3110	1900	1460	1640	5920	6380	4830	1320	966	1030
11	1160	4100	2400	1720	1450	1770	4820	10200	4580	1380	925	935
12	1380	4220	1480	1500	1390	1700	4310	9250	2780	1210	1080	985
13	1630	3870	1540	1950	1350	1610	3900	8370	3100	1150	1140	947
14	1410	3840	1860	1870	1610	1830	3360	5940	3640	1130	1130	962
15	1350	3380	1990	2220	2800	4550	2860	5320	4370	1100	1020	1940
16	1310	3160	1980	2720	2490	5610	3070	4180	7620	1090	1170	2090
17	1290	3530	1820	2330	1870	4140	2880	3780	6640	1050	1210	1850
18	1300	3690	1650	1960	1580	3830	2420	3550	5560	1050	1060	1820
19	1420	3280	1450	1790	1430	3860	2640	2550	4250	1020	979	1320
20	1350	3500	1580	1890	1370	2920	4340	2210	2950	1100	1040	4040
21	1290	6970	2400	e1860	2690	2790	4060	2150	2570	1220	1230	5020
22	1920	5510	2380	e1570	6410	2530	3820	2110	2780	1180	1150	2510
23	3290	3830	1680	e1490	4980	2400	3520	1940	2470	1260	1090	2190
24	4200	3600	1690	1440	2920	2560	3090	2150	2280	1070	1070	4220
25	4940	3370	2370	1380	2300	3580	2870	2410	2250	1000	1100	3280
26	3390	3230	2240	1350	1800	4480	2800	2160	1950	958	1010	2490
27	2780	3170	1760	1920	1630	4940	2640	2110	1720	971	944	2180
28	2340	3450	2710	1770	1550	5990	2090	1950	2180	1510	950	2040
29	2320	3580	3500	1700	---	8040	2230	1710	2270	1220	962	1920
30	2050	3370	2870	1970	---	10400	2250	1590	1790	1040	968	1800
31	1880	---	2530	2700	---	11800	---	1880	---	934	942	---
TOTAL	55160	123640	76410	56200	63900	107110	158080	142160	99060	38433	36148	55017
MEAN	1779	4121	2465	1813	2282	3455	5269	4586	3302	1240	1166	1834
MAX	4940	8870	4570	2720	6410	11800	12000	12000	7620	1780	3480	5020
MIN	1030	1840	1450	1330	1350	1290	2090	1590	1720	934	805	935
‡	18.1	3.5	0.4	0	0	0	0.2	22.9	26.4	28.7	23.3	22.6

CAL YR 1988 TOTAL 783316 MEAN 2140 MAX 11700 MIN 687 ‡ 12.9
WTR YR 1989 TOTAL 1011318 MEAN 2771 MAX 12000 MIN 805 ‡ 12.3

e Estimated

‡ Diversion, equivalent in cubic feet per second, at Rocky Rift Dam into Erie (Barge) Canal for lockages at Lock 16.

HUDSON RIVER BASIN

01348000 EAST CANADA CREEK AT EAST CREEK, NY

LOCATION.--Lat 43°01'00", long 74°44'28", Herkimer County, Hydrologic Unit 0202004, on right bank at village of East Creek, 0.2 mi downstream from Niagara Mohawk Power Corp. Beardslee powerplant, 1.2 mi upstream from mouth, and 3.5 mi northwest of St. Johnsville.

DRAINAGE AREA.--289 mi^2.

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

REVISED RECORDS.--WDR NY-85-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 335.70 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Extensive diurnal fluctuation and slight regulation caused by powerplants upstream from station. City of Little Falls diverts about 5 ft^3/s for municipal supply.

AVERAGE DISCHARGE.--43 years (water years 1947-89), 678 ft^3/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,600 ft^3/s, Dec. 29, 1984, gage height, 7.68 ft; minimum, 0.05 ft^3/s, July 9, 1978, gage height, 0.47 ft; minimum gage height, 0.44 ft, July 29, 1977; minimum daily discharge, 0.22 ft^3/s, July 9, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 2, 1945, reached a stage of 9.0 ft, from floodmarks (discharge, 24,000 ft^3/s, from slope-area measurement of peak flow).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than 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)
Mar. 30	2100	*8,380	*6.46	May 6	1215	7,780	6.29

Minimum discharge, 4.0 ft^3/s, July 20, 21, gage height, 0.79 ft; minimum daily discharge 4.0 ft^3/s, July 20.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	193	718	472	299	281	531	4610	434	951	71	467	173
2	98	716	537	353	563	384	2830	1050	1100	44	382	876
3	303	1060	331	416	643	339	2380	1780	795	52	244	664
4	68	916	356	225	513	422	2740	1250	537	87	127	248
5	222	764	466	262	391	187	4080	964	1190	309	1950	236
6	343	2340	189	237	e280	387	4230	4970	925	538	1820	204
7	475	2350	355	193	e250	308	3530	4340	846	146	1060	163
8	331	1570	312	236	e250	396	2550	2780	581	551	633	194
9	105	1420	325	376	e400	359	1920	2370	614	443	515	102
10	251	1270	287	336	248	356	1680	1890	1840	306	238	76
11	398	1080	305	186	250	188	1420	2460	1720	1010	117	134
12	463	1030	15	227	141	219	1040	2290	1050	691	264	298
13	720	969	521	334	313	265	970	1980	961	557	511	283
14	397	1480	59	241	299	518	896	1770	1180	459	294	322
15	396	1160	32	433	533	721	851	1350	1050	210	389	386
16	247	1090	228	313	446	783	1140	1130	2480	21	282	516
17	268	854	197	449	467	985	1240	983	2340	542	397	868
18	544	840	169	262	185	862	1430	568	1800	295	206	391
19	720	840	294	293	224	685	1640	477	1440	4.3	212	417
20	720	736	254	298	485	765	1640	328	805	4.0	382	1480
21	720	1730	290	67	475	798	1480	330	870	10	109	2970
22	720	1740	280	224	813	419	1170	415	619	15	27	1720
23	720	1430	325	190	820	372	1040	395	492	16	27	1040
24	719	904	282	177	979	702	826	269	406	169	28	1440
25	1100	731	559	278	921	413	766	335	547	163	266	1220
26	1040	610	281	215	848	641	731	140	446	290	294	644
27	771	726	436	418	838	960	741	396	425	205	121	713
28	725	812	558	177	837	1420	597	401	439	990	78	259
29	720	640	566	383	---	5190	191	273	475	455	22	287
30	720	684	590	187	---	6690	486	288	123	211	138	120
31	720	---	357	504	---	6150	---	351	---	547	22	---
TOTAL	15937	33210	10228	8789	13693	33415	50845	38757	29047	9411.3	11622	18444
MEAN	514	1107	330	284	489	1078	1695	1250	968	304	375	615
MAX	1100	2350	590	504	979	6690	4610	4970	2480	1010	1950	2970
MIN	68	610	15	67	141	187	191	140	123	4.0	22	76

CAL YR 1988 TOTAL 186476.3 MEAN 509 MAX 5530 MIN 9.3
WTR YR 1989 TOTAL 273398.3 MEAN 749 MAX 6690 MIN 4.0

e Estimated

HUDSON RIVER BASIN

01349000 OTSQUAGO CREEK AT FORT PLAIN, NY

LOCATION.--Lat 42°55'46", long 74°37'35", Montgomery County, Hydrologic Unit 02020004, on left bank 25 ft downstream from bridge on State Highway 163 in Fort Plain, and 0.5 mi upstream from mouth.

DRAINAGE AREA.--59.2 mi^2.

PERIOD OF RECORD.--October 1949 to September 1989 (discontinued).

REVISED RECORDS.--WDR NY-86-1: 1982 (maximum gage height).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 301.16 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1973, at datum 2.00 ft higher. Prior to Oct. 1, 1986, at datum 1.00 ft higher.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Occasional diurnal fluctuation at low flow.

AVERAGE DISCHARGE.--40 years, 84.6 ft^3/s, 19.41 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,400 ft^3/s Oct. 28, 1981, gage height, 12.24 ft, present datum, in gage well, 12.8 ft, present datum, from floodmarks, from rating curve extended above 3,200 ft^3/s on basis of contracted-opening measurement of peak flow; maximum gage height, at least 13.6 ft, but less than 13.9 ft, Jan. 26, 1989 (ice jam); minimum discharge, 0.6 ft^3/s, Nov. 30, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than 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. 20	2315	2,410	6.45	May 6	0700	*3,270	b7.24
Jan. 26	1845	ice jam	a*	June 10	0300	2,310	6.35
Mar. 30	1515	2,410	6.45	June 16	0300	3,220	c7.20
Mar. 31	2015	2,350	6.39				

a At least 13.6 ft, but less than 13.9 ft.
b Recorded in well; outside gage height was 7.77 ft, from crest-stage gage.
c Recorded in well; outside gage height was 7.78 ft, from crest-stage gage.

Minimum discharge, 4.7 ft^3/s, Sept. 10.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.8	12	38	e32	e60	e17	386	31	73	18	7.3	8.2
2	5.6	368	36	e27	e35	e15	150	304	81	16	7.3	9.8
3	5.5	232	38	e26	e15	e14	262	136	81	14	8.3	8.6
4	7.0	74	36	e25	e12	e13	328	88	55	12	7.9	e8.0
5	29	56	25	e25	e13	e20	453	67	47	113	214	e7.0
6	31	304	35	e25	e15	e40	291	1100	60	71	39	e6.0
7	17	93	33	e28	e14	e30	300	310	60	32	22	e5.0
8	13	58	36	e30	e14	e23	166	174	48	30	15	5.0
9	11	64	28	e45	e14	e19	124	131	50	20	13	5.0
10	12	71	e23	e45	e14	e18	109	204	836	54	11	4.9
11	13	70	e19	e40	e15	e18	94	750	139	78	10	5.6
12	13	58	e16	e35	e15	e19	86	326	80	26	12	5.3
13	13	346	e15	e33	e17	e25	81	196	185	19	17	5.0
14	11	238	e15	e35	e30	e45	79	159	216	15	15	5.6
15	10	77	e18	e45	e60	250	74	123	432	13	12	9.3
16	9.6	54	e18	e40	e50	79	135	101	1000	12	11	8.2
17	9.3	131	e17	e35	e35	45	109	84	295	12	9.7	13
18	9.4	79	e16	e30	e25	74	93	69	156	12	8.6	8.9
19	11	50	e16	e26	e18	45	77	58	108	11	8.2	7.8
20	9.9	432	e20	e24	e21	27	64	51	73	11	8.9	47
21	9.1	850	e28	e23	e300	28	56	48	82	15	8.6	25
22	84	170	e34	e22	e200	28	49	45	252	13	8.7	12
23	128	93	e30	e21	e50	30	42	36	103	11	8.7	9.9
24	85	72	e32	e21	e32	35	40	49	66	9.7	8.6	14
25	59	60	e45	e20	e27	310	36	49	48	9.3	7.9	12
26	33	50	e37	e80	e24	251	32	45	37	8.6	7.7	8.8
27	22	48	e32	e40	e21	136	29	48	30	11	7.1	7.2
28	20	111	e50	e21	e19	171	27	37	42	23	7.3	6.3
29	25	76	e70	e20	---	214	26	29	30	13	7.8	6.1
30	16	46	e54	e22	---	842	31	30	22	9.6	9.3	5.8
31	13	---	e40	e35	---	701	---	37	---	8.1	8.7	---
TOTAL	740.2	4443	950	976	1165	3582	3829	4915	4787	720.3	547.6	290.3
MEAN	23.9	148	30.6	31.5	41.6	116	128	159	160	23.2	17.7	9.68
MAX	128	850	70	80	300	842	453	1100	1000	113	214	47
MIN	5.5	12	15	20	12	13	26	29	22	8.1	7.1	4.9
CFSM	.40	2.50	.52	.53	.70	1.95	2.16	2.68	2.70	.39	.30	.16
IN.	.47	2.79	.60	.61	.73	2.25	2.41	3.09	3.01	.45	.34	.18

CAL YR 1988 TOTAL 22625.5 MEAN 61.8 MAX 1050 MIN 3.5 CFSM 1.04 IN. 14.22
WTR YR 1989 TOTAL 26945.4 MEAN 73.8 MAX 1100 MIN 4.9 CFSM 1.25 IN. 16.93

e Estimated

HUDSON RIVER BASIN

01349530 MOHAWK RIVER AT FONDA, NY

LOCATION.--Lat 42°57'01", long 74°22'10", Montgomery County, Hydrologic Unit 02020004, at highway 30A bridge, at Fonda.

DRAINAGE AREA.--2,118 mi^2.

PERIOD OF RECORD.--May 1988 to current year.
CHEMICAL DATA: 1988 (a), 1989 (c).
MINOR ELEMENTS DATA: 1988 (a), 1989 (c).
SEDIMENT DATA: 1989 (c).

REMARKS.--Water-quality samples were collected by personnel of the New York State Department of Environmental Conservation, and were analyzed in USGS laboratories.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, IN CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	BAROMETRIC PRESSURE (MM OF HG)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
MAR												
20...	1200	3870	275	7.50	2.0	746	12.8	94	92	29	4.8	9.0
APR												
03...	0900	13300	216	7.70	3.5	755	13.6	103	83	26	4.5	7.0
27...	1000	3630	207	8.00	7.5	751	8.0	68	71	22	3.9	7.8
MAY												
16...	1200	6030	229	7.90	12.5	753	10.4	99	96	30	5.1	8.1
JUN												
05...	1100	5510	289	8.10	18.5	755	9.9	107	120	36	6.8	10
28...	1000	3030	289	8.00	23.5	--	--	--	120	37	6.8	11
AUG												
02...	1100	1260	237	8.80	26.0	757	9.5	118	100	31	5.8	14
SEP												
07...	1100	1200	259	8.90	21.0	759	11.3	128	100	32	5.6	11

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)	ALUMINUM, DISSOLVED (UG/L AS AL)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)
MAR											
20...	1.6	72	18	14	0.10	380	--	<1	--	8	--
APR											
03...	1.5	65	17	12	0.10	930	70	<1	<1	12	5
27...	0.90	53	16	11	0.10	220	--	<1	--	6	--
MAY											
16...	1.1	74	14	11	0.10	310	70	<1	<1	8	5
JUN											
05...	1.3	97	22	15	0.10	260	--	<1	--	6	--
28...	1.2	97	5.0	15	0.10	180	--	1	--	13	--
AUG											
02...	1.2	77	24	18	0.10	240	--	<1	--	7	--
SEP											
07...	1.1	77	25	16	0.10	180	--	<1	--	14	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, DISSOLVED (UG/L AS NI)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)
MAR											
20...	760	--	<5	--	50	--	<0.10	1	--	20	--
APR											
03...	1700	54	6	<5	90	26	<0.10	2	1	30	20
27...	240	--	<5	--	40	--	<0.10	3	--	20	--
MAY											
16...	470	39	4	1	40	23	<0.10	8	5	20	12
JUN											
05...	440	--	4	--	50	--	<0.10	4	--	20	--
28...	310	--	10	--	50	--	<0.10	7	--	10	--
AUG											
02...	330	--	<1	--	70	--	<0.10	2	--	10	--
SEP											
07...	270	--	3	--	40	--	<0.10	4	--	10	--

01349530 MOHAWK RIVER AT FONDA, NY--Continued

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, IN CUBIC FEET PER SECOND	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)
MAR				
20...	1200	3870	18	188
APR				
03...	0900	13300	62	2230
27...	1000	3630	5	49
MAY				
16...	1200	6030	13	212
JUN				
05...	1100	5510	12	179
28...	1000	3030	8	65
AUG				
02...	1100	1260	10	34
SEP				
07...	1100	1200	5	16

ANALYSIS OF BOTTOM MATERIAL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SOLIDS, VOLATILE IN BOTTOM MATERIAL (MG/KG)	ALUMINUM, RECOV. FM BOTTOM MATERIAL (UG/G)	CADMIUM RECOV. FM BOTTOM MATERIAL (UG/G AS CD)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU)	IRON, RECOV. FM BOTTOM MATERIAL (UG/G AS FE)	LEAD, RECOV. FM BOTTOM MATERIAL (UG/G AS PB)
AUG							
02...	1100	45500	3800	1	10	9100	20

DATE	MANGANESE, RECOV. FM BOTTOM MATERIAL (UG/G)	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG)	NICKEL, RECOV. FM BOTTOM MATERIAL (UG/G AS NI)	ZINC, RECOV. FM BOTTOM MATERIAL (UG/G AS ZN)	BED MAT. FALL DIAM. % FINER THAN .004 MM	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM
AUG							
02...	280	0.09	<10	60	3	13	100

HUDSON RIVER BASIN

01350000 SCHOHARIE CREEK AT PRATTSVILLE, NY

LOCATION.--Lat 42°19'15", long 74°26'10", Greene County, Hydrologic Unit 02020005, on left bank 100 ft upstream from bridge on State Highway 23 in Prattsville, 0.2 mi upstream from Schoharie Reservoir, 0.2 mi downstream from Huntersfield, and 1.6 mi downstream from Batavia Kill.

DRAINAGE AREA.--236 mi^2.

PERIOD OF RECORD.--November 1902 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 351: Drainage area. WSP 1432: 1937-38. WDR NY-87-1: 1956(M), 1972(M), 1974-76(M), 1978(P), 1979(M), 1980(P), 1981(M), 1984(M).

GAGE.--Water-stage recorder. Datum of gage is 1,134.98 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1915, nonrecording gage, and Oct. 1, 1915 to July 17, 1936, water-stage recorder, at old highway bridge 80 ft upstream, and July 18, 1936 to July 15, 1954, water-stage recorder at site 0.2 mi downstream, all at datum 1.56 ft lower than present datum.

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

AVERAGE DISCHARGE.--86 years, 461 ft^3/s, 26.53 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 51,600 ft^3/s, Oct. 16, 1955, gage height, 19.14 ft, from rating curve extended above 17,800 ft^3/s on basis of contracted-opening measurements of peak flow at gage heights 18.37 ft and 19.14 ft; maximum gage height, 19.57 ft, Mar. 5, 1979 (ice jam); minimum daily discharge, 4.8 ft^3/s, Sept. 22, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 6	0115	10,200	9.07	May 11	0715	8,380	8.38
May 6	0915	*13,400	*10.14	May 16	2400	11,200	9.40

Minimum daily discharge, 19 ft^3/s, Oct. 7.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	94	309	e100	e120	e60	1760	289	311	301	90	37
2	25	361	272	e88	e120	e54	966	2810	279	254	87	38
3	23	357	251	e86	e105	e54	789	1830	249	214	73	33
4	22	250	237	e80	e90	e60	773	1110	215	187	68	29
5	21	769	212	e75	e87	e80	876	846	190	776	68	27
6	20	5180	e200	e74	e81	e120	1690	6690	275	713	63	26
7	19	1570	e190	e73	e75	e80	1710	2920	343	423	64	25
8	20	848	189	e88	e62	e65	1080	1670	306	336	61	23
9	26	605	e150	e82	e56	e53	833	1190	299	272	55	22
10	32	467	e130	e80	e50	e58	707	1390	1000	260	50	22
11	33	395	e100	e80	e45	e60	579	6290	605	533	46	21
12	33	335	e94	e90	e45	e64	495	3130	416	315	60	20
13	32	443	e90	e100	e45	e70	448	1860	522	243	178	20
14	31	805	e90	e110	e79	e86	440	1320	644	211	183	22
15	30	511	e110	e135	e120	e190	435	1060	1180	187	118	28
16	30	424	e100	e115	e180	225	845	2090	1370	164	92	28
17	29	503	e90	e100	e105	139	920	6130	1110	154	78	42
18	29	520	e86	e94	e86	188	742	2310	804	142	67	43
19	31	412	e84	e89	e73	227	650	1470	608	127	61	42
20	31	634	e100	e86	e64	e130	553	1090	474	157	60	861
21	30	1240	e130	e84	e320	e110	486	910	396	288	60	557
22	201	773	e120	e80	e580	e100	438	771	366	193	56	291
23	508	618	e110	e78	e180	e100	388	594	374	158	51	442
24	218	530	e110	e75	e125	e110	353	808	1200	132	47	532
25	210	453	e150	e72	e110	e120	323	756	613	115	43	345
26	167	403	e100	e95	e96	378	296	570	656	103	76	306
27	139	373	e90	e97	e84	776	277	535	1210	93	97	320
28	121	446	e130	e85	e74	2020	258	457	591	170	87	238
29	116	422	e160	e85	---	1720	249	373	468	178	78	197
30	104	352	e130	e95	---	1690	298	323	361	124	65	167
31	93	---	e110	e105	---	1890	---	301	---	103	44	---
TOTAL	2452	21093	4424	2776	3257	11077	20657	53893	17435	7626	2326	4804
MEAN	79.1	703	143	89.5	116	357	689	1738	581	246	75.0	160
MAX	508	5180	309	135	580	2020	1760	6690	1370	776	183	861
MIN	19	94	84	72	45	53	249	289	190	93	43	20
CFSM	.34	2.98	.60	.38	.49	1.51	2.92	7.37	2.46	1.04	.32	.68
IN.	.39	3.32	.70	.44	.51	1.75	3.26	8.49	2.75	1.20	.37	.76

CAL YR 1988 TOTAL 119943 MEAN 328 MAX 5180 MIN 14 CFSM 1.39 IN. 18.91
WTR YR 1989 TOTAL 151820 MEAN 416 MAX 6690 MIN 19 CFSM 1.76 IN. 23.93

e Estimated

HUDSON RIVER BASIN

01350080 MANOR KILL AT WEST CONESVILLE NEAR GILBOA, NY

LOCATION.--Lat 42°22'37", long 74°24'48", Schoharie County, Hydrologic Unit 02020005, on right bank 50 ft south of County Highway 3, 0.5 mi east of West Conesville, 2.2 mi southeast of Gilboa, and 1.2 mi upstream from mouth.

DRAINAGE AREA.--32.4 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is 1,255.95 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.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,680 ft^3/s, Apr. 4, 1987, gage height, 9.76 ft in gage well, 10.9 ft from floodmarks, from rating curve extended above 970 ft^3/s on basis of slope-area measurement of peak flow; minimum discharge, 1.5 ft^3/s, Sept. 28, 1988.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 11	0530	*904	*3.97	No other peak greater than base discharge.			

Minimum discharge, 1.6 ft^3/s, Oct. 16, 17, 18.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	4.8	28	e21	19	e12	198	47	52	30	13	3.7
2	2.0	23	26	16	20	e17	114	279	45	25	11	4.0
3	1.9	23	24	16	17	e11	103	162	42	22	10	3.5
4	2.0	19	23	e23	e16	e11	104	115	33	19	9.7	3.3
5	2.0	40	e21	e25	e14	e16	103	95	29	84	9.9	3.2
6	1.9	123	20	e19	e13	e18	166	277	49	58	9.2	3.0
7	1.8	62	21	e16	e11	e12	160	208	47	36	8.9	2.9
8	1.8	45	20	e14	e10	e10	113	146	41	28	8.2	2.7
9	1.9	36	18	e13	e9.0	e9.0	94	116	40	23	7.5	2.6
10	1.9	30	e17	e12	e8.4	e10	81	189	85	32	7.0	2.6
11	1.9	27	e16	e11	e8.0	e9.0	71	595	53	51	6.7	3.1
12	1.8	23	e14	e17	e7.8	e7.6	64	308	40	27	9.3	3.0
13	1.8	28	e15	e16	e7.8	e11	61	209	115	22	22	2.7
14	1.8	40	e17	e18	e14	e14	59	177	113	19	22	3.4
15	1.8	29	e14	22	30	e34	60	139	151	17	13	4.7
16	1.7	25	e12	e17	22	24	111	201	133	15	9.9	4.5
17	1.7	30	e13	e18	e15	17	93	332	119	14	8.3	9.9
18	1.7	30	e15	14	e12	26	80	177	88	13	7.3	6.3
19	1.8	25	e13	13	e11	e18	72	144	72	12	6.8	6.1
20	1.8	43	11	13	10	e16	65	113	59	38	6.5	62
21	1.8	73	15	e15	e60	e14	60	96	51	76	6.5	30
22	9.8	49	13	e17	e50	e13	56	82	101	35	5.9	18
23	15	42	e16	e15	e26	e12	51	68	103	25	5.6	27
24	11	38	e18	e13	e22	13	47	87	127	20	5.2	27
25	9.8	34	27	12	e18	17	44	71	81	17	4.8	19
26	7.1	31	e18	15	e15	52	41	62	67	14	4.5	17
27	5.8	30	e22	15	e13	104	38	56	58	13	4.3	16
28	5.4	39	20	e14	e12	147	36	47	50	37	4.2	13
29	5.1	35	24	13	---	128	36	39	43	24	4.3	12
30	4.8	30	e20	15	---	179	54	35	35	17	4.3	10
31	4.4	---	e22	17	---	208	---	35	---	14	3.8	---
TOTAL	117.0	1106.8	573	495	491.0	1189.6	2435	4707	2122	877	259.6	326.2
MEAN	3.77	36.9	18.5	16.0	17.5	38.4	81.2	152	70.7	28.3	8.37	10.9
MAX	15	123	28	25	60	208	198	595	151	84	22	62
MIN	1.7	4.8	11	11	7.8	7.6	36	35	29	12	3.8	2.6
CFSM	.12	1.14	.57	.49	.54	1.18	2.51	4.69	2.18	.87	.26	.34
IN.	.13	1.27	.66	.57	.56	1.37	2.80	5.40	2.44	1.01	.30	.37

CAL YR 1988 TOTAL 11114.8 MEAN 30.4 MAX 298 MIN 1.7 CFSM .94 IN. 12.76
WTR YR 1989 TOTAL 14699.2 MEAN 40.3 MAX 595 MIN 1.7 CFSM 1.24 IN. 16.88

e Estimated

HUDSON RIVER BASIN

01350100 SCHOHARIE RESERVOIR NEAR GRAND GORGE, NY

LOCATION.--Lat 42°21'21", long 74°26'42", Schoharie County, Hydrologic Unit 02020005, in Shandaken Tunnel intake house on Intake Road, 1.6 mi north of junction of Intake Road and State Highway 23, 2.5 mi upstream from Gilboa Dam, and 2.6 mi east of Grand Gorge.

DRAINAGE AREA.--314 mi^2.

PERIOD OF RECORD.--January 1973 to current year. Monthly contents only published as "at Gilboa" for September 1928 to December 1972.

REVISED RECORDS.--WDR NY-86-1: 1956 (maximum elevation).

GAGE.--Water-stage recorder. Supplementary nonrecording gage used for periods when reservoir elevation is below 1,072.50 ft. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Board of Water Supply, City of New York).

REMARKS.--Reservoir is formed by masonry and earth dam. Storage began July 24, 1926. Usable capacity 19,583 mil gal between minimum operating level, elevation, 1,050.00 ft, and crest of spillway, elevation, 1,130.00 ft. Dead storage below elevation 1,050.00, 1,968 mil gal. Figures given herein represent usable contents. Reservoir impounds water except for periods of spilling, for diversion through Shandaken Tunnel into Esopus Creek to Ashokan Reservoir, for New York City water supply.

COOPERATION.--Capacity table and once-daily nonrecording gage readings provided by Department of Environmental Protection, City of New York.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation observed, 1,136.26 ft, Oct. 16, 1955, contents, 22,058 mil gal; minimum observed (after initial filling), 1,062.00 ft, Aug. 20, 1970, contents, 1,520 mil gal.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 1,131.97 ft, May 17, contents, 20,348 mil gal; minimum elevation observed, 1,076.00 ft, Oct. 21, from observation at 0800 hours, contents, 4,079 mil gal.

Capacity table (elevation, in feet, and usable contents in million gallons)

1,063.0	1,670	1,120.0	16,100
1,080.0	4,970	1,133.0	20,700

ELEVATION, IN FEET, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1084.90	1078.83	1118.87	1101.34	1083.28	1082.43	1107.11	1115.26	1126.36	1130.31	1125.89	1113.24
2	1084.47	1079.21	1118.98	1100.63	1083.17	1082.28	1110.22	1118.00	1125.93	1130.24	1125.65	1112.83
3	1084.01	1080.27	1118.98	1099.93	1083.01	1082.16	1112.21	1123.02	1125.73	1130.18	1125.39	1112.38
4	1083.47	1080.87	1119.00	1099.09	1082.64	1082.01	1113.11	1124.69	1125.46	1130.14	1125.09	1111.92
5	1082.81	1081.38	1118.89	1098.09	1082.24	1081.93	1113.75	1125.35	1125.14	1130.38	1124.78	1111.46
6	1082.22	1090.68	1118.72	1097.14	1081.87	1081.99	1115.21	1129.59	1125.11	1130.81	1124.50	1111.01
7	1081.63	1097.26	1118.27	1096.19	1081.50	1081.83	1117.81	1130.94	1125.48	1130.58	1124.26	1110.56
8	1081.08	1100.03	1117.79	1095.30	1081.03	1081.62	1119.31	1130.57	1125.62	1130.42	1123.99	1110.11
9	1080.53	1101.85	1117.29	1094.55	1080.55	1081.43	1120.04	1130.30	1125.78	1130.29	1123.64	1109.67
10	1080.00	1102.99	1116.69	1093.66	1080.05	1081.24	1120.39	1130.33	1126.74	1130.18	1123.27	1109.22
11	1079.52	1103.78	1116.05	1092.72	1079.55	1081.03	1120.44	1131.45	1128.40	1130.25	1122.92	1108.77
12	1079.09	1104.39	1115.22	1091.80	1079.06	1080.88	1120.24	1130.84	1129.43	1130.18	1122.57	1108.32
13	1078.75	1104.99	1114.42	1091.10	1078.60	1080.65	1119.90	1130.57	1130.21	1130.02	1122.48	1107.96
14	1078.39	1106.51	1113.75	1090.21	1078.24	1080.48	1119.52	1130.42	1130.54	1129.82	1122.49	1107.66
15	1078.09	1107.53	1113.14	1089.42	1078.33	1080.62	1119.03	1130.39	1130.70	1129.28	1122.39	1107.26
16	1077.77	1108.10	1112.42	1088.76	1078.83	1081.14	1119.07	1130.69	1130.79	1128.62	1122.15	1105.98
17	1077.43	1108.67	1111.61	1088.06	1078.84	1081.33	1119.76	1131.52	1130.79	1128.00	1121.89	1104.69
18	1077.06	1109.47	1110.76	1087.70	1078.70	1081.44	1120.12	1130.87	1130.74	1127.66	1121.37	1103.51
19	1076.70	1109.98	1109.90	1087.40	1078.50	1081.87	1120.20	1130.68	1130.66	1127.35	1120.24	1103.01
20	1076.32	1110.52	1109.04	1087.09	1078.26	1082.05	1120.10	1130.41	1130.62	1127.05	1118.88	1103.46
21	1076.17	1112.55	1108.32	1086.72	1078.73	1082.13	1119.79	1130.32	1130.62	1127.23	1117.67	1105.08
22	1076.76	1114.22	1107.65	1086.25	1081.59	1082.10	1119.35	1130.24	1130.60	1127.25	1117.16	1105.64
23	1077.40	1115.27	1106.81	1085.85	1082.48	1082.04	1118.81	1130.03	1130.63	1127.09	1116.75	1106.28
24	1077.99	1116.07	1106.02	1085.48	1082.65	1082.03	1118.23	1129.95	1130.88	1126.87	1116.32	1107.27
25	1078.37	1116.64	1105.61	1085.13	1082.57	1082.17	1117.54	1130.07	1130.76	1126.71	1115.88	1108.02
26	1078.66	1117.07	1105.13	1084.78	1082.52	1082.77	1116.77	1129.91	1130.60	1126.50	1115.45	1108.34
27	1078.83	1117.41	1104.40	1084.61	1082.53	1084.43	1115.92	1129.63	1130.96	1126.29	1115.11	1108.68
28	1078.89	1117.84	1103.78	1084.33	1082.50	1088.26	1115.14	1129.19	1130.70	1126.27	1114.79	1108.89
29	1078.93	1118.35	1103.36	1084.00	---	1093.20	1114.97	1128.59	1130.55	1126.33	1114.44	1108.92
30	1078.93	1118.65	1102.77	1083.72	---	1097.15	1115.08	1127.87	1130.42	1126.27	1114.08	1108.90
31	1078.89	---	1102.05	1083.51	---	1102.38	---	1127.10	---	1126.11	1113.68	---
MEAN	1079.49	1104.38	1111.80	1090.47	1080.78	1083.52	1117.30	1128.67	1128.90	1128.54	1120.49	1108.30
MAX	1084.90	1118.65	1119.00	1101.34	1083.28	1102.38	1120.44	1131.52	1130.96	1130.81	1125.89	1113.24
MIN	1076.17	1078.83	1102.05	1083.51	1078.24	1080.48	1107.11	1115.26	1125.11	1126.11	1113.68	1103.01
‡	4713	15690	10564	5774	5556	11399	14549	18397	19719	18146	14023	12633
‡‡	-73.7	+566	-256	-239	-12.0	+292	+162	+192	+68.2	-78.5	-206	-71.7

CAL YR 1988 MEAN 1114.21 MAX 1131.13 MIN 1076.17 ‡‡ -38.1
WTR YR 1989 MEAN 1107.01 MAX 1131.52 MIN 1076.17 ‡‡ +27.3

‡ Contents, in million gallons, at 2400 hours on last day of month.
‡‡ Change in contents, equivalent in cubic feet per second.

NOTE: Mean elevations for Oct. 1-26, Apr. 16-18, 22-25, and July 23 to Aug. 18, computed based on observations at 0800 hours.

HUDSON RIVER BASIN

01350101 SCHOHARIE CREEK AT GILBOA, NY

LOCATION.--Lat 42°23'50", long 74°27'03", Schoharie County, Hydrologic Unit 02020005, on left bank, 200 ft upstream from bridge on County Highway 322, 0.2 mi west of village of Gilboa, 0.4 mi downstream from dam on Schoharie Reservoir, and 0.8 mi upstream from the Platter Kill.

DRAINAGE AREA.--314 mi^2.

PERIOD OF RECORD.--October 1975 to current year (since October 1983, discharges only for days of Schoharie Reservoir spill).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 939.56 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Entire flow, runoff from 314 mi^2, except for periods of spill, diverted from Schoharie Reservoir through Shandaken Tunnel into Esopus Creek upstream from Ashokan Reservoir for water supply of city of New York.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 56,400 ft^3/s, Apr. 4, 1987, gage height, 30.2 ft, from floodmarks, from rating curve extended above 14,000 ft^3/s on basis of flow-over-dam measurement of peak flow; minimum daily discharge, 0.04 ft^3/s on many days, June to October 1976, and Sept. 11-13, 1980, but may have been lower since October 1983 (see PERIOD OF RECORD).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, about 65,000 ft^3/s, Oct. 16, 1955, by computation of flow over dam; flood of Mar. 18, 1936, reached a discharge of 32,000 ft^3/s, from information furnished by Bureau of Water Resources Development, City of New York.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,500 ft^3/s, May 17, gage height, 17.86 ft.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	206	---	---
2	---	---	---	---	---	---	---	---	---	144	---	---
3	---	---	---	---	---	---	---	---	---	98	---	---
4	---	---	---	---	---	---	---	---	---	62	---	---
5	---	---	---	---	---	---	---	---	---	298	---	---
6	---	---	---	---	---	---	---	a4100	---	761	---	---
7	---	---	---	---	---	---	---	3470	---	415	---	---
8	---	---	---	---	---	---	---	1530	---	248	---	---
9	---	---	---	---	---	---	---	653	---	157	---	---
10	---	---	---	---	---	---	---	600	---	92	---	---
11	---	---	---	---	---	---	---	6780	---	128	---	---
12	---	---	---	---	---	---	---	2910	---	83	---	---
13	---	---	---	---	---	---	---	1500	---	---	---	---
14	---	---	---	---	---	---	---	842	791	---	---	---
15	---	---	---	---	---	---	---	585	1330	---	---	---
16	---	---	---	---	---	---	---	1540	1590	---	---	---
17	---	---	---	---	---	---	---	7140	1420	---	---	---
18	---	---	---	---	---	---	---	2600	1060	---	---	---
19	---	---	---	---	---	---	---	1320	800	---	---	---
20	---	---	---	---	---	---	---	453	655	---	---	---
21	---	---	---	---	---	---	---	238	545	---	---	---
22	---	---	---	---	---	---	---	150	499	---	---	---
23	---	---	---	---	---	---	---	---	529	---	---	---
24	---	---	---	---	---	---	---	---	1080	---	---	---
25	---	---	---	---	---	---	---	53	799	---	---	---
26	---	---	---	---	---	---	---	---	517	---	---	---
27	---	---	---	---	---	---	---	---	1170	---	---	---
28	---	---	---	---	---	---	---	---	643	---	---	---
29	---	---	---	---	---	---	---	---	444	---	---	---
30	---	---	---	---	---	---	---	---	306	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
TOTAL	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	---	---	---	---	---	---	---	---	---	---	---	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---

a Reservoir spilled for 15 hours

NOTE: Discharges only for days when Schoharie Reservoir spilled for the entire day, unless otherwise noted.

HUDSON RIVER BASIN

01350120 PLATTER KILL AT GILBOA, NY

LOCATION.--Lat 42°24'18", long 74°26'36", Schoharie County, Hydrologic Unit 02020005, on right bank, 190 ft upstream from culvert on County Highway 17, 0.5 mi upstream from mouth, and 0.6 mi northeast of Gilboa.

DRAINAGE AREA.--11.1 mi^2.

PERIOD OF RECORD.--January 1975 to current year. Occasional discharge measurements, water years 1969-73.

GAGE.--Water-stage recorder. Concrete control since Nov. 12, 1976. Elevation of gage is 1,110 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

AVERAGE DISCHARGE.--14 years, 14.8 ft^3/s, 18.11 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,210 ft^3/s, Apr. 4, 1987, gage height, 5.24 ft, in gage well, about 6.2 ft, from floodmarks, from rating curve extended above 280 ft^3/s on basis of flow-through-culvert measurement of peak flow; minimum discharge, 0.32 ft^3/s, Nov. 18, 1980 (result of freezeup); minimum gage height (subsequent to concrete control installation), 0.73 ft, Oct. 18, 1988.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 11	0500	*164	*2.74	No other peak greater than base discharge.			

Minimum discharge, 1.0 ft^3/s, Oct. 18, gage height, 0.73 ft.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	1.8	8.2	e4.4	5.9	e3.4	45	13	15	8.7	4.2	2.0
2	1.2	5.5	7.7	e4.4	5.9	e4.4	29	55	15	7.9	3.9	2.0
3	1.7	3.7	7.3	e4.3	5.3	e4.0	27	39	15	7.1	3.8	1.8
4	1.5	2.9	6.8	e4.0	e4.6	e4.4	27	30	13	6.8	3.6	1.8
5	1.5	4.7	6.1	e3.8	e4.3	e5.5	27	27	12	15	5.2	1.8
6	1.4	15	6.1	e3.7	e4.1	e5.9	36	65	17	12	3.9	1.7
7	1.3	12	6.1	e3.6	e3.8	e4.1	37	54	16	9.2	3.7	1.7
8	1.2	8.7	5.9	4.4	e3.1	e3.3	30	44	15	7.7	3.4	1.7
9	1.3	6.7	e5.1	4.1	e2.4	e2.7	26	38	15	6.5	3.2	1.6
10	1.4	5.8	e4.6	e4.0	e2.0	e2.9	24	52	24	9.0	3.0	1.8
11	1.4	5.1	e4.4	3.6	e1.9	e3.4	21	126	18	8.8	3.0	2.2
12	1.3	4.4	e3.9	e3.4	e1.8	3.3	19	74	15	6.1	4.8	1.8
13	1.2	5.7	e3.4	e4.1	e1.7	e2.9	18	51	29	5.4	5.6	1.7
14	1.2	7.4	e3.3	e4.2	e4.0	e4.4	17	44	30	5.0	4.2	2.6
15	1.2	6.7	e3.4	6.5	e9.6	9.6	17	35	34	4.6	3.5	2.6
16	1.2	6.0	e3.5	5.6	e8.8	7.3	26	36	32	4.4	3.2	2.8
17	1.2	8.0	e3.1	5.1	e5.2	5.7	24	54	30	4.2	3.0	7.2
18	1.2	8.2	e2.9	4.7	e4.3	7.1	21	35	27	3.9	2.8	2.8
19	1.3	6.8	e3.2	4.5	e3.7	6.2	19	29	23	3.7	2.7	3.2
20	1.2	10	e4.1	4.3	e3.2	e5.1	18	27	20	13	2.6	15
21	1.2	17	4.4	e4.2	e16	e4.6	17	24	18	15	2.6	6.6
22	5.4	13	4.1	e4.0	e14	e4.1	15	21	20	9.8	2.4	5.8
23	3.1	12	3.8	4.0	e7.0	e4.3	14	19	18	7.4	2.4	7.2
24	2.2	11	5.3	3.8	e6.2	4.4	14	22	20	6.0	2.2	6.2
25	1.9	9.8	6.1	3.6	e5.4	5.7	13	20	16	5.4	2.2	5.0
26	1.6	9.2	5.0	4.8	e4.9	11	13	18	14	4.9	2.1	5.1
27	1.5	9.0	4.5	4.9	e4.2	17	12	18	13	4.7	2.0	4.3
28	1.6	10	6.1	4.3	e3.7	18	12	15	12	11	2.0	4.1
29	1.6	9.9	6.3	4.3	---	20	12	13	11	6.5	2.0	3.9
30	1.5	8.7	5.5	4.8	---	35	14	12	9.8	5.0	2.0	3.6
31	1.4	---	e4.8	5.3	---	49	---	12	---	4.5	1.9	---
TOTAL	49.1	244.7	155.0	134.7	147.0	268.7	644	1122	566.8	229.2	97.1	111.6
MEAN	1.58	8.16	5.00	4.35	5.25	8.67	21.5	36.2	18.9	7.39	3.13	3.72
MAX	5.4	17	8.2	6.5	16	49	45	126	34	15	5.6	15
MIN	1.2	1.8	2.9	3.4	1.7	2.7	12	12	9.8	3.7	1.9	1.6
CFSM	.14	.73	.45	.39	.47	.78	1.93	3.26	1.70	.67	.28	.34
IN.	.16	.82	.52	.45	.49	.90	2.16	3.76	1.90	.77	.33	.37

CAL YR 1988 TOTAL 3363.5 MEAN 9.19 MAX 73 MIN 1.1 CFSM .83 IN. 11.27
WTR YR 1989 TOTAL 3769.9 MEAN 10.3 MAX 126 MIN 1.2 CFSM .93 IN. 12.63

e Estimated

HUDSON RIVER BASIN

01350140 MINE KILL NEAR NORTH BLENHEIM, NY

LOCATION.--Lat 42°25'44", long 74°28'24", Schoharie County, Hydrologic Unit 02020005, on left bank 200 ft upstream from bridge on State Highway 30, 0.6 mi upstream from mouth, and 3.0 mi southwest of North Blenheim.

DRAINAGE AREA.--16.3 mi^2.

PERIOD OF RECORD.--December 1974 to current year. Occasional discharge measurements, water years 1969-74.

GAGE.--Water-stage recorder. Concrete control since Sept. 23, 1975. Elevation of gage is 1,060 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

AVERAGE DISCHARGE.--14 years (water years 1976-89), 24.0 ft^3/s, 19.99 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,320 ft^3/s, May 29, 1984, gage height, 3.81 ft; minimum, 0.10 ft^3/s, Aug. 27, 28, 29, 30, 1980, gage height, 0.49 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 550 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 21	1215	ice jam	*2.08	May 6	0615	*257	1.94

Minimum discharge, 0.48 ft^3/s, Sept. 10, gage height, 0.58 ft.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.82	3.7	19	e11	e14	e5.4	100	19	21	5.7	4.4	.86
2	.80	22	18	e11	e14	e5.6	60	126	18	4.9	3.7	1.4
3	.80	19	17	e10	e13	e5.8	54	64	16	4.0	3.9	1.0
4	.80	16	e15	e9.5	e11	e10	55	47	12	4.1	3.3	.91
5	.82	30	e14	e8.7	e9.7	e13	56	40	11	25	14	.84
6	.97	52	e14	e8.7	e9.3	e14	68	e150	28	15	6.5	.66
7	.90	30	14	e8.5	e8.7	e9.4	71	e100	22	9.0	5.0	.59
8	.88	23	13	e10	e7.2	e7.6	56	e70	18	5.7	3.7	.59
9	.89	19	11	e9.5	e6.4	e6.2	47	e54	19	4.6	2.9	.57
10	1.3	16	e11	e9.4	e5.6	e6.8	39	e100	47	6.1	2.5	.60
11	1.4	15	e10	e8.5	e5.3	e7.8	33	e140	25	11	2.1	1.5
12	1.3	12	e9.0	e8.0	e5.2	e7.6	30	e90	19	5.3	5.8	.98
13	1.3	22	e8.0	e9.7	e4.8	e6.8	27	e62	77	3.7	16	.81
14	1.3	25	e7.6	e9.8	e9.2	e8.0	27	e50	66	3.3	10	1.2
15	1.2	18	e7.8	e16	e22	e24	27	e44	90	2.8	6.0	3.2
16	1.2	15	e8.2	e14	e20	14	46	e44	78	2.3	4.0	2.4
17	1.1	27	e7.2	e12	e13	10	37	e50	65	2.3	2.7	14
18	.94	22	e6.7	e11	e9.7	17	33	e38	45	2.0	2.1	5.4
19	1.2	18	e7.5	e10	e8.5	15	31	e31	35	1.6	3.5	3.6
20	1.3	37	e9.5	e10	e7.5	13	26	e26	27	21	3.9	36
21	1.0	56	e10	e9.6	e37	9.0	25	23	24	29	2.5	14
22	10	36	e9.6	e9.5	e31	e7.4	23	20	22	12	2.0	8.4
23	13	29	e8.8	e9.5	e17	e7.8	18	17	18	8.2	1.6	11
24	10	26	e12	e8.8	e15	7.3	18	23	20	5.7	1.3	12
25	8.1	23	e15	e8.4	e13	14	18	19	15	4.1	1.1	7.0
26	5.2	21	e12	e12	e12	38	17	19	12	3.0	.90	5.3
27	4.2	21	e11	e13	e9.7	35	16	21	11	2.5	.82	4.8
28	4.2	29	e15	e10	e7.0	40	15	17	9.2	29	.85	4.1
29	5.7	23	e16	e10	---	59	14	13	7.8	16	.89	3.7
30	4.4	20	e13	e11	---	96	21	12	6.6	8.1	1.2	3.3
31	3.5	---	e12	e13	---	123	---	12	---	5.8	1.1	---
TOTAL	90.52	725.7	361.9	320.1	345.8	643.5	1108	1541	884.6	262.8	120.26	150.71
MEAN	2.92	24.2	11.7	10.3	12.3	20.8	36.9	49.7	29.5	8.48	3.88	5.02
MAX	13	56	19	16	37	123	100	150	90	29	16	36
MIN	.80	3.7	6.7	8.0	4.8	5.4	14	12	6.6	1.6	.82	.57
CFSM	.18	1.48	.72	.63	.76	1.27	2.27	3.05	1.81	.52	.24	.31
IN.	.21	1.66	.83	.73	.79	1.47	2.53	3.52	2.02	.60	.27	.34

CAL YR 1988 TOTAL 5404.12 MEAN 14.8 MAX 80 MIN .32 CFSM .91 IN. 12.33
WTR YR 1989 TOTAL 6554.89 MEAN 18.0 MAX 150 MIN .57 CFSM 1.10 IN. 14.96

e Estimated

HUDSON RIVER BASIN

01350180 SCHOHARIE CREEK AT NORTH BLENHEIM, NY

LOCATION.--Lat 42°27'57", long 74°27'45", Schoharie County, Hydrologic Unit 02020005, on left bank 2,300 ft upstream from West Kill, and 1.2 mi upstream from bridge on State Highway 30 in North Blenheim.

DRAINAGE AREA.--359 mi^2.

PERIOD OF RECORD.--October 1970 to current year. Occasional measurements, water years 1969-70.

REVISED RECORDS.--WDR NY-87-1: 1984(M).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 800 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 1, 1971, at datum 1.00 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Regulation of flow by Blenheim-Gilboa Pumped Storage Project immediately upstream from gage. Entire flow, runoff from 314 mi^2, except for periods of spill, diverted from Schoharie Reservoir through Shandaken Tunnel into Esopus Creek upstream from Ashokan Reservoir for water supply of City of New York. For periods of spill see station 01350101. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--19 years, 424 ft^3/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 64,200 ft^3/s, Apr. 4, 1987, gage height, 16.70 ft, from floodmarks, from rating curve extended above 12,000 ft^3/s on basis of computation of peak flow through radial gates; minimum discharge, no flow, Oct. 21-28, 1972, Sept. 12-14, 1973.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,650 ft^3/s, May 11, gage height, 9.89 ft, minimum, 3.5 ft^3/s, Oct. 12, 13, 14, 18, 26, gage height, 0.86 ft; minimum daily discharge, 3.5 ft^3/s, Oct. 14.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.1	5.2	21	e15	31	25	275	43	31	237	8.5	7.0
2	6.1	8.8	22	16	32	32	127	388	49	219	7.6	7.3
3	4.8	7.9	25	e16	33	23	75	165	77	112	7.0	6.9
4	4.4	7.2	e29	e16	32	13	184	109	35	91	7.1	7.0
5	4.2	6.9	e21	13	24	11	136	111	49	375	8.4	7.4
6	4.2	8.6	e14	9.1	22	25	192	3670	58	714	12	7.1
7	4.3	8.5	e19	8.8	24	20	169	3130	98	441	19	7.3
8	4.4	8.0	30	9.2	21	13	117	1390	66	281	28	6.9
9	4.2	7.8	e31	9.3	11	13	125	607	51	192	7.6	6.8
10	4.4	7.9	21	17	8.6	9.9	81	611	137	169	7.5	8.0
11	4.0	8.0	17	25	8.6	8.7	91	6460	45	124	7.6	8.5
12	4.1	8.2	10	32	8.2	8.0	69	2930	42	159	8.3	7.0
13	3.6	8.7	7.9	33	8.4	8.7	64	1490	404	54	8.1	7.0
14	3.5	9.5	7.7	34	19	8.5	66	865	899	19	13	7.5
15	3.8	18	7.9	32	91	42	68	676	1340	8.5	9.2	7.7
16	3.8	28	11	28	61	55	118	1280	1630	7.5	9.0	7.8
17	4.6	37	8.4	29	16	15	143	6820	1390	7.2	9.1	8.9
18	3.9	45	7.5	19	12	16	99	2660	973	7.5	8.0	8.0
19	4.4	38	7.7	19	11	31	42	1270	816	7.3	7.3	8.0
20	3.8	132	7.5	20	9.7	24	40	513	693	25	7.1	37
21	3.7	141	7.9	17	203	18	49	292	576	115	8.1	22
22	5.6	118	7.6	13	107	19	49	249	527	25	6.6	45
23	4.4	e44	11	12	29	19	45	72	561	30	6.5	15
24	5.0	20	17	12	14	19	38	115	990	17	6.8	8.8
25	4.2	26	92	13	10	24	53	138	745	7.8	6.6	9.2
26	4.0	e36	28	17	8.7	93	55	59	535	7.5	6.6	13
27	4.0	75	12	89	9.3	115	42	65	1020	7.6	7.0	17
28	4.1	73	46	15	16	86	39	39	616	36	7.4	9.3
29	4.0	83	73	13	---	177	27	22	467	45	6.6	7.2
30	3.9	30	38	17	---	273	25	12	293	32	6.5	7.5
31	e4.7	---	22	29	---	232	---	24	---	19	6.7	---
TOTAL	135.2	1055.2	680.1	647.4	880.5	1476.8	2703	36275	15213	3591.9	274.8	333.1
MEAN	4.36	35.2	21.9	20.9	31.4	47.6	90.1	1170	507	116	8.86	11.1
MAX	7.1	141	92	89	203	273	275	6820	1630	714	28	45
MIN	3.5	5.2	7.5	8.8	8.2	8.0	25	12	31	7.2	6.5	6.8

CAL YR 1988 TOTAL 55809.5 MEAN 152 MAX 3030 MIN 3.5
WTR YR 1989 TOTAL 63266.0 MEAN 173 MAX 6820 MIN 3.5

e Estimated

HUDSON RIVER BASIN

01350355 SCHOHARIE CREEK AT BREAKABEEN, NY

LOCATION.--Lat 42°32'10", long 74°24'40", Schoharie County, Hydrologic Unit 02020005, on left bank 100 ft downstream from bridge on State Highway 30, 0.9 mi north of Breakabeen, and 1.1 mi downstream from Keyser Kill.

DRAINAGE AREA.--443 mi^2.

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

REVISED RECORDS.--WDR NY-79-1: Drainage area. WDR NY-81-1: 1980(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 686.79 ft above National Geodetic Vertical Datum of 1929 (Soil Conservation Service Benchmark).

REMARKS.--Records good except those for estimated daily discharges, which are fair. Regulation of flow by Blenheim-Gilboa Pumped Storage Project. Entire flow, runoff from 314 mi^2, except for periods of spill, diverted from Schoharie Reservoir through Shandaken Tunnel into Esopus Creek upstream from Ashokan Reservoir for water supply of City of New York. For periods of spill see station 01350101. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--14 years, 528 ft^3/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 72,200 ft^3/s, Apr. 5, 1987, gage height, about 19.5 ft, from reconstructed graph, 20.0 ft, from floodmarks, from rating curve extended above 20,000 ft^3/s on basis of contracted opening and flow-over-road measurement of peak flow; minimum discharge, 1.7 ft^3/s, Oct. 14, 1980; minimum gage height, 0.25 ft, Sept. 26, 1985; minimum daily discharge, 5.8 ft^3/s, Sept. 13, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,600 ft^3/s, May 11, gage height, 9.15 ft; minimum, 12 ft^3/s, Oct. 17, 18, 19, gage height, 0.68 ft; minimum gage height, 0.65 ft, Sept. 8, 9; minimum daily discharge, 12 ft^3/s, Oct. 17, 19.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	29	132	e84	98	e50	954	123	172	263	35	17
2	15	100	125	e80	112	e48	503	1160	195	252	30	18
3	14	127	119	e74	93	e47	384	626	249	150	28	18
4	13	96	120	e70	e80	e46	504	415	157	131	28	17
5	13	175	105	e66	e72	51	511	356	151	522	36	16
6	13	531	93	e64	e66	86	606	4470	230	951	37	16
7	13	273	91	e62	e62	e62	636	4460	254	577	41	16
8	13	195	99	75	e56	e54	436	2390	217	355	45	15
9	13	158	94	85	e52	e44	388	1290	187	231	28	14
10	13	136	78	e72	e46	e33	315	1270	489	191	25	15
11	13	121	e60	e68	e46	34	294	7570	251	204	24	21
12	13	106	e52	e66	e44	e35	252	3990	192	187	29	20
13	13	117	e47	e90	e43	e33	231	2360	810	110	51	18
14	13	167	e42	e98	e47	41	226	1560	1560	59	53	18
15	13	130	e40	e96	177	135	219	1170	2120	39	37	23
16	13	128	e39	93	155	149	390	1640	2470	34	31	24
17	12	168	e38	e76	e70	70	377	7240	2170	31	28	60
18	13	183	e37	e66	e56	78	325	3410	1620	30	25	41
19	12	148	e36	e62	e45	89	241	1890	1330	27	23	32
20	13	325	e45	e56	e41	67	203	817	1060	72	22	169
21	13	796	58	e54	455	65	196	484	851	288	23	111
22	33	467	58	e62	357	52	184	427	749	103	24	82
23	76	307	47	e52	127	55	167	209	787	81	21	78
24	54	219	58	50	e70	59	150	244	1270	64	20	75
25	54	191	169	49	e60	70	155	264	1060	44	19	56
26	43	179	105	53	e56	244	151	190	710	37	18	49
27	36	201	e60	158	e54	362	136	192	1280	34	18	49
28	33	230	96	e68	e52	345	128	150	841	79	17	43
29	33	241	193	61	---	530	112	111	587	93	18	34
30	31	167	e110	67	---	939	123	94	380	65	18	32
31	28	---	e94	95	---	1100	---	105	---	52	17	---
TOTAL	697	6411	2540	2272	2692	5073	9497	50677	24399	5356	869	1197
MEAN	22.5	214	81.9	73.3	96.1	164	317	1635	813	173	28.0	39.9
MAX	76	796	193	158	455	1100	954	7570	2470	951	53	169
MIN	12	29	36	49	41	33	112	94	151	27	17	14

CAL YR 1988 TOTAL 97478 MEAN 266 MAX 4880 MIN 11
WTR YR 1989 TOTAL 111680 MEAN 306 MAX 7570 MIN 12

e Estimated

HUDSON RIVER BASIN

01351500 SCHOHARIE CREEK AT BURTONSVILLE, NY

LOCATION.--Lat 42°48'00", long 74°15'48", Schenectady County, Hydrologic Unit 02020005, on right bank 0.4 mi south of Burtonsville, 2.7 mi north of Esperance, and 13.5 mi upstream from mouth.

DRAINAGE AREA.--883 mi^2.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 507.98 ft above National Geodetic Vertical Datum of 1929, unadjusted.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Regulation of flow by Blenheim-Gilboa Pumped Storage Project. Entire flow, runoff from 314 mi^2, except for periods of spill, diverted from Schoharie Reservoir through Shandaken Tunnel into Esopus Creek upstream from Ashokan Reservoir for water supply of City of New York. For periods of spill see station 01350101. Telephone gage-height telemeter at station.

AVERAGE DISCHARGE.--50 years, 1,007 ft^3/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 76,500 ft^3/s, Oct. 16, 1955, gage height, 12.39 ft; minimum, 2.4 ft^3/s, Sept. 24, 25, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of March 1936 and September 1938 reached stages of 10.5 and 10.2 ft, respectively, from information provided by local resident. However, flood of October 1903 is known to have reached a higher stage than the 1936 or 1938 flood.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15,800 ft^3/s, May 11, gage height, 5.30 ft; minimum discharge, 23 ft^3/s, Sept. 11; minimum gage height, 0.65 ft, Oct. 20, 21; minimum daily discharge, 24 ft^3/s, Sept. 10-11.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	121	617	e280	e300	e170	3810	487	511	469	135	34
2	40	642	550	e250	e400	e160	2310	3170	637	404	111	34
3	36	1360	503	e240	e330	e150	1780	3370	745	350	96	32
4	34	885	472	e220	e280	e150	2060	1960	572	260	91	31
5	34	763	408	e210	e250	e160	2780	1490	458	1080	93	30
6	33	2760	394	e200	e230	e230	2840	5400	647	1680	94	28
7	30	1980	393	e200	e210	e190	3540	9200	1010	1180	89	26
8	29	1280	385	e200	e190	e170	2370	4820	772	844	87	26
9	29	975	359	e240	e180	e140	1820	3070	700	537	86	25
10	29	814	e300	e200	e170	e130	1670	2440	3190	564	77	24
11	30	687	e240	e190	e160	e120	1440	11000	1730	1330	64	24
12	29	588	e210	e190	e160	e120	1240	9480	1050	627	71	25
13	29	541	e180	e200	e160	e110	1110	5310	1650	457	98	29
14	28	939	e170	e220	e160	e180	1080	3540	3470	319	147	31
15	28	770	e170	e250	e250	e700	1010	2650	3780	246	143	35
16	28	630	e170	e270	e350	905	1610	2390	5420	199	110	44
17	28	697	e170	e250	e230	426	1940	7270	4410	174	87	86
18	27	900	e160	e220	e190	337	1550	5890	3400	157	72	145
19	27	711	e160	e200	e180	373	1290	3080	2450	141	63	114
20	26	908	e160	e190	e180	291	1070	1840	1910	136	57	292
21	26	3570	e170	e190	e1200	260	951	1210	1580	652	63	499
22	37	2030	e200	e190	e2200	227	863	1070	1480	523	94	272
23	265	1370	e180	e180	e740	203	760	836	1730	318	75	211
24	271	1090	e180	e180	e400	214	678	702	1490	249	61	206
25	227	937	e330	e180	e300	402	608	874	1780	204	50	188
26	197	836	e280	e200	e250	1480	567	731	1170	166	44	156
27	163	781	e230	e300	e210	1860	516	895	1200	142	40	132
28	141	851	e250	e230	e190	1880	466	706	1330	162	38	113
29	135	894	e450	e220	---	2020	430	515	916	218	37	101
30	131	734	e350	e220	---	3080	458	411	722	194	37	86
31	118	---	e310	e260	---	5040	---	404	---	154	35	---
TOTAL	2328	32044	9101	6770	10050	21878	44617	96211	51910	14136	2445	3079
MEAN	75.1	1068	294	218	359	706	1487	3104	1730	456	78.9	103
MAX	271	3570	617	300	2200	5040	3810	11000	5420	1680	147	499
MIN	26	121	160	180	160	110	430	404	458	136	35	24

CAL YR 1988 TOTAL 270705 MEAN 740 MAX 10100 MIN 16
WTR YR 1989 TOTAL 294569 MEAN 807 MAX 11000 MIN 24

e Estimated

HUDSON RIVER BASIN

01351500 SCHOHARIE CREEK AT BURTONSVILLE, NY--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960, 1963-64, 1972, May 1988 to current year.
CHEMICAL DATA: 1960 (e), 1963-64, 1972 (a), 1988 (b), 1989 (c).
MINOR ELEMENTS DATA: 1960 (e), 1963 (b), 1964, 1972 (a), 1988 (b), 1989 (c).
NUTRIENT DATA: 1960, 1963-64, 1972 (a).
SEDIMENT DATA: 1989 (c).

REMARKS.--Water-quality samples were collected by personnel of the New York State Department of Environmental Conservation, and were analyzed in USGS laboratories.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT												
12...	1000	29	306	8.20	10.0	--	11.0	--	120	39	5.4	12
MAR												
20...	1000	303	248	7.80	4.0	746	13.2	103	100	34	3.9	12
APR												
05...	1000	2960	210	7.70	4.5	747	12.3	98	86	29	3.4	7.4
24...	1200	678	210	8.90	7.5	745	12.7	109	89	30	3.3	7.0
MAY												
15...	1100	2720	167	7.90	11.0	748	10.9	101	68	23	2.6	5.2
JUN												
07...	1200	1010	270	8.10	18.0	749	9.3	100	110	36	4.3	9.3
26...	1000	1240	--	8.20	24.0	--	--	--	68	23	2.5	5.0
JUL												
31...	1100	155	292	8.30	23.0	767	8.8	102	120	40	4.9	9.6
SEP												
05...	1000	30	297	8.50	18.5	760	10.1	109	110	37	5.3	12

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)
OCT											
12...	2.3	100	30	19	0.10	80	--	1	--	13	--
MAR											
20...	2.0	76	17	20	0.10	270	--	<1	--	5	--
APR											
05...	1.6	65	16	11	0.10	750	20	<1	<1	6	3
24...	1.3	73	15	11	0.10	280	--	1	--	7	--
MAY											
15...	1.2	55	13	6.7	0.10	340	10	<1	<1	7	3
JUN											
07...	1.8	98	16	11	0.10	440	--	<1	--	6	--
26...	1.3	58	11	6.4	0.20	500	--	<1	--	5	--
JUL											
31...	2.2	106	17	13	0.10	210	--	<1	--	5	--
SEP											
05...	2.5	97	21	17	0.10	100	--	<1	--	7	--

HUDSON RIVER BASIN

01351500 SCHOHARIE CREEK AT BURTONSVILLE, NY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT											
12...	140	--	<5	--	20	--	<0.10	2	--	<10	--
MAR											
20...	520	--	<5	--	30	--	<0.10	<1	--	<10	--
APR											
05...	1300	38	<5	<5	40	8	<0.10	7	3	20	<3
24...	570	--	<5	--	40	--	<0.10	3	--	10	--
MAY											
15...	570	23	3	<1	30	11	<0.10	9	<1	<10	6
JUN											
07...	790	--	4	--	50	--	<0.10	3	--	10	--
26...	820	--	3	--	50	--	<0.10	1	--	<10	--
JUL											
31...	300	--	1	--	40	--	<0.10	1	--	<10	--
SEP											
05...	210	--	2	--	20	--	<0.10	9	--	<10	--

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
OCT				
12...	1000	29	3	0.23
MAR				
20...	1000	303	23	19
APR				
05...	1000	2960	46	368
MAY				
15...	1100	2720	15	110
JUN				
07...	1200	1010	21	57
26...	1000	1240	39	131
JUL				
31...	1100	155	8	3.3
SEP				
05...	1000	30	5	0.41

HUDSON RIVER BASIN

01357500 MOHAWK RIVER AT COHOES, NY

LOCATION.--Lat 42°47'07", long 73°42'29", Albany County, Hydrologic Unit 02020004, on right bank at Niagara Mohawk Power Corp. School Street powerplant in Cohoes, and 2.0 mi upstream from mouth.

DRAINAGE AREA.--3,456 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1917 to current year. Monthly discharge only for some periods, published in WSP 1302. Prior to July 17, 1925, published as "at Crescent Dam".

REVISED RECORDS.--WSP 741: Drainage area. WSP 1302: 1919-23 (M).

GAGE.--Water-stage recorder. Datum of gage is 49.13 ft above National Geodetic Vertical Datum of 1929. Dec. 1, 1917, to July 16, 1925, water-stage recorder at site 1.7 mi upstream at Crescent Dam at datum 130.87 ft higher. July 17 to Oct. 19, 1925, powerplant gage at present site.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Total flow of Mohawk River equals flow published at Cohoes which includes small diversion for Cohoes water supply, plus flow diverted at Cresent Dam to Barge Canal through Lock 6. Prior to 1926 records published as total flow. See Diversions in Hudson River Basin for regulation and diversions upstream from this station. Telephone gage-height telemeter at station.

COOPERATION.--Diversions through Barge Canal at Lock 6 provided by New York State Department of Transportation.

AVERAGE DISCHARGE.--7 years (water years 1919-25), 5,820 ft^3/s, includes diversion at Lock 6; 64 years (water years 1926-89), 5,656 ft^3/s, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 143,000 ft^3/s, Mar. 6, 1964, result of release from ice jam, gage height, 23.15 ft, from rating curve extended above 110,000 ft^3/s; minimum discharge, 6 ft^3/s, Sept. 18, 1941, gage height, 3.40 ft; minimum daily, 23 ft^3/s, Aug. 24, 1941.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 41,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 31	0845	*36,200	*16.52				

Minimum discharge, 147 ft^3/s, Sept. 29, gage height, 4.74 ft; minimum daily discharge, 369 ft^3/s, Sept. 2.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1270	2850	8170	3730	4380	2820	25900	3070	4870	2700	1440	652
2	1190	6150	8890	3120	5520	2420	19300	8430	4480	2390	1380	369
3	473	8640	7990	3010	5420	2250	15400	14000	6730	1970	1040	911
4	937	7220	5930	2860	4000	2070	16200	9550	4950	1590	1010	1840
5	1140	5930	4620	1670	3080	2140	19000	7160	4930	2730	3120	2200
6	1670	12000	4230	1530	2730	2570	21300	19200	5660	6030	7680	1550
7	1850	14700	4150	1850	2350	2910	23700	30500	5290	4050	3290	998
8	1640	10400	3830	2180	2190	2500	20100	21600	4720	3050	2120	1140
9	1640	7670	3790	2480	2040	2290	15200	16000	4020	3370	1440	937
10	959	6640	3860	2900	1630	2410	11900	12700	16000	3550	1690	828
11	1780	5920	3700	2860	1820	2360	10000	24300	11800	6370	1670	1300
12	1690	6240	2500	2370	1920	2480	8410	28000	7270	4500	1510	1390
13	1700	5960	e1850	2510	1950	2140	6860	20600	6030	2870	1720	793
14	1990	7830	e1900	2610	1840	2360	6700	15800	11000	2530	2100	1080
15	2020	6320	2280	2890	2290	3890	5900	10300	12400	2430	2150	1220
16	1580	5080	2260	3210	3900	9170	6680	9140	23600	1860	1680	2360
17	1750	4830	2420	3810	3610	7190	8310	9180	18600	1640	1580	3050
18	1530	6570	e2300	3430	3080	5740	6410	13200	14400	1800	1630	2600
19	1880	5700	e2100	2920	2350	5490	5700	7320	10000	1860	1360	2640
20	1930	5420	e1900	2640	2010	5000	4780	4920	7750	1450	1140	2610
21	2010	14900	e2100	2420	3100	4260	5770	4780	4740	1520	1830	10600
22	2190	11800	e3100	2270	11200	3950	5710	4210	6650	1200	1410	7280
23	4580	7840	3180	2190	10200	3440	5610	3430	5180	1840	1230	3560
24	4170	6670	2850	2220	6660	3290	4470	3580	5100	1950	1210	4500
25	6410	5730	2970	2030	4570	3960	1850	1900	4660	1450	1200	4350
26	5780	4800	3860	2010	3600	8300	1360	3810	4340	1500	732	3920
27	3400	4420	3440	2310	3250	9140	1210	3710	3660	1310	926	3410
28	3920	5740	3130	3200	2870	9600	2940	3640	3480	1340	1460	2610
29	3560	8050	4660	2790	---	12200	2430	3550	3750	2250	1050	2350
30	3320	6580	5370	2950	---	19200	2890	2670	3580	2390	1390	2170
31	2860	---	4500	3400	---	32300	---	1880	---	2000	739	---
TOTAL	72819	218600	117830	82370	103560	179840	291990	322130	229640	77490	53927	75218
MEAN	2349	7287	3801	2657	3699	5801	9733	10390	7655	2500	1740	2507
MAX	6410	14900	8890	3810	11200	32300	25900	30500	23600	6370	7680	10600
MIN	473	2850	1850	1530	1630	2070	1210	1880	3480	1200	732	369

CAL YR 1988 TOTAL 1390794 MEAN 3800 MAX 32100 MIN 274
WTR YR 1989 TOTAL 1825414 MEAN 5001 MAX 32300 MIN 369

e Estimated

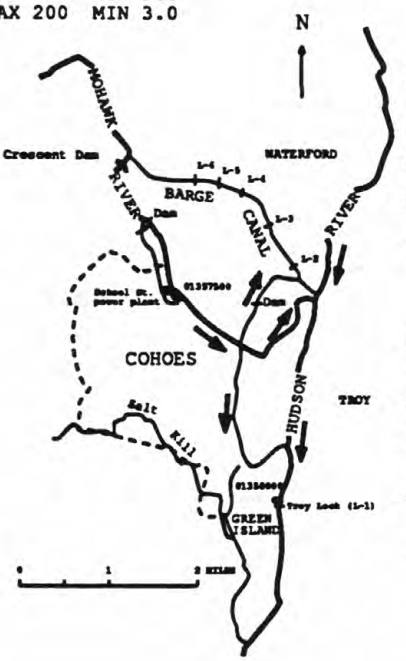
01357500 MOHAWK RIVER AT COHOES, NY--Continued

(01357499) Diversion, in cubic feet per second, from Mohawk River at Crescent Dam, NY, through Barge Canal at lock 6, water year October 1988 to September 1989

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	134	104	104	3.0	3.0	3.0	3.0	158	128	164	146	176
2	158	104	92	3.0	3.0	3.0	3.0	122	134	182	152	158
3	128	104	92	3.0	3.0	3.0	3.0	128	164	164	140	176
4	140	110	92	3.0	3.0	3.0	3.0	134	140	176	164	188
5	146	110	98	3.0	3.0	3.0	3.0	122	152	140	164	134
6	134	98	104	3.0	3.0	3.0	3.0	122	152	134	134	134
7	152	116	92	3.0	3.0	3.0	3.0	140	158	164	152	134
8	140	116	104	3.0	3.0	3.0	3.0	140	122	146	146	152
9	146	92	104	3.0	3.0	3.0	3.0	134	134	152	146	200
10	146	110	92	3.0	3.0	3.0	3.0	134	116	122	122	158
11	164	92	98	3.0	3.0	3.0	3.0	110	170	152	140	128
12	146	98	104	3.0	3.0	3.0	3.0	104	158	146	134	146
13	110	92	104	3.0	3.0	3.0	46	146	146	140	164	104
14	128	98	104	3.0	3.0	3.0	92	158	152	164	128	140
15	140	104	49	3.0	3.0	3.0	92	140	128	140	128	170
16	158	92	3.0	3.0	3.0	3.0	92	152	104	182	128	164
17	116	98	3.0	3.0	3.0	3.0	92	122	146	116	134	146
18	128	92	3.0	3.0	3.0	3.0	92	128	164	164	140	152
19	116	92	3.0	3.0	3.0	3.0	92	158	128	146	182	128
20	110	110	3.0	3.0	3.0	3.0	92	164	104	146	164	116
21	116	98	3.0	3.0	3.0	3.0	98	158	128	134	140	110
22	110	104	3.0	3.0	3.0	3.0	92	116	146	176	116	140
23	110	98	3.0	3.0	3.0	3.0	92	170	170	188	128	140
24	122	98	3.0	3.0	3.0	3.0	92	128	176	164	140	146
25	116	98	3.0	3.0	3.0	3.0	104	152	164	134	146	140
26	128	92	3.0	3.0	3.0	3.0	92	152	146	104	158	134
27	110	104	3.0	3.0	3.0	3.0	98	176	140	146	158	122
28	116	110	3.0	3.0	3.0	3.0	92	152	152	146	146	134
29	110	92	3.0	3.0	---	3.0	92	188	152	170	146	152
30	104	92	3.0	3.0	---	3.0	92	134	152	128	122	134
31	110	---	3.0	3.0	---	3.0	---	140	---	158	152	---
TOTAL	3992	3018	1481.0	93.0	84.0	93.0	1670.0	4382	4326	4688	4460	4356
MEAN	129	101	47.8	3.00	3.00	3.00	55.7	141	144	151	144	145
MAX	164	116	104	3.0	3.0	3.0	104	188	176	188	182	200
MIN	104	92	3.0	3.0	3.0	3.0	3.0	104	104	104	116	104

CAL YR 1988 TOTAL 33179.0 MEAN 90.7 MAX 200 MIN 3.0
WTR YR 1989 TOTAL 32643.0 MEAN 89.4 MAX 200 MIN 3.0



01357500 MOHAWK RIVER AT COHOES, NY

REGULATION
(see Reservoirs in Hudson River Basin)

Delta Dam.
Hinckley Reservoir.
Schoharie Reservoir.

DIVERSIONS
(see Reservoirs in Hudson River Basin)

From Chenango River basin through Oriskany Creek Feeder.

From (and occasionally into) Oswego River basin through summit level of Erie (Barge) Canal between New London and Utica.

From Black River basin through Black River Canal during navigation period.

Into Esopus Creek from Schoharie Reservoir through Shandaken Tunnel for New York City water supply.

01358000 HUDSON RIVER AT GREEN ISLAND, NY

REGULATION

Great Sacandaga Lake at Conklingville (see station 01323500).
Indian Lake near Indian Lake (see station 01314500).
Mohawk River regulation listed under Mohawk River at Cohoes.

DIVERSIONS

Mohawk River diversions listed under Mohawk River at Cohoes.

Into St. Lawrence River basin through:
Glens Falls feeder at Dunham Basin.
Bond Creek at Dunham Basin.
Champlain (Barge) Canal.

From St. Lawrence River basin through summit level of Champlain (Barge) Canal at Dunham Basin.

Figure 8.--Gaging stations and diversions near mouth of Mohawk River.

HUDSON RIVER BASIN

01357500 MOHAWK RIVER AT COHOES, NY--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951-52, 1955, 1955-59, 1963-64, 1970, 1976-79, June 1988 to current year.
CHEMICAL DATA: 1951-52 (a), 1958-59 (b), 1963-64, 1970, 1976 (a), 1977 (c), 1979 (d), 1988 (a), 1989 (c).
MINOR ELEMENTS DATA: 1952, 1955 (a), 1958-59 (b), 1963-64, 1970, 1976 (a), 1977 (c), 1979 (d), 1988 (a), 1989 (c).
ORGANIC DATA: 1976 (a), 1977 (c), 1979 (d).
NUTRIENT DATA: 1951-52, 1955 (a), 1958-59 (b), 1963-64, 1970, 1976 (a), 1977 (c), 1979 (d).
BIOLOGICAL DATA: 1979 (d).
SEDIMENT DATA: 1976-77 (e), 1978 (a), 1979 (e), 1988 (a), 1989 (c).

REMARKS.--Water-quality samples were collected by personnel of the New York State Department of Environmental Conservation, and were analyzed in USGS laboratories.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT												
11...	1100	1780	274	8.30	14.0	741	9.8	98	110	34	6.1	12
MAR												
21...	1000	4320	253	7.70	3.0	758	14.5	109	98	31	5.0	11
APR												
05...	1200	19100	239	7.70	5.5	760	13.4	107	96	30	5.0	8.8
27...	1200	1120	209	8.80	11.5	758	12.7	117	82	26	4.2	8.3
MAY												
15...	1300	11200	218	8.10	13.5	762	10.7	103	93	29	4.9	7.8
JUN												
08...	0900	6620	289	8.30	19.5	760	8.8	96	110	35	6.2	11
26...	1200	4680	--	8.10	25.0	--	--	--	100	33	5.4	9.3
JUL												
31...	1400	2050	317	7.90	25.5	767	8.1	98	120	36	6.3	12
SEP												
05...	1200	2340	319	8.00	22.0	772	9.2	104	110	35	6.1	15

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)
OCT											
11...	1.4	84	28	17	0.10	510	--	<1	--	7	--
MAR											
21...	2.1	76	18	17	0.10	400	--	1	--	9	--
APR											
05...	1.6	72	18	14	0.10	570	50	<1	<1	6	2
27...	1.0	62	16	12	0.10	370	--	1	--	7	--
MAY											
15...	1.3	74	15	11	0.10	740	40	<1	2	8	4
JUN											
08...	1.3	95	19	15	0.80	500	--	<1	--	8	--
26...	1.2	86	15	12	0.10	440	--	<1	--	7	--
JUL											
31...	1.4	101	21	18	0.10	350	--	<1	--	7	--
SEP											
05...	1.6	90	25	22	0.10	390	--	<1	--	8	--

HUDSON RIVER BASIN

01357500 MOHAWK RIVER AT COHOES, NY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT											
11...	910	--	<5	--	90	--	<0.10	1	--	<10	--
MAR											
21...	820	--	<5	--	60	--	<0.10	<1	--	10	--
APR											
05...	1100	45	<5	<5	60	17	<0.10	3	2	10	9
27...	640	--	8	--	100	--	<0.10	2	--	30	--
MAY											
15...	1200	37	3	<1	80	35	<0.10	3	1	20	<3
JUN											
08...	890	--	3	--	90	--	<0.10	2	--	20	--
26...	600	--	4	--	70	--	<0.10	1	--	10	--
JUL											
31...	560	--	2	--	80	--	<0.10	3	--	10	--
SEP											
05...	720	--	3	--	80	--	<0.10	3	--	10	--

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
OCT				
11...	1100	1780	23	111
MAR				
21...	1000	4320	16	187
APR				
05...	1200	19100	36	1860
27...	1200	1120	14	42
MAY				
15...	1300	11200	31	937
JUN				
08...	0900	6620	27	483
26...	1200	4680	18	227
JUL				
31...	1400	2050	14	77
SEP				
05...	1200	2340	5	32

ANALYSIS OF BOTTOM MATERIAL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SOLIDS, VOLA-TILE IN BOTTOM MA-TERIAL (MG/KG)	ALUM-INUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G)	CADMIUM RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CD)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU)	IRON, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS FE)	LEAD, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS PB)	MANGA-NESE, RECOV. FM BOT-TOM MA-TERIAL (UG/G)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG)	NICKEL, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS NI)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN)
JUL											
31...	1400	42100	11000	1	40	8100	150	780	0.09	20	40

HUDSON RIVER BASIN

01358000 HUDSON RIVER AT GREEN ISLAND, NY

(National stream-quality accounting network station)
(National radiochemical network station)

LOCATION.--Lat 42°45'08", long 73°41'22", Albany County, Hydrologic Unit 02020003, on right bank at Green Island, just upstream from Troy lock and dam, and 0.5 mi downstream from 5th branch Mohawk River. Water-quality sampling site at bridge on State Highway 7, 1.7 mi downstream from discharge station.

DRAINAGE AREA.--8,090 mi^2, approximately (including that above site of former auxiliary gage).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1946 to current year.

GAGE.--Water-stage recorder. Datum of gage is 0.31 ft below National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). From July 1, 1946 to Mar. 12, 1962 auxiliary water-stage recorder on bypass channel at datum 10.59 ft higher. Totalizing flowmeter on each turbine in powerplant.

REMARKS.--Records poor. Records include flow over spillway, estimates of flow through lock, and flow through powerplant. Powerplant, located on right bank just downstream from gage, was inoperative from Nov. 20, 1960 to Feb. 23, 1971. See Diversions in Hudson River Basin for regulation and diversions upstream from this station. Satellite gage-height and flowmeter telemeter readings at station.

COOPERATION.--Turbine flowmeter readings provided by Niagara Mohawk Power Corporation.

AVERAGE DISCHARGE.--43 years, 13,600 ft^3/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 181,000 ft^3/s, Dec. 31, 1948, gage height, 27.05 ft, from high-water mark in gage well; maximum daily discharge, 152,000 ft^3/s, Mar. 14, 1977; minimum daily, 882 ft^3/s, Sept. 2, 1968; minimum gage height, 13.68 ft, July 6, 1981, when pool was lowered for inspection of flashboards.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 19, 1936, reached a stage of 29.48 ft at gage on opposite bank, from information by Corps of Engineers (discharge, 215,000 ft^3/s). Flood of Mar. 28, 1913, prior to construction of Sacandaga Reservoir and Troy lock and dam, reached a stage about 0.2 ft higher upstream from former dam near same site. Downstream from dams, flood in 1913 was about 3.3 ft higher than flood in 1936, from information by Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 66,900 ft^3/s, May 7, gage height, 20.78 ft; maximum gage height, 20.82 ft, May 11, (less flow through powerplant than on May 7); minimum daily, about 2,890 ft^3/s, Oct. 5; minimum gage height, 13.95 ft, Oct. 10.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e4130	e8570	20400	9100	10000	7600	53200	8660	11500	7980	7100	4660
2	e3830	14700	21900	e8210	10700	6980	42400	16200	13200	7650	6260	4430
3	e3350	19000	19000	e8020	10600	7000	32100	30400	16000	6880	5180	5070
4	e3820	16300	16900	9110	8420	6450	33400	24900	13100	6090	4990	6580
5	e2890	14300	15100	e5660	6430	5740	36900	20200	13000	7970	8630	7140
6	e6180	21000	14800	5210	5560	6370	45600	35800	14300	14500	15700	5630
7	e6940	30700	14600	5280	6280	7800	55300	60600	16000	10900	11800	4420
8	e6460	25600	14100	6320	6490	6380	47400	47600	14700	9580	9730	4430
9	e5000	22000	13800	6870	6180	6050	36100	40800	13700	9710	6100	4660
10	e2980	19600	13200	7720	5370	6210	27900	34600	28300	9270	6150	4270
11	e8190	19100	12100	7560	5110	6560	24900	50200	24800	16300	6120	4690
12	e6650	18900	10200	6080	4910	5820	21400	57500	19000	15000	6300	5590
13	e7640	18100	e8290	6730	4760	3960	18800	50800	17200	11600	8480	4170
14	e6050	21700	e8580	6470	4970	5910	18200	44200	22100	10100	10600	4880
15	e8950	20200	9670	7480	7590	8290	16900	37500	24200	7630	9300	5540
16	e7080	16700	9240	7670	9650	16400	18100	34100	37900	6410	7640	7590
17	e5910	16000	9420	9240	8460	14500	21800	32000	35300	6140	6680	10200
18	e7150	18200	e8920	8100	7370	12300	18800	34400	30000	6160	6540	9350
19	9090	16700	e8820	6820	5710	11900	17800	26000	23500	5900	5840	8690
20	e7060	16600	e8530	6620	4380	10200	16400	20000	20700	5920	5650	8210
21	9270	31800	e7910	6810	9200	8580	16300	16900	16600	5890	6150	21600
22	9820	31100	e8270	6380	27200	8220	15800	15600	17300	5840	4870	21000
23	11600	25000	e8580	5600	21800	7380	14500	13300	15900	5010	6230	15300
24	10000	21300	e7480	5620	17300	7490	14200	11900	16400	6850	5920	15100
25	12400	19800	e8860	6020	15200	9150	11200	10600	15500	5610	5610	15600
26	12800	17900	10500	5690	8040	14600	9470	12400	14200	5500	4960	13700
27	e8970	16500	e8600	5840	7430	16500	7620	13000	12900	5000	4420	12000
28	e9000	18700	e8520	7460	7720	18100	9090	12400	12500	5710	5380	10500
29	e8960	23200	11200	6550	---	23800	7240	11200	12700	7290	5010	10400
30	9130	19700	12000	5830	---	39100	7920	8270	12100	6700	4250	9530
31	9240	---	11100	6890	---	58600	---	6750	---	6440	4840	---
TOTAL	230540	598970	360590	212960	252830	373940	716740	838780	554600	247530	212430	264930
MEAN	7437	19970	11630	6870	9030	12060	23890	27060	18490	7985	6853	8831
MAX	12800	31800	21900	9240	27200	58600	55300	60600	37900	16300	15700	21600
MIN	2890	8570	7480	5210	4380	3960	7240	6750	11500	5000	4250	4170

CAL YR 1988 TOTAL 3834970 MEAN 10480 MAX 56900 MIN 2300
WTR YR 1989 TOTAL 4864840 MEAN 13330 MAX 60600 MIN 2890

e Estimated

HUDSON RIVER BASIN

01358000 HUDSON RIVER AT GREEN ISLAND, NY--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1955 to current year.
CHEMICAL DATA: 1963 (a), 1964-65 (e), 1966-77 (d), 1978 (c), 1979-82 (d), 1983-86 (b), 1987 (a), 1988-89 (b).
MINOR ELEMENTS DATA: 1970-71 (a); 1972-73, 1975-79 (b), 1980-85 (b), 1986-87 (a), 1988-89 (b).
RADIOCHEMICAL DATA: 1968-71 (c), 1973-75 (a), 1976 (d), 1977 (a), 1978 (b), 1979-80 (a), 1981 (b), 1982-85, 1988-89 (a).
PESTICIDE DATA: 1976-77 (b), 1978 (a), 1979 (c), 1980, 1982 (a).
ORGANIC DATA: OC--1974 (a), 1975 (c), 1976-77 (b), 1978 (a), 1979 (c), 1980-81 (d).
PCB--1978 (a), 1979 (b), 1980 (a).
NUTRIENT DATA: 1968 (b), 1969-76 (d), 1977-79 (c), 1980-82 (d), 1983-86 (b), 1987 (a), 1988-89 (b).
BIOLOGICAL DATA:
Bacteria--1971 (a), 1973-74 (d), 1975 (a), 1976-78 (c), 1979-81 (d), 1983-86, 1988 (b).
Phytoplankton--1975 (a), 1976-77 (c), 1978 (b), 1979-81 (c).
Periphyton--1976-77 (b), 1978 (a), 1979-80 (b).
SEDIMENT DATA: 1975 (b), 1976 (d), 1977 (b), 1978 (c), 1979-82 (d), 1983-86, 1988-89 (b).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1964 to September 1965, once-daily measurements, unpublished.
pH: October 1964 to September 1965, once-daily measurements, unpublished.
WATER TEMPERATURES: April 1947 to September 1954, once-daily measurements, unpublished; October 1954 to September 1981.

REMARKS.--Prior to October 1968 sampling site at old bridge on State Highway 7 about 100 ft upstream, and between April 1971 and September 1973 sampling site at former bridge on road between Green Island and Troy at Starbuck Island.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	*DISCHARGE, IN CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	BAROMETRIC PRESSURE (MM OF HG)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS TOTAL (MG/L AS CACO3)
DEC										
06...	1100	14800	197	8.17	2.0	3.2	--	14.3	--	71
MAR										
28...	1100	18100	280	7.77	7.5	34	760	13.5	113	88
JUN										
29...	0930	12700	231	7.53	23.5	67	764	6.7	79	74

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3	BICARBONATE WATER DIS IT FIELD MG/L AS HCO3	CARBONATE WATER DIS IT FIELD MG/L AS CO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
DEC										
06...	22	3.9	6.9	0.90	51	63	0	16	12	0.10
MAR										
28...	27	5.0	13	1.9	61	76	0	15	22	0.10
JUN										
29...	23	4.0	7.2	1.0	51	62	0	13	11	0.10

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRATE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHOROUS TOTAL (MG/L AS P)	PHOSPHOROUS DISSOLVED (MG/L AS P)	PHOSPHOROUS ORTHO, DISSOLVED (MG/L AS P)
DEC											
06...	4.9	103	100	0.490	0.510	0.100	0.130	0.50	0.030	0.020	0.010
MAR											
28...	4.5	145	130	0.670	0.690	0.210	0.230	0.80	0.070	0.010	0.010
JUN											
29...	4.2	102	96	0.420	0.440	0.050	0.060	0.20	0.040	0.020	0.010

* Daily discharge.

HUDSON RIVER BASIN

01358000 HUDSON RIVER AT GREEN ISLAND, NY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)
DEC 06...	40	<1	15	<0.5	3	<1	<3	9	57	<5
MAR 28...	40	<1	22	<0.5	<1	1	<3	5	71	<5
JUN 29...	40	<1	18	<0.5	<1	1	<3	3	52	1

DATE	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
DEC 06...	<4	20	<0.1	<10	1	<1	<1.0	120	<6	22
MAR 28...	<4	37	<0.1	<10	1	<1	<1.0	160	<6	16
JUN 29...	<4	10	<0.1	<10	<1	<1	<1.0	120	<6	13

RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, IN CUBIC FEET PER SECOND	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DISSOLVED (PCI/L AS CS-137)	GROSS BETA, DISSOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RADIUM 226, DISSOLVED, RADON METHOD (PCI/L)
JUN 29...	0930	15000	<0.4	<0.4	2.1	1.7	<0.4	<0.4	0.05

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	*DISCHARGE, IN CUBIC FEET PER SECOND	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)
DEC 06...	1100	14800	7	361
MAR 28...	1100	18100	40	1980
JUN 29...	0930	12700	16	648

* Daily discharge.

HUDSON RIVER BASIN

01359139 HUDSON RIVER AT ALBANY, NY

LOCATION.--Lat 42°38'57", long 73°44'46", Albany County, Hydrologic Unit 02020006, on right bank 0.5 mi upstream from bridge on U.S. Highways 9 and 20 in Albany, and 0.5 mi downstream from the Conrail railroad bridge.

DRAINAGE AREA.--8,290 mi^2.

PERIOD OF RECORD.--October 1972 to September 1976, April 1981 to current year.

GAGE.--Water-stage recorder. Datum of gage is 10.00 ft below National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Gage-height record converted to elevation above or below (-) mean sea level for publication.

REMARKS.--Records good. Telephone gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation recorded, 10.05 ft, May 31, 1984; minimum recorded, -4.50 ft, Mar. 8, 1986.

TIDE ELEVATIONS, IN FEET, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP*
Maximum high tide												
Elevation	5.87	6.19	5.27	5.38	5.44	6.06	6.98	8.06	6.00	5.99	5.10	6.12
Date	22	6	15	8	1	31	7	7	17	7	16	22
Minimum low tide												
Elevation	-2.64	-2.01	-3.29	-3.21	-3.41	-3.50	-2.04	-2.23	-2.19	-2.20	-2.09	-2.05
Date	13	3	29	21	10	7	27	28	29	26	18	15,16
Mean high tide	4.30	4.58	4.09	3.76	3.81	4.01	4.69	5.38	5.05	4.68	4.53	4.57
Mean water level	1.40	1.92	1.18	0.97	0.97	1.24	2.07	2.73	2.20	1.54	1.56	1.64
Mean low tide	-1.59	-0.95	-1.77	-1.94	-1.98	-1.64	-0.64	-0.05	-0.81	-1.55	-1.48	-1.35

* Incomplete month, values for record through Sept. 26, 1989.

01359560 HUDSON RIVER AT GLENMONT, NY

LOCATION.--Lat 42°35'43", long 73°45'43", Albany County, Hydrologic Unit 02020006, at Niagara Mohawk Glenmont Power Station (intake), 0.2 mi downstream from lower mouth of Normans Kill, and 0.9 mi southeast of Glenmont.

DRAINAGE AREA.--8,840 mi^2.

PERIOD OF RECORD.--Water years 1969-79, May 1988 to current year.
CHEMICAL DATA: 1969 (d), 1970-74 (e), 1975 (d), 1976-77 (c), 1978-79 (d), 1988-89 (b).
MINOR ELEMENTS DATA: 1969 (d), 1970-74 (e), 1975 (d), 1976-77 (c), 1978-79 (d), 1988-89 (b).
NUTRIENT DATA: 1969 (d), 1970-74 (e), 1975 (d), 1976-77 (c), 1978-79 (d), 1988 (b).
BIOLOGICAL DATA:
Bacteria--1977 (c), 1978-79 (d).
Phytoplankton--1974 (a), 1975 (b), 1976-77 (c), 1978-79 (d).
SEDIMENT DATA: 1988-89 (b).

REMARKS.--Water-quality samples were collected by personnel of the New York State Department of Environmental Conservation, and were analyzed in USGS laboratories.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	BAROMETRIC PRESSURE (MM OF HG)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)
OCT 11...	1300	240	6.90	14.5	741	9.2	92	83	26
APR 18...	1100	242	7.60	8.0	764	12.2	102	92	28
MAY 11...	1100	166	7.50	10.5	757	10.4	94	61	19
JUN 19...	1300	--	7.80	23.5	768	7.6	--	92	28
AUG 10...	1300	230	7.30	25.0	773	6.8	81	76	23

DATE	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)
OCT 11...	4.5	12	1.3	53	28	20	0.10	490	<1
APR 18...	5.3	12	1.4	64	19	20	0.10	450	<1
MAY 11...	3.4	7.6	1.1	46	16	11	0.10	1100	<1
JUN 19...	5.3	10	1.4	73	17	14	0.10	420	<1
AUG 10...	4.6	10	1.3	58	20	13	0.10	800	<1

DATE	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)
OCT 11...	17	1400	--	<5	70	<0.10	2	20
APR 18...	5	660	--	<5	60	<0.10	6	30
MAY 11...	8	1700	60	3	70	<0.10	3	20
JUN 19...	4	830	--	4	70	<0.10	2	<10
AUG 10...	10	1900	--	5	120	<0.10	2	20

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SEDIMENT, SUSPENDED (MG/L)
OCT 11...	1300	6
APR 18...	1100	14
MAY 11...	1100	43
JUN 19...	1300	25
AUG 10...	1300	79

HUDSON RIVER BASIN

01359750 MOORDENER KILL AT CASTLETON-ON-HUDSON, NY

LOCATION.--Lat 42°32'02", long 73°44'15", Rensselaer County, Hydrologic Unit 02020006, on left bank 800 ft downstream from bridge on State Highway 150, 0.2 mi east of village of Castleton-on-Hudson, 0.5 mi downstream from unnamed tributary, and 1.2 mi upstream from mouth.

DRAINAGE AREA.--32.6 mi^2.

PERIOD OF RECORD.--October 1957 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 98.72 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 25, 1957, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Slight diurnal fluctuation of low flow by mills upstream.

AVERAGE DISCHARGE.--32 years, 38.0 ft^3/s, 15.83 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,850 ft^3/s, Mar. 15, 1986, gage height, 4.25 ft; minimum, 0.30 ft^3/s, Aug. 9, 10, 1964, gage height, 0.25 ft; minimum daily, 1.0 ft^3/s, Sept. 6, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 6	1630	*475	a*2.39	No other peak greater than base discharge.			

a Recorded in well; outside gage height was 2.59 ft, from crest-stage gage.

Minimum discharge, 2.3 ft^3/s, Feb. 8, gage height, 0.52 ft, result of freezeup; minimum daily discharge, 3.8 ft^3/s, Oct. 29.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.2	4.8	32	e10	e7.6	e10	220	34	26	14	35	12
2	6.3	21	29	e10	e6.0	e8.0	126	133	26	13	20	13
3	6.4	21	26	e11	e5.4	e7.2	97	125	29	11	20	12
4	6.4	12	24	e10	e5.4	e7.0	93	77	23	11	17	11
5	6.4	9.3	21	e8.8	e5.4	e8.0	92	60	21	64	17	9.9
6	6.4	17	19	e9.2	e5.6	e7.4	168	325	37	77	15	9.3
7	6.4	15	19	e10	e6.2	e7.0	234	238	43	37	17	8.6
8	6.4	13	18	e11	e7.0	e6.6	143	126	51	37	14	8.2
9	6.6	10	17	e10	e6.6	e6.6	103	96	51	26	12	7.7
10	6.8	8.9	e14	e9.0	e6.0	e6.8	92	99	166	49	11	7.5
11	6.9	8.4	e12	e9.0	e5.6	e7.0	74	315	94	197	12	7.5
12	6.9	7.6	e10	e9.4	e5.8	7.4	64	261	57	82	74	7.3
13	6.7	14	e10	e10	e6.0	7.7	63	186	70	51	111	7.2
14	6.8	36	e12	e9.0	e7.0	7.4	94	136	77	41	166	7.8
15	6.8	24	e14	e8.0	e9.0	12	80	107	71	36	78	8.8
16	6.8	18	e12	e7.4	e15	17	171	96	104	28	48	9.1
17	6.8	25	e10	e7.0	e11	13	154	101	148	25	37	18
18	7.3	35	e10	e7.0	e9.0	14	109	76	103	22	29	17
19	7.9	27	e10	e7.0	e8.2	14	86	61	73	20	25	13
20	7.9	42	e11	e7.0	e9.0	12	71	51	55	29	23	26
21	8.4	72	e12	e7.6	e70	12	60	44	45	68	62	30
22	11	50	e11	e7.0	93	12	53	40	38	39	48	19
23	11	37	e11	e6.8	46	11	46	33	34	28	32	19
24	8.7	31	e11	e6.4	31	12	41	41	33	22	26	31
25	6.6	27	e15	e6.2	23	66	37	40	27	19	22	20
26	5.1	24	e20	e7.0	e17	117	33	33	24	16	19	34
27	4.2	22	e15	e6.6	e15	60	31	34	22	15	17	35
28	3.9	38	e13	e6.4	e12	57	29	30	21	29	15	22
29	3.8	51	e11	e6.2	---	75	28	25	19	20	14	17
30	4.0	39	e11	e6.4	---	117	39	23	16	15	16	14
31	4.1	---	e10	e7.0	---	195	---	23	---	25	14	---
TOTAL	205.9	760.0	470	253.4	453.8	920.1	2731	3069	1604	1166	1066	461.9
MEAN	6.64	25.3	15.2	8.17	16.2	29.7	91.0	99.0	53.5	37.6	34.4	15.4
MAX	11	72	32	11	93	195	234	325	166	197	166	35
MIN	3.8	4.8	10	6.2	5.4	6.6	28	23	16	11	11	7.2
CFSM	.20	.78	.47	.25	.50	.91	2.79	3.04	1.64	1.15	1.05	.47
IN.	.23	.87	.54	.29	.52	1.05	3.12	3.50	1.83	1.33	1.22	.53

CAL YR 1988 TOTAL 9458.2 MEAN 25.8 MAX 261 MIN 3.8 CFSM .79 IN. 10.79
WTR YR 1989 TOTAL 13161.1 MEAN 36.1 MAX 325 MIN 3.8 CFSM 1.11 IN. 15.02

e Estimated

HUDSON RIVER BASIN

01362200 ESOPUS CREEK AT ALLABEN, NY
(Hydrologic bench-mark station)

LOCATION.--Lat 42°07'01", long 74°22'50", Ulster County, Hydrologic Unit 02020006, on right bank, 20 ft downstream from bridge on Fox Hollow Road, 0.5 mi west of Allaben, 200 ft downstream from Fox Hollow Creek, and 600 ft upstream from Peck Hollow Creek. Water-quality sampling site at discharge station.

DRAINAGE AREA.--63.7 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1963 to current year. Published as Esopus Creek at Shandaken, October 1963 to September 1988.

GAGE.--Water-stage recorder. Datum of gage is 998.04 ft above National Geodetic Vertical Datum of 1929. Prior to November 22, 1988, at site 0.5 mi upstream at datum 19.23 ft higher.

REMARKS.--Records fair, except those for estimated daily discharges, which are poor. Occasional slight regulation when filling or draining swimming pools or small ponds upstream from station. Satellite gage-height and temperature telemeter at station.

AVERAGE DISCHARGE.--26 years, 137 ft^3/s, 29.21 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,100 ft^3/s, Apr. 4, 1987, gage height, 13.70 ft, from floodmarks, site and datum then in use, from rating curve extended above 3,000 ft^3/s, on basis of slope-area measurement at gage height 13.70 ft, at site 0.5 mi upstream, not adjusted for undetermined amount of flow bypassing gage; minimum discharge, 2.1 ft^3/s, Sept. 16, 1983 (result of slight regulation upstream from station).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 30, 1951 reached a stage of about 15.1 ft, at previous site and datum, from information supplied by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 5	2245	1,660	7.02	May 11	0500	1,450	6.75
May 6	0745	*2,690	*8.23	May 17	0030	2,350	7.84

Minimum discharge, 8.9 ft^3/s, Sept. 10, 11, 12, 13, 14; minimum daily, 9.2 ft^3/s, Sept. 11, 13.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	44	129	e48	47	69	495	86	115	76	23	13
2	11	70	118	48	49	64	375	506	101	68	22	13
3	11	71	110	47	46	57	323	504	94	61	24	12
4	11	68	101	37	e42	51	307	402	88	56	22	11
5	11	294	93	e35	e38	58	310	365	77	108	23	11
6	11	858	e86	e37	e37	58	414	1660	97	84	22	12
7	11	518	e82	e41	e35	e40	422	1050	93	70	22	10
8	11	359	e76	e44	e34	e39	370	693	89	64	20	10
9	11	274	e70	e48	e31	e38	325	491	94	57	19	9.5
10	11	231	e64	e42	e31	e37	274	511	145	59	18	9.3
11	11	199	e58	e39	e31	e33	228	1220	135	59	18	9.2
12	11	169	e50	e42	e30	e31	197	847	131	51	27	9.3
13	11	192	e50	e50	e29	e30	176	606	159	48	41	9.2
14	11	201	e52	e44	e36	37	158	454	175	45	35	13
15	11	171	e54	e52	e58	52	149	368	294	41	29	13
16	11	174	e50	e49	e56	53	183	597	382	39	25	14
17	12	210	e47	e45	e40	43	178	1500	384	38	22	20
18	12	202	e44	e43	e38	68	182	836	328	35	19	17
19	12	190	e43	e41	e36	71	179	587	271	33	18	22
20	12	270	e42	e37	e35	55	171	438	223	38	19	255
21	12	407	e44	e33	360	53	161	358	189	39	18	153
22	84	348	40	e30	212	47	150	288	162	34	16	111
23	72	301	e38	e30	151	45	138	237	140	31	13	168
24	66	259	e44	e30	126	48	126	241	205	29	13	142
25	80	223	65	e32	106	70	115	197	143	27	16	114
26	66	193	50	e34	103	119	105	172	129	26	15	111
27	57	173	e49	e39	91	209	98	156	123	25	14	96
28	53	184	54	e34	79	554	90	137	109	40	14	82
29	53	156	56	e38	---	572	85	122	96	31	15	73
30	49	139	50	45	---	529	82	111	85	26	16	65
31	46	---	e48	46	---	555	---	103	---	24	13	---
TOTAL	862	7148	1957	1260	2007	3785	6566	15843	4856	1462	631	1607.5
MEAN	27.8	238	63.1	40.6	71.7	122	219	511	162	47.2	20.4	53.6
MAX	84	858	129	52	360	572	495	1660	384	108	41	255
MIN	11	44	38	30	29	30	82	86	77	24	13	9.2
CFSM	.44	3.74	.99	.64	1.13	1.92	3.44	8.02	2.54	.74	.32	.84
IN.	.50	4.17	1.14	.74	1.17	2.21	3.83	9.25	2.84	.85	.37	.94

CAL YR 1988 TOTAL 37540.0 MEAN 103 MAX 858 MIN 10 CFSM 1.61 IN. 21.92
WTR YR 1989 TOTAL 47984.5 MEAN 131 MAX 1660 MIN 9.2 CFSM 2.06 IN. 28.02

e Estimated

HUDSON RIVER BASIN

01362200 ESOPUS CREEK AT ALLABEN, NY--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1963 to current year. Published as Esopus Creek at Shandaken, October 1963 to September 1988.
CHEMICAL DATA: 1963-65 (a), 1966-67 (b), 1968-82 (d), 1983-84 (b), 1985 (c), 1986 (b), 1987 (a), 1988-89 (b).
MINOR ELEMENT DATA: 1964-65, 1967-73, 1975-76 (a), 1977 (b), 1978-87 (a), 1988-89 (b).
RADIOCHEMICAL DATA: 1967-77, 1979-85, 1988-89 (a).
PESTICIDE DATA: 1967-72, 1974-77, 1979-82 (a).
ORGANIC DATA: OC--1979 (a), 1981 (c).
PCB--1974-77, 1979-82 (a).
PCN--1977, 1979-82 (a).
NUTRIENT DATA: 1968 (a), 1969-71 (d), 1972 (c), 1974 (a), 1975-82 (d), 1983-84 (b), 1985 (c), 1986-87 (a), 1988-89 (b).
BIOLOGICAL DATA:
Bacteria--1968-69 (d), 1970-72 (c), 1973-82 (d), 1983-85 (b), 1986-88 (a).
SEDIMENT DATA: 1969-71 (c), 1972-75, 1977-82 (d), 1983-86, 1988-89 (b).

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: July 1963 to July 1968, January 1970 to current year.

INSTRUMENTATION.--Water-temperature satellite telemeter since June 1989, provides 15-minute-interval readings. Prior to June 1989, water-temperature digital recorder provided one-hour-interval punches, and prior to November 1981, water-temperature recorder provided continuous recordings.

REMARKS.--Interruptions in temperature record were due to malfunctions of recording instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum (water years 1963-76, 1978-80, 1982, 1985-86, 1989), 28.5°C Aug. 16, 1965, Aug. 9, 1980; minimum, 0.0°C on many days during winter periods except water years 1967 and 1976.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum, 25.5°C, Aug. 5, 6; minimum, 0.0°C on many days during winter period.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	BAROMETRIC PRESSURE (MM OF HG)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS TOTAL (MG/L AS CACO3)
DEC										
07...	0945	E82	41	--	2.5	1.2	726	9.7	74	17
APR										
04...	1100	300	50	6.08	4.5	3.2	729	13.2	106	18
JUN										
27...	1245	122	44	6.70	17.0	1.2	731	10.6	114	18

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3	BICARBONATE WATER DIS IT FIELD MG/L AS HCO3	CARBONATE WATER DIS IT FIELD MG/L AS CO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
DEC										
07...	5.0	1.1	2.3	0.40	8	10	0	7.9	3.2	0.10
APR										
04...	5.2	1.3	3.5	0.40	5	6	0	7.0	6.0	0.10
JUN										
27...	5.4	1.2	2.9	0.40	7	9	0	7.0	3.5	0.10

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRATE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHOROUS TOTAL (MG/L AS P)	PHOSPHOROUS DISSOLVED (MG/L AS P)	PHOSPHOROUS ORTHO, DISSOLVED (MG/L AS P)
DEC											
07...	2.5	31	29	0.340	0.350	<0.010	<0.010	<0.20	<0.010	<0.010	0.010
APR											
04...	2.8	37	32	--	0.580	0.020	0.010	<0.20	<0.010	<0.010	<0.010
JUN											
27...	2.6	25	28	0.150	0.160	0.020	0.020	<0.20	<0.010	0.010	<0.010

E Estimated daily discharge.

HUDSON RIVER BASIN

01362200 ESOPUS CREEK AT ALLABEN, NY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)
DEC 07...	<10	<1	10	<0.5	<1	1	<3	1	12	<5
APR 04...	20	<1	13	<0.5	<1	<1	<3	1	7	<5
JUN 27...	10	<1	10	<0.5	<1	1	<3	2	9	1

DATE	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
DEC 07...	<4	4	<0.1	<10	<1	<1	<1.0	17	<6	20
APR 04...	<4	3	<0.1	<10	1	<1	<1.0	18	<6	19
JUN 27...	<4	5	<0.1	<10	<1	<1	<1.0	17	<6	30

RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DISSOLVED (PCI/L AS CS-137)	GROSS BETA, DISSOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RADIUM 226, DISSOLVED, RADON METHOD (PCI/L)
JUN 27...	1245	126	<0.4	<0.4	0.9	0.7	<0.4	<0.4	<0.02

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)
DEC 07...	0945	E82	2	0.46
APR 04...	1100	300	8	6.6
JUN 27...	1245	122	5	1.7

E Estimated daily discharge.

HUDSON RIVER BASIN

01362200 ESOPUS CREEK AT ALLABEN, NY--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	17.0	12.5	15.0	5.5	4.0	5.0	5.0	4.0	4.5	.5	.0	.0
2	17.0	14.5	15.5	5.5	5.0	5.5	4.0	3.0	3.5	2.0	.5	1.5
3	16.0	14.0	15.0	---	---	---	5.5	3.5	4.5	1.5	.0	1.0
4	14.5	12.5	13.5	---	---	---	4.5	2.0	3.0	.0	.0	.0
5	13.5	11.0	12.5	---	---	---	3.0	1.5	2.5	.0	.0	.0
6	11.5	9.0	10.5	---	---	---	4.0	1.5	3.0	.0	.0	.0
7	10.5	7.5	9.0	---	---	---	5.0	2.5	3.5	.0	.0	.0
8	9.5	8.0	9.0	---	---	---	4.5	2.5	3.5	.0	.0	.0
9	9.0	6.5	8.0	7.5	6.0	7.0	2.5	1.5	2.0	.0	.0	.0
10	11.0	7.5	9.5	8.0	5.5	6.5	1.5	.5	1.0	.0	.0	.0
11	12.0	9.0	10.5	7.0	5.5	6.5	1.0	.0	.0	.0	.0	.0
12	9.5	7.5	8.5	7.0	4.5	5.5	.0	.0	.0	.0	.0	.0
13	8.5	6.5	7.0	7.0	5.0	6.0	.0	.0	.0	.0	.0	.0
14	9.0	5.5	7.5	8.0	5.5	6.5	.0	.0	.0	.0	.0	.0
15	10.0	6.5	8.0	7.5	5.0	6.0	.5	.0	.0	.5	.0	.5
16	12.0	8.5	10.5	8.5	5.0	6.0	.0	.0	.0	.5	.0	.5
17	13.0	10.0	11.5	9.0	6.0	8.0	.0	.0	.0	.5	.0	.0
18	12.0	11.0	11.5	6.5	5.0	5.5	.0	.0	.0	1.0	.0	.5
19	11.0	8.0	9.5	6.0	4.5	5.0	.0	.0	.0	2.0	1.0	1.5
20	8.5	6.0	7.0	7.5	5.5	6.0	.5	.0	.0	2.0	.0	1.0
21	7.0	5.0	6.0	7.5	4.5	6.0	2.0	.5	1.5	.0	.0	.0
22	7.5	5.5	6.5	6.0	4.5	5.0	2.0	.0	1.0	.0	.0	.0
23	9.0	6.5	7.5	6.0	3.5	4.5	.5	.0	.0	.0	.0	.0
24	9.5	7.0	8.5	5.0	3.5	4.5	1.5	.0	.5	.0	.0	.0
25	8.0	6.5	7.0	5.5	3.0	4.0	3.0	1.0	2.0	.0	.0	.0
26	7.0	5.5	6.0	6.5	3.5	5.0	.5	.0	.0	.0	.0	.0
27	8.0	5.0	6.5	9.0	5.0	7.0	.5	.0	.0	.5	.0	.5
28	8.0	4.5	6.5	8.0	5.0	7.0	3.5	.5	2.0	1.5	.0	.5
29	7.5	5.5	6.5	5.5	4.0	5.0	1.0	.5	1.0	2.5	1.0	1.5
30	6.0	5.0	5.5	5.5	3.5	4.5	.5	.0	.0	3.5	2.0	3.0
31	6.0	3.5	4.5	---	---	---	.5	.0	.0	3.5	1.5	2.5
MONTH	17.0	3.5	9.0	---	---	---	5.5	0.0	1.5	3.5	0.0	0.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	5.5	2.0	4.0	2.5	.0	1.0	4.0	2.5	3.5	11.0	8.0	9.5
2	4.0	2.0	3.0	1.0	.0	.5	7.5	2.0	4.0	9.5	7.0	8.5
3	2.0	.0	1.5	1.5	.0	.5	5.0	3.5	4.0	9.0	6.0	7.0
4	.0	.0	.0	2.5	.5	1.5	6.5	3.5	5.0	12.0	5.5	8.0
5	.0	.0	.0	4.0	1.5	2.5	8.0	5.5	6.5	8.0	6.0	7.0
6	.0	.0	.0	3.0	.0	1.0	5.5	4.5	5.0	9.5	7.5	8.0
7	.5	.0	.0	.0	.0	.0	7.0	3.5	5.0	8.0	6.5	7.5
8	.0	.0	.0	.0	.0	.0	7.0	3.5	4.5	7.5	6.0	6.5
9	.0	.0	.0	.0	.0	.0	5.5	3.0	4.0	9.5	6.0	7.5
10	.0	.0	.0	2.5	.0	1.0	5.0	2.0	3.5	7.5	6.5	7.0
11	.0	.0	.0	2.5	.0	1.0	7.0	2.0	4.0	7.0	6.5	6.5
12	.0	.0	.0	2.5	.5	1.5	8.0	2.0	4.5	8.0	7.0	7.0
13	.0	.0	.0	2.0	.0	1.0	5.5	3.0	4.0	8.5	6.5	7.5
14	.0	.0	.0	6.0	.0	3.0	9.0	2.5	5.0	8.0	6.5	7.5
15	.0	.0	.0	9.5	4.0	6.0	5.5	3.0	4.5	11.0	7.0	8.5
16	.5	.0	.0	6.5	2.5	4.5	5.5	4.0	5.0	9.0	7.5	8.5
17	.0	.0	.0	8.0	2.0	5.0	11.0	3.0	6.5	11.5	7.5	9.0
18	.0	.0	.0	7.0	3.0	5.5	10.5	6.0	7.5	12.5	8.0	10.0
19	.0	.0	.0	5.5	1.0	3.0	11.0	5.0	7.5	13.5	8.5	10.5
20	.0	.0	.0	3.0	.0	1.5	10.5	4.0	7.0	12.5	9.0	10.5
21	2.0	.0	.5	3.5	1.0	2.0	11.0	4.5	7.0	13.5	10.0	11.0
22	2.5	1.0	2.0	5.5	.0	2.0	7.5	3.5	5.5	15.0	8.5	11.0
23	2.5	.0	1.0	6.0	.0	2.5	9.5	2.5	5.0	12.5	8.5	10.5
24	.0	.0	.0	2.5	.0	1.0	10.5	3.0	6.0	10.5	9.5	10.0
25	.0	.0	.0	4.5	.0	2.0	11.5	4.0	7.0	15.5	9.0	12.0
26	.0	.0	.0	7.5	2.5	4.5	12.5	4.5	8.0	13.5	10.0	12.0
27	1.0	.0	.5	8.5	1.5	4.5	12.0	5.0	8.0	12.5	10.0	11.0
28	1.5	.0	.5	8.0	3.5	5.0	13.0	5.0	8.5	15.5	9.0	11.5
29	---	---	---	7.5	5.0	6.0	7.5	6.0	7.0	16.0	8.0	12.0
30	---	---	---	5.0	3.5	4.0	14.5	6.5	10.0	13.0	10.0	11.5
31	---	---	---	4.0	3.5	3.5	---	---	---	14.0	11.0	12.0
MONTH	5.5	0.0	0.5	9.5	0.0	2.5	14.5	2.0	6.0	16.0	5.5	9.0

HUDSON RIVER BASIN

01362200 ESOPUS CREEK AT ALLABEN, NY--Continued

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

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

HUDSON RIVER BASIN

01362500 ESOPUS CREEK AT COLDBROOK, NY

LOCATION.--Lat 42°00'51", long 74°16'16", Ulster County, Hydrologic Unit 02020006, on left bank at downstream side of bridge on Coldbrook Road in Coldbrook, 0.3 mi downstream from Little Beaver Kill, 1.5 mi upstream from Ashokan Reservoir, and 2.5 mi south of Mount Tremper.

DRAINAGE AREA.--192 mi^2.

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

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 621.54 ft above National Geodetic Vertical Datum of 1929. Prior to June 15, 1916, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good. Since 1924, water diverted from Schoharie Reservoir through Shandaken Tunnel (see Reservoirs in Hudson River Basin) enters Esopus Creek 10.5 mi upstream from station and is included in records of daily discharge. Slight diversion from Beaver Kill into Cooper Lake for water supply of Kingston. Several measurements of water temperature were made during the year. Telephone gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 65,300 ft^3/s, Mar. 21, 1980, gage height 21.94 ft, from rating curve extended above 13,000 ft^3/s, on basis of slope-area measurements at gage heights 12.39 ft, 15.15 ft, and 20.70 ft; minimum daily, 8 ft^3/s, Oct. 14, 1914.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15,300 ft^3/s, May 6, gage height, 12.87 ft; minimum, 137 ft^3/s, Oct. 21, gage height, 3.89 ft; minimum daily, 152 ft^3/s, Oct. 16.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	247	268	685	648	400	367	1590	616	1210	412	279	257
2	242	410	653	638	409	343	1190	2290	970	382	276	256
3	242	389	628	652	401	333	1130	2040	792	354	276	249
4	261	366	605	605	383	328	1650	2010	752	339	271	246
5	287	2030	585	591	375	338	1690	2040	694	505	271	245
6	278	4150	633	635	377	346	2080	8410	618	487	264	245
7	271	1550	756	633	370	291	2090	3310	620	406	268	244
8	265	987	740	663	359	287	1870	2500	623	391	270	237
9	258	732	723	663	332	287	1740	2230	707	360	267	234
10	250	732	705	639	337	284	1620	2420	1110	408	263	233
11	246	634	666	618	348	274	1500	3950	589	570	264	231
12	184	550	613	619	333	272	1430	3160	493	525	300	218
13	174	678	642	664	312	260	1380	2520	733	484	357	159
14	166	752	668	635	322	262	1350	2140	802	515	320	168
15	157	774	663	728	362	311	1340	1840	1510	692	294	280
16	152	740	653	672	350	333	1550	2440	1750	684	281	703
17	153	820	661	569	277	299	1500	4870	1490	627	271	718
18	173	787	646	402	272	336	1470	2400	1170	436	382	568
19	168	742	643	396	268	369	1450	2070	935	426	821	280
20	161	1070	636	392	256	323	1400	2080	689	450	827	1250
21	159	1450	642	358	992	324	1360	1850	586	466	665	718
22	335	1220	624	373	882	306	1320	1660	508	439	305	523
23	364	1100	629	376	644	299	1290	1530	461	425	287	678
24	316	1010	681	370	527	302	1250	1780	799	385	278	616
25	346	917	774	368	448	504	1220	1630	601	299	271	523
26	321	844	677	370	431	631	1190	1500	535	293	267	594
27	300	783	645	406	427	753	1160	1460	571	287	264	547
28	286	843	693	383	386	1350	1020	1370	519	332	263	497
29	282	762	714	376	---	1400	612	1310	476	301	268	463
30	271	713	679	388	---	1410	618	1270	429	288	271	432
31	263	---	662	401	---	1630	---	1230	---	284	259	---
TOTAL	7578	28803	20624	16231	11580	15152	42060	71926	23742	13252	10220	12612
MEAN	244	960	665	524	414	489	1402	2320	791	427	330	420
MAX	364	4150	774	728	992	1630	2090	8410	1750	692	827	1250
MIN	152	268	585	358	256	260	612	616	429	284	259	159

CAL YR 1988 TOTAL 231387 MEAN 632 MAX 4150 MIN 129
WTR YR 1989 TOTAL 273780 MEAN 750 MAX 8410 MIN 152

HUDSON RIVER BASIN

01364500 ESOPUS CREEK AT MOUNT MARION, NY

LOCATION.--Lat 42°02'16", long 73°58'21", Ulster County, Hydrologic Unit 02020006, on left bank at downstream side of bridge on Glasco Turnpike, 0.8 mi east of Mount Marion, 1.6 mi downstream from Plattekill Creek, and 4.5 mi upstream from mouth.

DRAINAGE AREA.--419 mi^2.

PERIOD OF RECORD.--March 1970 to current year. Monthly discharge only May 1907 to March 1918, published in WSP 1302. Occasional miscellaneous measurements, 1902, 1951, 1956, 1966, 1967, 1969.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 40.16 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 12, 1970, nonrecording gage at same site (at different datum May 1907 to March 1918, and at present datum June 9, 1966 to Aug. 12, 1970).

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow from 256 mi^2 of drainage area regulated by Ashokan Reservoir since Sept. 9, 1913. Water diverted from Schoharie Creek through Shandaken Tunnel (see Reservoirs in Hudson River Basin) since Feb. 3, 1924, enters Esopus Creek about 12.2 mi upstream from Ashokan Reservoir. Diversion from Plattekill Creek for water supply of village of Saugerties. Slight diversion at headwaters into Cooper Lake for water supply of Kingston. Diversions upstream during summer months for irrigation purposes. Diversions for water supply of city of New York made from Ashokan Reservoir (see Reservoirs in Hudson River Basin). Discharge records for this station now represent the natural flow from 112 mi^2, together with spillage during high stages from the upstream reservoirs. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--19 years (water years 1971-89), 491 ft^3/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 28,000 ft^3/s, Apr. 26, 1910, gage height, 25.10 ft, datum then in use; maximum discharge since March 1970, 22,500 ft^3/s, Apr. 5, 1987, gage height, 24.78 ft; minimum discharge, 9.7 ft^3/s, Sept. 16, 17, 1980, gage height, 11.79 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,300 ft^3/s, May 6, gage height, 21.25 ft; minimum, 20 ft^3/s, Sept. 14 gage height, 11.99 ft.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	54	320	e134	136	e185	963	168	280	281	68	30
2	30	171	282	e126	139	e162	728	1300	264	232	62	29
3	29	197	254	e116	137	e150	585	1590	257	197	61	28
4	28	155	228	e107	e108	e143	573	897	214	171	56	26
5	29	136	204	e100	e98	e146	560	646	186	186	52	25
6	28	848	189	e92	e90	e140	736	7060	191	246	48	23
7	27	525	177	e90	e82	e100	854	3290	228	207	46	23
8	29	349	167	e103	e76	e93	672	1410	260	172	44	23
9	30	271	155	142	e72	e99	532	890	319	148	41	22
10	30	221	144	e123	e68	e100	449	825	1260	136	39	22
11	29	196	e110	e110	e66	100	374	3010	824	159	39	22
12	26	171	e94	e108	e64	100	325	1980	510	131	76	21
13	24	207	e92	e130	e63	95	302	1180	474	116	136	21
14	24	435	e97	e120	e68	95	341	821	510	115	110	24
15	25	359	e100	e150	e115	103	321	661	995	114	87	36
16	25	295	e91	205	199	127	578	1380	1580	98	71	33
17	26	308	e83	176	e135	126	639	5000	1800	94	60	64
18	26	332	e76	157	e100	127	523	2020	1110	88	53	59
19	27	281	e76	153	e88	138	434	1100	743	82	48	51
20	26	468	e75	153	e80	130	366	755	719	90	48	254
21	25	1330	e79	e148	e520	131	321	574	592	141	47	410
22	68	873	e80	e120	1220	133	284	458	450	120	43	263
23	112	588	81	117	796	129	254	376	345	106	40	195
24	95	450	101	114	e500	133	232	791	607	90	37	187
25	84	363	201	109	e360	321	213	1300	472	80	33	156
26	74	308	194	105	e260	505	197	817	439	80	31	215
27	65	274	166	115	e220	467	182	625	758	104	30	306
28	61	400	170	118	e200	460	168	495	532	117	29	243
29	60	437	221	116	---	453	159	391	439	106	29	195
30	55	364	e180	117	---	446	171	331	343	85	38	161
31	51	---	e150	130	---	615	---	297	---	76	34	---
TOTAL	1300	11366	4637	3904	6060	6252	13036	42438	17701	4168	1636	3167
MEAN	41.9	379	150	126	216	202	435	1369	590	134	52.8	106
MAX	112	1330	320	205	1220	615	963	7060	1800	281	136	410
MIN	24	54	75	90	63	93	159	168	186	76	29	21

CAL YR 1988 TOTAL 80671 MEAN 220 MAX 1370 MIN 21
WTR YR 1989 TOTAL 115665 MEAN 317 MAX 7060 MIN 21

e Estimated

HUDSON RIVER BASIN

01365000 RONDOUT CREEK NEAR LOWES CORNERS, NY

LOCATION.--Lat 41°52'00", long 74°29'12", Sullivan County, Hydrologic Unit 02020007, on left bank 100 ft downstream from small tributary, 350 ft upstream from bridge on county road, 1.1 mi upstream from Sugarloaf Brook, 1.1 mi east of Lowes Corners, and 1.9 mi southwest of Sundown.

DRAINAGE AREA.--38.5 mi^2.

PERIOD OF RECORD.--February 1937 to current year.

REVISED RECORDS.--WSP 1702: 1952.

GAGE.--Water-stage recorder. Datum of gage is 874.44 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 4, 1938, nonrecording gage at highway bridge 350 ft downstream at datum 847.00 ft above NGVD (levels by Board of Water Supply, City of New York). Oct. 4, 1938 to July 5, 1951, water-stage recorder at site 1.2 mi downstream; Oct. 4, 1938 to July 3, 1949, datum 847.00 ft above NGVD and July 4, 1949 to July 5, 1951, datum 846.00 ft above NGVD (levels by Board of Water Supply, City of New York).

REMARKS.--Records poor.

AVERAGE DISCHARGE.--52 years, 97.9 ft^3/s, 34.53 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 7,600 ft^3/s, July 22, 1938, from rating curve extended above 2,600 ft^3/s; maximum gage height, 10.6 ft, Apr. 4, 1987, from floodmarks; minimum discharge, 3.3 ft^3/s, Sept. 16, 17, Oct. 17, 18, 1980.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 6	0730	*3,270	*7.30	May 16	2315	3,030	7.11
May 11	0245	1,230	5.61				

Minimum discharge, 7.3 ft^3/s, Sept. 13, 14.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	28	100	e37	e45	e41	290	87	95	66	20	12
2	21	48	91	e33	e40	e42	208	446	91	62	20	13
3	21	39	85	e30	e35	e44	203	296	83	58	24	11
4	20	36	78	e27	e30	e47	231	235	79	55	20	9.8
5	19	201	73	e26	e26	63	226	319	72	86	21	9.6
6	19	462	69	35	e26	59	313	1550	83	77	17	9.4
7	19	227	65	38	e25	e40	281	632	79	69	17	9.0
8	19	154	61	48	e25	e36	231	407	76	58	17	8.7
9	19	125	57	43	e24	e34	199	310	77	51	16	8.6
10	19	111	e50	36	e22	e38	165	475	130	50	16	8.3
11	19	104	e40	e33	e22	e37	138	902	86	51	16	8.0
12	18	88	e33	e30	e22	e36	123	497	75	44	28	7.7
13	17	127	e40	e33	e24	e34	120	360	92	42	50	7.5
14	17	127	48	e36	e35	e37	118	290	97	40	29	11
15	17	103	46	e50	e50	67	131	274	179	38	18	13
16	17	96	39	e45	e40	60	204	723	197	37	15	11
17	16	155	38	e39	e28	49	156	1240	183	39	15	20
18	17	128	36	e35	e25	76	146	493	149	35	15	14
19	18	113	36	e33	e25	64	138	336	130	33	14	15
20	17	395	37	e31	e26	e46	127	262	116	47	14	223
21	17	459	39	e30	e250	e44	120	218	114	47	13	89
22	58	299	35	e29	224	e40	111	179	115	37	14	64
23	40	235	34	e35	125	e39	105	154	107	33	13	102
24	32	190	63	39	e66	e60	97	217	125	29	12	83
25	32	155	75	38	e54	210	90	180	103	27	12	65
26	26	134	48	38	e50	211	85	151	95	25	11	98
27	24	121	41	42	e48	230	80	145	94	24	12	78
28	27	165	52	38	e44	298	75	128	86	31	12	66
29	29	123	53	38	---	292	75	116	79	25	13	61
30	26	108	44	e40	---	277	80	108	71	22	16	55
31	25	---	e40	e44	---	308	---	103	---	21	13	---
TOTAL	706	4856	1646	1129	1456	2959	4666	11833	3158	1359	543	1190.6
MEAN	22.8	162	53.1	36.4	52.0	95.5	156	382	105	43.8	17.5	39.7
MAX	58	462	100	50	250	308	313	1550	197	86	50	223
MIN	16	28	33	26	22	34	75	87	71	21	11	7.5
CFSM	.59	4.20	1.38	.95	1.35	2.48	4.04	9.91	2.73	1.14	.45	1.03
IN.	.68	4.69	1.59	1.09	1.41	2.86	4.51	11.43	3.05	1.31	.52	1.15

CAL YR 1988 TOTAL 32694 MEAN 89.3 MAX 644 MIN 15 CFSM 2.32 IN. 31.59
WTR YR 1989 TOTAL 35501.6 MEAN 97.3 MAX 1550 MIN 7.5 CFSM 2.53 IN. 34.30

e Estimated

HUDSON RIVER BASIN

01367500 RONDOUT CREEK AT ROSENDALE, NY

LOCATION.--Lat 41°50'35", long 74°05'11", Ulster County, Hydrologic Unit 02020007, on left bank 30 ft upstream from bridge on James Street in Rosendale, and 3 mi upstream from Wallkill River.

DRAINAGE AREA.--378 mi^2 (see REMARKS below).

WATER DISCHARGE RECORDS

PERIOD OF RECORD.--July 1901 to November 1903, October 1905 to January 1919, August 1926 to current year. Monthly discharge only for some periods, published in WSP 1302, and WDR NY-70-1.

REVISED RECORDS.--WSP 756: 1933. WDR NY-86-1: Drainage Area.

GAGE.--Water-stage recorder. Datum of gage is 32.83 ft above National Geodetic Vertical Datum of 1929. Prior to January 1919, nonrecording gage at site 150 ft downstream at datum 38.83 ft above NGVD. Aug. 3, 1926 to Sept. 10, 1969, at present site at datum 42.83 ft above NGVD. Sept. 11, 1969 to Feb. 3, 1970, water-stage recorder, and June 9, 1970 to Jan. 18, 1971, nonrecording gage at site 0.2 mi upstream at datum 44.03 ft above NGVD.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Occasional regulation from hydroelectric plant upstream from station. Diversion from Rondout Creek through the emergency connection to the Delaware Aqueduct at Lackawack for New York City water supply during period April 1944 to May 1951. Since October 1950, flow regulated by Rondout Reservoir (see Reservoirs in Hudson River Basin). Subsequent to May 1951, entire flow except for period of spilling, diverted from Rondout Reservoir for New York City water supply. Discharge records for this station now represent the natural flow from 283 mi^2, together with spillage during high flow from Rondout Reservoir. Telephone gage-height telemeter at station. Several measurements of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,800 ft^3/s, Oct. 16, 1955, gage height, 36.8 ft, present datum, from floodmarks, from rating curve extended above 17,500 ft^3/s, on basis of contracted-opening measurement at gage height 33.93 ft, present datum; minimum discharge, 2.2 ft^3/s, July 16, 1965; minimum daily, 3.0 ft^3/s, July 16, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 12,100 ft^3/s, May 17, gage height, 17.62 ft; minimum, 42 ft^3/s, Oct. 7, gage height, 8.77 ft; minimum daily, 55 ft^3/s, Sept. 13.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	84	98	512	e260	e270	336	2170	294	498	315	105	76
2	82	288	453	e240	e275	281	1470	2090	571	276	104	71
3	76	253	412	e230	e270	277	1200	1990	500	250	105	67
4	64	185	379	e225	e230	261	1200	1210	398	219	108	64
5	60	164	344	e195	e215	262	1040	966	355	267	102	62
6	58	1400	314	e175	e190	e260	1450	8330	453	542	94	62
7	58	753	e295	e185	e180	e190	1730	4100	723	364	94	59
8	65	476	283	e200	e170	e175	1220	2210	753	293	89	58
9	67	375	263	e275	e160	e185	996	1550	690	243	84	57
10	66	315	242	e240	e150	e190	873	1840	2480	222	80	57
11	63	300	229	e220	e150	184	706	6710	1300	230	82	56
12	59	268	e215	e215	e140	199	582	3250	784	207	141	56
13	58	337	e200	e270	e135	181	525	2090	725	189	261	55
14	56	793	e220	e230	e150	192	621	1520	848	176	209	64
15	56	494	e225	e290	e250	227	566	1140	2480	174	167	83
16	56	391	e195	e395	360	292	1090	2300	3450	158	140	86
17	57	397	e180	e340	279	252	1070	9880	3080	161	125	180
18	56	459	e165	e310	e220	264	857	3930	1850	161	111	161
19	56	373	e170	294	e190	325	698	2160	1150	153	104	121
20	57	1160	e165	291	e170	285	586	1520	829	158	116	2720
21	56	3250	e175	e285	1160	307	485	1160	702	240	141	2150
22	115	1610	e180	e230	2030	363	439	864	659	211	114	1300
23	234	1060	e180	e225	1320	310	392	678	571	175	99	939
24	157	810	e215	e220	768	313	384	2090	1400	153	93	775
25	132	669	e390	217	605	1350	358	2220	1010	137	89	541
26	118	528	e380	e210	e460	1790	331	1340	720	128	83	943
27	102	453	e330	e220	e410	1350	299	1130	648	121	79	1120
28	95	921	331	e230	386	1180	268	944	530	130	75	700
29	96	818	e430	e230	---	1200	261	730	463	138	78	496
30	99	593	e300	e240	---	1220	285	580	362	121	89	379
31	92	---	e270	e250	---	1370	---	531	---	110	87	---
TOTAL	2550	19991	8642	7637	11293	15571	24152	71347	30982	6422	3448	13558
MEAN	82.3	666	279	246	403	502	805	2302	1033	207	111	452
MAX	234	3250	512	395	2030	1790	2170	9880	3450	542	261	2720
MIN	56	98	165	175	135	175	261	294	355	110	75	55

CAL YR 1988 TOTAL 160075 MEAN 437 MAX 3250 MIN 51
WTR YR 1989 TOTAL 215593 MEAN 591 MAX 9880 MIN 55

e Estimated

HUDSON RIVER BASIN

01367500 RONDOUT CREEK AT ROSENDALE, NY--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1963-64, 1971-72, June 1988 to current year.
CHEMICAL DATA: 1963 (c), 1964, 1971-72, 1988 (a), 1989 (b).
MINOR ELEMENTS DATA: 1963 (c), 1964, 1988 (a), 1989 (b).
NUTRIENT DATA: 1963 (c), 1964, 1971-72 (a).
SEDIMENT DATA: 1989 (b).

REMARKS.--Water-quality samples were collected by personnel of the New York State Department of Environmental Conservation, and were analyzed in USGS laboratories.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)
OCT										
18...	0915	56	--	--	--	--	--	--	57	17
APR										
13...	0900	521	102	7.40	6.5	767	11.9	96	31	9.4
MAY										
09...	1000	1570	82	7.20	9.5	764	11.7	103	24	7.3
JUN										
20...	0900	852	107	--	18.0	767	--	--	33	10
AUG										
28...	1000	75	159	8.30	22.0	764	9.7	111	56	17

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)
OCT								
18...	3.5	6.6	1.1	42	15	9.8	<0.10	30
APR								
13...	1.9	4.9	0.70	19	12	8.2	0.10	90
MAY								
09...	1.5	5.6	0.90	14	12	5.5	0.10	350
JUN								
20...	2.0	4.0	0.70	23	11	5.5	0.10	190
AUG								
28...	3.2	6.8	1.0	43	13	10	0.10	60

DATE	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)
OCT									
18...	<1	4	140	--	<5	20	<0.10	4	<10
APR									
13...	<1	4	180	--	<5	40	<0.10	<1	20
MAY									
09...	<1	7	540	70	4	50	<0.10	4	<10
JUN									
20...	<1	4	350	--	2	40	<0.10	1	<10
AUG									
28...	<1	11	110	--	2	30	<0.10	4	10

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
APR				
13...	0900	521	3	4.2
MAY				
09...	1000	1570	17	72
JUN				
20...	0900	852	8	18
AUG				
28...	1000	75	3	0.61

HUDSON RIVER BASIN

01371000 SHAWANGUNK KILL AT PINE BUSH, NY

LOCATION.--Lat 41°37'05", long 74°17'40", Ulster County, Hydrologic Unit 02020007, on left bank, 50 ft downstream from Hardenburg Bridge, 0.5 mi northeast of Pine Bush, 2.3 mi downstream from Pakanasink Creek, and 11.0 mi upstream from mouth at Ganahgote.

DRAINAGE AREA.--102 mi^2.

PERIOD OF RECORD.--September 1924 to September 1932, June 1957 to September 1971, December 1988 to current year.

REVISED RECORDS.--WSP 1502: Drainage area, 1925-26(M), 1927-29, 1930-31(M).

GAGE.--Water-stage recorder. Datum of gage is 302.06 ft above National Geodetic Vertical Datum of 1929. Prior to July 1, 1957, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Slight regulation at low flow by dam upstream from station. Some diversions upstream for city of Middletown water supply.

AVERAGE DISCHARGE.--22 years (1925-32, 1958-71), 139 ft^3/s, 18.51 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,350 ft^3/s, Sept. 1, 1927, gage height, 10.5 ft, from graph based on gage readings, from rating curve extended above 2,300 ft^3/s on basis of slope-area measurement at gage height 8.07 ft, and estimated discharges for floods in 1952 and 1955 as mentioned below; minimum discharge, 2.2 ft^3/s, Aug. 30, 1966; minimum gage height, 0.37 ft, Aug. 5, 1930.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of Aug. 19 and Oct. 16, 1955 reached a stage of about 12.5 ft, from floodmarks (discharge, 9,700 ft^3/s, based on indirect measurements at Ganahgote for each flood). Flood of June 1, 1952 reached a stage of about 11.0 ft, from floodmarks (discharge, 7,200 ft^3/s, based on indirect measurements at Winterton and Ganahgote).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than 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)
May 6	0915	*3,740	*7.22	May 17	0400	3,060	6.60
May 11	0245	2,660	6.19				

Minimum discharge, 4.8 ft^3/s, Sept. 11, gage height, 0.55 ft.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	e64	e80	e68	490	70	118	74	31	16
2	---	---	---	e49	e74	e60	276	735	218	67	30	15
3	---	---	---	e50	e72	e58	253	460	141	61	34	15
4	---	---	---	e47	e60	62	276	235	109	58	41	12
5	---	---	---	e40	e52	68	242	195	98	107	29	12
6	---	---	---	e56	e54	102	433	2560	147	199	24	12
7	---	---	---	e52	e47	e68	456	1010	200	114	22	13
8	---	---	---	e56	e35	e62	283	510	265	79	21	12
9	---	---	---	e66	e37	e56	217	347	231	63	19	12
10	---	---	---	e86	e40	e50	192	727	1130	54	18	11
11	---	---	---	e68	e35	e49	162	1960	427	55	18	10
12	---	---	---	e82	e32	59	138	816	218	53	46	11
13	---	---	---	e120	e30	e50	129	485	256	45	85	11
14	---	---	---	e110	e28	61	167	349	288	44	61	11
15	---	---	e43	e120	e39	78	158	286	876	44	41	14
16	---	---	e52	e150	e74	116	361	884	1310	38	33	17
17	---	---	e49	e120	e54	102	276	2330	1080	39	28	55
18	---	---	e50	e90	e47	117	193	882	487	37	23	45
19	---	---	e64	e70	e41	165	160	471	289	34	22	34
20	---	---	e50	e74	e38	113	133	321	209	36	40	1040
21	---	---	e40	e66	e300	159	115	247	183	61	34	753
22	---	---	e45	e62	594	226	106	197	187	48	26	405
23	---	---	e54	e60	340	161	96	161	253	42	23	240
24	---	---	e44	e66	e120	200	91	680	465	36	21	185
25	---	---	e90	e56	e90	747	86	618	260	32	21	119
26	---	---	e100	e50	e84	416	80	310	171	29	18	400
27	---	---	e88	e54	e82	276	78	274	152	26	16	372
28	---	---	e70	e64	84	237	74	221	115	26	15	174
29	---	---	e74	e52	---	248	69	165	103	26	16	119
30	---	---	e90	e62	---	238	69	136	84	22	24	93
31	---	---	e76	e90	---	327	---	127	---	22	20	---
TOTAL	---	---	---	2252	2663	4799	5859	18769	10070	1671	900	4238
MEAN	---	---	---	72.6	95.1	155	195	605	336	53.9	29.0	141
MAX	---	---	---	150	594	747	490	2560	1310	199	85	1040
MIN	---	---	---	40	28	49	69	70	84	22	15	10
CFSM	---	---	---	.71	.93	1.52	1.91	5.94	3.29	.53	.28	1.38
IN.	---	---	---	.82	.97	1.75	2.14	6.85	3.67	.61	.33	1.55

e Estimated

HUDSON RIVER BASIN

01371500 WALLKILL RIVER AT GARDINER, NY

LOCATION.--Lat 41°41'10", long 74°09'56", Ulster County, Hydrologic Unit 02020007, on left bank 400 ft upstream from bridge on U.S. Highway 44, 500 ft downstream from Shawangunk Kill, and 0.7 mi northwest of Gardiner.

DRAINAGE AREA.--711 mi^2.

PERIOD OF RECORD.--September 1924 to current year.

REVISED RECORDS.--WSP 756: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 185.70 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Regulation at low flows by dams upstream and some diversions for municipalities and irrigational purposes. Telephone gage-height telemeter at station.

AVERAGE DISCHARGE.--65 years, 1,062 ft^3/s, 20.28 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,800 ft^3/s, Oct. 16, 1955, gage height, 19.81 ft; minimum, 9.5 ft^3/s, Sept. 28, 1964; minimum gage height, 1.59 ft, Aug. 14, 15, 16, 19, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,400 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	0630	8,540	8.70	May 17	0900	*11,000	*10.10
May 6	1430	9,700	9.38	June 16	0930	7,000	7.75
May 11	0830	8,660	8.77				

Minimum discharge, 48 ft^3/s, Oct. 15, 16, 17, 18, 19, 21, gage height, 1.92 ft.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	57	175	1370	485	616	587	2450	510	995	819	197	165
2	120	380	1130	353	614	541	1970	2410	1270	675	291	129
3	112	431	992	366	585	501	1670	2970	1140	594	288	126
4	135	342	858	e340	473	472	1740	1980	862	500	391	112
5	98	303	740	e340	437	480	1660	1480	768	803	279	108
6	117	826	708	e350	386	562	2450	7830	732	1650	231	116
7	106	901	681	e400	360	613	2920	6300	1180	1240	160	104
8	119	694	603	e370	326	401	2240	4320	2560	864	179	79
9	163	564	574	437	e250	507	1800	3340	2200	699	174	91
10	130	401	523	e600	e260	435	1630	3600	5220	568	159	84
11	121	390	455	483	e290	382	1430	8070	3810	520	165	95
12	94	335	321	574	278	433	1170	6510	2510	470	320	85
13	94	474	379	796	250	391	1020	4970	2020	416	688	83
14	125	1090	430	862	e220	417	1120	3680	2160	370	664	78
15	78	915	341	e800	e320	456	1180	2870	4030	424	449	96
16	92	691	423	e960	571	618	1890	4240	6470	331	365	138
17	108	607	395	887	444	682	2000	10300	5920	327	290	217
18	88	718	407	656	406	712	1610	8030	4010	313	252	274
19	97	692	533	571	339	930	1310	6720	2730	292	246	210
20	106	2540	399	615	316	836	1110	5840	1970	289	236	2290
21	95	7300	298	e500	1130	923	955	4570	1620	313	260	4700
22	196	5020	355	e480	3320	1360	841	3270	1670	356	230	4100
23	254	3370	447	495	2840	1060	764	2310	2010	323	214	3110
24	293	2560	344	443	1770	1050	697	3540	4070	317	180	2650
25	273	1880	637	390	1100	3580	635	4420	3340	269	184	1890
26	194	1460	767	416	765	2970	597	3290	2600	251	203	2380
27	181	1170	657	427	715	2290	572	2750	2360	232	117	3050
28	181	1960	515	528	635	1870	550	2260	1690	232	121	2060
29	159	2140	531	403	---	1740	493	1750	1340	200	119	1520
30	148	1660	675	548	---	1620	516	1370	1020	170	174	1100
31	130	---	569	657	---	1840	---	1190	---	166	230	---
TOTAL	4264	41989	18057	16532	20016	31259	40990	126690	74277	14993	8056	31240
MEAN	138	1400	582	533	715	1008	1366	4087	2476	484	260	1041
MAX	293	7300	1370	960	3320	3580	2920	10300	6470	1650	688	4700
MIN	57	175	298	340	220	382	493	510	732	166	117	78
CFSM	.19	1.97	.82	.75	1.01	1.42	1.92	5.75	3.48	.68	.37	1.46
IN.	.22	2.20	.94	.86	1.05	1.64	2.14	6.63	3.89	.78	.42	1.63

CAL YR 1988 TOTAL 331332 MEAN 905 MAX 8400 MIN 53 CFSM 1.27 IN. 17.34
WTR YR 1989 TOTAL 428363 MEAN 1174 MAX 10300 MIN 57 CFSM 1.65 IN. 22.41

e Estimated

HUDSON RIVER BASIN

01372043 HUDSON RIVER NEAR POUGHKEEPSIE, NY

LOCATION.--Lat 41°43'18", long 73°56'28", Dutchess County, Hydrologic Unit 02020008, at city pumping station on east bank, adjacent (north) to Marist College, 0.5 mi north of Poughkeepsie, and 1.3 mi upstream from Mid-Hudson Bridge

DRAINAGE AREA.--11,700 mi^2.

PERIOD OF RECORD.--Water years 1969-75, 1981, June 1988 to current year.
CHEMICAL DATA: 1969 (c), 1970-71 (d), 1972 (b), 1973-75 (e), 1988 (a), 1989 (b).
MINOR ELEMENTS DATA: 1969 (c), 1970-71 (d), 1972 (b), 1973-75 (d), 1988 (a), 1989 (b).
RADIOCHEMICAL DATA: 1974 (a), 1975 (d).
ORGANIC DATA: 1975 (a), 1981 (b).
NUTRIENT DATA: 1969 (c), 1970-71 (d), 1972 (b), 1973-75 (d), 1988 (a).
BIOLOGICAL DATA: 1973-75 (d).
SEDIMENT DATA: 1973 (a), 1974 (b), 1975, 1988 (a), 1989 (b).

REMARKS.--Water-quality samples were collected by personnel of the New York State Department of Environmental Conservation, and were analyzed in USGS laboratories.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	BAROMETRIC PRESSURE (MM OF HG)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)
OCT									
18...	1250	--	--	--	--	--	--	94	28
APR									
13...	1100	198	7.00	7.5	767	11.0	91	69	21
MAY									
09...	1200	187	7.50	13.5	765	9.5	91	63	19
JUN									
20...	1100	212	7.60	--	766	8.3	--	79	24
AUG									
28...	1200	258	7.60	24.5	767	6.7	80	92	28

DATE	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)
OCT								
18...	5.8	14	1.8	66	25	20	0.10	720
APR								
13...	4.1	8.5	1.3	51	14	14	0.10	1000
MAY								
09...	3.8	10	1.5	47	17	12	0.10	3900
JUN								
20...	4.7	8.9	1.4	62	14	13	0.10	880
AUG								
28...	5.3	12	1.4	72	18	18	0.20	1000

DATE	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)
OCT									
18...	<1	12	1100	--	<5	100	<0.10	4	10
APR									
13...	<1	17	1700	--	<5	70	<0.10	2	20
MAY									
09...	<1	16	6700	62	17	320	<0.10	7	40
JUN									
20...	<1	8	1600	--	4	80	<0.10	2	10
AUG									
28...	<1	12	1900	--	5	120	<0.10	3	20

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SEDIMENT, SUSPENDED (MG/L)
APR		
13...	1100	34
MAY		
09...	1200	173
JUN		
20...	1100	36
AUG		
28...	1200	48

HUDSON RIVER BASIN

01372500 WAPPINGER CREEK NEAR WAPPINGERS FALLS, NY

LOCATION.--Lat 41°39'11", long 73°52'23", Dutchess County, Hydrologic Unit 02020008, on left bank 700 ft downstream from Red Oak Mill dam, and 4.5 mi northeast of village of Wappingers Falls.

DRAINAGE AREA.--181 mi^2.

PERIOD OF RECORD.--May 1903 to June 1905 (gage heights only during some winter months), August 1928 to current year.

REVISED RECORDS.--WSP 741: 1932. WSP 1902: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 114.37 ft above National Geodetic Vertical Datum of 1929, (levels by Corps of Engineers). May 1903 to June 1905 staff gage at site 2.5 mi downstream at different datum. Aug. 7, 1928 to Sept. 25, 1931, water-stage recorder at site 2 mi downstream at different datum.

REMARKS.--Records fair. Telephone gage-height telemeter at station.

AVERAGE DISCHARGE.--61 years (water years 1929-89), 254 ft^3/s, 19.06 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,600 ft^3/s, Aug. 19, 1955, gage height, 19.60 ft, from floodmarks in gage shelter, from rating curve extended above 6,000 ft^3/s on basis of flow-over-dam and contracted-opening measurement at gage height 18.02 ft and contracted-opening and flow-over-road measurement at gage height 19.60 ft; minimum discharge, 0.90 ft^3/s, Sept. 20, 21, 1964, gage height, 2.05 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than 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)
Nov. 21	1215	1,710	6.20	May 17	1100	*4,590	*9.44
May 7	0030	2,100	6.74	May 25	0400	2,210	6.88
May 11	1730	2,560	7.32				

Minimum discharge, 17 ft^3/s, Sept. 14, gage height, 2.43 ft.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	57	70	455	193	191	194	579	251	491	211	57	37
2	53	184	409	183	200	173	515	609	472	183	52	34
3	50	166	373	183	191	169	469	897	445	163	49	32
4	49	127	346	e150	e160	158	472	650	381	146	45	30
5	47	112	316	e110	e140	159	457	532	332	158	41	28
6	44	161	294	e120	e145	163	649	1260	337	221	38	26
7	43	162	285	143	148	e110	782	1820	444	190	43	25
8	51	132	275	158	e120	e100	680	1150	567	181	44	23
9	60	115	257	199	e105	e105	601	872	492	155	39	23
10	56	104	239	e160	e96	e110	554	839	626	133	35	23
11	50	100	220	e130	e100	111	488	2140	521	157	39	23
12	48	96	e150	e145	e98	118	434	2020	405	149	208	21
13	46	111	e175	206	e92	111	398	1410	377	127	318	19
14	43	233	198	e150	122	112	443	1050	382	113	241	20
15	53	202	194	244	166	120	408	863	474	102	155	71
16	53	171	e155	291	244	151	590	1150	807	96	112	69
17	44	180	e150	224	e170	143	621	3890	669	95	91	79
18	42	235	e150	201	e135	150	534	2600	526	92	75	70
19	45	204	e150	199	e115	178	481	1680	435	85	65	71
20	45	376	158	201	e120	149	423	1190	364	81	62	93
21	42	1450	162	e165	357	170	383	946	339	90	56	164
22	58	1000	168	e150	985	206	355	819	321	89	51	195
23	81	716	155	e140	592	175	334	681	328	83	49	142
24	72	583	175	e130	e310	192	316	1300	495	73	44	131
25	68	489	284	146	e260	591	298	1900	431	67	39	108
26	64	430	245	142	e240	592	284	1200	338	60	38	220
27	59	386	204	184	e220	487	271	967	315	55	37	323
28	56	588	194	177	e190	448	256	826	280	75	35	212
29	57	622	260	164	---	462	244	677	290	93	36	161
30	59	512	230	181	---	455	261	586	243	73	48	130
31	55	---	201	199	---	523	---	536	---	62	43	---
TOTAL	1650	10017	7227	5368	6012	7085	13580	37311	12927	3658	2285	2603
MEAN	53.2	334	233	173	215	229	453	1204	431	118	73.7	86.8
MAX	81	1450	455	291	985	592	782	3890	807	221	318	323
MIN	42	70	150	110	92	100	244	251	243	55	35	19
CFSM	.29	1.84	1.29	.96	1.19	1.26	2.50	6.65	2.38	.65	.41	.48
IN.	.34	2.06	1.49	1.10	1.24	1.46	2.79	7.67	2.66	.75	.47	.53

CAL YR 1988 TOTAL 84250 MEAN 230 MAX 1450 MIN 27 CFSM 1.27 IN. 17.32
WTR YR 1989 TOTAL 109723 MEAN 301 MAX 3890 MIN 19 CFSM 1.66 IN. 22.55

e Estimated

HUDSON RIVER BASIN

01375000 CROTON RIVER AT NEW CROTON DAM, NEAR CROTON-ON-HUDSON, NY

LOCATION.--Lat 41°13'32", long 73°51'32", Westchester County, Hydrologic Unit 02030101, on left bank 1,000 ft downstream from New Croton Dam, and 1.8 mi northeast of Croton-On-Hudson.

DRAINAGE AREA.--378 mi^2.

PERIOD OF RECORD.--August 1933 to current year. Prior to Oct. 1, 1941, published as "at Quaker Bridge," (low-flow records at this site are not equivalent owing to well pumpage upstream). Fragmentary records published during August 1933 to September 1941 for "at Cornell Dam near Croton" and "at New Croton near Croton" are equivalent. Oct. 1, 1941 to Sept. 30, 1955 published as "at New Croton Dam near Croton".

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 50 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 1, 1941, supplementary water-stage recorder and concrete control at site 1.1 mi downstream at Quaker Bridge.

REMARKS.--Records good except those for estimated daily discharges and those below 300 ft^3/s, which are poor. Entire flow, except for periods of spilling and releases to augment Croton-on-Hudson water supply, diverted from New Croton Reservoir for municipal supply of City of New York.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,400 ft^3/s, Oct. 16, 1955, gage height, 18.44 ft, from floodmark; from rating curve extended above 9,700 ft^3/s, on basis of slope-area measurements of peak flow; minimum daily discharge, 0.1 ft^3/s, Mar. 14, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,430 ft^3/s, May 17, gage height, 8.45 ft; minimum daily, 6.2 ft^3/s, Oct. 25.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	7.7	457	85	83	113	1120	203	e700	285	19	19
2	13	7.8	371	65	75	97	842	741	e900	232	19	19
3	15	21	329	62	77	90	745	814	e780	201	19	19
4	33	51	302	53	81	86	747	554	e660	156	19	19
5	14	147	282	22	53	77	821	560	e520	284	19	18
6	11	456	262	36	43	136	1440	1520	472	566	19	16
7	16	288	245	18	32	105	1340	1510	555	393	e19	16
8	16	159	230	11	22	85	1140	1150	741	302	e19	16
9	9.7	108	212	42	16	64	999	945	1010	201	e19	16
10	9.6	88	190	53	8.0	61	866	1100	1730	137	e19	16
11	9.5	86	180	50	7.6	87	725	2290	1330	117	e20	16
12	9.6	72	140	59	7.5	122	620	1900	921	63	e22	16
13	10	131	132	123	7.6	123	533	1630	916	21	e25	16
14	10	268	140	104	7.8	117	480	1430	878	12	e22	16
15	9.9	182	124	152	13	123	462	1220	1100	20	e19	16
16	10	122	124	185	90	130	1070	2010	1680	20	e18	16
17	10	221	115	137	101	114	1010	6600	1580	23	e18	16
18	11	264	94	104	69	94	795	e4000	1270	19	e18	16
19	9.8	180	93	102	48	128	739	e3500	983	19	18	17
20	11	732	95	92	34	96	643	e2000	766	19	18	18
21	46	1720	105	75	246	133	543	e1900	712	20	18	14
22	34	817	120	53	786	146	454	e1700	669	19	18	13
23	6.4	502	123	40	613	100	360	e1300	720	19	18	15
24	6.3	364	166	34	358	173	293	e1800	741	19	19	12
25	6.2	294	318	32	205	578	259	e2500	578	19	18	10
26	6.3	257	274	30	158	467	229	e1700	492	19	18	10
27	6.3	246	204	113	147	288	207	e1400	812	19	18	9.7
28	6.3	930	193	122	132	208	178	e1300	650	19	18	9.3
29	6.5	861	269	94	---	191	169	e1000	528	19	18	9.3
30	6.5	604	172	95	---	348	204	e700	359	19	18	9.3
31	7.2	---	110	95	---	902	---	e700	---	19	18	---
TOTAL	388.1	10186.5	6171	2338	3520.5	5582	20033	51677	25753	3300	587	448.6
MEAN	12.5	340	199	75.4	126	180	668	1667	858	106	18.9	15.0
MAX	46	1720	457	185	786	902	1440	6600	1730	566	25	19
MIN	6.2	7.7	93	11	7.5	61	169	203	359	12	18	9.3

CAL YR 1988 TOTAL 90463.6 MEAN 247 MAX 1720 MIN 6.2
WTR YR 1989 TOTAL 129984.7 MEAN 356 MAX 6600 MIN 6.2

e Estimated

HUDSON RIVER BASIN

01376500 SAW MILL RIVER AT YONKERS, NY

LOCATION.--Lat 40°56'11", long 73°53'12", Westchester County, Hydrologic Unit 02030101, on right bank in Yonkers, just upstream from Old Croton aqueduct, near intersection of Nepperhan Avenue and Center Street, and 1.2 mi upstream from mouth.

DRAINAGE AREA.--25.6 mi^2.

PERIOD OF RECORD.--November 1943 to September 1973, April 1974 to September 1989 (discontinued).

REVISED RECORDS.--WDR NY-71-1: 1965, 1966.

GAGE.--Water-stage recorder, crest-stage gage, and concrete control. Elevation of gage is 90 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Aug. 17, 1978, water-stage recorder and concrete control at same site but at different datum. Aug. 17, 1978 to Sept. 9, 1980, nonrecording and crest-stage gage, and Sept. 10, 1980 to Sept. 30, 1982, water-stage recorder and crest-stage gage at site 1,300 ft downstream at different datum.

REMARKS.--Records good. Flow affected by diversion by city of Yonkers, village of Tarrytown, and several industries for water supply and industrial purposes. Diurnal fluctuations caused by water supply and industrial operations. Radio gage-height telemeter at station.

COOPERATION.--Figures for diversion and return in upstream water supply provided by city of Yonkers and village of Tarrytown.

AVERAGE DISCHARGE.--44 years (water years 1945-73, 1975-89), 34.0 ft^3/s, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,450 ft^3/s, July 7, 1984, gage height, 7.84 ft; minimum, no flow during part of several days in Oct., Nov., and June-Sept. of 1981 water year because of construction in channel upstream from gage; minimum daily discharge, 0.11 ft^3/s, Sept. 14, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 766 ft^3/s, May 17, gage height, 5.55 ft; minimum, 2.1 ft^3/s, Jan. 5, gage height, 1.25 ft, result of freezeup; minimum daily, 4.6 ft^3/s, Oct. 6, 17.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.1	69	43	18	20	27	115	37	48	22	24	8.8
2	10	105	40	18	19	25	66	194	48	21	12	8.5
3	17	26	36	18	23	25	66	84	40	20	15	8.0
4	7.4	17	33	17	22	24	65	48	37	19	12	7.7
5	5.4	41	31	e13	18	26	80	61	34	119	11	7.5
6	4.6	84	30	e15	18	36	148	219	38	101	9.8	7.7
7	6.0	26	28	15	18	27	94	86	42	32	11	7.8
8	31	18	27	29	16	22	89	62	70	27	9.4	7.3
9	12	16	25	30	15	24	73	55	91	22	8.7	7.1
10	7.4	15	24	19	14	24	65	122	176	28	8.2	7.0
11	5.6	14	23	17	15	23	56	280	53	31	60	7.3
12	5.5	12	18	31	16	23	51	111	39	19	217	6.9
13	4.9	36	19	47	14	23	50	83	91	19	74	6.5
14	5.0	46	19	24	28	22	51	71	50	19	44	35
15	4.8	20	21	51	32	22	61	64	87	16	43	43
16	4.7	16	19	34	40	22	145	257	117	18	25	16
17	4.6	75	17	27	23	20	69	695	65	54	23	24
18	4.8	39	16	24	19	37	54	387	47	21	17	11
19	4.7	22	17	29	19	49	50	160	41	17	18	50
20	4.7	202	16	26	18	27	45	119	37	31	15	74
21	12	361	20	22	97	43	42	97	57	30	14	90
22	106	70	19	20	115	31	38	87	41	29	15	24
23	21	50	23	21	52	25	35	82	34	22	12	20
24	11	42	33	20	37	74	35	282	49	16	12	18
25	9.5	36	44	20	31	160	34	165	35	16	12	13
26	8.5	32	24	22	31	54	32	88	35	15	11	42
27	7.3	33	21	34	31	44	31	81	46	15	10	23
28	7.0	182	28	23	29	41	30	71	31	17	10	15
29	6.5	67	35	21	---	39	30	58	28	12	20	13
30	6.3	48	21	27	---	63	63	54	24	11	13	12
31	5.9	---	19	23	---	197	---	50	---	12	10	---
TOTAL	356.2	1820	789	755	830	1299	1863	4310	1631	851	796.1	621.1
MEAN	11.5	60.7	25.5	24.4	29.6	41.9	62.1	139	54.4	27.5	25.7	20.7
MAX	106	361	44	51	115	197	148	695	176	119	217	90
MIN	4.6	12	16	13	14	20	30	37	24	11	8.2	6.5
‡	1.4	1.2	1.1	1.1	1.2	1.1	1.6	1.4	1.3	1.2	1.3	1.6

CAL YR 1988 TOTAL 11241.7 MEAN 30.7 MAX 361 MIN 4.6 ‡ 1.3
WTR YR 1989 TOTAL 15921.4 MEAN 43.6 MAX 695 MIN 4.6 ‡ 1.3

e Estimated

‡ Indicated net diversion, in cubic feet per second, for diversion and return in upstream supply.

HUDSON RIVER BASIN

RESERVOIRS IN HUDSON RIVER BASIN

01335900 DELTA RESERVOIR.--Lat 43°16'20", long 75°25'50", Oneida County, Hydrologic Unit 02020004, on superstructure of gatehouse at Delta Dam on Mohawk River, and 4 mi upstream from Rome. DRAINAGE AREA, 148 mi^2. PERIOD OF RECORD, May 1913 to current year. REVISED RECORDS, WDR NY-85-1: Drainage area. GAGE, nonrecording gage read daily at 0800. Datum of gage is Barge Canal datum.

Dam completed Aug. 3, 1912, and controlled storage for which records are available began May 1, 1913. Usable capacity 2,800 mil ft^3 at crest of spillway, elevation 550.0 ft. Reservoir is used for navigation in Barge Canal. Records provided by New York State Department of Transportation.

EXTREMES FOR PERIOD OF RECORD (1951-86).--Maximum contents observed, 3,136 mil ft^3, June 22, 1972, elevation, 552.8 ft; minimum observed, 2.0 mil ft^3, Jan. 10, 13, 16-21, Feb. 7-15, Feb. 22 to Mar. 2, 1959, elevation, 492.0 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 3,040 mil ft^3, Mar. 31, elevation, 552.0 ft; minimum observed, 1,250 mil ft^3, Oct. 21, elevation, 534.0 ft.

01343900 HINCKLEY RESERVOIR.--Lat 43°18'45", long 75°06'25", Oneida County, Hydrologic Unit 02020004, on south side of north gatehouse at Hinckley Dam on West Canada Creek at Hinckley, and 2.2 mi east of Prospect. DRAINAGE AREA, 372 mi^2. PERIOD OF RECORD, March 1914 to current year. REVISED RECORDS, WDR NY-85-1: Drainage area. GAGE, nonrecording gage read daily at 0800. Datum of gage is Barge Canal datum.

Reservoir is formed by earth and concrete dam; storage began March 1914. Usable capacity 3,320 mil ft^3 between elevation 1,173.5 and 1,225.0 ft. Elevation of inverts of four 60-inch discharge pipes at north end of spillway is 1,169.5 ft, and elevation of inverts of two 42-inch pipes at south end for diverting water to city of Utica is 1,164.25 ft. Crest of Ogee spillway is at elevation 1,225.0 ft. Length of spillway is 400 ft. Area of water surface at crest elevation is 4.46 mi^2. Telephone gage-height telemeter at station. Records provided by New York State Department of Transportation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 4,041 mil ft^3, Oct. 2, 1945, elevation, 1,230.2 ft; minimum observed (after initial filling), not determined.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 3,666 mil ft^3, Apr. 7, elevation, 1,227.6 ft; minimum observed, 324 mil ft^3, Dec. 21-22, elevation, 1,185.5 ft.

01350100 SCHOHARIE RESERVOIR (see station for mean daily elevations, skeleton capacity table, monthly contents and change in contents).

01363400 ASHOKAN RESERVOIR.--Lat 41°57'01", long 74°12'30", Ulster County, Hydrologic Unit 02020006, at gatehouse located at Dividing Weir Dyke, and 1.6 mi south of Shokan. DRAINAGE AREA, 256 mi^2. PERIOD OF RECORD, September 1913 to current year. REVISED RECORDS, WDR NY-72-1: 1968. WDR NY-83-1: (M)(m). GAGE, nonrecording gage read daily at 0900. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Board of Water Supply, City of New York).

The reservoir is formed by the masonry Olive Bridge Dam across Esopus Creek and a series of earth embankments between hills. The reservoir is divided into two basins separated by a weir containing a gatehouse. Storage began Sept. 9, 1913. Usable capacity of West basin 47,180 mil gal between minimum operating level elevation 495.50 ft and crest of spillway to East basin, elevation 590.00 ft; dead storage below minimum operating level 2,237 mil gal. Usable capacity of East basin 80,678 mil gal between elevation 500.00 ft and crest of spillway, elevation 587.10 ft; no dead storage. Figures given herein represent total contents for each basin. Reservoir impounds water for diversion into Catskill Aqueduct for New York City water supply (see elsewhere in this section). Any flood spillage enters the Esopus Creek channel below Olive Bridge Dam. Records provided by Department of Environmental Protection, City of New York.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, in West basin, 54,001 mil gal, Mar. 31, 1951, elevation, 594.33 ft, in East basin, 89,411 mil gal, Mar. 31, 1951, elevation, 592.23 ft; minimum observed, in West basin, 9,098 mil gal, Oct. 24, 1926, elevation, 530.56 ft, in East basin, 8,394 mil gal, Oct. 24, 1926, elevation, 525.91 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, in West basin, 51,757 mil gal, May 6, elevation, 592.21 ft, in East basin, 81,282 mil gal, June 20, elevation, 587.46 ft; minimum observed, in West basin, 19,519 mil gal, Feb. 21, elevation, 553.13 ft, in East basin, 18,960 mil gal, Apr. 12, elevation, 539.28 ft.

01366400 RONDOUT RESERVOIR.--Lat 41°47'57", long 74°25'48", Ulster County, Hydrologic Unit 02020007, at release chamber at Merriman Dam on Rondout Creek, 1.1 mi upstream from Brandy Brook, and 1.3 mi northwest of Lackawack. DRAINAGE AREA, 95.4 mi^2. PERIOD OF RECORD, May 1951 to current year. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Board of Water Supply, City of New York).

Reservoir is formed by an earthfill rockfaced dam; storage began May 10, 1951. Initial filling (to crest of spillway) Mar. 28, 1955. Usable capacity 50,048 mil gal between minimum operating level, elevation, 720.00 ft and crest of spillway, elevation, 840.00 ft. Dead storage below elevation 720.00 ft, 2,387 mil gal. Figures given herein represent total contents. Reservoir impounds water from Rondout Creek; water diverted from Cannonsville Reservoir in the Delaware River basin through West Delaware Tunnel; water diverted from Pepacton Reservoir through East Delaware Tunnel; and water diverted from Neversink Reservoir through Neversink-Grahamsville Tunnel. Water is diverted from Rondout Reservoir for New York City water supply through West Branch Tunnel of Delaware Aqueduct (see elsewhere in this section). Records provided by Bureau of Water Resources Development, City of New York.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 53,458 mil gal, Apr. 5, 1987, elevation, 841.49 ft; minimum observed (after initial filling), 8,335 mil gal, Oct. 15, 1957, elevation, 748.75 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 52,428 mil gal, May 19, elevation, 839.99 ft; minimum observed, 36,251 mil gal, Nov. 5, elevation, 814.18 ft.

HUDSON RIVER BASIN

RESERVOIRS IN HUDSON RIVER BASIN--Continued

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

Date	Elevation (feet) ‡	Contents (million ft^3)	Change in contents (equivalent in ft^3/s)	Elevation (feet) ‡	Contents (million ft^3)	Change in contents (equivalent in ft^3/s)
	01335900 Delta Reservoir			01343900 Hinckley Reservoir		
Sept. 30	537.7	1,546		1,197.6	942	
Oct. 31	540.1	1,759	+ 79.5	1,201.4	1,189	+ 92.2
Nov. 30	550.1	2,812	+406	1,207.4	1,622	+167
Dec. 31	547.2	2,482	-123	1,187.7	415	-451
CAL YR 1988	-	-	- 5.57	-	-	+ 2.25
Jan. 31	543.4	2,080	-150	1,190.3	540	+ 46.7
Feb. 28	544.0	2,140	+ 24.8	1,197.3	924	+159
Mar. 31	551.9	3,028	+332	1,219.3	2,680	+656
Apr. 30	550.1	2,812	- 83.3	1,224.3	3,236	+214
May 31	550.2	2,824	+ 4.48	1,223.4	3,131	- 39.2
June 30	550.1	2,812	- 4.63	1,223.3	3,119	- 4.63
July 31	547.1	2,471	-127	1,216.3	2,380	-276
Aug. 31	545.0	2,240	- 86.3	1,213.3	2,111	-100
Sept. 30	546.8	2,438	+ 76.4	1,220.2	2,772	+255
WTR YR 1989	-	-	+ 28.3	-	-	+ 58.0

Date	Elevation (feet) ‡‡	Contents (million gallons)	Change in contents (equivalent in ft^3/s)	Elevation (feet) ‡‡	Contents (million gallons)	Change in contents (equivalent in ft^3/s)	Elevation (feet) ‡‡‡	Contents (million gallons)	Change in contents (equivalent in ft^3/s)
	01363398 Ashokan Reservoir West Basin			01363399 Ashokan Reservoir East Basin			01366400 Rondout Reservoir		
Sept. 30	572.32	33,241		571.68	56,595		820.59	40,000	
Oct. 31	573.48	34,192	+ 47.5	560.89	42,200	- 718	814.75	36,574	-171
Nov. 30	585.35	44,787	+546	555.53	35,706	- 335	823.35	41,675	+263
Dec. 31	567.27	29,240	-776	565.56	48,202	+ 624	819.15	39,137	-127
CAL YR 1988	-	-	- 86.1	-	-	- 78.0	-	-	- 10.3
Jan. 31	563.40	26,350	-144	562.00	43,617	- 229	820.94	40,211	+ 53.6
Feb. 28	558.98	23,246	-172	560.31	41,459	- 119	822.14	40,938	+ 40.2
Mar. 31	573.86	34,504	+562	545.68	25,062	- 818	828.40	44,814	+193
Apr. 30	589.58	49,000	+748	547.64	27,077	+ 104	831.65	46,890	+107
May 31	589.96	49,378	+ 18.9	583.44	74,637	+2,374	838.93	51,706	+240
June 30	590.19	49,619	+ 12.4	586.95	80,426	+ 299	838.37	51,328	- 19.5
July 31	585.32	44,757	-243	585.36	77,759	- 133	832.22	47,259	-203
Aug. 31	586.94	46,370	+ 80.5	577.52	65,261	- 624	824.60	42,443	-240
Sept. 30	580.34	40,115	-323	576.97	64,413	- 43.7	823.67	41,871	- 29.5
WTR YR 1989	-	-	+ 29.1	-	-	+ 33.1	-	-	+ 7.93

‡ Elevation at 2400 hours by interpolation.
‡‡ Daily elevation on last day of month.
‡‡‡ Elevation at 0800 hours on first day of following month.

HUDSON RIVER BASIN

DIVERSIONS IN HUDSON RIVER BASIN

Undetermined diversion at Solsville from Chenango River in Susquehanna River basin into Oriskany Creek in Mohawk River Basin through Oriskany Creek Feeder.

Undetermined diversion from (and occasionally into) Oswego River, tributary to Lake Ontario, through Summit level of Erie (Barge) Canal.

Undetermined diversion from Black River tributary into Lake Ontario through Black River canal into Mohawk River in Hudson River basin.

Undetermined diversion from Hudson River basin to summit level of Champlain (Barge) Canal.

01343899 Diversion from Hinckley Reservoir (see preceding pages) for municipal supply of Utica. Diversion began prior to 1921. Records provided by Utica Board of Water Supply.

Diversion from Schoharie Reservoir (see preceding pages) on Schoharie Creek through Shandaken Tunnel to Esopus Creek at, 01362230 Lat 42°06'52", long 74°21'51", near Phoenicia, Ulster County. No diversion prior to 1924. Records provided by Department of Environmental Protection, City of New York.

01363401 Diversion from Ashokan Reservoir (see preceding pages) on Esopus Creek through the Catskill Aqueduct for municipal supply of New York City. Completed in 1917. Records provided by Department of Environmental Protection, City of New York.

01366399 Diversion from Rondout Reservoir. Total diversion from Rondout Reservoir to Delaware Aqueduct for municipal supply of City of New York. Rondout Reservoir is a collection basin for diversion from: Cannonsville Reservoir, Pepacton Reservoir, and Neversink Reservoir in the Delaware River basin and the Rondout Creek in the Hudson River basin. Diversion began April 1944 by means of temporary emergency connection to aqueduct. Records provided by Bureau of Water Resources Development, City of New York.

01367630 Diversion from Morris Lake, tributary to Wallkill River, by Newtown Water and Sewer Authority for municipal use in New Jersey. After use the water is released into the Paulins Kill (Delaware River basin). Records available from the Delaware River Basin Commission.

DIVERSION, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

Month	01343899 Hinckley Reservoir	01362230 Schoharie Reservoir	01363401 Ashokan Reservoir	01366399 Rondout Reservoir
October.....	34.5	164	909	1,380
November.....	32.3	230	906	1,098
December.....	31.1	580	904	1,048
CAL YR 1988	34.3	348	872	1,246
January.....	29.9	470	911	1,139
February.....	32.5	231	902	1,017
March.....	33.3	156	835	906
April.....	33.3	793	703	1,024
May.....	31.9	755	493	939
June.....	34.8	223	688	1,205
July.....	36.3	356	809	1,334
August.....	34.5	361	864	1,378
September.....	33.6	332	855	1,272
WTR YR 1989	33.2	389	814	1,146

HACKENSACK RIVER BASIN

01376800 HACKENSACK RIVER AT WEST NYACK, NY

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

DRAINAGE AREA.--29.4 mi^2.

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

GAGE.--Water-stage recorder, stop-log control, and crest-stage gage. Datum of gage is 53.50 ft above National Geodetic Vertical Datum of 1929 (levels by Hackensack Water Co.).

REMARKS.--No estimated daily discharges. Records fair. Flow regulated by DeForest Lake (see Reservoirs in Hackensack River Basin). Diversion from gaging station pool for municipal supply for village of Nyack (see Diversions in Hackensack River Basin). Discharge given for this station represents the flow of Hackensack River downstream from this diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,550 ft^3/s, Feb. 3, 1973, gage height, 9.38 ft, from floodmarks, from rating curve extended above 840 ft^3/s; maximum gage height, 10.52 ft, May 30, 1984; minimum daily discharge, 2.6 ft^3/s, June 12, 1965, Sept. 25, 26, 30, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,130 ft^3/s, May 17, gage height, 9.69 ft in gage well, 9.78 ft, from floodmarks; minimum daily discharge, 16 ft^3/s, on many days during year.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	34	88	19	16	16	24	22	48	25	21	18
2	26	26	88	19	16	17	16	99	45	18	19	19
3	27	19	83	18	17	17	18	116	39	17	19	19
4	25	20	81	19	17	17	19	83	33	19	17	19
5	28	32	59	18	17	17	32	75	29	46	17	18
6	33	31	28	18	17	22	40	436	30	71	17	19
7	34	24	22	18	17	18	25	170	46	55	18	19
8	39	21	17	20	17	17	21	101	79	43	17	19
9	35	19	19	19	17	18	19	87	92	28	17	17
10	35	19	16	18	17	17	19	136	217	22	17	18
11	34	19	17	18	16	17	17	419	102	25	24	19
12	34	19	16	22	17	17	18	152	72	19	47	19
13	34	30	17	23	17	17	19	107	89	19	88	18
14	34	24	18	17	20	17	20	94	86	19	74	22
15	38	18	18	26	21	17	25	86	107	17	68	22
16	39	21	17	19	23	18	57	317	194	18	72	19
17	38	33	16	16	18	18	51	897	198	24	70	20
18	37	25	16	16	17	20	59	290	102	19	49	18
19	37	22	17	17	17	20	62	136	82	18	38	35
20	37	98	16	17	17	18	52	111	67	21	39	119
21	37	61	16	16	53	24	46	105	70	22	30	93
22	48	23	16	16	33	19	46	99	66	28	24	80
23	38	23	17	17	19	18	34	89	54	25	20	105
24	36	23	25	16	16	36	28	207	66	20	19	120
25	37	23	22	16	16	43	26	146	57	18	17	77
26	37	22	17	17	17	19	20	99	53	18	17	90
27	38	22	18	19	17	18	21	92	83	17	17	84
28	35	103	21	17	17	20	19	84	65	19	18	60
29	21	104	21	16	---	19	16	67	52	18	18	43
30	19	91	20	18	---	23	26	56	34	18	18	33
31	19	---	19	17	---	33	---	52	---	23	17	---
TOTAL	1043	1049	881	562	539	627	895	5030	2357	769	963	1281
MEAN	33.6	35.0	28.4	18.1	19.2	20.2	29.8	162	78.6	24.8	31.1	42.7
MAX	48	104	88	26	53	43	62	897	217	71	88	120
MIN	19	18	16	16	16	16	16	22	29	17	17	17

CAL YR 1988 TOTAL 12117 MEAN 33.1 MAX 209 MIN 14
WTR YR 1989 TOTAL 15996 MEAN 43.8 MAX 897 MIN 16

HACKENSACK RIVER BASIN

01377000 HACKENSACK RIVER AT RIVERVALE, NJ

LOCATION.--Lat 40°59'55", long 73°59'27", Bergen County, Hydrologic Unit 02030103, on upstream right bank at bridge on Westwood Avenue in Rivervale, 1.5 mi upstream from Pascack Brook, 4.6 mi upstream from Oradell Dam, and 27.2 mi upstream from mouth.

DRAINAGE AREA.--58.0 mi^2.

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

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

GAGE.--Water-stage recorder and concrete control. Datum of gage is 22.51 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Flow regulated by De Forest Lake and Lake Tappan (see Hackensack River basin, reservoirs in). Diversions from De Forest Lake and West Nyack, NY, for municipal water supply (see Hackensack River basin, diversions). Water occasionally diverted from Oradell Reservoir to Lake Tappan. Several measurements of water temperature, other than those published, were made during the year.

COOPERATION.--Gage-height record collected in cooperation with Hackensack Water Co.

AVERAGE DISCHARGE.--48 years, 88.5 ft^3/s, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,440 ft^3/s, May 30, 1984, gage height, 7.85 ft; no flow part of Jan. 16, 1970 and May 30, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,120 ft^3/s, May 17, gage height, 7.06 ft; minimum, 22 ft^3/s, Feb. 25, gage height 1.60 ft.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	51	33	76	87	37	54	49	85	61	89	103
2	58	53	31	76	86	37	40	179	79	50	87	124
3	63	38	31	77	87	37	41	234	71	45	92	125
4	59	38	31	90	86	37	41	148	62	42	87	123
5	58	40	31	103	86	38	53	133	55	109	87	123
6	60	48	31	107	86	41	69	475	53	146	85	130
7	81	33	31	101	86	38	46	562	60	113	85	138
8	90	32	31	104	89	38	44	186	105	89	86	137
9	83	30	31	98	94	38	42	145	152	66	84	136
10	77	30	31	82	82	38	40	184	471	62	84	136
11	69	30	31	80	66	37	39	484	233	81	93	136
12	68	29	30	88	59	37	39	423	136	55	126	134
13	68	43	30	91	45	37	39	207	213	48	133	137
14	68	37	30	82	50	37	40	161	179	45	85	147
15	69	31	31	95	51	37	47	143	218	42	115	98
16	78	30	30	85	51	36	133	e310	451	41	160	89
17	90	51	30	65	38	36	113	e2030	372	55	180	91
18	80	35	30	39	38	47	102	1130	229	45	124	86
19	66	32	51	39	37	42	97	317	149	43	92	109
20	66	123	90	39	37	37	86	193	119	56	80	190
21	64	86	100	37	87	44	77	171	128	68	70	91
22	71	36	97	60	59	38	73	155	118	52	64	45
23	38	32	94	88	44	37	62	143	102	53	53	53
24	38	31	93	88	40	64	55	318	115	48	48	44
25	38	30	83	88	38	69	49	350	102	44	43	40
26	38	30	60	88	38	39	46	190	92	41	41	58
27	37	30	39	89	38	37	44	159	116	39	40	44
28	35	85	41	88	37	37	42	144	110	40	40	53
29	34	38	42	88	---	36	40	114	97	38	41	57
30	34	34	39	89	---	59	56	97	76	37	41	54
31	35	---	52	88	---	80	---	91	---	59	69	---
TOTAL	1859	1266	1435	2508	1722	1302	1749	9625	4548	1813	2604	3031
MEAN	60.0	42.2	46.3	80.9	61.5	42.0	58.3	310	152	58.5	84.0	101
MAX	90	123	100	107	94	80	133	2030	471	146	180	190
MIN	34	29	30	37	37	36	39	49	53	37	40	40

CAL YR 1988 TOTAL 25951 MEAN 70.9 MAX 349 MIN 29
WTR YR 1989 TOTAL 33462 MEAN 91.7 MAX 2030 MIN 29

e Estimated

HACKENSACK RIVER BASIN

RESERVOIRS IN HACKENSACK RIVER BASIN

01376700 DE FOREST LAKE.--Lat 41°06'23", long 73°58'01, Rockland County, NY, Hydrologic Unit 02030103, at dam on Hackensack River, 0.8 mi north of West Nyack, NY. DRAINAGE AREA, 27.5 mi^2. PERIOD OF RECORD, February 1956 to current year. REVISED RECORDS.--WDR NJ-84-1: Drainage area. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. REMARKS.--Reservoir is formed by earthfill dam with sheet piling cutoff and concrete spillway; dam completed and storage began in February 1956. Crest of dam topped by two 50 ft Bascule Gates, 5 ft high. Capacity 5,670,500 gal, elevation, 85.00 ft, top of Bascule gates. Flow regulated by 12-inch Howell-Bunger valve at elevation, 59.25 ft and 24-inch Howell-Bunger valve at elevation, 61.25 ft. Reservoir used for storage and water released by Hackensack Water Co., for municipal water supply.
COOPERATION.--Records provided by Hackensack Water Company.

01376950 LAKE TAPPAN.--Lat 41°01'05", long 74°00'05", Bergen County, Hydrologic Unit 02030103, at dam on Hackensack River, 0.5 mi north of Old Tappan. DRAINAGE AREA, about 49.0 mi^2. PERIOD OF RECORD, October 1966 to current year. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.
REMARKS.--Reservoir is formed by earthfill dam, completed in 1966. Capacity, 3,853,000,000 gal, revised, elevation, 55.00 ft at top of Bascule gates. Flow regulated by four Bascule gates and one sluice gate. Water is released by Hackensack Water Co., for municipal water supply.
COOPERATION.--Records provided by Hackensack Water Company.

01377450 WOODCLIFF LAKE.--Lat 41°01', long 74°03', Bergen County, Hydrologic Unit 02030103, at dam on Pascack Brook, 0.7 mi north of Hillsdale. DRAINAGE AREA, 19.4 mi^2. PERIOD OF RECORD, December 1929 to current year. Monthend contents only, prior to September 1953, published in WSP 1302, 1722. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.
REMARKS.--Reservoir is formed by earthfill dam, completed about 1905. Capacity, 871,000,000 gal, elevation, 95.00 ft at top of Bascule gates, revised. Flow is regulated by two Bascule gates and one 36-inch gate in center of dam. Water is released for diversion at New Milford by Hackensack Water Co., for municipal supply.
COOPERATION.--Records provided by Hackensack Water Company.

01378480 ORADELL RESERVOIR.--Lat 40°57', long 74°02', Bergen County, Hydrologic Unit 02030103, at dam on Hackensack River at Oradell. DRAINAGE AREA, 113 mi^2. PERIOD OF RECORD, December 1922 to current year. Monthend contents only, prior to September 1953, published in WSP 1302, 1722. REVISED RECORDS.--WDR NJ-84-1: Spillway elevation. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.
REMARKS.--Reservoir is formed by hollow concrete dam, completed in 1922. Capacity at spillway level, 3,507,000,000 gal, revised, elevation, 23.16 ft. Flow regulated by seven sluice gates (7 by 9 ft). Water is released for diversion by Hackensack Water Co., 1 mi downstream from dam for municipal supply.
COOPERATION.--Records provided by Hackensack Water Company.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

Date	Elevation (feet)†	Contents (million gallons)	Change in contents (equivalent in ft^3/s)	Elevation (feet)†	Contents (million gallons)	Change in contents (equivalent in ft^3/s)
	01376700 DE FOREST LAKE			01376950 LAKE TAPPAN		
Sept. 30.....	80.06	4,135	-	49.62	2,095	-
Oct. 31.....	77.19	3,296	-41.9	49.52	2,066	-1.4
Nov. 30.....	80.29	4,204	+46.8	54.39	3,634	+80.9
Dec. 31.....	79.72	4,034	-8.5	54.49	3,670	+1.8
CAL YR 1988			-7.0			+.4
Jan. 31.....	80.28	4,201	+8.3	52.28	2,915	-37.7
Feb. 28.....	81.35	4,523	+17.8	52.02	2,831	-4.6
Mar. 31.....	83.08	5,055	+26.5	53.83	3,438	+30.3
Apr. 30.....	85.08	5,696	+33.1	55.11	3,892	+23.4
May 31.....	85.21	5,739	+2.1	55.20	3,924	+5.0
June 30.....	85.17	5,726	-.7	55.18	3,917	-.4
July 31.....	84.80	5,604	-6.1	54.92	3,823	-4.7
Aug. 31.....	84.74	5,585	-.9	54.85	3,798	-1.2
Sept. 30.....	85.13	5,713	+6.6	52.12	3,895	+5.0
WTR YR 1989	-	-	+6.7	-	-	+7.6

Date	Elevation (feet)†	Contents (million gallons)	Change in contents (equivalent in ft^3/s)	Elevation (feet)†	Contents (million gallons)	Change in contents (equivalent in ft^3/s)
	01377450 WOODCLIFF LAKE			01378480 ORADELL RESERVOIR		
Sept. 30.....	91.63	685	-	18.66	2,387	-
Oct. 31.....	90.32	617	-3.4	19.05	2,477	+4.5
Nov. 30.....	88.71	536	-4.2	23.22	3,523	+53.9
Dec. 31.....	88.53	527	-.5	18.69	2,394	-56.3
CAL YR 1988			+.7			-4.3
Jan. 31.....	89.13	556	+1.5	18.65	2,384	-.5
Feb. 28.....	90.77	640	+4.6	21.62	3,100	+39.6
Mar. 31.....	91.29	667	+1.3	23.37	3,564	+23.2
Apr. 30.....	91.24	665	-.1	22.52	3,334	-11.9
May 31.....	95.07	875	+10.5	23.05	3,476	+7.1
June 30.....	94.99	870	-.3	22.83	3,417	-3.0
July 31.....	90.92	648	-11.1	20.64	2,855	-28.0
Aug. 31.....	83.68	312	-16.8	20.89	2,917	+3.1
Sept. 30.....	87.12	460	+7.6	21.01	2,947	+1.5
WR YR 1989	-	-	-1.0	-	-	+2.4

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

DIVERSIONS INTO AND FROM HACKENSACK RIVER BASIN

01376272 Hackensack Water Co., diverts water from Sparkill Creek (Hudson River basin) at foot of Danny Lane in Northvale, 300 ft south of New York-New Jersey state line and 0.6 mi upstream of Sparkill Brook. Water is diverted into Oradell Reservoir on the Hackensack River, for municipal supply. Records provided by Hackensack Water Co.

01376699 Spring Valley Water Co., diverts water at De Forest Lake for municipal supply in Rockland County, NY. Records provided by Spring Valley Water Co.

01376810 Village of Nyack, NY, diverts water from Hackensack River 100 ft downstream from gaging station on Hackensack River at West Nyack, NY (station 01376800, measured flow includes diversions) for municipal supply. Records provided by Board of Water Commissioners of Nyack, NY.

01378490 Hackensack Water Co., diverts water for municipal supply from Oradell Reservoir at Haworth pumping station 2.0 mi upstream from gaging station on Hackensack River at New Milford and from Hackensack River, at New Milford pumping station about 50 ft above gaging station on Hackensack River at New Milford, NJ (station 01378500). Records provided by Hackensack Water Co.

01378520 Hackensack Water Co., diverts water from Hirshfeld Brook, a tributary of the Hackensack River, below the gaging station on Hackensack River at New Milford, NJ, for municipal supply. Records provided by Hackensack Water Co.

01387991 Hackensack Water Co., diverts water from the Ramapo River (Passaic River basin) by pumping from Pompton Lake above the gaging station into Oradell Reservoir on the Hackensack River, for municipal supply. Pumping began Feb. 14, 1985. Records provided by Hackensack Water Co.

01391210 Hackensack Water Co., diverts water from Saddle River (Passaic River basin) just north of bridge on State Route 4 at Arcola. Water is diverted into Oradell Reservoir on the Hackensack River, for municipal supply. Records provided by Hackensack Water Co.

DIVERSIONS, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MONTH	01376699 SPRING VALLEY WATER CO.	01376810 WEST NYACK, NY	01378490 HACKENSACK WATER CO.
October	12.3	2.65	153
November	7.7	2.13	145
December	4.9	2.63	142
CAL YR 1988	7.5	2.70	160
January	0	2.47	145
February	0	2.49	144
March	0	2.48	146
April	2.2	2.48	146
May	6.1	2.66	153
June	7.2	2.92	166
July	10.1	2.91	171
August	9.0	2.92	177
September	9.4	2.76	175
WTR YR 1989	5.8	2.88	155

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

MONTH	01376272 SPARKILL CREEK (HUDSON RIVER BASIN)	01378520 HIRSHFELD BROOK (HACKENSACK RIVER BASIN)	01387991 RAMAPO RIVER (PASSAIC RIVER BASIN)	01391210 SADDLE RIVER (PASSAIC RIVER BASIN)	WELLS TO SURFACE SUPPLY
October	0	0	63.4	0.2	0.35
November	0	0	6.0	.04	.24
December	0	0	0	0	.04
CAL YR 1988	0	.23	25.3	.93	.35
January	0	0	0	0	.01
February	0	0	43.0	.29	.02
March	0	0	46.4	.50	.14
April	0	0	0	0	.11
May	0	0	.44	0	.41
June	0	0	2.2	0	.37
July	0	0	2.7	0	.37
August	0	0	4.4	0	.47
September	0	0	10.1	0	.40
WTR YR 1989	0	0	14.8	.003	.24

PASSAIC RIVER BASIN

01387400 RAMAPO RIVER AT RAMAPO, NY

LOCATION.--Lat 41°08'25", long 74°10'14", Rockland County, Hydrologic Unit 02030103, on right bank, 105 ft downstream from highway bridge on New York State Thruway at Ramapo, 500 ft upstream from local bridge, and 0.4 mi upstream from Torne Brook.

DRAINAGE AREA.--86.7 mi^2.

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

REVISED RECORDS.--WDR NY-81-1: 1980(m).

GAGE.--Water-stage recorder, crest-stage gage, and concrete control. Datum of gage is 297.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records fair. Occasional regulation by Lake Sebago.

AVERAGE DISCHARGE.--10 years, 166 ft^3/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,700 ft^3/s, Apr. 5, 1984, gage height, 13.82 ft, from rating curve extended above 3,600 ft^3/s on basis of runoff comparison with station 1.5 mi downstream; minimum discharge, 5.3 ft^3/s, Aug. 7, 1983, gage height, 1.27 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,050 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	0745	1,660	5.30	May 11	1245	1,580	5.18
May 6	1900	2,640	6.67	May 17	1115	*3,790	*8.00

Minimum discharge, 13 ft^3/s, Oct. 1, 2, gage height, 1.48 ft.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	41	223	67	79	128	488	89	133	94	35	21
2	13	130	199	62	78	115	355	269	145	81	31	20
3	17	100	178	62	77	108	297	343	122	68	33	18
4	18	72	159	56	78	101	286	238	99	62	31	17
5	15	115	141	47	72	100	278	235	86	195	28	16
6	14	451	129	44	67	120	398	2070	82	365	24	16
7	14	272	120	49	66	111	439	1740	141	222	22	16
8	16	181	113	61	59	94	346	878	306	156	23	16
9	20	134	104	84	51	85	296	547	315	114	21	15
10	20	111	96	77	45	81	274	610	436	94	19	15
11	17	97	88	70	43	76	240	1430	320	107	20	14
12	16	85	74	70	43	75	214	1080	216	83	144	14
13	15	110	69	100	41	76	196	673	199	68	253	14
14	15	197	67	93	47	74	197	484	209	61	177	14
15	15	158	67	103	60	75	189	377	280	53	117	25
16	15	128	64	118	80	84	279	752	425	47	87	27
17	15	168	57	107	72	82	277	3230	358	47	74	30
18	15	196	52	94	61	83	241	2010	263	46	58	28
19	15	159	48	91	54	103	219	993	211	41	49	48
20	15	540	48	91	49	92	193	620	170	43	51	432
21	15	1490	47	84	189	111	171	443	197	64	47	592
22	58	782	49	74	455	131	154	340	188	80	39	298
23	65	414	49	71	338	112	136	270	177	72	35	208
24	46	301	63	68	248	131	126	408	435	56	32	158
25	39	253	102	68	197	338	116	434	331	59	28	122
26	34	221	89	66	171	291	111	295	239	49	25	203
27	29	199	76	87	157	243	102	252	218	42	22	259
28	27	306	73	86	140	221	94	228	173	40	21	188
29	26	304	94	79	---	209	89	187	142	36	21	149
30	25	253	85	75	---	209	89	160	114	32	22	120
31	24	---	75	79	---	342	---	148	---	30	23	---
TOTAL	701	7968	2898	2383	3117	4201	6890	21833	6730	2607	1612	3113
MEAN	22.6	266	93.5	76.9	111	136	230	704	224	84.1	52.0	104
MAX	65	1490	223	118	455	342	488	3230	436	365	253	592
MIN	13	41	47	44	41	74	89	89	82	30	19	14

CAL YR 1988 TOTAL 42930 MEAN 117 MAX 1490 MIN 12
WTR YR 1989 TOTAL 64053 MEAN 175 MAX 3230 MIN 13

PASSAIC RIVER BASIN

01387420 RAMAPO RIVER AT SUFFERN, NY

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

DRAINAGE AREA.--93.0 mi^2.

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

GAGE.--Water-stage recorder, crest-stage gage, and concrete control. Datum of gage is 264.44 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Flow affected by diversion from Spring Valley Water Company well field upstream from station and by occasional regulation by Lake Sebago.

AVERAGE DISCHARGE.--10 years, 171 ft^3/s, unadjusted.

COOPERATION.--Figures of pumpage from well field provided by Spring Valley Water Company.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,300 ft^3/s, Apr. 5, 1984, gage height, 15.38 ft, from rating curve extended above 5,400 ft^3/s; minimum discharge, 2.6 ft^3/s, Sept. 30, 1981, gage height, 1.23 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 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	0730	2,020	7.45	May 11	1400	1,690	6.79
May 6	1815	2,860	8.94	May 17	1145	*4,500	*10.60

Minimum discharge, 10 ft^3/s, Oct. 1, 6; minimum gage height, 1.45 ft, Oct. 6, Sept. 11.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	42	252	57	68	120	500	86	129	90	29	16
2	11	128	224	55	67	107	356	296	143	76	26	14
3	14	95	203	54	69	100	328	374	116	64	29	13
4	15	70	183	47	69	92	307	244	92	57	26	14
5	12	144	157	e45	63	92	323	250	80	230	23	14
6	11	598	141	e43	59	118	476	2330	77	417	18	14
7	11	343	130	e46	57	100	449	1930	139	245	17	14
8	15	214	120	e56	53	90	358	924	318	164	19	13
9	18	160	108	e74	e48	80	318	594	341	111	15	13
10	18	127	100	65	e45	72	274	654	474	90	13	13
11	14	109	90	59	e43	69	233	1570	351	103	17	13
12	12	93	78	64	e42	71	208	1140	225	77	165	12
13	12	129	70	95	e41	70	199	714	209	63	294	13
14	14	227	66	82	47	67	193	509	217	55	185	15
15	13	185	64	102	57	69	225	392	305	48	109	28
16	13	147	e60	111	73	77	315	816	468	43	83	30
17	13	204	e54	95	62	75	279	3720	398	45	68	32
18	13	228	e50	85	56	83	237	2190	287	42	51	29
19	12	188	e47	86	52	91	213	1070	221	37	42	56
20	12	704	46	86	50	83	187	702	176	41	45	559
21	13	1840	48	78	209	121	167	518	211	59	39	715
22	60	948	48	69	510	117	149	398	200	75	33	e350
23	63	530	48	64	371	98	130	316	195	66	29	231
24	47	379	61	61	252	194	117	468	521	49	27	167
25	41	299	97	61	196	375	110	494	381	52	23	122
26	36	256	80	61	165	289	103	340	272	42	19	225
27	32	231	65	80	151	234	95	278	250	37	16	288
28	29	387	65	76	132	211	89	243	189	33	16	215
29	27	382	86	69	---	200	84	196	146	29	17	154
30	26	293	73	69	---	251	86	169	111	26	19	122
31	23	---	63	71	---	446	---	151	---	24	19	---
TOTAL	661	9680	2977	2166	3107	4262	7108	24076	7242	2590	1531	3514
MEAN	21.3	323	96.0	69.9	111	137	237	777	241	83.5	49.4	117
MAX	63	1840	252	111	510	446	500	3720	521	417	294	715
MIN	11	42	46	43	41	67	84	86	77	24	13	12
‡	6.4	11	12	14	14	14	14	14	14	13	10	6.3

CAL YR 1988 TOTAL 45469.0 MEAN 124 MAX 1840 MIN 5.4 ‡ 11
WTR YR 1989 TOTAL 68914 MEAN 189 MAX 3720 MIN 11 ‡ 12

e Estimated

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

PASSAIC RIVER BASIN

01387450 MAHWAH RIVER NEAR SUFFERN, NY

LOCATION.--Lat 41°08'27", long 74°07'01", Rockland County, Hydrologic Unit 02030103, on left bank 13 ft upstream from bridge on U.S. Highway 202, 2.5 mi northeast of Suffern, and 4.8 mi upstream from mouth.

DRAINAGE AREA.--12.3 mi^2.

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

REVISED RECORDS.--WDR NY-79-1: 1977(P). WDR NY-87-1: 1986.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 321.57 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 18, 1976, water-stage recorder at site on right bank 13 ft downstream, at present datum.

REMARKS.--No estimated daily discharges. Records fair. Occasional regulation from unknown source. Telephone gage-height telemeter at station.

AVERAGE DISCHARGE.--31 years, 24.6 ft^3/s, 27.16 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,840 ft^3/s, Nov. 8, 1977, gage height, 9.91 ft, from rating curve extended above 850 ft^3/s on basis of contracted-opening measurement at gage height 9.91 ft; minimum discharge, 0.05 ft^3/s, Oct. 20, 21, 1970, result of temporary pumping from gage pool.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 21	0115	356	4.45	May 11	0245	353	4.44
May 6	1015	483	4.91	May 17	0630	*818	*5.91

Minimum dishcarge, 1.20 ft^3/s, Oct. 7, gage height, 1.38 ft.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	10	27	8.6	11	16	49	12	23	11	6.1	2.9
2	1.6	21	24	8.8	11	15	37	61	21	9.5	4.3	2.8
3	4.2	13	22	8.8	11	14	35	42	18	8.6	5.0	2.6
4	2.3	10	20	8.2	10	14	33	29	16	8.0	4.1	2.3
5	1.6	29	19	6.9	9.4	14	34	36	14	35	3.9	2.3
6	1.4	58	17	6.5	9.1	17	48	323	15	26	3.5	2.2
7	1.2	33	16	6.5	8.9	14	44	153	22	17	3.7	2.1
8	3.0	24	15	8.0	8.5	11	37	81	31	13	4.9	2.0
9	2.8	18	14	11	7.8	11	34	56	41	9.6	3.3	1.8
10	1.9	15	13	9.2	6.9	11	31	97	69	8.4	2.8	1.8
11	1.7	13	12	8.4	6.6	11	27	249	40	11	4.4	1.7
12	1.6	11	10	10	6.7	11	24	129	28	7.6	39	1.5
13	1.5	23	9.2	19	6.4	10	22	82	30	7.1	25	1.5
14	1.3	27	9.1	13	8.2	9.8	22	62	27	6.7	14	1.8
15	1.3	22	9.1	20	10	10	24	51	42	5.7	9.9	6.9
16	1.3	18	8.7	19	13	11	50	211	65	5.3	9.8	3.0
17	1.5	34	8.0	15	10	10	36	618	46	6.9	10	5.7
18	1.5	29	7.5	13	8.4	11	29	240	35	5.8	6.8	3.0
19	1.5	24	7.1	14	7.8	12	26	116	27	5.1	6.9	12
20	1.5	137	7.0	14	7.5	10	23	79	22	8.9	8.6	55
21	1.8	216	7.5	12	53	14	22	64	27	12	6.3	64
22	18	93	7.8	9.8	60	15	19	52	23	21	5.5	31
23	6.5	57	7.8	9.7	42	12	18	44	22	11	5.1	23
24	5.1	42	11	9.8	30	22	17	96	45	7.4	4.7	17
25	4.3	34	18	9.8	24	58	15	69	29	6.1	4.1	12
26	3.5	29	12	10	21	37	15	50	23	8.5	3.7	31
27	2.9	27	9.8	14	20	29	14	45	20	8.4	3.5	24
28	2.7	57	11	12	18	26	13	37	17	5.4	3.5	17
29	2.7	39	15	11	---	24	13	31	14	5.7	3.5	13
30	2.5	31	11	11	---	27	13	27	12	4.5	3.5	11
31	2.5	---	9.2	11	---	51	---	25	---	4.4	3.2	---
TOTAL	88.7	1194	394.8	348.0	446.2	557.8	824	3267	864	310.6	222.6	357.9
MEAN	2.86	39.8	12.7	11.2	15.9	18.0	27.5	105	28.8	10.0	7.18	11.9
MAX	18	216	27	20	60	58	50	618	69	35	39	64
MIN	1.2	10	7.0	6.5	6.4	9.8	13	12	12	4.4	2.8	1.5
CFSM	.23	3.24	1.04	.91	1.30	1.46	2.23	8.57	2.34	.81	.58	.97
IN.	.27	3.61	1.19	1.05	1.35	1.69	2.49	9.88	2.61	.94	.67	1.08

CAL YR 1988 TOTAL 6020.60 MEAN 16.4 MAX 216 MIN .70 CFSM 1.34 IN. 18.21
WTR YR 1989 TOTAL 8875.6 MEAN 24.3 MAX 618 MIN 1.2 CFSM 1.98 IN. 26.84

PASSAIC RIVER BASIN

01387500 RAMAPO RIVER NEAR MAHWAH, NJ

LOCATION.--Lat 41°05'51", long 74°09'48", Bergen County, Hydrologic Unit 02030103, on left bank 350 ft downstream from State Highway 17, 0.6 mi downstream from Mahwah River, and 1.0 mi west of Mahwah. Water-quality samples collected at bridge, 350 ft upstream from gage, at high flows.

DRAINAGE AREA.--120 mi^2.

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

REVISED RECORDS.--WSP 781: 1904(M). WSP 1031: 1938, 1940. WSP 1552: 1923(M), 1924, 1925-26(M), 1927-28, 1933, 1937. WRD-NJ 1971: 1968(M). WDR NJ-82-1: Drainage area. WDR-NJ-87-1: 1986.

GAGE.--Water-discharge recorder. Datum of gage is 253.10 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 31, 1906, nonrecording gage on former bridge at site 250 ft downstream at different datum. Sept. 1, 1922 to Dec. 23, 1936, water-stage recorder just below former bridge at present datum.

REMARKS.--No estimated daily discharges. Records fair. Flow affected by diversion from Spring Valley (NY) Water Company well field upstream from station (see station 01387420). Occasional regulation from lakes and ponds upstream from the station. Several measurements of water temperature, other than those published, were made during the year. Satellite telemeter at station.

AVERAGE DISCHARGE.--71 years (water years 1903-06,1923-89), 230 ft^3/s, 26.03 in./yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,500 ft^3/s, April 5, 1984, gage height, 13.35 ft, from rating curve extended above 1,400 ft^3/s; minimum, 4.6 ft^3/s, Sept. 30, 1981 (possible regulation); minimum daily, 6.1 ft^3/s, Sept. 30, 1981 (possible regulation).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,400 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	0700	2,470	7.46	May 11	1245	2,170	7.17
May 6	1815	3,510	8.30	May 17	1215	*5,230	*9.36

Minimum discharge, 17 ft^3/s, Sept. 12, 13, gage height, 2.47 ft.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	84	305	84	97	161	640	122	208	142	59	24
2	30	179	265	80	95	144	488	457	215	122	50	23
3	36	127	235	80	99	134	419	495	187	106	58	21
4	26	91	211	71	98	128	399	318	156	94	48	22
5	22	186	189	74	88	129	390	335	143	361	42	22
6	20	578	174	59	84	163	551	2770	138	535	36	22
7	20	369	163	65	81	136	591	2360	225	306	40	22
8	31	247	152	90	75	112	485	1090	436	206	39	21
9	29	186	140	111	67	107	415	717	471	158	32	21
10	26	147	129	94	60	102	367	847	637	157	29	20
11	23	123	119	84	58	98	311	2010	470	161	54	20
12	21	103	98	103	57	99	272	1410	316	119	308	18
13	20	166	92	141	61	96	249	876	324	101	376	19
14	21	270	92	117	71	92	246	645	307	93	226	31
15	21	214	91	152	86	96	261	528	437	83	148	54
16	21	173	86	157	105	104	429	1140	632	77	140	58
17	21	264	80	132	87	100	385	4450	520	87	111	56
18	27	275	73	118	74	108	321	2770	387	76	81	38
19	20	221	71	120	69	125	283	1370	301	71	68	140
20	19	827	69	119	71	115	245	905	245	93	70	745
21	26	2220	72	107	307	143	218	686	288	117	58	900
22	119	1120	72	92	657	160	198	553	286	129	46	450
23	81	622	75	89	478	134	178	468	287	118	42	300
24	56	455	107	87	324	196	162	711	661	88	41	224
25	47	362	149	91	247	488	150	689	477	85	34	164
26	41	308	117	89	211	406	143	486	372	78	31	303
27	36	279	96	110	196	318	131	426	354	77	28	361
28	34	512	100	105	177	276	123	373	249	62	27	245
29	33	459	126	98	---	257	115	300	207	54	34	191
30	31	353	107	98	---	281	120	261	170	48	30	156
31	30	---	93	100	---	496	---	235	---	53	27	---
TOTAL	1009	11520	3948	3117	4180	5504	9285	30803	10106	4057	2413	4691
MEAN	32.5	384	127	101	149	178	309	994	337	131	77.8	156
MAX	119	2220	305	157	657	496	640	4450	661	535	376	900
MIN	19	84	69	59	57	92	115	122	138	48	27	18
CFSM	.27	3.20	1.06	.84	1.24	1.48	2.58	8.28	2.81	1.09	.65	1.30
IN.	.31	3.57	1.22	.97	1.30	1.71	2.88	9.55	3.13	1.26	.75	1.45

CAL YR 1988 TOTAL 59903 MEAN 164 MAX 2220 MIN 19 CFSM 1.36 IN. 18.57
WTR YR 1989 TOTAL 90633 MEAN 248 MAX 4450 MIN 18 CFSM 2.07 IN. 28.10

DELAWARE RIVER BASIN

01413500 EAST BRANCH DELAWARE RIVER AT MARGARETVILLE, NY

LOCATION.--Lat 42°08'41", long 74°39'14", Delaware County, Hydrologic Unit 02040102, on right bank at downstream side of bridge on Fair Street at intersection with Main Street at Margaretville, 0.2 mi upstream from unnamed tributary, and 1.6 mi downstream from Dry Brook.

DRAINAGE AREA.--163 mi^2.

PERIOD OF RECORD.--February 1937 to current year.

REVISED RECORDS.--WDR NY-87-1: 1948(M), 1951(P), 1953(M), 1955-56(M), 1974-75(M), 1977(M), 1978(P), 1980-81(M), 1986(M).

GAGE.--Water-stage recorder. Datum of gage is 1,302.38 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 9, 1937, nonrecording gage and Sept. 9, 1937 to Aug. 17, 1944, water-stage recorder, at same site at datum 1.00 ft higher.

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

AVERAGE DISCHARGE.--52 years, 304 ft^3/s, 25.33 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,600 ft^3/s, Nov. 25, 1950, gage height, 13.84 ft, from rating curve extended above 8,700 ft^3/s on basis of contracted-opening and flow-over-road measurement of peak flow at gage height 12.88 ft and does not include undetermined amount of flow bypassing gaging station; minimum discharge, 5.0 ft^3/s, Aug. 5, 1964; minimum gage height, 0.89 ft, Sept. 30, Oct. 1, 1943, present datum.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,800 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 6	0800	*3,540	*7.46	No other peak greater than base discharge.			

Minimum discharge, 18 ft^3/s, Sept. 10, 13, gage height, 1.81 ft.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	75	255	e125	131	e130	1030	201	263	215	68	29
2	23	166	237	130	142	e115	738	1280	230	189	64	29
3	22	164	222	128	127	e105	662	1070	208	166	71	27
4	22	149	211	e92	102	114	664	839	184	151	62	24
5	22	264	195	e80	104	159	631	706	171	569	63	22
6	22	859	184	e90	107	165	847	2300	282	377	62	21
7	22	556	179	109	e96	e94	851	1630	266	277	74	21
8	22	424	169	130	e90	e96	697	1230	243	275	60	20
9	23	352	155	134	e78	e100	623	957	257	220	53	20
10	23	299	144	e105	e84	e98	546	1070	369	211	48	19
11	23	266	126	96	e88	e90	464	2000	287	249	45	19
12	24	230	e100	109	e80	e90	405	1480	254	186	60	19
13	23	306	e110	153	e72	e80	372	1160	362	166	88	19
14	23	357	e115	e105	e90	115	353	936	409	153	80	22
15	22	288	122	143	e220	224	340	785	655	139	61	36
16	21	265	e110	128	e200	181	477	891	678	127	52	33
17	20	365	e100	107	e100	136	416	1730	766	122	46	72
18	21	344	e93	101	e90	201	395	1100	625	112	42	55
19	24	300	94	99	e86	198	382	879	527	101	40	46
20	24	539	96	98	e84	145	359	729	434	118	48	479
21	23	807	109	e76	925	142	338	661	379	167	46	266
22	87	593	99	e74	583	126	315	560	347	119	41	184
23	115	522	89	e88	e270	120	290	456	334	101	36	330
24	93	460	118	e84	e200	137	270	462	775	89	34	294
25	101	398	200	87	e180	233	250	392	468	81	31	224
26	88	353	e125	89	e170	410	232	339	385	74	29	234
27	80	320	e105	141	e160	447	215	388	436	69	28	204
28	78	366	147	102	e140	623	202	298	346	159	27	173
29	86	317	182	100	---	792	192	254	295	120	26	155
30	79	274	e135	118	---	927	205	234	247	88	32	139
31	74	---	e125	131	---	1050	---	229	---	76	31	---
TOTAL	1353	10978	4451	3352	4799	7643	13761	27246	11482	5266	1548	3235
MEAN	43.6	366	144	108	171	247	459	879	383	170	49.9	108
MAX	115	859	255	153	925	1050	1030	2300	775	569	88	479
MIN	20	75	89	74	72	80	192	201	171	69	26	19
CFSM	.27	2.24	.88	.66	1.05	1.51	2.81	5.39	2.35	1.04	.31	.66
IN.	.31	2.51	1.02	.76	1.10	1.74	3.14	6.22	2.62	1.20	.35	.74

CAL YR 1988 TOTAL 81217 MEAN 222 MAX 2170 MIN 20 CFSM 1.36 IN. 18.54
WTR YR 1989 TOTAL 95114 MEAN 261 MAX 2300 MIN 19 CFSM 1.60 IN. 21.71

e Estimated

DELAWARE RIVER BASIN

01414500 MILL BROOK NEAR DUNRAVEN, NY

LOCATION.--Lat 42°06'22", long 74°43'51", Delaware County, Hydrologic Unit 02040102, on left bank 0.4 mi upstream from bridge on New York City Road 9 and Pepacton Reservoir, and 2.7 mi southwest of Dunraven.

DRAINAGE AREA.--25.2 mi^2.

PERIOD OF RECORD.--February 1937 to current year. Published as "at Arena" 1937-67.

REVISED RECORDS.--WSP 1432: 1937. WDR NY-82-1: Drainage area. WDR NY-84-1: 1979-83.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,298.54 ft Board of Water Supply, City of New York datum. Prior to Oct. 17, 1939, nonrecording gage at site 0.2 mi downstream at different datum. Oct. 17 to Dec. 8, 1939, nonrecording gage at present site at different datum.

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

AVERAGE DISCHARGE.--52 years, 54.9 ft^3/s, 29.58 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,500 ft^3/s, Sept. 21, 1938, from rating curve extended above 960 ft^3/s on basis of velocity-area study; maximum gage height, 9.92 ft, Nov. 25, 1950; minimum discharge observed, 1.2 ft^3/s, Sept. 25, 26, 1939.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 740 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 6	0645	*834	*6.74	No other peak greater than base discharge.			

Minimum discharge, 4.1 ft^3/s, Sept. 10, 11-13, 14.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.6	23	49	e19	20	e21	160	39	42	e35	9.1	5.2
2	6.6	41	46	e18	23	e19	122	205	48	e30	8.6	6.0
3	6.6	37	43	e16	20	e17	108	164	43	e27	12	5.3
4	6.6	35	41	e14	e17	e19	105	125	38	e25	9.5	5.2
5	6.6	86	38	e12	e18	e25	108	113	36	e72	9.8	5.0
6	6.4	216	37	e13	e16	e24	144	464	61	e50	9.3	4.8
7	6.0	122	36	e15	e15	e15	139	260	57	e44	9.1	4.5
8	6.0	91	33	e17	e14	e16	119	181	55	e43	8.3	4.5
9	6.0	77	29	e19	e13	e17	105	136	53	e37	7.9	4.3
10	6.0	67	27	e17	e14	e16	91	140	59	e35	7.2	4.2
11	6.0	59	e25	e15	e15	e15	78	206	51	e36	6.6	4.1
12	6.0	51	e19	e17	e13	e15	68	159	46	e30	8.2	4.1
13	6.0	79	e20	e19	e12	e14	64	133	50	e26	11	4.1
14	6.0	84	e23	e19	e16	e20	60	111	56	e24	11	5.5
15	6.0	73	e21	e20	e35	41	59	93	81	e22	9.2	5.4
16	6.0	67	e20	e19	e32	33	79	112	95	e20	8.1	5.3
17	6.0	93	e19	e18	e19	28	76	198	115	e19	7.5	7.6
18	6.4	84	e17	e17	e15	48	72	136	96	e18	7.0	6.9
19	7.1	75	e16	e16	e14	42	71	112	83	e17	7.0	7.6
20	7.0	117	e16	e15	e13	e31	67	97	73	e23	9.0	126
21	7.0	157	e17	e13	e130	31	62	93	66	e20	8.1	67
22	16	122	e15	e13	e80	e25	57	79	62	e17	7.6	59
23	18	104	e16	e14	e44	28	52	67	56	e15	6.9	114
24	28	89	e20	e13	e35	42	49	65	147	e14	6.6	86
25	34	77	e30	e14	e31	61	46	57	e80	e12	6.5	63
26	28	68	e18	e14	e28	81	43	52	e66	e12	6.1	63
27	24	62	e17	e22	e26	99	40	48	e68	e11	6.0	53
28	24	67	e20	e17	e23	152	37	44	e56	e25	5.7	47
29	27	58	e27	18	---	189	36	40	e47	13	5.7	43
30	24	52	e23	19	---	178	35	38	e40	11	5.5	39
31	23	---	e21	18	---	174	---	37	---	9.5	5.0	---
TOTAL	378.9	2433	799	510	751	1536	2352	3804	1926	792.5	245.1	859.6
MEAN	12.2	81.1	25.8	16.5	26.8	49.5	78.4	123	64.2	25.6	7.91	28.7
MAX	34	216	49	22	130	189	160	464	147	72	12	126
MIN	6.0	23	15	12	12	14	35	37	36	9.5	5.0	4.1
CFSM	.49	3.22	1.02	.65	1.06	1.97	3.11	4.87	2.55	1.01	.31	1.14
IN.	.56	3.59	1.18	.75	1.11	2.27	3.47	5.62	2.84	1.17	.36	1.27

CAL YR 1988 TOTAL 15672.1 MEAN 42.8 MAX 568 MIN 5.2 CFSM 1.70 IN. 23.13
WTR YR 1989 TOTAL 16387.1 MEAN 44.9 MAX 464 MIN 4.1 CFSM 1.78 IN. 24.19

e Estimated

DELAWARE RIVER BASIN

01415000 TREMPER KILL NEAR ANDES, NY

LOCATION.--Lat 42°07'12", long 74°49'08", Delaware County, Hydrologic Unit 02040102, on right bank 500 ft upstream from bridge on County Highway 1, about 1,700 ft upstream from Pepacton Reservoir, and 5 mi south of Andes.

DRAINAGE AREA.--33.2 mi^2.

PERIOD OF RECORD.--February 1937 to current year. Published as "near Shavertown" 1937-67.

REVISED RECORDS.--WDR NY-82-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Concrete control since Nov. 1937. Datum of gage is 1,285.87 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 5, 1937, nonrecording gage at site 500 ft downstream at different datum. Aug. 5 to Sept. 28, 1937, nonrecording gage at site 0.25 mi downstream at different datum.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--52 years, 58.8 ft^3/s, 24.05 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,250 ft^3/s, Sept. 21, 1938, gage height, 7.12 ft, from rating curve extended above 1,500 ft^3/s; maximum gage height, 7.92 ft, Jan. 26, 1976 (ice jam); minimum discharge, 0.5 ft^3/s, Sept. 17, 21, 22, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 21	1330	ice jam	*4.74	May 6	0715	*666	4.42

Minimum discharge, 2.2 ft^3/s, Sept. 14, gage height, 2.32 ft.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.4	11	47	e40	46	e23	211	41	26	26	6.8	4.7
2	3.1	30	44	34	42	e22	159	255	26	21	6.7	6.0
3	3.2	30	41	33	e32	e21	151	201	23	17	9.5	4.9
4	3.1	26	39	e27	e30	e20	149	158	19	15	7.6	4.3
5	4.7	34	35	e21	e28	e25	139	132	16	53	8.8	3.8
6	4.2	87	34	e24	e26	e35	167	369	30	31	8.6	3.5
7	4.1	71	32	e28	e25	e29	172	253	28	39	17	3.3
8	3.8	60	29	e32	e24	e25	144	203	27	47	10	3.2
9	3.6	53	26	e29	e23	e20	133	154	30	28	8.2	3.1
10	3.4	46	e20	e27	e22	e17	109	180	52	25	7.3	2.9
11	3.7	42	e19	e25	e22	e15	89	218	36	22	6.9	2.8
12	3.8	35	e18	e23	e21	e14	75	184	31	18	10	2.8
13	4.4	51	e18	e22	e21	e14	70	149	46	16	21	2.5
14	3.5	54	e19	e23	e35	e25	66	119	51	15	16	4.2
15	3.2	42	e20	e25	e60	e45	65	101	98	13	12	5.9
16	3.4	39	e19	e22	e45	42	92	95	94	13	10	5.5
17	2.9	72	e18	e20	e35	34	74	115	101	12	9.0	13
18	3.1	61	e17	e17	e25	64	71	83	80	9.9	8.0	7.6
19	3.7	53	e17	e15	e21	e46	68	72	66	9.1	8.1	6.9
20	3.2	121	e18	e14	e20	e37	63	65	53	16	11	35
21	3.2	156	e18	e13	e160	e34	59	62	47	22	9.2	18
22	12	120	e17	e14	e90	e35	55	52	51	13	8.0	12
23	16	103	e13	e15	e62	40	50	44	70	10	7.2	20
24	17	87	e35	e16	e50	106	46	45	105	8.7	7.3	24
25	17	74	49	20	e40	133	42	38	76	8.0	5.8	17
26	13	64	e39	22	e33	120	39	35	59	7.3	5.4	18
27	11	57	e30	37	e28	110	36	34	49	6.8	5.0	15
28	13	71	e46	21	e25	120	34	28	44	17	4.7	13
29	15	59	51	20	---	162	33	23	37	10	5.1	12
30	13	50	e45	32	---	220	34	22	29	8.5	6.0	10
31	11	---	e43	33	---	237	---	22	---	7.3	5.0	---
TOTAL	212.7	1859	916	744	1091	1890	2695	3552	1500	564.6	271.2	284.9
MEAN	6.86	62.0	29.5	24.0	39.0	61.0	89.8	115	50.0	18.2	8.75	9.50
MAX	17	156	51	40	160	237	211	369	105	53	21	35
MIN	2.9	11	13	13	20	14	33	22	16	6.8	4.7	2.5
CFSM	.21	1.87	.89	.72	1.17	1.84	2.71	3.45	1.51	.55	.26	.29
IN.	.24	2.08	1.03	.83	1.22	2.12	3.02	3.98	1.68	.63	.30	.32

CAL YR 1988 TOTAL 15498.3 MEAN 42.3 MAX 515 MIN 1.7 CFSM 1.28 IN. 17.37
WTR YR 1989 TOTAL 15580.4 MEAN 42.7 MAX 369 MIN 2.5 CFSM 1.29 IN. 17.46

e Estimated

DELAWARE RIVER BASIN

01417000 EAST BRANCH DELAWARE RIVER AT DOWNSVILLE, NY

LOCATION.--Lat 42°04'30", long 74°58'36", Delaware County, Hydrologic Unit 02040102, on left bank 0.5 mi downstream from Downsville Dam, at downstream end of outlet channel of Pepacton Reservoir, and 1.0 mi east of Downsville.

DRAINAGE AREA.--372 mi^2.

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

REVISED RECORDS.--WDR NY-82-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,094.92 ft, Board of Water Supply, City of New York datum. Prior to Sept. 26, 1941, nonrecording gage, and Sept. 26, 1941, to June 27, 1955, water-stage recorder, at site 0.8 mi downstream at datum 7.03 ft lower.

REMARKS.--No estimated daily discharges. Records good. Subsequent to September 1954, entire flow from drainage area controlled by Pepacton Reservoir (see Reservoirs in Delaware River Basin). Part of flow diverted for New York City municipal supply (see Reservoirs in Delaware River Basin). Remainder of flow (except for conservation releases and spill) impounded for release during periods of low flow in the lower Delaware River basin, as directed by the Delaware River Master.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,900 ft^3/s, Nov. 26, 1950, gage height, 14.52 ft, site and datum then in use, from rating curve extended above 12,000 ft^3/s; minimum discharge, 0.3 ft^3/s, Oct. 11, 1954; minimum daily, 0.6 ft^3/s, Oct. 10, 1954; minimum gage height, 1.39 ft, Jan. 17, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 9, 1903, reached a stage of about 16 ft (at former datum).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 655 ft^3/s, Oct. 14, gage height, 3.83 ft; minimum, 6.1 ft^3/s, Jan. 25, 26; minimum daily, 6.3 ft^3/s, Jan. 23-25.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	67	56	50	51	6.8	7.0	7.7	21	65	67	65	65
2	67	189	50	51	6.8	7.0	7.6	22	65	67	65	65
3	67	269	50	55	6.7	7.0	7.7	21	65	79	73	65
4	75	124	49	51	6.6	7.0	7.6	21	65	92	96	65
5	189	50	49	50	6.5	7.0	7.6	20	65	80	120	65
6	291	51	49	49	6.7	7.0	7.7	23	65	65	133	65
7	292	51	49	50	6.8	7.0	12	22	66	64	111	65
8	293	52	49	51	6.7	7.0	21	22	67	63	77	77
9	292	52	49	51	6.7	6.8	21	21	66	63	65	89
10	291	52	49	52	6.7	6.8	21	22	66	63	64	88
11	290	52	49	52	6.6	6.8	21	22	66	64	65	77
12	458	52	49	52	6.7	6.8	21	22	67	65	66	66
13	625	52	49	52	6.7	6.8	21	22	68	65	67	67
14	617	52	51	52	6.8	6.8	21	22	68	65	67	67
15	608	53	51	52	7.0	6.9	21	22	66	65	76	67
16	606	53	51	28	6.9	6.8	21	21	67	65	88	67
17	605	53	51	6.9	6.8	6.8	21	20	65	65	89	68
18	606	54	51	6.8	6.8	7.1	21	20	65	65	89	67
19	609	54	51	29	6.8	6.9	21	20	67	65	89	68
20	608	55	49	53	6.8	6.9	20	19	67	65	88	69
21	327	53	49	31	7.8	6.9	20	19	68	63	88	69
22	191	52	50	6.4	7.3	6.8	20	19	67	63	89	67
23	293	52	50	6.3	7.1	6.8	20	36	67	63	87	66
24	294	51	49	6.3	7.0	7.3	20	63	67	73	87	66
25	177	51	51	6.3	7.0	7.3	20	63	95	98	76	66
26	65	51	52	27	7.0	7.3	20	63	190	106	64	66
27	136	51	50	50	7.0	7.2	20	63	205	106	65	65
28	363	51	51	30	7.0	7.2	20	64	172	98	65	65
29	539	51	51	6.4	---	7.4	20	64	122	76	65	66
30	589	51	51	26	---	7.8	20	65	75	63	65	66
31	337	---	50	38	---	7.7	---	65	---	65	65	---
TOTAL	10867	1990	1549	1128.4	192.1	217.9	529.9	1009	2449	2226	2469	2054
MEAN	351	66.3	50.0	36.4	6.86	7.03	17.7	32.5	81.6	71.8	79.6	68.5
MAX	625	269	52	55	7.8	7.8	21	65	205	106	133	89
MIN	65	50	49	6.3	6.5	6.8	7.6	19	65	63	64	65

CAL YR 1988 TOTAL 33642 MEAN 91.9 MAX 625 MIN 49
WTR YR 1989 TOTAL 26681.3 MEAN 73.1 MAX 625 MIN 6.3

DELAWARE RIVER

01417500 EAST BRANCH DELAWARE RIVER AT HARVARD, NY

LOCATION.--Lat 42°01'28", long 75°07'10", Delaware County, Hydrologic Unit 02040102, on right bank 800 ft downstream from Baxter Brook, and 1,100 ft downstream from highway bridge at Harvard. Water-quality sampling site at discharge station.

DRAINAGE AREA.--458 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1934 to June 1967, November 1977 to current year.

REVISED RECORDS.--WDR NY-82-1: Drainage area. WDR NY-84-1: 1978-81(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,007.41 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 12, 1958, water-stage recorder 1,100 ft upstream at datum 0.65 ft higher, and from Aug. 12, 1958, to June 30, 1967, water-stage recorder at site 200 ft downstream at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Subsequent to September 1954, entire flow from 371 mi^2 of drainage area controlled by Pepacton Reservoir (see Reservoirs in Delaware River Basin). Part of flow diverted for New York City municipal supply. Remainder of flow (except for conservation releases and spill) impounded for release during periods of low flow in the lower Delaware River Basin, as directed by the Delaware River Master. Satellite gage-height and temperature telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,400 ft^3/s, Sept. 22, 1938, gage height, 16.93 ft, site and datum then in use, from rating curve extended above 10,000 ft^3/s, on basis of slope-area measurement at gage height 15.58 ft; minimum discharge, 7.2 ft^3/s, Oct. 13, 1954, gage height, 1.63 ft, site and datum then in use; minimum daily discharge, 7.6 ft^3/s, Oct. 13, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,430 ft^3/s, May 6, gage height, 6.83 ft; minimum, 31 ft^3/s, Mar. 11, gage height, 1.65 ft; minimum daily, 47 ft^3/s, Jan. 26.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71	136	182	e130	88	e96	618	108	176	183	94	88
2	71	153	171	e130	e80	e86	468	696	171	164	92	93
3	71	422	164	e120	e74	81	410	688	178	151	97	87
4	71	273	155	e110	69	72	417	518	164	161	108	83
5	96	146	146	e100	68	e70	405	413	158	285	133	82
6	276	792	138	e120	76	e70	440	2100	199	217	163	81
7	289	574	133	e130	74	e70	488	1700	215	179	191	82
8	292	410	127	e130	e76	e70	425	964	206	178	136	81
9	292	332	120	e120	e70	e68	378	667	204	158	105	99
10	292	272	111	e110	e72	64	332	627	277	148	97	102
11	292	240	e94	e100	e64	53	275	1030	246	142	93	104
12	335	205	e88	e100	e58	50	238	875	225	132	96	85
13	611	230	e96	131	e56	48	213	665	259	127	129	81
14	618	296	e100	113	56	48	198	534	275	122	121	86
15	611	253	e96	110	81	77	183	447	485	116	107	90
16	610	235	e92	109	115	102	226	369	541	113	120	88
17	611	303	e86	81	e80	79	216	372	599	113	120	104
18	615	301	e80	66	e60	120	211	302	532	108	116	96
19	618	268	e78	61	e52	158	207	261	443	105	118	95
20	616	387	e82	e80	e58	117	199	231	358	125	174	168
21	544	625	e84	e90	247	117	187	218	319	147	151	141
22	177	512	e80	e100	375	94	174	196	302	119	138	121
23	358	419	e78	e60	228	91	162	169	276	111	130	127
24	365	348	102	55	180	137	149	198	551	105	125	153
25	354	290	178	49	e150	351	137	190	587	120	120	133
26	145	250	137	47	e130	335	127	205	514	136	100	133
27	129	219	123	93	e120	349	117	278	470	139	93	128
28	291	232	142	93	e110	374	110	226	399	163	91	119
29	560	220	192	69	---	468	104	202	321	136	92	114
30	606	194	157	61	---	613	101	189	228	103	93	110
31	574	---	e140	96	---	704	---	183	---	96	89	---
TOTAL	11461	9537	3752	2964	2967	5232	7915	15821	9878	4402	3632	3154
MEAN	370	318	121	95.6	106	169	264	510	329	142	117	105
MAX	618	792	192	131	375	704	618	2100	599	285	191	168
MIN	71	136	78	47	52	48	101	108	158	96	89	81

CAL YR 1988 TOTAL 75739 MEAN 207 MAX 1570 MIN 71
WTR YR 1989 TOTAL 80715 MEAN 221 MAX 2100 MIN 47

e Estimated

DELAWARE RIVER BASIN

01417500 EAST BRANCH DELAWARE RIVER AT HARVARD, NY--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: June 1978 to current year.

INSTRUMENTATION.--Water-temperature digital recorder since June 1978, provides one-hour-interval punches. Also, water-temperature satellite telemeter since May 1985, provides one-hour-interval readings.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum (water years 1978, 1981-82, 1984-89), 28.0°C, June 30, 1981; minimum (water years 1979-87, 1989), 0.0°C on many days during winter periods, except 1989.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum, 23.5°C, July 24, 25; minimum recorded, 0.5°C on many days during winter period.

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	15.5	12.5	14.0	5.0	4.5	5.0	4.0	3.5	3.5	.5	.5	.5
2	15.0	14.0	14.5	5.0	4.5	5.0	4.0	3.0	3.0	.5	.5	.5
3	15.0	13.0	14.0	5.5	4.5	5.0	4.0	3.0	3.5	.5	.5	.5
4	13.5	12.0	12.5	5.5	4.5	5.0	3.5	2.0	2.5	.5	.5	.5
5	12.5	11.0	11.5	9.5	5.5	7.5	2.0	1.5	2.0	.5	.5	.5
6	11.0	7.0	8.5	9.5	8.5	9.0	2.5	1.5	2.0	.5	.5	.5
7	8.0	6.0	7.0	8.5	6.5	7.5	3.0	1.5	2.5	.5	.5	.5
8	7.0	6.0	6.5	6.5	6.0	6.5	3.0	2.5	3.0	.5	.5	.5
9	6.5	5.5	6.0	6.5	6.5	6.5	2.5	1.5	1.5	.5	.5	.5
10	8.0	6.0	7.0	6.5	6.0	6.0	1.0	.5	1.0	.5	.5	.5
11	8.0	7.0	7.5	6.5	6.0	6.5	.5	.5	.5	.5	.5	.5
12	7.0	6.0	6.5	6.0	5.0	5.5	.5	.5	.5	.5	.5	.5
13	6.0	5.0	5.5	6.0	5.0	5.5	.5	.5	.5	.5	.5	.5
14	7.0	4.5	6.0	6.5	5.5	6.0	.5	.5	.5	.5	.5	.5
15	7.5	5.0	6.5	6.5	5.0	6.0	.5	.5	.5	.5	.5	.5
16	8.0	6.0	7.0	7.0	5.0	6.0	.5	.5	.5	.5	.5	.5
17	8.5	6.5	7.5	8.5	7.0	8.0	.5	.5	.5	.5	.5	.5
18	8.0	7.0	7.0	6.5	5.0	6.0	.5	.5	.5	.5	.5	.5
19	7.0	6.0	6.5	5.0	4.5	4.5	.5	.5	.5	1.0	.5	.5
20	6.5	5.0	6.0	6.0	5.0	5.0	.5	.5	.5	.5	.5	.5
21	6.0	5.0	5.5	6.0	5.0	6.0	.5	.5	.5	.5	.5	.5
22	5.5	5.0	5.5	5.0	4.5	5.0	1.0	.5	.5	1.0	.5	.5
23	6.5	5.0	6.0	4.5	4.0	4.5	.5	.5	.5	.5	.5	.5
24	7.0	6.5	6.5	4.5	3.5	4.0	.5	.5	.5	1.0	.5	.5
25	6.5	5.5	5.5	4.5	3.5	4.0	.5	.5	.5	.5	.5	.5
26	5.5	4.5	5.0	4.5	3.5	4.0	.5	.5	.5	.5	.5	.5
27	6.5	4.5	5.5	7.0	4.5	5.5	.5	.5	.5	.5	.5	.5
28	5.5	4.5	5.0	7.0	6.0	7.0	.5	.5	.5	1.0	.5	.5
29	6.0	5.0	5.5	6.0	4.0	5.0	.5	.5	.5	1.0	.5	1.0
30	5.5	4.5	5.0	4.0	3.5	4.0	.5	.5	.5	1.0	.5	1.0
31	5.5	4.0	5.0	---	---	---	.5	.5	.5	1.0	.5	.5
MONTH	15.5	4.0	7.5	9.5	3.5	5.5	4.0	0.5	1.0	1.0	0.5	0.5

DELAWARE RIVER BASIN

01417500 EAST BRANCH DELAWARE RIVER AT HARVARD, NY--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	2.0	.5	1.0	.5	.5	.5	4.5	3.5	4.0	13.5	11.0	12.5
2	1.5	1.0	1.5	.5	.5	.5	6.5	2.5	4.5	11.0	8.0	9.5
3	1.5	.5	1.0	1.0	.5	.5	5.5	4.5	5.0	8.0	7.0	7.5
4	.5	.5	.5	1.0	.5	.5	6.0	4.5	5.0	11.0	6.0	8.5
5	.5	.5	.5	1.0	.5	1.0	7.5	6.0	6.5	10.0	8.5	9.0
6	.5	.5	.5	.5	.5	.5	7.0	5.5	6.0	10.0	8.0	9.0
7	.5	.5	.5	1.0	.5	.5	6.5	4.5	5.5	9.5	8.0	8.5
8	.5	.5	.5	1.0	.5	.5	7.0	4.5	5.5	7.5	6.5	7.0
9	.5	.5	.5	1.5	.5	1.0	5.5	4.0	5.0	10.0	6.5	7.5
10	.5	.5	.5	2.0	.5	1.0	5.0	3.0	4.0	9.0	8.0	8.5
11	.5	.5	.5	1.5	.5	1.0	6.0	2.5	4.5	8.0	7.0	7.5
12	.5	.5	.5	1.5	1.0	1.5	8.0	3.0	5.5	8.5	7.5	8.0
13	.5	.5	.5	2.0	.5	1.5	5.5	4.5	5.0	9.5	7.5	8.5
14	.5	.5	.5	4.5	1.0	2.5	9.0	4.0	6.5	9.5	8.0	8.5
15	.5	.5	.5	6.5	3.5	5.0	6.5	5.5	6.0	11.0	8.0	8.5
16	.5	.5	.5	6.0	4.0	5.0	6.5	5.5	6.0	11.5	9.5	10.5
17	1.0	.5	.5	7.5	4.0	5.5	10.0	5.0	7.5	13.0	9.5	10.0
18	1.0	.5	.5	6.0	4.0	5.5	11.5	8.0	9.5	15.0	11.5	13.0
19	.5	.5	.5	5.0	2.5	3.5	12.0	7.5	9.5	16.0	12.0	14.0
20	.5	.5	.5	2.5	1.5	2.0	11.0	6.5	9.0	17.0	13.0	15.0
21	.5	.5	.5	2.5	1.0	2.0	11.5	7.0	9.0	17.5	14.0	15.5
22	.5	.5	.5	4.0	1.0	2.5	9.0	6.0	7.5	16.5	12.0	14.5
23	.5	.5	.5	5.0	1.0	3.0	9.0	4.5	6.5	17.5	12.5	15.0
24	.5	.5	.5	3.5	2.5	3.0	10.0	4.5	7.5	14.0	12.5	13.5
25	.5	.5	.5	4.0	2.0	3.0	11.0	6.0	8.5	12.5	11.0	12.0
26	.5	.5	.5	7.0	3.5	5.0	13.0	8.0	10.5	16.5	11.0	14.5
27	.5	.5	.5	8.0	3.5	5.5	12.5	9.0	10.5	15.5	13.0	14.0
28	.5	.5	.5	9.0	5.5	7.0	14.0	8.0	11.0	14.0	11.0	13.0
29	---	---	---	9.0	7.5	8.0	11.5	9.5	10.5	15.5	10.5	13.0
30	---	---	---	7.5	4.5	5.5	15.0	9.0	11.5	16.5	10.5	14.0
31	---	---	---	4.5	4.0	4.0	---	---	---	13.5	12.0	13.0
MONTH	2.0	0.5	0.5	9.0	0.5	3.0	15.0	2.5	7.0	17.5	6.0	11.0

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

DELAWARE RIVER BASIN

01420500 BEAVER KILL AT COOKS FALLS, NY

LOCATION.--Lat 41°56'47", long 74°58'48", Delaware County, Hydrologic Unit 02040102, on left bank 66 ft downstream from road bridge in Cooks Falls, and 5.5 mi downstream from Willowemoc Creek.

DRAINAGE AREA.--241 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1913 to current year.

REVISED RECORDS.--WSP 521: Drainage area. WSP 781: 1933(M). WSP 891: 1936-39(M). WSP 1202: 1950. WSP 1232: 1950(M).

GAGE.--Water-stage recorder. Datum of gage is 1,151.70 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1933, nonrecording gage at site 125 ft upstream at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Telephone gage-height telemeter and satellite gage-height, temperature, and rain-gage telemeter at station.

AVERAGE DISCHARGE.--75 years (water years 1915-89), 554 ft^3/s, 31.22 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,600 ft^3/s, Mar. 31, 1951, gage height, 16.02 ft, from rating curve extended above 13,000 ft^3/s on basis of slope-area measurement at gage height 15.52 ft; minimum discharge, 16 ft^3/s, Nov. 22, 23, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,700 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 6	0845	*11,700	*10.74	No other peak greater than base discharge.			

Minimum discharge, 47 ft^3/s, Sept. 13, 14, gage height, 0.80 ft.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	70	151	451	e200	e190	e210	1760	394	365	361	109	67
2	70	252	415	e190	e230	e190	1230	3020	379	328	103	74
3	71	304	384	e210	e220	e180	1120	2110	345	297	146	67
4	69	256	360	e160	e190	e200	1190	1360	319	274	129	60
5	67	275	334	e150	e170	e230	1160	1210	297	662	121	56
6	67	1810	316	e140	e160	e250	1540	7330	404	590	116	54
7	66	1030	304	e150	e160	e160	1530	3700	461	466	113	56
8	65	718	292	e170	e140	e150	1200	2380	389	403	106	57
9	66	592	e260	e210	e140	e180	1020	1790	370	328	95	60
10	64	509	e220	e190	e130	e190	898	1930	502	294	87	55
11	64	472	e180	e170	e140	e170	761	2920	412	276	83	52
12	64	418	e110	e170	e150	e190	654	2120	337	245	96	52
13	64	591	e140	e190	e140	e150	607	1640	383	232	131	48
14	62	920	e210	e190	e150	e180	602	1320	429	223	147	65
15	64	660	e220	e220	e240	430	587	1170	1090	203	117	109
16	64	561	e190	e210	e260	489	921	1140	1230	192	98	80
17	61	816	e180	e200	e200	346	817	2980	1390	198	87	111
18	70	837	e180	e180	e180	638	730	1690	1050	188	80	111
19	74	658	e170	e170	e150	641	682	1260	812	170	77	101
20	74	1400	e160	e160	e150	392	617	1030	643	205	97	1490
21	69	2460	e180	e140	e840	371	570	911	577	260	97	880
22	112	1420	e170	e130	e1300	313	538	790	592	201	86	448
23	183	1080	e160	e130	e580	295	495	654	724	178	78	1050
24	180	892	e200	e140	e350	503	463	668	1850	156	73	747
25	239	743	e400	e150	e300	1740	433	613	1110	143	68	486
26	182	641	e250	e150	e240	1640	406	536	780	133	64	500
27	156	576	e180	e160	e250	1330	385	660	633	127	60	477
28	151	613	e200	e170	e230	1330	367	546	545	158	60	373
29	178	553	e250	e150	---	1840	352	453	479	151	63	331
30	165	488	e210	e190	---	1930	377	404	408	126	94	293
31	152	---	e190	e180	---	1940	---	384	---	115	77	---
TOTAL	3103	22696	7466	5320	7580	18798	24012	49113	19305	7883	2958	8410
MEAN	100	757	241	172	271	606	800	1584	643	254	95.4	280
MAX	239	2460	451	220	1300	1940	1760	7330	1850	662	147	1490
MIN	61	151	110	130	130	150	352	384	297	115	60	48
CFSM	.42	3.14	1.00	.71	1.12	2.52	3.32	6.57	2.67	1.06	.40	1.16
IN.	.48	3.50	1.15	.82	1.17	2.90	3.71	7.58	2.98	1.22	.46	1.30

CAL YR 1988 TOTAL 141532 MEAN 387 MAX 7400 MIN 57 CFSM 1.60 IN. 21.85
WTR YR 1989 TOTAL 176644 MEAN 484 MAX 7330 MIN 48 CFSM 2.01 IN. 27.27

e Estimated

DELAWARE RIVER BASIN

01420500 BEAVER KILL AT COOKS FALLS, NY--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: October 1987 to current year.

INSTRUMENTATION.--Water-temperature satellite and telephone telemeter since June 1986, provides 15-minute-interval readings.

REMARKS.--Interruptions of record were due to malfunctions of recording instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Minimum, 0.0°C on many days during winter period.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum recorded, 27.5°C, Aug. 6, but may have been higher during period of instrument malfunction; minimum, 0.0°C on many days during winter period.

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

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

DELAWARE RIVER BASIN

01420500 BEAVER KILL AT COOKS FALLS, NY--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	.5	.0	.0	.5	.0	.0	---	---	---	---	---	13.0
2	.0	.0	.0	1.0	.0	.5	---	---	---	---	7.5	9.5
3	.0	.0	.0	1.5	.0	.5	---	---	---	8.0	6.5	7.0
4	.0	.0	.0	1.5	.0	1.0	---	---	---	11.0	5.5	8.0
5	.5	.0	.0	2.0	1.0	1.5	---	---	---	9.5	7.5	8.0
6	.0	.0	.0	1.5	.0	.5	---	---	---	10.0	7.5	8.5
7	.0	.0	.0	1.0	.0	.0	---	---	---	9.5	7.0	8.0
8	.5	.0	.0	.5	.0	.5	---	---	---	---	6.0	---
9	.0	.0	.0	1.5	.0	.5	---	---	---	9.5	6.0	7.5
10	.0	.0	.0	2.0	.0	.5	---	---	---	8.5	7.0	7.5
11	.0	.0	.0	2.0	.0	1.0	---	---	---	8.0	6.5	7.0
12	.0	.0	.0	2.5	.0	1.5	---	---	---	8.5	7.5	8.0
13	.0	.0	.0	3.5	.0	---	---	---	---	---	7.0	---
14	.0	.0	.0	---	---	---	---	---	7.0	8.5	7.5	7.5
15	.0	.0	.0	---	---	---	---	---	6.5	11.0	7.5	9.0
16	.0	.0	.0	---	---	---	---	---	7.0	10.0	9.0	9.5
17	.0	.0	.0	---	---	---	---	---	8.0	13.0	8.5	10.5
18	.0	.0	.0	---	---	---	---	---	10.0	14.0	9.5	12.0
19	.0	.0	.0	---	---	---	---	---	10.0	15.5	10.5	13.0
20	.0	.0	.0	---	---	---	---	---	9.0	15.5	12.0	14.0
21	.5	.0	.0	2.0	.0	---	---	---	9.5	15.5	13.0	14.0
22	.5	.0	.5	4.0	.0	1.5	---	---	8.0	16.5	11.0	13.5
23	1.5	.0	.5	4.5	.5	2.0	---	---	7.0	14.0	11.5	12.5
24	.5	.0	.0	2.5	1.0	1.5	---	---	8.0	12.0	11.5	12.0
25	.0	.0	.0	4.0	.5	2.0	---	---	9.5	16.5	11.0	13.5
26	.0	.0	.0	5.5	2.0	3.5	---	---	11.0	15.5	13.5	14.5
27	1.0	.0	.0	7.0	1.5	4.0	---	---	11.5	14.5	13.0	14.0
28	1.0	.0	.5	8.0	3.5	5.5	---	---	11.5	16.0	10.5	13.5
29	---	---	---	7.0	5.5	6.5	---	---	10.5	16.5	10.5	13.5
30	---	---	---	5.5	3.0	4.0	---	---	12.0	15.0	12.5	13.5
31	---	---	---	---	3.0	---	---	---	---	15.0	12.5	13.5
MONTH	1.5	0.0	0.0	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	20.0	14.0	17.0	---	14.5	---	23.0	18.0	20.0	20.0	17.0	18.5
2	20.0	16.5	18.0	---	16.0	---	22.5	18.0	20.5	---	18.5	---
3	21.0	15.5	18.0	22.0	16.5	19.5	---	19.5	---	---	---	---
4	19.0	16.0	17.5	20.5	18.5	19.5	25.0	---	---	---	---	---
5	18.0	14.0	16.0	19.0	16.5	---	---	22.0	---	---	---	---
6	16.5	14.0	15.0	19.5	16.0	---	27.5	---	---	---	---	---
7	14.0	13.0	13.5	22.5	17.0	19.5	---	19.0	---	22.5	17.5	19.5
8	16.5	13.0	14.5	21.5	17.5	19.5	20.0	16.5	18.0	24.0	18.5	21.0
9	15.5	14.0	15.0	22.0	16.0	19.0	20.5	15.5	18.0	23.5	19.0	21.0
10	17.0	13.5	15.5	20.5	17.0	19.0	22.0	16.0	19.0	25.5	20.0	22.5
11	18.5	14.0	16.0	22.5	17.5	20.0	20.5	18.0	19.0	23.5	21.0	22.5
12	19.0	13.0	16.0	20.0	17.5	18.5	19.5	18.0	---	22.0	18.5	20.0
13	17.5	14.5	15.5	19.5	16.0	18.0	---	---	---	22.5	17.5	20.0
14	14.5	13.0	13.5	21.0	16.5	19.0	23.0	19.0	---	20.0	19.0	19.5
15	13.0	12.0	12.0	21.0	16.0	18.5	24.5	19.0	---	19.0	17.5	18.5
16	14.0	12.0	12.5	19.0	16.5	17.0	25.0	21.0	23.0	17.5	16.5	17.0
17	16.5	13.5	15.0	21.0	15.5	18.0	24.5	20.0	---	18.0	16.0	17.0
18	16.0	13.0	14.5	22.5	17.0	19.5	---	18.0	---	18.0	16.5	17.5
19	18.0	13.0	15.5	23.5	18.5	21.0	---	18.5	---	17.0	16.0	16.5
20	18.5	14.5	16.5	21.0	17.0	19.0	---	---	---	17.0	16.0	16.5
21	18.5	15.5	17.0	18.0	16.5	17.0	---	19.0	---	18.0	16.5	17.0
22	19.0	16.0	17.5	19.5	17.0	18.0	24.0	18.5	---	19.0	17.5	18.0
23	19.0	16.5	17.5	24.5	18.0	21.0	23.0	20.0	21.5	19.0	14.0	17.0
24	17.5	15.5	16.5	25.0	19.5	22.0	---	18.0	---	14.5	12.0	13.0
25	20.0	15.5	17.5	26.0	20.5	23.0	---	16.5	---	14.0	10.5	12.5
26	20.5	15.5	18.0	26.5	21.5	24.0	---	---	---	15.0	13.0	13.5
27	21.5	17.0	19.0	26.5	22.0	24.0	---	14.0	---	13.5	11.0	12.0
28	19.5	17.5	18.5	24.0	20.5	22.5	---	---	---	13.0	9.5	11.5
29	18.5	15.5	17.0	23.0	18.0	20.5	20.5	19.0	19.5	14.5	10.5	12.5
30	20.0	14.0	17.0	22.5	18.0	20.0	---	---	---	15.0	11.5	13.0
31	---	---	---	21.5	18.0	20.0	22.5	---	---	---	---	---
MONTH	21.5	12.0	16.0	---	14.5	---	---	---	---	---	---	---

DELAWARE RIVER BASIN

01421000 EAST BRANCH DELAWARE RIVER AT FISHS EDDY, NY

LOCATION.--Lat 41°58'23", long 75°10'28", Delaware County, Hydrologic Unit 02040102, on left bank 3,000 ft upstream from bridge on County Highway 28 at Fishs Eddy, 0.6 mi upstream from Fish Creek, 4.2 mi downstream from Beaver Kill, and 11 mi upstream from the confluence of East and West Branches near Hancock. Water-quality sampling site at discharge station.

DRAINAGE AREA.--784 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1912 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WDR NY-82-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 955.96 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 27, 1928, nonrecording gage and Sept. 28, 1928 to Nov. 1, 1967, water-stage recorder at site 3,000 ft downstream at datum 5.0 ft lower.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Subsequent to September 1954, entire flow from 371 mi^2 of drainage area controlled by Pepacton Reservoir (see Reservoirs in Delaware River Basin). Part of flow diverted for New York City municipal supply. Remainder of flow (except for conservation releases and spill) impounded for release during periods of low flow in the lower Delaware River basin, as directed by the Delaware River Master. Telephone gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 53,300 ft^3/s, Aug. 24, 1933, gage height, 20.60 ft, at former site and datum, from rating curve extended above 22,000 ft^3/s; minimum discharge, 52 ft^3/s, July 23, 1964, gage height, 1.16 ft, at former site and datum; minimum daily discharge, 68 ft^3/s, Aug. 29, 1949.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 9, 1903, reached a stage of 23.6 ft, at former site and datum, from description obtained in April 1939, from local residents who had experienced the flood (discharge, about 70,000 ft^3/s, from rating curve extended above 22,000 ft^3/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 16,500 ft^3/s, May 6, gage height, 10.10 ft; minimum, 141 ft^3/s, Sept. 14, gage height, 2.46 ft; minimum daily, 146 ft^3/s, Sept. 13.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	171	378	786	e430	e340	e380	3270	626	699	719	240	184
2	172	433	744	e410	e360	e340	2410	4300	710	651	230	194
3	170	763	704	e420	e340	e320	2080	3880	680	590	259	182
4	173	611	664	e280	e300	e320	2180	2660	622	557	282	171
5	187	512	627	e180	e280	e340	2110	2130	592	1220	292	163
6	328	3280	597	e330	e290	e360	2590	10700	713	1140	325	159
7	367	2340	571	e360	e340	e250	2740	7210	862	837	367	157
8	367	1560	547	e390	e260	e250	2240	4660	764	774	296	159
9	368	1230	513	e420	e240	e290	1900	3510	735	657	242	170
10	368	1020	e420	e390	e230	e290	1650	3390	965	597	217	178
11	369	904	e350	e340	e250	e250	1360	5410	858	555	205	177
12	371	793	e260	e340	e250	e260	1170	4290	740	497	218	162
13	612	923	e300	e410	e230	e220	1040	3350	790	466	315	146
14	629	1580	e380	e380	e240	e240	1020	2740	880	441	317	159
15	620	1180	e390	e410	e360	518	942	2340	2070	407	275	217
16	623	1020	e350	e400	e470	761	1350	2000	2440	384	255	202
17	621	1300	e330	e340	e350	535	1290	4030	2790	386	243	235
18	626	1460	e320	e290	e280	738	1170	2720	2280	368	227	249
19	636	1160	e300	e270	e230	1040	1100	2080	1750	338	227	230
20	635	1890	e300	e290	e240	649	1020	1690	1350	399	342	1530
21	625	3950	e320	e270	e1100	621	935	1470	1170	518	311	1290
22	362	2690	e310	e260	e2000	517	870	1290	1130	408	273	689
23	572	2050	e290	e230	e1050	493	815	1050	1100	359	253	1120
24	584	1660	e370	e230	e690	650	763	1060	3370	322	234	1050
25	664	1360	e700	e230	e500	2430	718	1010	2650	310	220	733
26	439	1150	e550	e220	e460	2540	675	902	1910	318	198	690
27	363	1010	e390	e310	e460	2250	646	1190	1550	315	181	717
28	449	1040	e430	e330	e420	2230	618	995	1280	368	176	594
29	719	975	e560	e270	---	2910	590	838	1060	357	180	544
30	755	845	e480	e290	---	3320	607	762	833	284	203	487
31	760	---	e440	e350	---	3590	---	731	---	252	198	---
TOTAL	14705	41067	14293	10070	12560	29902	41869	85014	39343	15794	7801	12938
MEAN	474	1369	461	325	449	965	1396	2742	1311	509	252	431
MAX	760	3950	786	430	2000	3590	3270	10700	3370	1220	367	1530
MIN	170	378	260	180	230	220	590	626	592	252	176	146

CAL YR 1988 TOTAL 270376 MEAN 739 MAX 9710 MIN 169
WTR YR 1989 TOTAL 325356 MEAN 891 MAX 10700 MIN 146

e Estimated

DELAWARE RIVER BASIN

01421000 EAST BRANCH DELAWARE RIVER AT FISHS EDDY, NY--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1958-59, 1968 to current year.
CHEMICAL DATA: 1958-59 (d), 1970 (b), 1971-74 (d), 1975 (c).
MINOR ELEMENTS DATA: 1971-74 (a).
ORGANIC DATA: OC--1974 (a), 1975 (c).
NUTRIENT DATA: 1971-75 (d).
BIOLOGICAL DATA:
Bacteria--1971 (c), 1973-75 (c).

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: November 1967 to current year.

INSTRUMENTATION.--Water-temperature digital recorder since October 1975, provides one-hour-interval punches. Prior to October 1975, water-temperature recorder provided continuous recordings.

REMARKS.--Interruption of record was due to malfunction of recording instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum (water years 1968-75, 1978, 1980-82, 1984, 1986-89), 31.5°C, Aug. 2, 1975; minimum (water years 1968-76, 1978-79, 1981-89), 0.0°C on many days during winter periods, except 1978.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum, 27.0°C, July 26, 27, Aug. 5; minimum, 0.0°C, Feb. 21, 22, 24, 25.

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	17.5	14.0	16.0	4.5	4.0	4.5	3.5	3.5	3.5	1.0	1.0	1.0
2	16.5	15.5	16.0	4.5	4.5	4.5	3.5	2.5	2.5	1.0	1.0	1.0
3	16.5	14.0	15.5	6.0	4.5	5.0	4.0	2.0	3.0	1.0	.5	1.0
4	15.0	13.0	14.5	6.0	4.0	5.0	3.0	1.5	2.0	1.0	1.0	1.0
5	15.0	12.5	13.5	10.0	6.0	8.0	1.5	1.0	1.5	1.0	1.0	1.0
6	12.5	9.0	11.0	9.5	8.5	9.5	2.5	1.0	1.5	1.0	1.0	1.0
7	10.0	8.0	9.0	8.5	7.0	7.5	2.5	1.0	1.5	1.0	1.0	1.0
8	8.5	7.0	8.0	6.5	6.5	6.5	3.0	2.0	2.5	1.0	.5	.5
9	7.5	6.5	7.0	7.0	6.5	6.5	2.5	1.0	1.5	.5	.5	.5
10	9.5	7.0	8.5	7.0	6.0	6.5	1.0	1.0	1.0	1.0	.5	.5
11	10.0	8.0	9.0	7.0	6.0	6.5	1.0	1.0	1.0	1.0	.5	.5
12	9.0	7.0	8.0	6.0	5.0	5.5	1.0	1.0	1.0	.5	.5	.5
13	6.5	5.5	6.0	6.0	5.0	5.5	1.0	1.0	1.0	.5	.5	.5
14	8.0	5.0	6.5	7.0	5.5	6.0	1.0	1.0	1.0	.5	.5	.5
15	8.5	6.5	7.5	6.5	5.5	6.0	1.0	1.0	1.0	.5	.5	.5
16	10.0	8.0	9.0	7.5	5.5	6.0	1.0	1.0	1.0	.5	.5	.5
17	11.0	8.5	9.5	8.5	6.5	8.0	1.0	1.0	1.0	.5	.5	.5
18	9.5	8.5	9.0	6.5	4.5	5.5	1.0	1.0	1.0	1.0	.5	.5
19	8.0	6.5	7.5	4.5	4.0	4.5	1.0	1.0	1.0	1.0	.5	.5
20	8.0	6.0	7.0	6.0	4.5	5.0	1.0	1.0	1.0	.5	.5	.5
21	6.0	5.5	6.0	6.0	5.0	5.5	1.5	1.0	1.0	.5	.5	.5
22	6.0	5.0	5.5	5.0	4.0	4.5	1.5	1.0	1.0	.5	.5	.5
23	7.0	5.0	6.0	4.0	3.5	4.0	1.0	1.0	1.0	.5	.5	.5
24	8.0	7.0	7.5	4.0	3.0	3.5	1.0	1.0	1.0	1.0	.5	.5
25	7.0	5.5	6.0	4.5	3.0	3.5	1.0	.5	1.0	1.5	.5	.5
26	5.5	5.0	5.0	4.5	3.0	4.0	.5	.5	.5	.5	.5	.5
27	7.0	4.5	5.5	7.0	4.0	5.5	.5	.5	.5	.5	.5	.5
28	6.0	4.5	5.0	7.0	5.5	7.0	1.0	.5	1.0	1.0	.5	.5
29	6.5	5.0	5.5	5.5	4.0	5.0	1.0	1.0	1.0	1.5	.5	.5
30	5.5	4.5	5.0	4.0	3.0	3.5	1.0	1.0	1.0	1.0	.5	.5
31	5.5	3.5	4.5	---	---	---	1.0	1.0	1.0	1.0	.5	1.0
MONTH	17.5	3.5	8.5	10.0	3.0	5.5	4.0	0.5	1.5	1.5	0.5	0.5

DELAWARE RIVER BASIN

01421000 EAST BRANCH DELAWARE RIVER AT FISHS EDDY, NY--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	2.0	.5	1.0	1.0	.5	.5	3.5	3.0	3.5	13.5	11.0	12.0
2	1.0	.5	1.0	1.5	.5	.5	6.0	2.0	4.0	11.0	8.0	9.5
3	.5	.5	.5	2.0	.5	1.0	5.0	4.5	4.5	8.0	7.0	7.5
4	.5	.5	.5	1.5	.5	1.0	5.5	4.0	5.0	11.0	6.0	8.5
5	.5	.5	.5	1.5	1.0	1.0	7.0	5.5	6.0	9.5	8.0	8.5
6	.5	.5	.5	1.0	.5	.5	6.5	4.5	5.5	9.5	8.0	8.5
7	.5	.5	.5	1.5	.5	.5	5.5	3.5	4.5	9.0	7.0	8.0
8	.5	.5	.5	2.0	.5	1.0	6.5	4.0	5.0	7.0	6.0	6.5
9	.5	.5	.5	3.0	.5	1.0	5.0	3.5	4.5	9.0	6.5	8.0
10	.5	.5	.5	3.5	.5	1.0	4.5	2.5	3.5	8.5	7.5	8.0
11	.5	.5	.5	2.5	.5	1.5	5.0	2.0	3.5	7.5	7.0	7.0
12	.5	.5	.5	2.5	.5	1.5	7.0	2.5	5.0	8.0	7.5	7.5
13	.5	.5	.5	3.0	.5	1.5	5.5	4.0	4.5	9.5	7.5	8.5
14	.5	.5	.5	5.5	.5	3.0	8.0	3.5	5.5	8.5	8.0	8.0
15	.5	.5	.5	8.0	4.5	5.5	6.0	5.0	5.5	11.0	7.5	9.5
16	.5	.5	.5	6.0	3.5	5.0	6.0	5.0	5.5	10.0	9.5	10.0
17	.5	.5	.5	7.0	3.0	5.0	9.0	4.5	7.0	13.0	9.0	11.0
18	1.0	.5	.5	6.0	3.5	5.0	10.5	8.0	9.0	15.0	10.5	13.0
19	1.5	.5	.5	4.0	1.5	3.0	11.0	7.0	9.0	16.5	11.5	14.0
20	.5	.5	.5	2.0	1.0	1.5	10.5	6.0	8.5	16.5	13.0	15.0
21	.5	.0	.5	2.0	1.0	1.5	11.0	6.5	8.5	16.0	14.0	15.0
22	.5	.0	.0	4.0	.5	2.0	8.0	5.5	7.0	17.0	12.0	14.5
23	1.0	.5	.5	5.0	.5	3.0	8.5	3.5	6.0	14.5	12.5	13.5
24	.5	.0	.5	3.5	1.5	2.5	10.0	4.5	7.0	12.5	12.0	12.5
25	.5	.0	.5	3.5	1.5	2.5	11.0	6.0	8.0	16.5	11.0	14.0
26	.5	.5	.5	6.0	3.0	4.0	13.0	7.5	10.0	16.0	14.5	15.0
27	.5	.5	.5	7.0	2.5	5.0	12.5	8.5	10.5	15.0	13.0	14.0
28	1.5	.5	.5	8.5	5.0	7.0	13.5	7.5	10.5	15.5	11.5	13.5
29	---	---	---	8.5	6.5	7.5	11.5	9.0	10.0	17.0	11.0	14.0
30	---	---	---	6.5	4.0	5.0	14.5	8.5	11.0	14.5	13.0	13.5
31	---	---	---	4.0	3.5	3.5	---	---	---	15.5	13.0	14.0
MONTH	2.0	0.0	0.5	8.5	0.5	2.5	14.5	2.0	6.5	17.0	6.0	11.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	20.0	14.0	17.0	20.5	15.0	18.0	24.0	18.5	21.0	---	---	---
2	20.0	17.0	18.5	22.0	16.5	19.5	23.5	19.5	21.5	---	---	---
3	21.0	16.0	18.5	22.5	17.5	20.0	24.5	21.0	22.5	---	---	---
4	20.0	17.0	18.0	21.0	19.0	20.0	25.5	21.5	23.5	---	---	---
5	18.0	15.0	16.5	19.0	16.5	17.0	27.0	22.5	24.5	---	---	---
6	16.5	14.5	15.0	19.0	16.0	17.5	26.5	23.0	24.5	---	---	---
7	14.5	13.0	14.0	22.0	17.5	19.5	22.5	18.5	21.0	---	---	---
8	15.5	13.0	14.0	21.5	18.0	19.5	19.5	16.0	17.5	---	---	---
9	15.5	14.0	15.0	22.0	16.5	19.0	21.0	15.5	18.0	---	---	---
10	16.5	13.5	15.0	21.5	18.0	20.0	22.5	16.5	19.5	---	---	---
11	17.5	13.5	15.5	23.0	18.0	20.5	21.0	18.5	20.0	---	---	---
12	18.5	13.0	15.5	20.5	18.0	19.5	19.5	18.5	19.0	---	---	---
13	16.0	14.5	15.0	21.0	17.0	18.5	20.5	17.5	19.0	---	---	---
14	14.0	12.5	13.5	21.0	17.0	19.0	22.5	18.5	20.5	---	---	---
15	12.5	11.5	12.0	22.0	16.5	19.5	24.0	19.5	21.5	---	---	---
16	12.5	11.5	12.0	20.0	17.5	18.5	24.0	21.0	22.5	---	---	---
17	15.5	12.5	14.0	20.5	16.5	18.5	24.0	19.5	22.0	---	---	---
18	15.0	12.5	14.0	23.0	17.5	20.5	22.0	18.5	20.5	---	---	---
19	17.0	12.5	15.0	24.0	19.5	22.0	20.5	18.5	19.5	---	---	---
20	18.0	14.0	16.0	22.0	18.0	20.0	20.0	17.5	18.5	---	---	---
21	18.0	15.5	16.5	18.5	17.5	18.0	21.5	18.0	19.5	---	---	---
22	19.0	16.0	17.5	20.0	17.0	18.5	23.5	18.5	20.5	---	---	---
23	19.0	17.0	17.5	24.5	18.5	21.0	22.5	19.5	21.0	---	---	---
24	17.0	15.5	16.5	25.5	20.5	23.0	22.5	18.0	20.0	---	---	---
25	17.5	14.5	16.0	26.5	21.5	24.0	22.5	16.5	19.0	---	---	---
26	18.5	14.5	16.5	27.0	22.5	24.5	21.0	16.0	19.0	---	---	---
27	20.0	16.0	18.0	27.0	23.0	25.0	21.0	16.0	19.0	---	---	---
28	19.0	17.0	18.0	25.0	20.5	23.0	22.5	18.0	20.0	---	---	---
29	17.5	15.5	16.5	23.5	18.5	21.0	---	---	---	---	---	---
30	19.5	14.0	16.5	22.5	18.5	20.5	---	---	---	---	---	---
31	---	---	---	22.0	19.0	20.5	---	---	---	---	---	---
MONTH	21.0	11.5	16.0	27.0	15.0	20.0	---	---	---	---	---	---

DELAWARE RIVER BASIN

01423000 WEST BRANCH DELAWARE RIVER AT WALTON, NY

LOCATION.--Lat 42°09'58", long 75°08'26", Delaware County, Hydrologic Unit 02040101, on left bank at west end of fairgrounds at Walton, and 100 ft downstream from West Brook.

DRAINAGE AREA.--332 mi^2.

PERIOD OF RECORD.--October 1950 to current year.

REVISED RECORDS.--WDR NY-82-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,190.30 ft above National Geodetic Vertical Datum of 1929.

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

AVERAGE DISCHARGE.--39 years, 578 ft^3/s, 23.64 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,500 ft^3/s, Mar. 15, 1986, gage height, 14.84 ft, from floodmark in gage well; minimum discharge, 12 ft^3/s, Sept. 15, Nov. 22, 1964; minimum gage height, 1.86 ft, Nov. 22, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 6	1415	*5,950	*9.35	No other peak greater than base discharge.			

Minimum discharge, 36 ft^3/s, Oct. 4, gage height, 2.42 ft.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39	147	607	e290	e310	e250	2310	345	341	412	144	79
2	39	266	558	e285	e380	e230	1640	1420	343	352	132	93
3	38	381	514	e270	e330	e200	1510	1310	284	300	158	92
4	38	332	485	e210	e240	e210	1700	1120	257	276	142	77
5	48	495	436	e180	e220	389	1710	1010	256	678	359	69
6	65	2230	408	e200	e225	445	1770	4660	353	560	330	64
7	57	1440	390	e220	e200	210	1950	3960	447	466	349	60
8	51	1100	365	e260	e190	e200	1540	2600	370	529	252	57
9	48	897	323	e280	e175	e195	1330	1970	367	375	210	55
10	47	748	281	e260	e180	e190	1170	2090	623	323	184	52
11	48	650	250	e230	e190	e175	1000	3860	494	360	164	52
12	48	537	e160	e240	e170	e170	876	2640	414	290	167	54
13	47	605	e220	e300	e160	e130	794	2020	694	248	284	51
14	47	880	e225	e230	e190	203	768	1640	885	222	267	53
15	46	636	e240	e275	e500	514	713	1400	1300	195	204	62
16	44	560	e220	e270	e660	443	972	1170	1440	178	172	73
17	42	814	e210	e260	e220	288	870	1250	1620	168	152	102
18	42	872	e200	e220	e200	438	782	952	1380	153	138	114
19	42	690	e190	e210	e185	474	736	798	1120	139	133	95
20	41	1220	e195	e210	e180	316	674	697	904	200	207	240
21	41	2720	e225	e170	e1500	313	621	641	816	383	160	278
22	79	1710	e230	e175	1740	257	571	587	748	246	140	180
23	186	1370	e190	e200	e690	258	519	490	919	188	125	208
24	251	1150	e250	e180	e480	684	480	482	2100	156	115	361
25	293	964	e390	e180	390	1280	440	451	1360	136	104	255
26	225	831	e310	e190	e330	1100	401	412	1000	125	96	215
27	193	742	e250	e290	e300	1010	368	494	836	118	90	195
28	177	897	e320	e225	e270	1060	341	387	719	356	85	171
29	194	831	e440	e220	---	1430	322	319	617	319	84	154
30	173	669	e340	e260	---	1960	359	290	493	206	89	141
31	154	---	e310	e310	---	2600	---	312	---	164	82	---
TOTAL	2883	27384	9732	7300	10805	17622	29237	41777	23500	8821	5318	3752
MEAN	93.0	913	314	235	386	568	975	1348	783	285	172	125
MAX	293	2720	607	310	1740	2600	2310	4660	2100	678	359	361
MIN	38	147	160	170	160	130	322	290	256	118	82	51
CFSM	.28	2.75	.95	.71	1.16	1.71	2.94	4.06	2.36	.86	.52	.38
IN.	.32	3.07	1.09	.82	1.21	1.97	3.28	4.68	2.63	.99	.60	.42

CAL YR 1988 TOTAL 159000 MEAN 434 MAX 4000 MIN 25 CFSM 1.31 IN. 17.82
WTR YR 1989 TOTAL 188131 MEAN 515 MAX 4660 MIN 38 CFSM 1.55 IN. 21.08

e Estimated

DELAWARE RIVER BASIN

01425000 WEST BRANCH DELAWARE RIVER AT STILESVILLE, NY

LOCATION.--Lat 42°04'29", long 75°23'47", Delaware County, Hydrologic Unit 02040101, on right bank at Stilesville, 0.5 mi upstream from Cold Spring Creek, 1.4 mi downstream from Cannonsville Dam, and 2.0 mi northeast of Deposit. Water-quality sampling site at discharge station.

DRAINAGE AREA.--456 mi^2.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder and concrete control. Datum of gage is 992.23 ft above National Geodetic Vertical Datum of 1929 (levels by Board of Water Supply, City of New York). Prior to Oct. 1, 1964, at site 600 ft downstream at datum 1.37 ft higher.

REMARKS.--No estimated daily discharges. Records good except those for periods below 300 ft^3/s, which are poor. Subsequent to October 1963, entire flow from 454 mi^2 of drainage area controlled by Cannonsville Reservoir (see Reservoirs in Delaware River Basin). Part of flow diverted for New York City municipal supply (see Reservoirs in Delaware River Basin). Remainder of flow (except for conservation releases and spill) impounded for release during period of low flow in the lower Delaware River basin, as directed by the Delaware River Master.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,800 ft^3/s, Mar. 16, 1986, gage height, 13.07 ft; minimum daily, 7.2 ft^3/s, Feb. 8, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,530 ft^3/s, June 18, gage height, 8.76 ft; minimum daily, 8.4 ft^3/s, Feb. 16.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1230	48	42	123	11	9.4	17	31	173	429	397	1150
2	875	443	42	49	10	9.5	14	35	236	386	385	1150
3	761	322	42	43	10	9.4	15	33	369	383	377	1190
4	1170	266	43	43	9.5	9.6	16	31	112	384	669	1220
5	1200	94	43	69	9.7	9.9	18	32	68	387	529	1260
6	1010	42	45	120	9.3	8.9	17	72	66	383	690	1070
7	986	39	46	48	9.6	9.9	16	74	64	384	448	1070
8	984	38	47	43	9.3	9.2	14	72	65	383	377	1450
9	1020	38	48	43	9.3	9.2	14	72	65	383	421	1410
10	1070	38	50	42	9.3	9.3	13	58	76	382	446	1090
11	1090	38	53	41	9.5	9.3	13	55	93	382	825	1020
12	1170	38	55	36	9.5	9.3	12	55	94	383	583	749
13	851	41	54	35	9.4	9.2	12	51	86	383	379	713
14	864	40	53	35	9.9	9.3	12	51	133	382	377	719
15	886	39	213	35	12	10	12	50	580	382	377	1410
16	900	39	615	24	8.4	9.6	27	50	818	382	377	687
17	950	41	245	10	11	9.4	29	251	1180	382	418	95
18	968	40	62	10	9.4	11	29	718	1510	381	883	431
19	991	40	43	10	9.3	10	29	940	1480	381	779	229
20	976	46	41	36	9.4	9.7	29	1010	1310	385	760	217
21	520	52	77	186	17	9.8	29	1020	1120	382	882	83
22	550	45	543	26	13	9.6	29	983	908	383	894	61
23	485	44	609	10	10	9.6	29	897	878	380	921	48
24	331	43	522	9.9	9.6	15	29	726	1160	378	1010	45
25	120	42	327	9.8	9.9	16	29	551	1290	436	1020	43
26	39	42	182	10	9.7	14	29	445	1160	689	1130	43
27	196	42	81	272	9.7	13	29	449	1040	711	1160	42
28	248	43	47	190	9.6	13	29	498	633	580	1200	42
29	269	43	44	25	---	16	29	510	574	754	1220	42
30	270	42	111	10	---	19	29	465	525	390	1260	42
31	193	---	182	28	---	19	---	288	---	452	1110	---
TOTAL	23173	2208	4607	1671.7	283.3	345.1	648	10573	17866	13242	22304	18821
MEAN	748	73.6	149	53.9	10.1	11.1	21.6	341	596	427	719	627
MAX	1230	443	615	272	17	19	29	1020	1510	754	1260	1450
MIN	39	38	41	9.8	8.4	8.9	12	31	64	378	377	42

CAL YR 1988 TOTAL 181169 MEAN 495 MAX 4200 MIN 35
WTR YR 1989 TOTAL 115742.1 MEAN 317 MAX 1510 MIN 8.4

DELAWARE RIVER BASIN

01425000 WEST BRANCH DELAWARE RIVER AT STILESVILLE, NY--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1963 to current year.
CHEMICAL DATA: 1959-60 (a) unpublished, 1969 (a), 1970 (a) unpublished, 1971, 1973 (b), 1974 (d), 1975 (b).
MINOR ELEMENTS DATA: 1971 (b).
NUTRIENT DATA: 1970 (a) unpublished, 1971, 1973 (b), 1974 (d), 1975 (b).
BIOLOGICAL DATA:
Bacteria--1973 (b), 1974 (d), 1975 (b).

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: October 1962 to current year.

INSTRUMENTATION.--Water-temperature digital recorder since October 1962, provides one-hour-interval punches. Prior to October 1962, water-temperature recorder provided continuous recordings.

REMARKS.--Interruptions of record were due to malfunctions of recording instrument. Water temperature is affected by release of water from upstream reservoir.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum (water years 1963-78, 1980-82, 1984-86, 1988), 30.5°C July 2, 1963; minimum, 0.0°C on many days during winter periods, except 1969, 1973, 1986-87.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum recorded, 18.5°C, June 19, but may have been higher during period of instrument malfunction; minimum, 0.0°C on many days during winter period.

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	15.0	14.0	14.5	7.5	6.0	6.5	5.0	4.0	4.5	3.0	1.5	2.5
2	15.0	14.0	14.5	9.0	7.0	8.0	4.5	3.0	4.0	3.0	1.5	2.5
3	15.5	14.0	14.5	10.0	8.5	9.0	6.5	3.0	4.5	2.5	1.0	1.5
4	15.5	15.0	15.0	10.0	9.0	9.5	4.5	2.0	3.0	1.0	.5	.5
5	16.0	15.0	15.5	11.5	9.0	10.0	4.0	2.5	3.0	1.0	.5	.5
6	15.5	15.0	15.5	12.0	10.0	11.0	6.0	3.0	4.0	1.5	.5	1.0
7	16.0	15.0	15.5	10.0	7.5	9.0	5.5	2.5	4.0	1.0	.5	.5
8	15.5	15.0	15.5	8.0	7.0	7.5	5.0	3.0	4.0	2.5	1.0	1.5
9	15.5	15.0	15.5	8.0	7.0	8.0	3.5	2.0	3.0	1.5	.5	1.0
10	16.0	15.0	15.5	8.5	6.5	7.5	3.0	1.5	2.5	2.5	.5	1.0
11	15.0	14.5	15.0	8.0	6.5	7.5	2.5	1.0	1.5	3.0	.5	1.5
12	15.0	14.5	14.5	9.5	6.0	7.0	2.0	1.0	1.5	1.5	.0	1.0
13	14.5	14.0	14.0	7.5	6.0	7.0	1.5	1.0	1.5	1.5	.0	1.0
14	15.0	14.0	14.0	10.0	6.0	8.0	2.0	1.0	1.5	2.5	.0	1.0
15	14.5	13.5	14.0	9.5	6.0	7.5	3.0	2.0	2.5	3.0	1.5	2.0
16	14.5	13.0	13.5	---	---	---	4.0	3.0	3.5	2.5	.5	1.5
17	14.0	13.0	13.5	---	---	---	4.0	3.0	4.0	3.0	.5	1.0
18	13.0	13.0	13.0	---	---	---	2.5	1.0	1.5	2.5	.5	1.5
19	13.0	12.5	13.0	---	---	---	3.0	1.0	2.0	4.0	1.5	2.5
20	13.0	12.5	12.5	---	---	---	4.5	2.0	3.0	3.0	.5	1.5
21	13.0	10.0	12.0	---	---	---	4.5	3.5	4.0	2.0	.5	1.5
22	12.0	7.0	10.0	7.0	4.0	5.0	3.5	3.0	3.5	2.0	.5	1.0
23	12.5	11.5	12.0	6.5	4.0	5.0	3.5	3.0	3.0	3.0	.5	1.0
24	12.5	12.0	12.5	6.5	4.0	5.0	3.5	3.5	3.5	4.0	.0	1.5
25	11.5	8.5	10.5	7.5	4.0	5.5	3.5	3.5	3.5	3.5	.0	1.5
26	8.5	7.5	8.0	7.5	4.5	5.5	3.5	1.0	2.5	1.5	.0	.5
27	12.0	7.5	10.5	9.0	6.0	7.5	2.5	1.0	2.0	2.0	1.0	2.0
28	11.0	9.0	10.5	8.0	5.5	7.5	3.0	1.5	2.0	4.0	2.0	2.5
29	11.0	9.5	10.5	5.0	4.0	5.0	1.5	.5	1.0	5.0	.5	2.5
30	10.0	9.5	9.5	5.5	3.5	4.5	3.0	.5	2.0	4.5	3.0	3.5
31	10.5	8.0	9.5	---	---	---	3.0	2.0	2.5	4.0	2.0	3.0
MONTH	16.0	7.0	13.0	---	---	---	6.5	0.5	3.0	5.0	0.0	1.5

DELAWARE RIVER BASIN

01425000 WEST BRANCH DELAWARE RIVER AT STILESVILLE, NY--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.5	1.5	4.5	2.5	.0	.5	4.5	2.5	3.5	9.5	7.5	8.5
2	4.5	2.5	3.5	3.0	.0	1.5	11.5	1.0	5.5	8.0	6.5	8.0
3	2.5	.0	1.0	4.0	.0	1.5	6.5	5.0	5.0	7.5	6.0	6.5
4	.5	.0	.5	3.5	1.0	2.0	9.0	4.5	6.5	15.0	4.5	9.0
5	.5	.0	.0	3.0	1.0	2.0	10.0	6.5	8.5	8.0	6.5	7.5
6	.5	.0	.0	.5	.0	.0	7.5	5.0	6.0	10.5	7.5	8.5
7	1.0	.0	.5	2.5	.0	.5	8.5	3.5	6.0	8.5	6.5	7.5
8	1.5	.0	.5	3.5	.0	1.0	10.5	3.5	6.5	7.5	6.0	6.5
9	.5	.0	.0	5.0	.0	2.0	6.0	3.5	5.0	11.5	6.5	8.5
10	.5	.0	.0	7.5	.0	3.0	7.0	2.0	4.0	8.0	7.0	7.5
11	.5	.0	.0	5.5	.0	2.5	8.0	1.0	4.5	7.5	6.5	7.0
12	.5	.0	.0	4.0	.0	2.5	12.5	2.0	7.0	8.5	7.0	7.5
13	.0	.0	.0	5.5	.0	2.0	7.0	4.5	5.5	10.5	7.0	8.5
14	.5	.0	.0	10.0	.0	4.5	13.5	3.5	8.0	8.5	7.0	8.0
15	.5	.5	.5	12.5	4.5	7.5	7.0	5.0	6.0	13.0	7.0	10.0
16	2.0	.0	.5	8.5	3.0	5.0	7.0	5.0	6.0	9.5	7.5	8.5
17	1.5	.0	.5	10.5	2.0	6.0	12.5	3.5	7.5	14.5	9.0	11.5
18	2.0	.0	.5	6.5	2.0	5.0	11.5	6.0	8.0	14.0	11.5	12.5
19	3.0	.0	1.0	6.0	.5	2.5	12.5	4.5	8.0	15.0	11.5	13.0
20	1.5	.0	.5	2.5	.0	1.0	12.5	3.5	7.5	13.5	10.0	11.5
21	1.5	1.0	1.0	4.5	.5	1.5	13.0	4.5	8.0	11.5	9.5	10.5
22	2.0	1.0	1.5	8.0	.0	3.0	8.0	3.5	5.5	13.5	10.0	11.5
23	2.5	.0	1.0	9.0	.0	4.0	10.0	2.0	5.5	13.5	11.0	13.0
24	2.0	.0	.5	4.0	2.5	3.0	12.0	2.5	7.0	14.0	13.5	13.5
25	2.5	.0	.5	6.5	2.0	4.0	12.5	4.0	7.5	16.0	13.0	14.0
26	.5	.0	.0	12.0	4.0	7.5	14.0	5.5	9.0	15.5	13.0	14.0
27	1.5	.0	.5	14.0	3.5	8.5	12.0	5.0	8.0	15.0	14.0	14.5
28	2.5	.0	1.0	13.5	7.0	10.5	14.5	4.5	9.0	15.0	11.0	13.0
29	---	---	---	11.5	8.5	10.5	8.5	6.5	7.5	16.0	12.0	14.0
30	---	---	---	8.5	4.5	6.0	14.5	6.5	9.5	15.0	13.0	14.0
31	---	---	---	4.5	4.0	4.5	---	---	---	15.5	13.5	14.5
MONTH	8.5	0.0	0.5	14.0	0.0	3.5	14.5	1.0	6.5	16.0	4.5	10.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	18.0	13.5	15.5	12.0	9.5	10.5	---	---	---	---	---	---
2	15.5	9.0	13.5	10.5	8.0	9.0	---	---	---	---	---	---
3	10.0	7.5	8.5	10.5	8.0	9.0	---	---	---	10.5	10.0	10.0
4	13.0	7.0	9.0	9.5	8.0	8.5	---	---	---	11.0	10.0	10.5
5	12.0	8.5	10.0	8.5	8.0	8.5	---	---	---	11.0	10.0	10.5
6	10.0	9.0	9.5	9.5	7.5	8.5	---	---	---	11.0	10.5	10.5
7	10.5	9.0	9.5	10.0	8.0	8.5	---	---	---	11.0	10.5	10.5
8	10.5	9.0	9.5	10.0	8.0	8.5	---	---	---	11.5	10.5	11.0
9	11.0	9.0	10.0	10.5	7.5	9.0	---	---	---	12.0	10.5	11.0
10	13.5	9.0	11.0	10.0	8.0	8.5	---	---	---	11.5	10.5	11.0
11	15.0	10.5	12.5	10.5	8.0	9.0	---	---	---	11.0	10.5	11.0
12	14.5	10.5	13.0	9.0	8.0	8.5	---	---	---	11.5	10.5	11.0
13	14.0	10.5	11.5	10.0	7.5	8.5	---	---	---	12.0	10.0	11.0
14	13.5	11.0	11.5	9.5	7.5	8.5	---	---	---	11.0	10.5	11.0
15	14.0	11.0	12.0	10.0	8.0	9.0	---	---	---	11.5	10.5	11.0
16	14.5	12.5	13.5	9.0	8.0	8.5	---	---	---	11.5	11.0	11.0
17	17.0	14.5	16.0	10.0	8.0	8.5	---	---	---	13.0	11.5	12.0
18	18.0	17.0	17.5	10.0	8.0	9.0	---	---	---	12.5	11.0	11.5
19	18.5	16.5	18.0	10.0	8.0	9.0	---	---	---	11.5	10.5	11.0
20	17.5	16.5	17.0	8.5	8.0	8.5	---	---	---	13.0	10.5	11.5
21	17.0	15.5	16.5	9.0	8.0	8.5	---	---	---	13.5	12.0	13.0
22	16.0	14.5	15.5	9.5	8.0	8.5	---	---	---	15.5	12.5	13.5
23	14.5	13.0	14.0	10.5	8.0	9.0	---	---	---	15.5	10.5	13.0
24	16.0	13.0	14.5	10.5	8.0	9.0	---	---	---	14.0	9.0	11.0
25	16.5	15.5	16.0	10.0	8.0	9.0	---	---	---	15.0	9.5	11.5
26	15.5	14.5	15.0	10.0	8.5	9.0	---	---	---	14.5	11.0	12.5
27	14.5	13.5	14.0	9.5	8.5	9.0	---	---	---	14.0	9.5	11.0
28	14.5	12.5	13.5	9.5	8.5	9.0	---	---	---	15.0	9.0	11.0
29	13.5	12.0	13.0	9.5	8.0	9.0	---	---	---	15.5	9.5	12.0
30	12.5	10.5	11.5	---	---	---	---	---	---	15.5	10.0	12.0
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	18.5	7.0	13.0	---	---	---	---	---	---	---	---	---

DELAWARE RIVER BASIN

01426500 WEST BRANCH DELAWARE RIVER AT HALE EDDY, NY

LOCATION.--Lat 42°00'11", long 75°23'02", Delaware County, Hydrologic Unit 02040101, on left bank at downstream side of bridge on County Highway 56 in Hale Eddy, and 9 mi upstream from confluence of East and West Branches near Hancock. Water-quality sampling site at discharge station.

DRAINAGE AREA.--595 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1912 to current year.

REVISED RECORDS.--WSP 871: 1916. WDR NY-82-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 946.46 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 8, 1928, nonrecording gage.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Subsequent to October 1963, entire flow from 454 mi^2 drainage area controlled by Cannonsville Reservoir (see Reservoirs in Delaware River Basin). Part of flow diverted for New York City municipal supply. Remainder of flow (except for conservation releases and spill) impounded for release during periods of low flow in the lower Delaware River basin, as directed by the Delaware River Master. Satellite gage-height and temperature telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,900 ft^3/s, Mar. 22, 1948, gage height, 15.69 ft; maximum gage height, 15.8 ft, Sept. 30, 1924, from graph based on gage readings; minimum discharge, 17 ft^3/s, Oct. 20, 1963; minimum gage height, 1.03 ft, Aug. 4, 1936.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 10, 1903, reached a stage of 20.3 ft, from floodmarks, discharge, about 46,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,660 ft^3/s, May 6, gage height, 7.13 ft; minimum, 64 ft^3/s, Sept. 30, gage height, 1.38 ft; minimum daily, 54 ft^3/s, Feb. 10, but may have been less during periods of ice effect.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1210	146	233	e220	e82	e74	1220	129	317	497	360	986
2	936	398	216	e140	e88	e70	786	556	325	435	384	1010
3	722	653	202	e120	e82	e68	741	476	532	417	366	1000
4	1100	408	187	e110	e68	e84	842	383	311	444	585	1090
5	1170	311	175	e130	e62	e100	918	339	214	780	494	1080
6	1030	700	166	e190	e68	e120	880	3030	276	587	771	947
7	949	486	160	e115	e66	e90	776	2920	262	579	883	911
8	985	371	152	e140	e62	e86	585	1510	277	705	483	1260
9	978	317	142	e220	e56	e82	511	947	264	556	447	1240
10	1060	270	139	e180	e54	e76	461	1020	417	507	478	980
11	1040	239	127	e150	e60	e74	367	1870	323	483	674	891
12	1140	205	e110	e140	e62	e70	317	1390	274	453	703	710
13	872	332	e120	e130	e66	e66	280	952	344	438	414	539
14	836	420	e140	e120	e74	e72	273	714	403	423	389	591
15	883	322	e270	e125	e94	e86	254	590	1280	414	379	1200
16	873	281	e800	e100	e100	e96	338	479	1540	406	372	781
17	910	374	e450	e82	e90	e86	298	674	1920	399	388	95
18	968	334	e110	e80	e82	e170	283	1020	2020	396	734	307
19	945	277	e92	e78	e78	e230	265	1190	1860	390	774	233
20	967	783	e94	e120	e74	e150	238	1220	1610	473	654	298
21	660	1400	e140	e280	e250	e140	218	1220	1420	487	775	114
22	475	808	652	e78	e310	e120	199	1160	1230	427	817	90
23	722	578	719	e76	e160	139	183	1040	1050	409	799	97
24	654	449	722	e74	e100	406	169	952	1560	402	919	119
25	459	367	561	e70	e96	779	155	735	1560	425	867	93
26	239	315	392	e64	e92	619	145	649	1360	640	1010	82
27	315	279	e180	e370	e84	558	134	709	1180	663	1010	75
28	350	303	e140	e250	e78	565	127	679	797	595	1050	72
29	397	298	e170	e74	---	788	121	654	681	670	1050	69
30	372	253	e210	e60	---	1190	122	619	601	423	1130	68
31	321	---	e280	e92	---	1330	---	449	---	425	976	---
TOTAL	24538	12677	8251	4178	2638	8584	12206	30275	26208	15348	21135	17028
MEAN	792	423	266	135	94.2	277	407	977	874	495	682	568
MAX	1210	1400	800	370	310	1330	1220	3030	2020	780	1130	1260
MIN	239	146	92	60	54	66	121	129	214	390	360	68

CAL YR 1988 TOTAL 245768 MEAN 671 MAX 5130 MIN 84
WTR YR 1989 TOTAL 183066 MEAN 502 MAX 3030 MIN 54

e Estimated

DELAWARE RIVER BASIN

01426500 WEST BRANCH DELAWARE RIVER AT HALE EDDY, NY--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1958-59, 1968 to current year.
CHEMICAL DATA: 1958-59 (d), 1970 (b), 1971-74 (d), 1975 (c).
MINOR ELEMENTS DATA: 1971-74 (a).
ORGANIC DATA: OC--1974 (a), 1975 (c).
NUTRIENT DATA: 1971-74 (d), 1975 (c).
BIOLOGICAL DATA:
Bacteria--1971, 1973 (c); 1974 (d); 1975 (c).

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: October 1967 to current year (no winter record for water years 1969-77).

INSTRUMENTATION.--Water-temperature digital recorder since October 1976, provides one-hour-interval punches. Also, water-temperature satellite telemeter since May 1985, provides one-hour-interval readings. Prior to October 1976, water-temperature recorder provided continuous recordings.

REMARKS.--Water temperature is affected by release of water from upstream reservoir.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum (water years 1968-77, 1979-83, 1985, 1988-89), 30.5°C, July 22, 23, 1972, June 16, 1981; minimum (water years 1968, 1978-89), 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum, 22.5°C, June 1, 2; minimum, 0.0°C on many days during winter period.

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	16.5	14.0	15.0	6.5	5.5	5.5	3.5	3.0	3.5	1.0	.0	.5
2	16.0	14.5	15.0	8.0	5.5	6.0	3.5	2.0	2.5	1.5	.0	1.0
3	16.0	13.5	15.0	9.0	7.0	8.0	4.5	1.5	3.0	1.0	.0	.5
4	15.5	14.0	15.0	9.0	6.0	7.5	3.0	1.0	2.0	.0	.0	.0
5	16.5	14.5	15.0	11.5	8.5	10.0	2.0	.5	1.5	.0	.0	.0
6	15.5	14.0	14.5	11.0	9.5	10.0	3.5	1.0	2.0	.0	.0	.0
7	16.5	14.0	15.0	9.5	7.0	8.0	3.0	1.0	2.5	.0	.0	.0
8	15.5	14.0	14.5	7.0	6.0	6.5	3.5	1.5	2.5	.0	.0	.0
9	15.5	13.5	14.5	8.0	7.0	7.0	1.0	.0	1.0	.0	.0	.0
10	16.5	14.5	15.0	7.5	6.0	7.0	.5	.0	.0	.0	.0	.0
11	15.5	13.5	14.5	7.5	6.0	7.0	.5	.0	.0	.0	.0	.0
12	15.0	13.5	14.0	8.0	5.0	6.0	.0	.0	.0	.0	.0	.0
13	13.5	13.0	13.0	6.5	5.0	6.0	.0	.0	.0	.0	.0	.0
14	15.5	12.0	13.5	8.0	5.5	7.0	.0	.0	.0	.0	.0	.0
15	16.0	12.5	14.0	7.5	5.0	6.5	.0	.0	.0	.0	.0	.0
16	16.0	13.0	14.0	8.0	5.0	6.0	1.0	.0	.0	.0	.0	.0
17	16.0	12.5	14.0	9.5	7.0	8.5	1.0	.5	.5	.0	.0	.0
18	13.5	12.5	13.0	7.0	5.0	6.0	.0	.0	.0	.0	.0	.0
19	13.0	11.5	12.5	5.0	4.0	4.5	.0	.0	.0	.0	.0	.0
20	13.5	11.5	12.5	6.5	4.5	5.0	.0	.0	.0	.0	.0	.0
21	12.0	10.0	11.0	6.5	4.5	6.0	2.0	.0	1.0	.0	.0	.0
22	11.0	6.5	8.5	6.0	4.0	5.0	2.5	.5	1.5	.0	.0	.0
23	12.5	10.5	11.5	5.0	3.0	4.0	2.0	.5	1.5	.0	.0	.0
24	11.5	9.5	10.5	4.5	3.0	3.5	3.0	2.0	2.5	.5	.0	.0
25	9.0	7.0	8.5	5.5	3.0	4.0	2.5	2.0	2.0	.0	.0	.0
26	7.0	5.5	6.0	5.5	3.0	4.5	1.5	.0	1.0	.0	.0	.0
27	9.5	5.0	7.0	8.0	5.0	6.5	.0	.0	.0	.0	.0	.0
28	9.0	6.0	7.5	8.0	5.5	7.5	1.5	.0	.5	.0	.0	.0
29	10.0	7.5	8.5	5.5	3.5	4.5	.0	.0	.0	.0	.0	.0
30	9.0	6.5	7.5	4.0	2.5	3.0	.0	.0	.0	.5	.0	.5
31	9.0	5.0	7.0	---	---	---	.5	.0	.0	2.0	.0	1.0
MONTH	16.5	5.0	12.0	11.5	2.5	6.0	4.5	0.0	1.0	2.0	0.0	0.0

DELAWARE RIVER BASIN

01426500 WEST BRANCH DELAWARE RIVER AT HALE EDDY, NY--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	5.0	.5	2.5	.0	.0	.0	3.5	2.0	2.5	14.0	12.5	13.5
2	3.0	1.5	2.5	.5	.0	.0	6.5	.5	3.5	12.0	9.0	10.5
3	1.0	.0	.5	.5	.0	.0	5.0	3.5	4.0	9.0	7.5	8.5
4	.0	.0	.0	.5	.0	.0	6.5	3.0	5.0	14.0	6.0	10.0
5	.0	.0	.0	.0	.0	.0	7.0	5.5	6.5	12.0	9.0	9.5
6	.0	.0	.0	.0	.0	.0	6.0	4.5	5.0	11.0	8.5	9.5
7	.0	.0	.0	.5	.0	.0	6.5	3.0	5.0	9.5	7.0	8.0
8	.0	.0	.0	1.0	.0	.0	7.5	3.5	5.5	7.5	6.0	7.0
9	.0	.0	.0	1.5	.0	.5	6.0	3.5	4.5	10.5	6.5	8.5
10	.0	.0	.0	2.0	.0	.5	5.0	2.0	3.5	9.5	8.0	8.5
11	.0	.0	.0	1.5	.0	.5	6.5	1.0	3.5	8.0	7.0	7.5
12	.0	.0	.0	1.5	.0	.5	9.0	2.0	5.0	9.0	7.5	8.0
13	.0	.0	.0	3.5	.0	.5	6.0	4.0	5.0	10.5	7.5	9.0
14	.0	.0	.0	7.0	.0	3.0	10.5	3.0	6.5	9.5	8.0	8.5
15	.0	.0	.0	9.0	3.5	6.0	7.5	5.0	6.0	14.0	8.5	11.0
16	.0	.0	.0	6.5	2.0	4.0	7.0	5.0	6.0	12.5	10.5	11.0
17	.0	.0	.0	8.5	2.5	5.5	10.5	4.5	7.5	17.5	10.0	13.5
18	.0	.0	.0	6.0	1.5	4.5	12.5	8.5	10.0	17.0	11.5	14.0
19	.0	.0	.0	3.5	.0	1.5	13.0	7.0	10.0	17.5	12.0	14.5
20	.0	.0	.0	1.5	.0	.5	12.5	6.0	9.5	16.5	12.0	14.0
21	.0	.0	.0	3.0	.0	1.0	13.5	7.0	10.0	15.0	10.5	12.5
22	.0	.0	.0	5.5	.0	2.0	9.5	5.5	8.0	16.5	10.5	13.0
23	.0	.0	.0	6.5	.0	3.0	10.5	3.5	6.5	14.0	11.5	13.0
24	.0	.0	.0	3.0	.5	1.5	12.0	4.0	8.0	13.5	13.0	13.5
25	.0	.0	.0	3.5	.5	2.0	13.5	6.5	9.5	18.0	12.5	15.0
26	.0	.0	.0	7.0	2.0	4.0	16.0	8.5	12.0	16.5	13.5	15.0
27	.0	.0	.0	8.5	1.5	5.0	14.5	9.0	11.5	16.0	14.0	15.0
28	.5	.0	.0	9.0	4.5	7.0	16.5	7.5	12.0	17.5	12.0	14.5
29	---	---	---	8.5	6.5	7.5	13.0	9.5	11.0	18.5	11.0	14.5
30	---	---	---	6.0	2.5	4.0	16.5	9.0	12.5	16.5	12.5	14.5
31	---	---	---	3.5	2.5	3.0	---	---	---	17.5	14.5	15.5
MONTH	5.0	0.0	0.0	9.0	0.0	2.0	16.5	0.5	7.0	18.5	6.0	11.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	22.5	15.5	18.5	18.5	10.5	14.5	15.5	10.0	12.5	11.0	9.0	10.0
2	22.5	18.0	20.5	18.0	10.5	14.5	15.5	10.0	13.0	13.0	9.5	11.0
3	18.0	11.0	15.0	17.0	10.5	13.5	16.5	11.0	13.5	13.0	9.0	10.5
4	19.0	11.5	15.0	14.5	10.5	12.5	15.5	10.0	13.0	13.5	9.0	10.5
5	18.5	14.5	16.5	14.0	11.0	12.5	17.5	12.0	14.0	13.5	9.0	10.5
6	16.5	14.5	15.0	16.5	11.0	13.5	15.0	10.0	12.5	13.5	9.5	11.0
7	15.5	13.5	14.5	16.5	11.0	14.0	16.5	12.5	14.0	13.5	10.0	11.0
8	16.5	13.5	15.0	17.5	12.5	14.5	14.0	10.0	12.0	13.0	10.0	11.0
9	17.0	15.0	16.0	18.0	10.0	14.0	15.0	9.5	12.5	13.0	10.0	11.0
10	19.0	14.5	16.5	16.5	11.0	14.0	16.0	9.5	12.5	14.0	10.0	11.5
11	20.5	14.5	17.0	18.0	11.0	14.5	13.5	9.5	11.5	11.5	10.5	11.0
12	21.0	14.0	17.5	15.5	10.5	12.5	11.5	9.0	10.0	12.5	10.0	11.0
13	18.5	14.5	16.0	14.5	10.0	12.0	15.0	11.0	12.5	14.0	10.5	12.0
14	14.5	13.5	14.0	16.0	10.0	13.0	15.5	11.0	13.0	11.5	10.0	11.0
15	13.0	12.0	12.5	16.0	9.5	13.0	17.0	11.0	14.0	11.5	10.5	11.0
16	14.0	12.0	13.0	14.5	10.0	11.5	17.0	11.0	14.0	12.0	10.5	11.0
17	16.5	14.0	15.0	15.5	9.5	12.5	16.5	11.0	13.5	14.5	12.0	13.0
18	16.0	13.5	14.5	16.5	10.5	13.5	12.5	9.0	11.0	14.5	12.5	13.5
19	18.0	14.0	15.5	17.0	10.5	14.0	11.0	8.5	10.0	12.5	11.0	12.0
20	18.0	15.0	16.5	15.0	10.5	11.5	13.0	10.0	11.0	14.0	12.0	13.0
21	18.0	16.0	16.5	13.0	11.0	12.0	13.5	9.5	11.0	17.5	14.0	16.0
22	18.5	15.5	17.0	14.0	11.0	12.5	14.0	9.0	11.0	18.5	17.0	18.0
23	18.0	13.5	15.5	18.5	10.5	14.0	13.5	9.0	11.0	18.5	12.5	16.5
24	16.0	12.5	14.0	17.0	11.0	14.5	13.0	8.5	10.5	15.0	10.5	12.5
25	17.5	14.0	15.5	17.0	11.0	14.0	13.5	8.0	10.5	15.5	10.0	12.5
26	18.0	13.5	15.5	15.0	9.5	12.0	13.0	8.0	10.0	16.0	12.5	14.0
27	17.0	13.0	14.5	15.0	9.0	11.5	12.5	8.5	10.0	15.0	10.0	12.5
28	17.5	12.5	14.5	14.5	9.5	11.5	12.5	9.0	10.5	15.5	8.5	12.0
29	16.5	12.5	14.5	14.5	9.0	11.5	10.0	9.5	9.5	16.0	10.0	13.0
30	18.0	11.0	14.0	15.0	8.5	11.5	13.5	9.5	11.0	17.0	11.5	14.5
31	---	---	---	13.5	10.0	12.0	13.5	9.0	11.0	---	---	---
MONTH	22.5	11.0	15.5	18.5	8.5	13.0	17.5	8.0	12.0	18.5	8.5	12.5

DELAWARE RIVER BASIN

01427207 DELAWARE RIVER AT LORDVILLE, NY

LOCATION (CORRECTED).--Lat 41°52'02", long 75°12'51", Wayne County, Pa., Hydrologic Unit 02040101, on right bank at site of former Lordville-Equinunk Interstate Bridge at Lordville, 9.7 mi southeast of Hancock.

DRAINAGE AREA.--1,590 mi^2.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: October 1967 to August 1971, June 1973 to current year.

REVISED RECORDS.--WDR NY-82-1: Drainage area.

INSTRUMENTATION.--Water-temperature digital recorder since June 1973, provides one-hour-interval punches. Also, water-temperature satellite telemeter since June 1989, provides 15-minute-interval readings. From June 1987 to June 1989, water-temperature satellite telemeter provided one-hour-interval readings. Prior to August 1971, water-temperature recorder provided continuous recordings.

REMARKS.--Interruption of record was due to malfunction of recording instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum (water years 1968-70, 1973, 1975-86, 1989) 30.5°C, June 16, 1976, July 10, 1981; minimum (water years 1968-71, 1974, 1977-78, 1980-89), 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum, 26.0°C, July 25; minimum, 0.0°C on many days during winter period.

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	16.5	15.0	15.5	3.5	3.0	3.0	3.5	3.0	3.5	.0	.0	.0
2	16.5	16.0	16.5	3.5	3.0	3.5	3.0	2.5	3.0	.0	.0	.0
3	16.5	15.5	16.0	5.0	3.0	4.0	2.5	2.5	2.5	.0	.0	.0
4	15.5	14.5	15.0	4.5	3.5	4.0	2.5	1.5	2.0	.0	.0	.0
5	15.0	13.5	14.0	8.5	4.5	6.5	1.5	1.0	1.5	.0	.0	.0
6	14.0	12.5	13.0	9.5	8.5	9.0	1.5	1.0	1.5	.0	.0	.0
7	12.5	11.5	12.0	9.0	6.5	8.0	1.5	1.0	1.5	.0	.0	.0
8	12.5	11.0	11.5	6.5	5.5	6.0	2.0	1.5	1.5	.0	.0	.0
9	11.0	10.5	10.5	6.0	5.5	6.0	1.5	.5	1.5	.0	.0	.0
10	12.0	10.0	11.0	6.5	5.0	6.0	.5	.0	.0	.0	.0	.0
11	12.5	11.5	12.0	6.5	6.0	6.5	1.0	.0	.5	.0	.0	.0
12	11.5	10.0	10.5	6.0	5.0	5.5	1.0	.0	.0	.5	.0	.0
13	10.0	8.5	9.5	5.5	5.0	5.5	.0	.0	.0	.5	.5	.5
14	9.0	7.0	8.0	6.5	5.0	5.5	.0	.0	.0	.5	.0	.0
15	10.5	8.0	9.0	6.0	5.0	5.5	.0	.0	.0	.5	.0	.5
16	12.0	10.5	11.0	6.0	5.0	5.5	.0	.0	.0	.5	.0	.5
17	12.5	11.0	11.5	7.5	6.0	7.0	.0	.0	.0	.5	.0	.5
18	12.0	11.0	11.5	7.0	5.5	6.0	.0	.0	.0	.5	.5	.5
19	11.0	9.5	10.0	5.5	4.5	4.5	.0	.0	.0	.5	.5	.5
20	9.0	8.0	8.5	5.5	4.5	4.5	.5	.0	.0	.5	.5	.5
21	8.5	7.0	7.5	5.5	5.0	5.5	.5	.0	.0	.5	.0	.5
22	7.0	5.0	6.5	5.0	4.0	4.5	.0	.0	.0	.5	.0	.5
23	7.5	4.5	6.0	4.5	3.5	4.0	.0	.0	.0	.5	.0	.5
24	8.0	7.5	7.5	3.5	3.0	3.5	.0	.0	.0	.5	.0	.0
25	7.5	6.0	7.0	3.5	2.5	3.0	.0	.0	.0	.5	.5	.5
26	6.0	5.0	5.5	4.0	3.0	3.5	.0	.0	.0	.5	.5	.5
27	5.5	4.5	5.0	5.5	3.5	4.5	.0	.0	.0	.5	.5	.5
28	5.0	4.5	4.5	6.5	5.5	6.0	.0	.0	.0	.5	.0	.0
29	5.5	4.5	5.0	6.0	4.5	5.5	.0	.0	.0	.5	.0	.5
30	5.0	4.0	4.5	4.5	3.5	4.0	.0	.0	.0	.5	.0	.0
31	4.0	2.5	3.5	---	---	---	.0	.0	.0	.0	.0	.0
MONTH	16.5	2.5	9.5	9.5	2.5	5.0	3.5	0.0	0.5	0.5	0.0	0.0

DELAWARE RIVER BASIN

01427207 DELAWARE RIVER AT LORDVILLE, NY--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	.0	.0	.0	1.5	.0	.5	3.5	3.0	3.5	13.5	12.0	13.0
2	.5	.0	.0	1.5	.0	.5	5.0	2.0	3.5	13.0	9.0	10.5
3	.5	.0	.0	2.0	.0	.5	5.0	4.5	4.5	9.0	8.0	8.5
4	.5	.0	.5	1.5	.5	1.0	6.0	4.0	5.0	11.5	7.0	9.0
5	.5	.0	.0	1.0	.5	.5	7.0	5.5	6.5	10.5	9.0	10.0
6	.5	.0	.0	1.5	.0	.5	7.0	5.5	6.5	10.0	8.5	9.0
7	.0	.0	.0	2.5	.0	.5	5.5	4.0	5.0	10.0	7.5	9.0
8	.5	.0	.0	1.5	.0	.5	6.5	4.0	5.5	7.5	7.0	7.0
9	.0	.0	.0	1.0	.0	.5	6.0	4.0	5.0	9.5	6.5	8.0
10	.5	.0	.0	2.0	.0	.5	4.5	3.5	4.0	9.5	8.5	9.0
11	.5	.0	.0	2.0	.5	1.0	5.5	2.5	4.0	8.5	7.0	7.5
12	.0	.0	.0	2.5	1.0	1.5	7.0	3.0	5.0	8.5	7.5	8.0
13	.0	.0	.0	1.5	.5	1.0	6.0	5.0	5.5	10.5	8.0	9.0
14	.0	.0	.0	4.0	.0	1.5	8.0	4.0	6.0	9.5	8.5	9.0
15	.0	.0	.0	5.5	2.5	4.0	7.5	6.0	6.5	12.0	8.5	10.0
16	.0	.0	.0	6.0	4.0	5.0	7.0	6.0	6.5	11.5	11.0	11.5
17	.5	.0	.5	6.5	4.0	5.0	9.0	5.5	7.0	14.0	10.5	12.0
18	.0	.0	.0	6.0	4.5	5.5	11.5	9.0	10.0	16.0	12.5	14.5
19	.0	.0	.0	4.0	2.5	3.5	12.0	8.5	10.5	17.5	14.0	15.5
20	.0	.0	.0	3.0	1.5	2.0	11.5	8.0	10.0	17.0	15.0	16.0
21	.0	.0	.0	3.0	1.0	1.5	12.0	8.5	10.0	17.0	15.0	16.5
22	.5	.0	.0	4.0	.5	2.0	10.5	7.5	9.0	18.0	13.5	16.0
23	.5	.0	.0	4.5	1.5	3.0	8.5	5.0	7.0	17.0	14.5	15.0
24	.5	.0	.5	4.0	2.0	3.5	10.0	5.5	7.5	14.5	13.5	14.0
25	1.5	.0	.5	3.0	1.5	2.5	11.5	7.5	9.0	16.5	12.5	14.5
26	.5	.0	.5	6.0	2.5	4.0	13.5	9.5	11.0	17.5	16.0	16.5
27	.5	.0	.5	7.5	3.5	5.5	13.5	10.5	12.0	17.0	15.5	16.5
28	1.5	.0	.5	9.5	6.0	7.5	14.0	9.5	12.0	17.0	13.5	15.5
29	---	---	---	9.5	8.0	8.5	13.5	11.0	12.0	18.5	14.0	16.0
30	---	---	---	8.0	4.0	6.0	14.5	10.0	12.0	17.5	15.5	16.5
31	---	---	---	4.0	3.5	3.5	---	---	---	17.5	15.5	16.5
MONTH	1.5	0.0	0.0	9.5	0.0	2.5	14.5	2.0	7.5	18.5	6.5	12.0

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

DELAWARE RIVER BASIN

01427510 DELAWARE RIVER AT CALLICOON, NY

LOCATION.--Lat 41°45'24", long 75°03'30", Wayne County, Pennsylvania, Hydrologic Unit 02040101, on right bank, 0.5 mi downstream from Callicoon Creek, 0.5 mi downstream from Interstate Bridge 7, and 0.8 mi southeast of Callicoon. Water-quality sampling site at discharge station.

DRAINAGE AREA.--1,820 mi^2.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WDR NY-82-1: Drainage area. WDR NY-86-1: 1975-84 (M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 734.88 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Subsequent to September 1954, entire flow from 371 mi^2 of drainage area controlled by Pepacton Reservoir (see Reservoirs in Delaware River Basin), and subsequent to October 1963, entire flow from 454 mi^2 of drainage area controlled by Cannonsville Reservoir (see Reservoirs in Delaware River Basin). Part of flow from these reservoirs diverted for New York City municipal supply. Remainder of flow (except for conservation releases and spill) impounded for release during period of low flow in the lower Delaware River basin, as directed by the Delaware River Master. Satellite gage-height and temperature telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 68,000 ft^3/s, Mar. 15, 1986, gage-height, 13.42 ft; maximum gage height, 14.83 ft, Jan. 9, 1979 (ice jam); minimum discharge, 307 ft^3/s, Aug. 23, 1985; minimum gage height, 2.20 ft, Sept. 13, 1977, Aug. 23, 1985.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 31,900 ft^3/s, May 6, gage height, 9.12 ft; minimum, 479 ft^3/s, Mar. 13, gage height, 2.41 ft.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1450	1140	1760	e1300	e1150	e1000	7310	1180	1420	1810	790	1190
2	1380	751	1640	e1250	e1300	e960	5460	6760	1300	1530	728	1250
3	998	1480	1530	e1150	e1100	e900	4430	7750	1410	1330	744	1220
4	1030	1430	1450	e1000	e960	e850	4630	5120	1380	1210	756	1260
5	1370	1240	1340	e880	e1000	e900	4560	4020	1110	2920	985	1210
6	1350	4490	1270	e860	e960	e820	5100	22400	1200	3490	968	1240
7	1320	4610	1220	e930	e900	e760	5470	18400	1720	2300	1510	1100
8	1370	3230	1170	e1000	e850	e720	4500	10500	1600	2610	1110	1170
9	1310	2550	1100	e1100	e700	e740	3820	7440	1460	1990	873	1410
10	1400	2150	e960	e1000	e620	e720	3490	6900	2080	e1550	813	1390
11	1410	1900	e780	e960	e680	e700	2950	12300	2070	e1400	777	1140
12	1450	1680	e560	e940	e720	e720	2570	9860	1580	e1300	1140	1090
13	1500	1760	e680	e960	e740	e600	2300	7400	1520	e1200	997	830
14	1480	3100	e830	e1000	e700	627	2190	5760	1800	e1100	902	873
15	1520	2710	e940	e980	e740	786	2080	5000	4630	e1000	837	1040
16	1530	2260	e760	e1000	e1300	1310	2600	4300	5900	e980	768	1530
17	1540	2320	e1100	e970	e1200	1110	2800	7210	6610	e940	730	956
18	1610	2930	e900	e920	e980	1090	2490	6020	6360	e920	733	529
19	1570	2400	e800	e850	e860	1870	2330	4950	5260	889	1120	747
20	1660	3670	e740	e800	e820	1370	2150	4340	4260	982	1080	1380
21	1570	8390	e820	e760	e2500	1180	1990	3900	3670	1330	1210	2640
22	1310	5960	e820	e800	e6000	1040	1870	3640	3630	1170	1200	1380
23	1460	4360	e1100	e860	e2900	963	1740	3120	3240	1020	1120	1130
24	1430	3520	e1600	e820	e1800	1330	1610	3020	5560	935	1160	1730
25	1580	2960	e1900	e760	e1400	4810	1500	2740	6770	859	1150	1270
26	1220	2510	e1800	e740	e1300	4970	1410	2270	4990	890	1190	1110
27	856	2240	e1300	e880	e1200	4490	1320	2500	4050	1070	1210	1110
28	867	2150	e1250	e1050	e1100	4050	1240	2350	3380	1180	1230	974
29	1090	2230	e1400	e1300	---	5290	1170	2020	2700	1100	1310	827
30	1310	1940	e1400	e1100	---	6630	1150	1810	2190	1090	1430	765
31	1290	---	e1200	e1050	---	7970	---	1670	---	779	1330	---
TOTAL	42231	84061	36120	29970	36480	61276	88230	186650	94850	42874	31901	35491
MEAN	1362	2802	1165	967	1303	1977	2941	6021	3162	1383	1029	1183
MAX	1660	8390	1900	1300	6000	7970	7310	22400	6770	3490	1510	2640
MIN	856	751	560	740	620	600	1150	1180	1110	779	728	529

CAL YR 1988 TOTAL 713949 MEAN 1951 MAX 17500 MIN 560
WTR YR 1989 TOTAL 770134 MEAN 2110 MAX 22400 MIN 529

e Estimated

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: June 1975 to current year.

INSTRUMENTATION.--Water-temperature satellite telemeter since May 1989, provides 15-minute-interval readings. Prior to May 1989, water-temperature digital recorder provided one-hour-interval punches.

REMARKS.--Interruptions of record were due to malfunctions of recording instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum recorded, (water years 1976-89), 30.5°C, July 12, 1987; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum, 29.0°C, July 26; minimum, 0.0°C on many days during winter period.

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	18.0	15.0	16.5	4.5	3.5	4.0	3.0	2.5	3.0	.0	.0	.0
2	17.5	16.0	17.0	5.0	4.5	4.5	2.5	2.0	2.5	.0	.0	.0
3	18.0	15.5	16.5	5.5	3.5	4.5	2.5	1.5	2.0	.0	.0	.0
4	16.5	14.5	15.0	7.0	4.0	5.0	2.5	.5	1.0	.0	.0	.0
5	15.0	13.5	14.0	9.0	5.5	7.0	1.5	.5	1.0	.0	.0	.0
6	13.0	11.5	12.5	10.0	9.0	9.5	1.5	.5	1.0	.0	.0	.0
7	13.0	10.5	11.5	9.5	8.0	9.0	1.5	.0	1.0	.0	.0	.0
8	12.0	10.5	11.5	8.0	---	---	1.5	1.0	1.5	.0	.0	.0
9	11.0	9.5	10.0	---	---	---	1.0	.0	.5	.0	.0	.0
10	12.5	9.0	10.5	7.0	6.0	6.5	.0	.0	.0	.0	.0	.0
11	13.0	11.5	12.0	7.0	5.5	6.5	.0	.0	.0	.0	.0	.0
12	11.5	10.0	11.0	6.5	5.0	5.5	.0	.0	.0	.0	.0	.0
13	10.0	8.5	9.0	6.0	5.0	5.5	.0	.0	.0	.0	.0	.0
14	10.0	7.5	8.5	---	---	---	.0	.0	.0	.0	.0	.0
15	11.0	7.5	9.0	---	---	---	.0	.0	.0	.0	.0	.0
16	13.0	10.0	11.5	---	---	---	.0	.0	.0	.0	.0	.0
17	14.5	11.5	13.0	7.5	---	---	.0	.0	.0	.0	.0	.0
18	13.5	12.5	13.0	6.5	5.0	6.0	.0	.0	.0	.0	.0	.0
19	12.5	10.5	11.5	5.0	4.5	5.0	.0	.0	.0	.0	.0	.0
20	10.5	9.0	9.5	5.5	4.5	4.5	.0	.0	.0	.0	.0	.0
21	8.5	7.5	8.0	5.5	5.5	5.5	.0	.0	.0	.0	.0	.0
22	7.5	7.0	7.5	5.0	4.0	4.5	.5	.0	.0	.0	.0	.0
23	7.5	6.0	7.0	4.0	3.5	4.0	.0	.0	.0	.0	.0	.0
24	9.0	7.0	8.0	3.5	2.5	3.0	.0	.0	.0	.0	.0	.0
25	8.0	6.5	7.5	3.5	2.5	3.0	.0	.0	.0	.0	.0	.0
26	6.5	5.5	6.0	4.0	2.5	3.0	.0	.0	.0	.0	.0	.0
27	7.0	5.0	6.0	5.5	3.5	4.0	.0	.0	.0	.0	.0	.0
28	5.5	4.5	5.0	6.0	5.5	6.0	.0	.0	.0	.0	.0	.0
29	6.5	4.5	5.5	5.5	4.5	5.0	.0	.0	.0	.0	.0	.0
30	6.0	4.5	5.5	4.0	3.5	4.0	.0	.0	.0	.0	.0	.0
31	5.5	3.0	4.5	---	---	---	.0	.0	.0	.0	.0	.0
MONTH	18.0	3.0	10.0	---	---	---	3.0	0.0	0.5	0.0	0.0	0.0

DELAWARE RIVER BASIN

01427510 DELAWARE RIVER AT CALLICOON, NY--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	.0	.0	.0	.5	.0	.5	3.5	3.0	3.5	---	---	---
2	.0	.0	.0	1.0	.0	.5	5.0	2.5	3.5	---	---	---
3	.0	.0	.0	1.5	.0	1.0	5.0	4.5	4.5	10.0	8.0	9.0
4	.0	.0	.0	1.0	.5	1.0	5.0	4.5	5.0	11.0	7.5	9.0
5	.0	.0	.0	1.0	.5	1.0	7.0	5.0	6.0	10.0	9.5	9.5
6	.0	.0	.0	.5	.0	.5	7.0	6.0	6.5	10.0	9.0	9.5
7	.0	.0	.0	.5	.0	.5	6.0	4.5	5.5	10.0	8.0	9.5
8	.0	.0	.0	1.0	.0	.5	7.0	4.5	5.5	---	---	---
9	.0	.0	.0	1.0	.0	.5	6.0	5.0	5.5	9.0	7.0	8.0
10	.0	.0	.0	2.5	.0	1.0	5.0	3.5	4.5	9.0	8.5	9.0
11	.0	.0	.0	3.0	.5	1.5	6.0	2.5	4.0	8.5	8.0	8.0
12	.0	.0	.0	2.0	.5	1.5	7.0	3.0	5.0	8.5	8.0	8.0
13	.0	.0	.0	2.0	.0	1.0	6.0	4.5	5.5	---	8.0	---
14	.0	.0	.0	5.0	1.0	3.0	8.5	4.5	6.0	9.5	9.0	9.5
15	.0	.0	.0	8.5	4.5	6.0	6.5	5.5	6.0	11.0	9.0	10.0
16	.0	.0	.0	7.0	4.0	5.5	7.0	5.5	6.0	12.0	11.0	11.5
17	.0	.0	.0	8.5	3.5	6.0	10.0	5.0	7.0	14.0	11.0	12.5
18	.0	.0	.0	7.0	4.0	6.0	12.0	8.0	9.5	16.0	13.0	14.5
19	.0	.0	.0	5.0	3.0	4.0	12.5	8.5	10.5	17.5	14.5	16.0
20	.0	.0	.0	3.0	1.5	2.5	12.5	8.0	10.0	18.5	15.5	17.0
21	.0	.0	.0	3.0	.5	2.0	13.0	8.0	10.5	18.0	16.0	17.0
22	.5	.0	.0	4.5	.0	2.5	10.5	7.5	9.0	18.5	15.0	16.5
23	1.0	.0	.5	5.5	.5	3.0	10.0	5.5	7.5	---	---	---
24	.0	.0	.0	4.0	1.0	2.5	10.5	5.0	8.0	---	---	---
25	.0	.0	.0	3.0	1.0	2.0	12.0	6.5	9.0	---	---	---
26	.0	.0	.0	5.0	2.0	3.5	14.0	8.5	11.0	---	---	---
27	.0	.0	.0	7.0	4.0	5.5	14.5	9.5	12.0	---	---	---
28	.5	.0	.5	9.5	6.0	7.5	15.5	9.5	12.5	---	---	---
29	---	---	---	10.0	8.5	9.0	13.5	11.0	12.0	---	---	---
30	---	---	---	9.0	4.5	6.5	16.5	10.5	13.0	17.5	15.5	---
31	---	---	---	4.5	3.5	4.0	---	---	---	18.5	16.0	17.0
MONTH	1.0	0.0	0.0	10.0	0.0	3.0	16.5	2.5	7.5	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	22.5	17.0	19.5	---	18.0	---	23.0	19.0	21.0	---	---	---
2	24.0	19.5	21.5	---	19.5	---	24.0	20.0	22.5	---	---	---
3	25.0	19.5	22.0	26.0	20.5	23.5	25.5	21.5	23.5	---	---	---
4	23.0	20.5	21.5	24.5	22.0	23.5	27.0	23.0	25.0	---	---	---
5	22.0	18.5	20.5	23.0	---	---	28.5	24.5	26.5	---	---	---
6	20.0	18.0	19.0	21.0	---	---	28.0	24.0	26.0	---	---	---
7	18.0	16.5	17.5	24.0	19.5	21.5	26.0	20.5	23.5	19.5	---	---
8	19.0	16.0	17.5	23.5	20.5	22.0	20.5	17.5	19.5	20.5	17.0	18.5
9	18.5	17.0	17.5	24.5	19.0	22.0	22.0	17.0	19.5	20.0	17.0	18.5
10	19.5	16.5	18.0	24.5	20.5	22.5	23.0	17.5	20.5	21.0	17.5	19.0
11	20.5	17.0	18.5	25.0	21.0	23.0	21.5	19.0	20.5	20.5	18.5	19.5
12	22.5	16.5	19.5	23.0	20.5	22.0	20.5	19.0	20.0	20.0	17.5	19.0
13	20.0	18.5	19.0	23.0	19.5	21.5	19.5	17.5	18.5	20.0	16.0	18.0
14	18.5	15.0	17.0	24.0	19.5	22.0	23.0	18.5	20.5	19.0	17.5	18.0
15	15.0	13.5	14.5	24.5	18.5	21.5	24.5	20.5	22.5	19.0	17.0	18.0
16	14.5	13.0	14.0	22.5	20.0	20.5	25.0	22.0	23.5	17.0	14.5	15.5
17	17.0	14.0	15.5	23.0	19.0	20.5	25.0	21.5	23.5	16.0	14.0	15.0
18	17.5	16.0	16.5	24.5	19.5	22.0	23.5	20.0	22.0	17.0	15.5	16.0
19	18.5	16.0	17.0	26.0	21.0	23.5	22.5	19.5	21.0	17.0	16.0	16.5
20	20.0	17.5	18.5	24.5	20.5	22.0	20.5	18.5	19.5	18.0	16.0	17.0
21	21.0	18.5	19.5	20.5	19.5	20.0	23.0	18.5	20.5	19.0	17.0	18.0
22	---	---	---	22.0	18.5	20.0	23.5	19.0	21.5	20.0	18.0	19.0
23	22.5	20.0	---	25.5	20.0	22.5	22.5	20.0	21.0	20.0	15.5	18.0
24	21.5	18.5	20.0	27.0	21.5	24.0	22.0	18.5	---	16.0	14.0	15.0
25	20.0	18.0	19.0	28.5	23.0	26.0	---	---	---	15.5	12.5	14.0
26	22.0	19.0	20.0	29.0	24.5	27.0	---	---	---	15.5	13.5	14.5
27	23.0	20.0	21.0	28.5	25.0	27.0	---	---	---	14.0	11.5	13.0
28	22.0	20.5	21.0	26.5	23.0	25.0	---	---	---	14.5	10.5	12.5
29	21.5	18.5	20.0	24.5	20.0	22.5	---	---	---	15.5	11.5	13.5
30	22.5	17.0	20.0	22.0	19.5	21.0	---	---	---	15.5	12.5	14.5
31	---	---	---	21.5	19.5	20.5	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

DELAWARE RIVER BASIN

01428500 DELAWARE RIVER ABOVE LACKAWAXEN RIVER NEAR BARRYVILLE, NY

LOCATION.--Lat 41°30'31", long 74°59'11", Sullivan County, Hydrologic Unit 02040101, on left bank, 1.6 mi upstream from Lackawaxen River, and 4.6 mi northwest of Barryville. Water-quality sampling site at discharge station.

DRAINAGE AREA.--2,020 mi^2.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WDR NY-82-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 600.22 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Subsequent to September 1954, entire flow from 371 mi^2 of drainage area controlled by Pepacton Reservoir, and subsequent to October 1963, entire flow from 454 mi^2 of drainage area controlled by Cannonsville Reservoir (see Reservoirs in Delaware River Basin). Part of flow of these reservoirs diverted for New York City municipal supply. Remainder of flow (except for conservation releases and spill) impounded for release during periods of low flow in the lower Delaware River basin as directed by the Delaware River Master. Telephone gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 130,000 ft^3/s, Aug. 19, 1955, gage height, 26.40 ft, from floodmarks in gage house, from rating curve extended above 55,000 ft^3/s, on basis of slope-area measurement at gage height 23.19 ft; minimum discharge, 122 ft^3/s, Sept. 5, 1953, gage height, 1.11 ft; minimum daily, 126 ft^3/s, Sept. 4, 1953.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 37,800 ft^3/s, May 6, gage height, 12.64 ft; minimum daily discharge, 580 ft^3/s, Dec. 13.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1420	1360	1800	e1400	1190	e1100	8840	1250	1830	2070	948	1410
2	1440	957	1680	e1400	1310	e1000	6610	6560	2020	1790	881	1390
3	1260	1020	1560	e1100	e1200	e940	5120	9830	1750	1590	885	1400
4	966	1700	1480	e860	e1000	e960	5090	6150	1800	1460	870	1370
5	1360	1380	1360	e1000	e1000	e1000	4980	4580	1530	2210	1070	1430
6	1430	3060	1270	e1000	e1000	e880	5520	24100	1430	3810	1110	1400
7	1400	5110	1220	e1100	e920	e780	6170	24500	1930	2640	1390	1300
8	1390	3380	1180	e1200	e900	e740	5220	13400	2000	2580	1520	1250
9	1420	2570	1120	e1000	e720	e780	4350	8930	1840	2310	1090	1530
10	1400	2150	1010	e1100	e660	853	3940	7660	2440	1880	959	1550
11	1480	1870	825	e1000	e710	833	3360	15100	2640	1730	958	1350
12	1460	1670	641	e1000	e740	832	2890	12600	2080	1560	1020	1240
13	1530	1520	e580	e1000	e760	724	2580	8990	1940	1430	1330	1150
14	1530	2580	e700	e1100	e670	668	2390	6630	2160	1340	1090	886
15	1540	2760	e860	e1000	e770	768	2310	5680	4630	1260	1000	1060
16	1580	2240	e960	e1100	e1400	1190	2780	4880	6980	1190	930	1570
17	1570	2100	e760	e1100	e1300	1460	3100	8610	7050	1170	858	1490
18	1610	2690	e1200	e980	e1000	1170	2770	7570	7220	1140	820	797
19	1670	2430	e920	e880	e900	1790	2560	5700	5750	1090	1060	693
20	1660	2980	e770	e880	e840	1820	2370	4840	4660	1110	1380	1560
21	1680	8890	e820	e800	e1100	1420	2180	4250	4000	1520	1270	2580
22	1620	6740	e820	e820	e6600	1300	2030	3890	3960	1520	1350	1910
23	1360	4650	e790	e900	e3600	1140	1870	3400	3400	1360	1340	1390
24	1650	3680	e1200	803	e2100	1260	1740	3260	4980	1190	1270	1760
25	1630	3060	e1700	755	e1400	4970	1620	3050	7220	1080	1360	1640
26	1510	2590	e2000	746	e1400	6060	1520	2630	5220	1020	1280	1390
27	1080	2290	e1800	866	e1300	5300	1420	2580	4130	1190	1390	1360
28	894	2150	e1300	1060	e1200	4610	1330	2690	3550	1310	1370	1260
29	1010	2210	e1500	1410	---	5570	1270	2350	2890	1320	1420	1040
30	1330	2010	e1500	1150	---	7370	1240	2140	2430	1290	1560	942
31	1370	---	e1300	1130	---	9390	---	2020	---	1080	1560	---
TOTAL	44250	83797	36626	31640	37690	68678	99170	219820	105460	49240	36339	41098
MEAN	1427	2793	1181	1021	1346	2215	3306	7091	3515	1588	1172	1370
MAX	1680	8890	2000	1410	6600	9390	8840	24500	7220	3810	1560	2580
MIN	894	957	580	746	660	668	1240	1250	1430	1020	820	693

CAL YR 1988 TOTAL 773935 MEAN 2115 MAX 21200 MIN 580
WTR YR 1989 TOTAL 853808 MEAN 2339 MAX 24500 MIN 580

e Estimated

DELAWARE RIVER BASIN

01428500 DELAWARE RIVER ABOVE LACKAWAXEN RIVER NEAR BARRYVILLE, NY--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968 to current year.
CHEMICAL DATA: 1971-73 (a).
NUTRIENT DATA: 1971 (a).

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: October 1967 to current year (no winter record for water years 1969-76).

INSTRUMENTATION.--Water-temperature digital recorder since October 1975, provides one-hour-interval punches. Prior to October 1975, water-temperature recorder provided continuous recordings.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum (water years 1968-75, 1980-81, 1983, 1985-89), 32.0°C, Aug. 2, 3, 1975, July 10, 1981, July 12, 1987; minimum (water years 1968, 1977-89), 0.0°C, on many days during winter periods, each year except water years 1980-82.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum, 30.0°C, Aug. 6; minimum, 0.0°C on many days during winter period.

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	19.0	16.0	17.5	4.5	4.0	4.5	3.5	3.0	3.5	.0	.0	.0
2	19.0	16.5	18.0	5.0	4.0	4.5	3.0	2.0	2.5	.5	.0	.0
3	18.5	16.5	17.5	7.5	3.5	5.0	3.5	1.5	2.5	.0	.0	.0
4	17.0	15.5	16.5	6.5	4.5	5.5	2.5	1.5	2.0	.0	.0	.0
5	16.0	14.0	15.0	8.0	4.5	6.5	2.5	1.0	1.5	.0	.0	.0
6	14.0	12.5	13.0	9.5	7.5	8.5	2.5	.5	1.5	.0	.0	.0
7	13.5	11.0	12.0	9.5	8.5	9.0	2.0	.5	1.5	.0	.0	.0
8	12.0	11.0	11.5	8.5	7.5	8.0	3.0	1.0	2.0	.0	.0	.0
9	12.0	10.5	11.0	7.5	6.5	7.0	1.5	.5	1.0	.0	.0	.0
10	12.5	9.5	11.0	7.0	6.0	6.5	.5	.5	.5	.0	.0	.0
11	12.5	10.5	11.5	7.0	6.0	6.5	.5	.5	.5	.0	.0	.0
12	12.0	10.0	11.0	7.0	4.5	5.5	1.0	.5	.5	.0	.0	.0
13	10.5	8.5	9.5	6.0	5.0	5.5	.5	.5	.5	.0	.0	.0
14	11.0	7.5	9.0	6.5	5.0	5.5	.5	.5	.5	.0	.0	.0
15	11.0	8.0	9.5	6.5	5.5	6.0	.5	.5	.5	.0	.0	.0
16	12.5	9.0	11.0	6.0	5.5	6.0	.5	.5	.5	.0	.0	.0
17	14.5	11.0	12.5	7.0	6.0	6.5	.5	.0	.5	.0	.0	.0
18	13.5	12.5	13.0	6.5	5.5	6.0	.0	.0	.0	.0	.0	.0
19	12.5	11.0	12.0	5.5	5.0	5.5	.0	.0	.0	.0	.0	.0
20	12.0	9.5	11.0	5.0	5.0	5.0	.5	.0	.5	.0	.0	.0
21	9.5	8.0	9.0	5.5	5.0	5.5	.0	.0	.0	.0	.0	.0
22	8.0	7.5	7.5	5.5	5.0	5.0	.5	.0	.0	.5	.0	.0
23	9.0	6.5	8.0	4.5	4.0	4.5	.0	.0	.0	.0	.0	.0
24	9.0	7.5	8.0	4.0	3.0	3.5	.0	.0	.0	.5	.0	.0
25	7.5	6.5	7.0	3.5	2.5	3.0	.0	.0	.0	.5	.0	.0
26	7.5	6.0	6.5	4.0	2.5	3.0	.0	.0	.0	.0	.0	.0
27	8.5	5.0	6.5	5.0	3.0	4.0	.0	.0	.0	.5	.0	.0
28	6.5	5.0	5.5	5.5	5.0	5.5	.0	.0	.0	.5	.0	.0
29	8.5	4.5	6.0	5.5	4.5	5.0	.0	.0	.0	.0	.0	.0
30	6.5	4.5	5.5	4.5	3.5	4.5	.0	.0	.0	.0	.0	.0
31	6.5	3.5	5.0	---	---	---	.0	.0	.0	.5	.0	.5
MONTH	19.0	3.5	10.5	9.5	2.5	5.5	3.5	0.0	0.5	0.5	0.0	0.0

DELAWARE RIVER BASIN

01428500 DELAWARE RIVER ABOVE LACKAWAXEN RIVER NEAR BARRYVILLE, NY--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	1.0	.0	.5	1.0	.5	.5	4.5	4.0	4.0	14.5	13.0	14.0
2	.5	.0	.0	2.0	.5	.5	5.0	3.0	4.0	14.0	11.0	12.5
3	.5	.0	.5	3.5	.0	1.5	5.0	5.0	5.0	11.0	9.5	10.0
4	.0	.0	.0	1.5	.5	1.0	5.5	5.0	5.5	11.0	8.5	10.0
5	.0	.0	.0	1.5	1.0	1.5	7.0	5.5	6.0	10.5	10.0	10.5
6	.0	.0	.0	1.5	.0	.5	7.0	6.5	7.0	10.5	10.0	10.0
7	.0	.0	.0	1.5	.0	.5	6.5	5.5	6.0	10.0	9.0	10.0
8	.0	.0	.0	1.5	.0	.5	6.5	5.0	6.0	9.0	8.0	8.5
9	.5	.0	.5	3.0	.0	1.0	6.5	6.0	6.0	9.0	7.5	8.0
10	.5	.5	.5	4.0	.0	1.5	6.0	5.0	5.5	9.0	9.0	9.0
11	1.0	.5	.5	4.5	.5	2.0	6.0	4.0	5.0	9.0	8.5	8.5
12	.5	.5	.5	3.5	1.0	2.0	7.0	4.5	5.5	8.5	8.0	8.5
13	.5	.5	.5	3.5	.5	1.5	7.0	5.5	6.0	10.0	8.5	9.0
14	.5	.5	.5	5.0	1.5	3.5	8.5	5.5	6.5	10.0	9.5	10.0
15	.5	.5	.5	10.5	4.5	6.0	7.0	6.5	7.0	11.0	9.5	10.5
16	.5	.0	.5	8.0	4.5	6.5	7.5	6.5	6.5	11.5	11.0	11.0
17	.5	.0	.5	9.0	4.5	6.5	9.5	6.5	8.0	14.0	11.5	12.5
18	.5	.0	.5	8.0	6.0	7.0	11.0	8.5	9.5	15.5	13.0	14.5
19	.5	.0	.5	6.5	4.0	5.0	12.5	9.5	10.5	17.0	15.0	16.0
20	.5	.0	.5	4.0	3.0	3.5	12.5	9.5	11.0	18.0	16.5	17.5
21	.0	.0	.0	4.5	2.5	3.0	13.0	10.0	11.0	19.0	17.5	18.0
22	.5	.0	.5	5.5	.5	3.0	11.0	9.0	10.0	18.5	16.5	17.5
23	1.5	.0	.5	6.5	1.0	3.5	11.0	7.5	9.0	17.5	16.0	16.5
24	.5	.0	.5	4.5	3.0	3.5	11.0	7.0	9.0	16.0	14.5	15.5
25	1.0	.5	.5	3.5	2.5	3.0	12.0	8.0	9.5	17.5	14.0	15.5
26	.5	.5	.5	5.0	3.0	4.0	14.0	9.5	11.5	18.0	16.5	17.5
27	.5	.5	.5	6.5	4.5	5.5	15.5	10.5	13.0	18.5	17.0	17.5
28	1.5	.5	.5	9.0	6.5	7.5	16.0	11.0	13.5	18.5	16.0	17.0
29	---	---	---	10.0	8.5	9.5	13.5	12.0	13.0	19.5	15.5	17.5
30	---	---	---	9.5	6.5	8.0	16.5	11.5	13.5	19.0	17.0	17.5
31	---	---	---	6.5	4.5	5.0	---	---	---	19.5	17.0	18.0
MONTH	1.5	0.0	0.5	10.5	0.0	3.5	16.5	3.0	8.0	19.5	7.5	13.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	22.5	17.5	20.0	24.0	19.5	21.5	25.0	20.5	22.5	20.0	18.5	19.5
2	23.0	20.5	21.5	25.5	21.0	23.0	25.0	21.5	23.5	21.5	19.0	20.0
3	24.5	20.5	22.5	26.0	22.0	24.0	26.5	22.5	24.5	21.5	17.0	19.0
4	24.0	21.5	23.0	25.5	23.5	24.5	28.5	24.0	26.0	20.5	16.5	18.5
5	23.0	20.5	21.5	24.0	21.5	23.0	29.0	25.5	27.5	20.5	17.0	18.5
6	21.5	19.5	20.0	21.5	20.0	20.5	30.0	26.0	27.5	20.5	17.0	18.5
7	19.5	18.0	18.5	24.0	20.5	22.0	27.0	23.5	25.5	21.5	17.5	19.5
8	18.5	17.5	18.0	24.0	22.0	23.0	23.0	21.0	22.0	22.5	18.5	20.5
9	19.0	17.5	18.5	24.5	21.5	23.0	23.0	19.0	21.0	22.5	19.5	21.0
10	20.0	17.5	18.5	25.5	22.0	23.5	23.5	19.5	21.5	23.0	20.0	21.5
11	20.5	17.5	19.0	26.0	22.0	24.0	21.5	20.5	21.0	23.5	21.0	22.0
12	21.5	18.0	19.5	23.5	22.0	23.0	21.5	20.0	20.5	22.5	20.0	21.5
13	20.5	19.0	20.0	24.5	21.0	22.5	23.0	20.5	21.5	22.5	19.0	20.5
14	19.5	17.0	18.5	25.5	21.5	23.0	24.0	21.0	22.5	21.0	19.0	20.0
15	17.0	14.5	16.0	25.0	20.5	23.0	24.5	21.0	23.0	21.5	19.5	20.0
16	15.0	14.0	14.5	22.5	21.0	22.0	26.0	23.0	24.5	19.5	17.5	18.5
17	17.0	14.5	16.0	23.5	20.0	21.5	27.0	23.0	25.0	18.0	17.0	17.0
18	18.0	16.0	17.5	24.5	20.5	22.5	24.5	22.5	23.5	17.5	16.0	17.0
19	19.0	17.0	18.0	25.5	22.0	23.5	23.5	22.0	22.5	17.0	16.5	16.5
20	20.0	18.0	19.0	23.5	22.0	23.0	24.0	21.5	22.5	17.5	16.5	17.5
21	21.0	19.5	20.0	22.0	20.5	21.5	24.5	21.5	23.0	18.5	17.5	18.0
22	21.0	20.5	20.5	23.5	20.0	21.5	25.0	21.5	23.5	20.0	18.5	19.5
23	22.0	20.5	21.0	25.5	21.0	23.0	25.0	22.5	23.5	20.0	16.5	19.0
24	22.0	21.0	21.5	27.5	22.5	25.0	25.0	21.0	23.0	17.0	15.0	16.0
25	21.0	19.0	20.0	28.5	24.0	26.0	24.0	20.0	22.0	16.5	14.0	15.0
26	21.5	19.5	20.5	29.5	25.5	27.5	23.0	19.0	21.0	16.5	14.5	15.0
27	23.0	21.0	22.0	29.5	26.5	28.0	22.0	19.0	20.5	16.0	13.0	14.5
28	22.5	21.0	22.0	29.0	25.5	27.0	23.0	19.5	21.0	16.0	12.0	14.0
29	22.0	20.0	21.0	27.0	23.0	25.0	21.5	20.5	21.0	17.5	12.5	14.5
30	23.0	19.0	21.0	24.5	22.0	23.0	23.0	19.5	21.0	16.5	13.5	15.0
31	---	---	---	23.0	21.0	22.0	22.5	19.0	20.5	---	---	---
MONTH	24.5	14.0	19.5	29.5	19.5	23.5	30.0	19.0	23.0	23.5	12.0	18.5

DELAWARE RIVER BASIN

01432160 DELAWARE RIVER AT BARRYVILLE, NY

LOCATION.--Lat 41°28'31", long 74°54'46", Pike County, Pa., Hydrologic Unit 02040104, at Shohola-Barryville Bridge at Barryville, just upstream from Halfway Brook, and 1,000 ft upstream from Shohola Brook.

DRAINAGE AREA.--2,659 mi^2.

PERIOD OF RECORD.--Water years 1958, 1968 to current year.
CHEMICAL DATA: 1958 (d), 1969 (a), 1973 (b), 1974 (d), 1975 (b).
NUTRIENT DATA: 1973 (b), 1974 (d), 1975 (b).
BIOLOGICAL DATA:
Bacteria.--1973 (b), 1974 (d), 1975 (b).

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: October 1967 to September 1973, March 1975 to current year.

INSTRUMENTATION.--Water-temperature digital recorder since March 1975, provides one-hour-interval punches. Prior to September 1973, water-temperature recorder provided continuous recordings.

REMARKS.--Unpublished records of daily temperatures for May to September 1964-66 are available in files of the Geological Survey. Temperature probe may be influenced by solar radiation during periods of low flow. Interruptions of record were due to malfunctions of recording instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum (water years 1968-73, 1976-78, 1980-82, 1986-88), 32.0°C, July 20, 21, 1980; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum recorded, 29.5°C, Aug. 6, but may have been higher during period of instrument malfunction; minimum, 0.0°C on many days during winter period.

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	18.5	16.5	17.5	5.0	4.5	5.0	4.0	3.0	3.5	.0	.0	.0
2	18.5	17.5	18.0	5.5	4.5	5.0	4.0	2.5	3.0	.5	.0	.0
3	18.5	17.0	17.5	6.5	4.0	5.0	3.0	2.0	2.0	.5	.0	.0
4	17.0	16.0	16.5	6.0	4.5	5.5	2.5	1.0	1.5	.0	.0	.0
5	16.0	14.5	15.5	8.5	6.0	7.0	2.5	1.0	1.5	1.0	.0	.0
6	14.0	12.5	13.5	9.5	8.0	8.5	3.0	1.5	2.0	.5	.0	.0
7	13.0	11.5	12.0	9.5	8.5	9.0	3.5	1.0	2.0	.0	.0	.0
8	12.0	11.0	11.5	8.5	7.5	8.0	3.5	2.0	2.5	.0	.0	.0
9	11.5	10.5	11.0	7.5	7.0	7.5	2.5	1.0	1.5	.0	.0	.0
10	12.0	10.0	11.0	7.0	6.0	6.5	2.0	.0	.5	.0	.0	.0
11	12.0	11.0	11.5	7.0	6.0	6.5	.5	.0	.5	.0	.0	.0
12	11.5	10.5	11.0	6.0	5.0	5.5	2.0	.0	.5	.0	.0	.0
13	10.5	9.0	9.5	6.0	5.0	5.5	1.0	.0	.5	.0	.0	.0
14	9.5	8.0	9.0	6.0	5.0	5.5	1.0	.0	.5	.0	.0	.0
15	10.0	8.0	9.0	6.0	5.5	6.0	.5	.0	.0	.0	.0	.0
16	12.5	9.5	10.5	6.0	5.5	5.5	.0	.0	.0	.0	.0	.0
17	13.0	11.0	12.0	7.0	6.0	6.5	.0	.0	.0	.0	.0	.0
18	13.0	12.5	13.0	6.0	5.5	6.0	.0	.0	.0	.0	.0	.0
19	13.0	11.0	12.0	5.5	5.0	5.0	.0	.0	.0	.5	.0	.0
20	11.0	10.0	10.5	5.5	5.0	5.0	.5	.0	.0	.5	.0	.0
21	10.0	8.5	9.0	5.5	5.5	5.5	.5	.0	.5	.5	.0	.0
22	8.5	7.5	8.0	5.5	5.0	5.0	.5	.0	.5	.5	.0	.5
23	8.5	7.0	8.0	5.0	4.0	4.0	.0	.0	.0	.5	.0	.0
24	9.0	8.0	8.5	4.0	3.5	3.5	.0	.0	.0	.5	.0	.0
25	8.0	7.0	7.5	3.5	3.0	3.0	.5	.0	.0	.5	.0	.0
26	7.5	6.5	7.0	3.5	2.5	3.0	.0	.0	.0	.0	.0	.0
27	7.0	6.0	6.5	5.5	3.5	4.0	.0	.0	.0	1.0	.0	.5
28	7.0	5.0	6.0	6.0	5.5	5.5	.5	.0	.0	1.5	.0	.5
29	7.0	5.0	5.5	5.5	4.5	5.0	.0	.0	.0	1.0	.0	.5
30	5.5	5.0	5.5	4.5	3.5	4.0	.0	.0	.0	2.0	.5	1.0
31	5.0	4.5	5.0	---	---	---	.0	.0	.0	2.0	.5	1.5
MONTH	18.5	4.5	10.5	9.5	2.5	5.5	4.0	0.0	0.5	2.0	0.0	0.0

01432160 DELAWARE RIVER AT BARRYVILLE, NY--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	2.0	.5	1.0	2.0	.0	1.0	5.0	4.5	4.5	15.0	14.0	14.5
2	2.0	1.0	1.5	1.5	.0	1.0	5.5	3.5	4.5	14.0	11.0	13.0
3	2.0	.5	1.0	2.5	.5	1.5	5.5	5.5	5.5	11.0	10.0	10.5
4	.5	.0	.0	2.5	1.5	2.0	6.5	5.5	6.0	12.0	9.0	10.5
5	.0	.0	.0	2.0	1.5	2.0	7.5	6.0	6.5	11.5	10.5	11.0
6	.5	.0	.0	1.5	.5	1.0	7.5	7.0	7.5	11.0	10.5	10.5
7	1.0	.0	.5	1.5	.0	1.0	7.0	6.0	6.5	10.5	10.0	10.5
8	1.0	.0	.5	---	.0	---	7.5	6.0	6.5	10.0	9.0	9.5
9	1.5	.0	.0	5.0	.0	2.5	7.0	6.5	6.5	10.0	8.5	9.5
10	1.0	.0	.0	5.0	.0	2.5	6.5	5.5	6.0	10.0	9.5	10.0
11	1.5	.0	.5	3.5	.5	2.5	6.5	4.5	5.5	9.5	9.0	9.0
12	1.0	.0	.5	3.5	1.0	2.5	7.5	4.5	6.0	9.5	9.0	9.0
13	.5	.0	.0	4.0	.0	1.5	7.0	6.0	6.5	10.5	9.5	10.0
14	2.5	.0	1.0	---	1.5	---	8.5	5.5	7.0	10.5	10.0	10.0
15	2.5	1.0	1.5	10.5	---	---	8.0	7.0	7.0	11.5	10.0	11.0
16	1.5	.0	.5	8.0	5.5	6.5	7.5	6.5	7.0	11.0	11.0	11.0
17	.5	.0	.0	---	5.0	---	10.0	6.5	8.0	13.5	11.0	12.0
18	.5	.0	.5	8.0	6.0	7.0	11.0	9.0	10.0	15.0	12.5	14.0
19	1.0	.0	.5	5.5	4.5	5.0	12.5	9.5	11.0	16.0	14.0	15.0
20	1.0	.0	.5	4.5	3.0	3.5	12.0	9.5	11.0	16.5	15.0	15.5
21	.5	.5	.5	3.5	2.5	3.0	12.5	9.5	11.0	17.0	15.5	16.0
22	.5	.0	.5	4.0	1.5	3.0	11.5	9.5	10.5	17.5	15.0	16.0
23	2.0	.0	.5	4.5	2.0	3.5	10.5	7.5	9.0	16.5	14.5	15.5
24	1.0	.0	.5	4.0	3.5	3.5	10.5	7.5	9.5	14.5	13.5	14.0
25	1.0	.0	.0	3.5	2.5	3.0	11.5	8.5	10.0	16.5	13.0	15.0
26	.0	.0	.0	5.0	3.0	4.0	13.5	10.0	11.5	16.5	15.0	16.0
27	1.0	.0	.5	7.0	4.5	5.5	14.5	11.0	13.0	16.0	15.5	15.5
28	2.0	.0	1.0	9.0	6.5	7.5	15.0	12.0	13.5	18.0	15.0	16.5
29	---	---	---	10.0	9.0	9.5	14.0	12.0	13.0	19.0	15.0	17.0
30	---	---	---	9.0	6.5	8.0	15.5	12.0	13.5	18.0	16.5	17.0
31	---	---	---	6.5	5.0	5.5	---	---	---	18.0	16.0	17.0
MONTH	2.5	0.0	0.5	---	---	---	15.5	3.5	8.5	19.0	8.5	13.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	21.0	16.5	18.5	23.5	19.5	21.5	23.5	19.5	21.0	---	---	---
2	21.5	18.0	19.5	25.0	21.0	23.0	25.5	20.5	22.5	---	---	---
3	23.5	19.5	21.5	25.0	22.5	23.5	25.0	21.0	23.0	---	---	---
4	23.5	21.5	22.5	24.5	23.0	23.5	28.0	22.5	24.5	---	---	---
5	22.0	20.0	21.0	24.0	20.0	22.5	28.0	23.5	26.0	---	---	---
6	20.5	19.0	20.0	---	19.0	---	29.5	26.0	27.5	19.5	---	---
7	19.0	18.0	18.5	---	19.5	---	---	---	---	20.5	18.0	19.5
8	18.0	17.0	18.0	24.5	20.5	22.5	---	19.5	---	21.5	19.0	20.5
9	18.5	17.5	18.0	24.5	21.0	23.0	---	19.5	---	22.0	20.0	21.0
10	18.5	16.0	17.5	---	22.0	---	---	19.0	---	23.5	21.0	22.0
11	20.0	17.5	18.5	24.5	22.0	22.5	---	---	---	23.0	21.5	22.5
12	20.0	17.5	19.0	23.0	20.5	22.0	21.0	19.5	20.0	22.0	20.0	21.0
13	19.5	18.5	19.0	22.5	20.0	21.0	22.5	20.5	21.0	22.0	19.0	20.5
14	19.0	16.0	17.5	23.5	20.5	22.0	---	---	---	22.5	19.5	20.5
15	16.5	15.0	15.5	24.0	20.0	22.0	---	---	---	21.5	20.0	20.5
16	15.5	14.5	15.0	22.5	21.0	22.0	---	---	---	20.0	18.5	19.0
17	18.0	15.5	16.5	22.0	19.5	21.0	---	---	---	18.5	17.5	18.0
18	19.0	16.5	17.5	---	19.0	---	---	---	---	19.5	17.0	18.0
19	19.0	17.0	18.0	---	20.0	---	---	---	---	18.0	17.0	17.5
20	19.5	17.5	18.5	22.0	20.0	21.5	---	---	---	18.5	17.5	18.0
21	20.5	18.5	19.5	21.0	19.0	20.0	---	---	---	19.5	18.5	18.5
22	20.5	19.0	19.5	23.0	19.0	21.0	---	---	---	20.5	19.0	19.5
23	20.5	18.5	20.0	---	---	---	---	---	---	20.5	17.5	20.0
24	---	19.0	---	---	---	---	---	---	---	17.5	15.5	16.5
25	20.5	19.5	20.0	26.5	22.0	24.0	---	---	---	17.0	14.5	16.0
26	20.5	19.0	19.5	27.5	22.0	24.5	---	---	---	17.0	15.5	16.5
27	---	20.0	---	28.0	23.0	25.0	---	---	---	16.0	14.5	15.5
28	21.5	19.5	21.0	27.5	23.5	25.0	---	---	---	16.0	13.0	14.5
29	20.5	18.5	20.0	25.5	22.5	24.0	---	---	---	16.5	13.5	15.0
30	21.5	18.0	19.5	24.0	22.5	23.0	---	---	---	16.5	14.5	15.5
31	---	---	---	23.0	20.0	22.0	---	---	---	---	---	---
MONTH	---	14.5	---	---	---	---	---	---	---	---	---	---

DELAWARE RIVER BASIN

01432805 DELAWARE RIVER AT POND EDDY, NY

LOCATION.--Lat 41°26'20", long 74°49'11", Pike County, Pa., Hydrologic Unit 02040104, at interstate bridge at Pond Eddy, 450 ft downstream from Mill Brook, and 4.5 mi upstream from Mongaup River.

DRAINAGE AREA.--2,820 mi^2.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: October 1973 to current year.

INSTRUMENTATION.--Water-temperature digital recorder since October 1973, provides one-hour-interval punches.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum (water years 1976, 1978, 1980-81, 1983-84, 1986, 1989) 31.0°C, July 21, 1980; minimum (water years 1974, 1977-78, 1980, 1983-89), 0.0°C on many days during winter periods, except 1978, 1980, and 1985.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum, 30.0°C, Aug. 6; minimum, 0.0°C on many days during winter period.

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	19.5	17.0	18.0	5.0	4.5	5.0	3.5	3.0	3.5	.5	.0	.0
2	19.0	17.5	18.0	5.5	5.0	5.0	3.0	2.0	3.0	.5	.0	.0
3	18.5	17.5	18.0	6.0	4.5	5.0	3.0	2.0	2.5	.5	.0	.0
4	17.5	16.0	17.0	6.0	4.5	5.5	2.5	1.0	1.5	.0	.0	.0
5	16.5	15.0	16.0	7.5	5.5	6.5	1.5	1.0	1.0	.5	.0	.0
6	15.0	13.0	14.0	9.0	7.5	8.5	2.5	1.5	2.0	.0	.0	.0
7	13.0	12.0	12.5	9.0	8.5	9.0	2.5	1.5	2.0	.0	.0	.0
8	12.0	11.0	12.0	8.5	8.0	8.0	3.0	1.5	2.5	.0	.0	.0
9	11.5	10.5	11.0	8.0	7.0	7.5	2.0	.5	1.5	.0	.0	.0
10	12.5	10.5	11.5	7.0	6.5	7.0	1.0	.0	1.0	.0	.0	.0
11	12.5	11.5	11.5	7.0	6.0	6.5	.5	.0	.0	.5	.0	.0
12	12.0	10.0	11.0	6.0	5.0	5.5	.5	.0	.0	.0	.0	.0
13	10.0	9.0	10.0	6.0	5.0	5.5	.5	.0	.0	.0	.0	.0
14	10.0	8.0	9.0	6.5	5.5	5.5	.5	.0	.0	.5	.0	.0
15	10.5	8.5	9.5	6.5	5.5	6.0	.5	.0	.0	.5	.0	.0
16	12.0	9.5	10.5	6.5	5.5	6.0	.5	.0	.0	.5	.0	.0
17	13.0	11.0	12.0	7.5	6.5	6.5	.5	.0	.0	.0	.0	.0
18	13.0	12.5	12.5	6.5	5.5	6.0	.0	.0	.0	.5	.0	.0
19	12.5	11.5	12.0	5.5	5.0	5.5	.5	.0	.0	.5	.0	.0
20	11.5	10.0	11.0	5.5	5.0	5.0	.5	.0	.0	.5	.0	.0
21	10.0	8.5	9.5	5.5	5.5	5.5	.5	.0	.0	.5	.0	.0
22	8.5	8.0	8.5	5.0	5.0	5.0	.5	.0	.0	.5	.0	.0
23	8.5	7.5	8.0	4.5	4.0	4.5	.0	.0	.0	.5	.0	.0
24	9.0	8.0	8.5	4.0	3.5	3.5	.0	.0	.0	.5	.0	.0
25	8.0	7.0	7.5	3.5	2.5	3.0	.0	.0	.0	.5	.0	.0
26	7.5	6.5	7.0	3.5	2.5	3.0	.0	.0	.0	.0	.0	.0
27	7.5	6.0	7.0	5.0	3.5	4.0	.0	.0	.0	.5	.0	.0
28	7.0	5.5	6.0	5.5	5.0	5.5	.5	.0	.0	.5	.0	.0
29	7.0	5.0	6.0	5.5	4.5	5.0	.0	.0	.0	.5	.0	.0
30	6.5	5.0	6.0	4.5	3.5	4.0	.0	.0	.0	.0	.0	.0
31	6.0	4.5	5.0	---	---	---	.5	.0	.0	.5	.0	.5
MONTH	19.5	4.5	11.0	9.0	2.5	5.5	3.5	0.0	0.5	0.5	0.0	0.0

DELAWARE RIVER BASIN

01432805 DELAWARE RIVER AT POND EDDY, NY--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	1.5	.5	1.0	2.0	.5	1.0	5.0	4.5	4.5	15.0	14.0	14.5
2	1.5	.5	1.0	2.5	.0	1.0	5.5	3.5	4.5	14.0	11.5	13.0
3	1.0	.0	1.0	3.0	.5	1.5	5.5	5.0	5.5	11.5	10.0	10.5
4	.5	.0	.0	2.5	1.5	2.0	6.5	5.5	6.0	11.5	9.5	10.5
5	.5	.0	.0	2.0	1.5	2.0	7.0	6.0	6.5	11.0	10.5	10.5
6	.5	.0	.0	2.0	.5	1.0	7.5	7.0	7.0	11.0	10.5	10.5
7	.5	.0	.0	2.0	.0	.5	7.0	6.0	6.5	10.5	10.0	10.5
8	.5	.0	.0	2.5	.0	1.0	7.0	6.0	6.5	10.0	9.0	9.0
9	.5	.0	.0	4.0	.5	2.0	7.0	6.5	6.5	9.5	8.5	9.0
10	.5	.0	.0	4.5	1.5	2.5	6.5	5.5	6.0	9.5	9.5	9.5
11	.5	.0	.0	4.5	1.0	2.5	6.5	4.5	5.5	9.5	9.0	9.0
12	.5	.0	.0	3.0	2.0	2.5	7.0	4.5	6.0	9.5	8.5	9.0
13	.5	.0	.0	3.5	.5	2.0	7.0	6.0	6.5	10.5	9.0	9.5
14	.5	.0	.0	5.5	1.5	3.0	8.0	5.5	7.0	10.0	10.0	10.0
15	1.0	.0	.5	8.5	4.0	6.0	8.0	7.0	7.5	11.5	10.0	10.5
16	1.0	.0	.5	8.5	6.0	7.0	7.5	7.0	7.0	11.5	11.0	11.0
17	.5	.0	.0	8.5	6.0	7.0	9.5	6.5	8.0	13.5	11.0	12.5
18	1.0	.0	.0	8.0	7.0	7.5	10.5	9.0	10.0	15.5	13.0	14.0
19	.5	.0	.0	7.0	5.0	6.0	12.0	9.5	11.0	16.5	14.5	15.5
20	.5	.0	.0	5.0	3.0	4.0	12.0	10.0	11.0	17.0	15.5	16.5
21	.5	.0	.5	4.0	3.0	3.5	12.5	10.5	11.5	18.0	16.5	17.0
22	.5	.0	.0	5.0	2.0	3.5	11.5	9.5	10.5	18.0	15.5	17.0
23	.5	.0	.5	5.0	2.5	3.5	10.5	8.5	9.5	17.0	15.5	16.0
24	.5	.0	.0	4.0	3.5	3.5	10.5	8.5	9.5	15.5	14.5	14.5
25	.5	.0	.0	4.0	3.0	3.5	11.0	9.0	10.0	16.5	13.5	15.0
26	.5	.0	.0	5.0	3.5	4.0	13.0	10.0	11.5	17.0	16.0	16.5
27	.5	.0	.0	7.0	4.5	5.5	14.5	11.5	13.0	16.5	16.0	16.5
28	1.0	.0	.5	9.5	6.5	8.0	15.5	12.0	13.5	17.5	14.5	16.5
29	---	---	---	10.0	9.0	9.5	13.5	12.5	13.0	18.5	15.5	17.0
30	---	---	---	10.0	7.5	8.5	15.5	12.0	13.5	18.0	17.0	17.5
31	---	---	---	7.0	5.0	6.0	---	---	---	18.5	17.0	17.5
MONTH	1.5	0.0	0.0	10.0	0.0	4.0	15.5	3.5	8.5	18.5	8.5	13.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	21.0	17.5	19.0	22.5	19.5	21.0	24.0	20.5	22.0	21.0	20.5	20.5
2	21.5	18.5	20.0	24.5	22.0	23.0	24.5	21.5	22.5	22.0	19.5	20.5
3	22.5	19.0	21.0	25.5	23.0	24.0	25.0	22.0	23.5	21.5	18.5	20.0
4	23.5	22.0	22.5	24.0	22.5	23.5	27.0	23.5	25.0	21.0	18.0	19.5
5	22.0	20.5	21.5	23.5	21.0	23.0	28.0	24.5	26.0	20.0	18.0	19.0
6	20.5	19.0	20.0	21.0	20.0	20.5	30.0	26.0	27.5	21.0	18.5	19.5
7	19.0	18.0	18.5	23.5	19.5	21.5	27.5	24.5	26.5	21.5	18.5	20.0
8	18.0	17.5	18.0	24.0	21.0	22.5	24.0	22.0	23.0	22.5	19.5	20.5
9	18.0	17.5	18.0	24.0	21.5	23.0	23.0	20.0	21.5	22.5	20.5	21.5
10	19.0	16.5	18.0	24.5	23.0	23.5	23.5	20.0	21.5	24.5	21.5	22.5
11	19.5	17.5	18.5	25.0	22.0	23.5	21.5	20.5	21.0	24.0	22.0	23.0
12	20.0	17.5	19.0	23.5	21.0	22.0	20.5	20.0	20.5	22.5	21.0	21.5
13	19.5	19.0	19.0	22.5	20.0	21.0	22.5	20.5	21.0	21.5	20.0	21.0
14	18.5	16.5	18.0	23.5	20.5	22.0	24.0	21.5	22.5	21.5	20.5	21.0
15	16.5	15.0	16.0	24.0	20.0	22.0	25.0	22.5	23.5	21.5	20.5	21.0
16	15.5	14.5	15.0	22.5	21.5	22.0	25.5	23.0	24.0	20.5	18.5	19.5
17	17.5	15.5	16.0	22.5	20.5	21.5	26.0	22.5	24.0	19.0	18.0	18.5
18	18.5	16.5	17.5	23.5	20.0	21.5	24.0	22.5	23.5	18.5	17.5	18.0
19	19.0	17.5	18.0	24.5	21.0	22.5	23.0	21.5	22.0	18.0	17.0	17.5
20	20.0	18.0	19.0	23.0	21.0	22.0	24.0	21.5	22.5	18.0	17.5	17.5
21	21.0	19.0	19.5	21.5	20.0	20.5	25.5	22.5	24.0	18.5	18.0	18.5
22	21.0	19.0	20.0	22.5	19.5	20.5	26.0	23.0	24.0	20.0	18.5	19.0
23	21.5	19.0	20.0	25.0	22.0	23.5	25.5	23.5	24.5	20.0	18.0	19.5
24	22.0	19.5	20.5	26.5	23.5	24.5	24.5	22.0	23.5	17.5	15.5	16.5
25	21.0	20.0	20.5	26.0	23.0	24.5	24.5	21.5	22.5	16.0	15.0	15.5
26	21.0	19.5	20.5	26.5	23.0	25.0	24.0	20.5	22.0	17.0	15.0	16.0
27	23.5	20.5	22.0	27.0	23.5	25.0	23.0	20.5	21.5	16.0	14.0	15.0
28	22.5	21.0	21.5	26.5	24.0	25.0	23.0	20.5	22.0	15.5	13.5	14.0
29	21.5	19.5	20.5	25.5	22.5	24.0	22.0	21.5	22.0	16.5	13.5	15.0
30	21.5	18.0	20.0	24.5	23.0	23.5	24.0	21.0	22.0	16.5	14.5	15.5
31	---	---	---	23.5	22.0	22.5	23.0	21.0	21.5	---	---	---
MONTH	23.5	14.5	19.5	27.0	19.5	22.5	30.0	20.0	23.0	24.5	13.5	19.0

DELAWARE RIVER BASIN

01433500 MONGAUP RIVER NEAR MONGAUP, NY

LOCATION.--Lat 41°27'41", long 74°45'33", Sullivan County, Hydrologic Unit 02040104, on right bank 300 ft downstream from Rio hydroelectric plant of Orange and Rockland Utilities, Inc., 0.5 mi downstream from Bush Kill, and 2.8 mi upstream from mouth and Mongaup.

DRAINAGE AREA.--200 mi^2.

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

REVISED RECORDS.--WDR NY-71-1: 1970. WDR NY-81-1: 1980. WDR NY-82-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 625.05 ft Orange and Rockland Utilities, Inc. datum. Prior to July 6, 1956, water-stage recorders at sites 25 ft upstream on Rio Tailrace and 200 ft upstream on natural channel, at datum 4.0 ft higher.

REMARKS.--No estimated daily discharges. Records fair. Entire flow regulated by Rio Hydroelectric plant except for runoff from about 7 mi^2 of drainage area downstream from Rio Dam of Orange and Rockland Utilities, Inc., and during periods of spill from Rio Reservoir. Flow also regulated by storage in Cliff Lake, Swinging Bridge, and Toronto Reservoirs (see Reservoirs in Delaware River Basin) and small reservoirs upstream from station.

AVERAGE DISCHARGE.--50 years, 342 ft^3/s, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,100 ft^3/s, Aug. 19, 1955, gage height, 15.22 ft, present datum; minimum daily, 6 ft^3/s, Oct. 1, 1939.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,460 ft^3/s, May 17, gage height, 7.84 ft; minimum daily, 22 ft^3/s, Oct. 26, Nov. 12.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	27	429	41	25	526	730	319	424	209	44	41
2	24	391	289	42	27	453	603	318	81	45	42	38
3	24	30	32	343	254	423	582	557	519	399	449	26
4	24	35	28	286	49	375	566	489	145	150	486	26
5	65	25	492	165	25	231	712	277	320	256	62	32
6	23	31	34	27	267	411	714	768	624	460	200	33
7	24	312	27	25	46	403	705	1750	666	456	250	33
8	24	89	26	25	26	279	706	1360	493	183	41	33
9	24	379	302	141	255	70	704	919	550	46	362	33
10	24	285	24	81	45	421	659	1860	447	396	478	164
11	215	23	184	28	28	39	422	2720	623	369	386	392
12	23	22	430	58	28	35	493	1620	498	119	183	36
13	23	25	430	67	26	292	506	1070	532	85	44	121
14	23	402	280	41	53	25	668	909	704	227	395	52
15	23	213	220	41	342	25	377	826	535	42	325	34
16	23	316	373	33	278	27	685	695	735	41	421	34
17	23	329	178	280	257	286	435	2460	712	42	332	38
18	23	32	184	50	24	98	536	2760	712	159	218	35
19	31	25	315	98	24	28	543	1500	508	176	42	36
20	42	88	324	99	31	300	465	1270	716	41	43	410
21	23	563	24	222	430	345	575	994	562	190	395	694
22	26	674	409	44	581	122	450	755	650	42	409	640
23	124	417	25	151	460	163	449	701	649	308	302	629
24	162	34	26	48	587	408	549	849	727	305	44	522
25	23	409	28	155	450	68	517	619	716	545	44	229
26	22	425	27	213	442	149	216	391	711	362	43	557
27	26	31	320	166	316	302	211	59	707	521	42	174
28	25	298	45	73	381	420	202	67	666	343	42	41
29	23	434	116	77	---	264	224	459	590	41	43	190
30	23	642	26	32	---	709	39	558	611	41	42	52
31	25	---	35	26	---	597	---	155	---	42	42	---
TOTAL	1231	7006	5682	3178	5757	8294	15243	30054	17133	6641	6251	5375
MEAN	39.7	234	183	103	206	268	508	969	571	214	202	179
MAX	215	674	492	343	587	709	730	2760	735	545	486	694
MIN	22	22	24	25	24	25	39	59	81	41	41	26

CAL YR 1988 TOTAL 87575 MEAN 239 MAX 768 MIN 21
WTR YR 1989 TOTAL 111845 MEAN 306 MAX 2760 MIN 22

DELAWARE RIVER BASIN

01434000 DELAWARE RIVER AT PORT JERVIS, NY

LOCATION.--Lat 41°22'14", long 74°41'52", Pike County, Pa., Hydrologic Unit 02040104, on right bank 250 ft downstream from bridge (on U.S. Highways 6 and 209) between Port Jervis, N.Y. and Matamoras, Pa., 1.2 mi upstream from Neversink River, and 6.5 mi downstream from Mongaup River. Water-quality sampling site at discharge station.

DRAINAGE AREA.--3,070 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1904 to current year.

REVISED RECORDS.--WSP 1031: 1905-36. WDR NY-71-1: 1970. WDR NY-82-1: Drainage area. WDR NY-86-1: 1979-80.

GAGE.--Water-stage recorder. Datum of gage is 415.35 ft above National Geodetic Vertical Datum of 1929. October 1904 to August 13, 1928, nonrecording gage at bridge 250 ft upstream at present datum; operated by U.S. Weather Bureau prior to June 20, 1914.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by Lake Wallenpaupack and by Toronto, Cliff Lake, and Swinging Bridge Reservoirs (see Reservoirs in Delaware River Basin) and smaller reservoirs. Large diurnal fluctuations at medium and low flows caused by powerplants on tributary streams. Subsequent to September 1954, entire flow from 371 mi^2 of drainage area controlled by Pepacton Reservoir, and subsequent to October 1963, entire flow from 454 mi^2 of drainage area controlled by Cannonsville Reservoir (see Reservoirs in Delaware River Basin). Part of flow from these reservoirs diverted for New York City municipal supply. Remainder of flow (except for conservation releases and spill) impounded for release during periods of low flow in the lower Delaware River basin, as directed by the Delaware River Master. Telephone gage-height telemeter and satellite gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 233,000 ft^3/s, Aug. 19, 1955, gage height, 23.91 ft, from floodmarks in gage house, from rating curve extended above 89,000 ft^3/s, on basis of slope-area measurement of peak flow; maximum gage height, 26.6 ft, Feb. 12, 1981 (ice jam), from floodmarks; minimum observed discharge, 175 ft^3/s, Sept. 23, 1908, gage height, 0.6 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--The U.S. Weather Bureau reported a discharge of 205,000 ft^3/s, Oct. 10, 1903, gage height, 23.1 ft, from rating curve extended above 70,000 ft^3/s, by velocity-area studies; maximum gage height, 25.5 ft, Mar. 8, 1904 (ice jam).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 50,500 ft^3/s, May 6, gage height, 11.21 ft; minimum, 825 ft^3/s, Mar. 9, gage height, 1.77 ft; minimum daily, 1,030 ft^3/s, Nov. 3.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1760	1550	3170	1710	2080	2660	12900	1980	4100	3410	1800	1670
2	1610	1620	3120	1870	2220	2310	10100	6810	4500	2760	1710	1560
3	1600	1030	2480	2130	2430	2100	7900	14200	3690	2960	2000	1580
4	1440	1790	2040	e1880	1800	1830	7410	9440	2890	2540	2150	1530
5	1580	1630	2500	e2310	1560	1610	7430	6760	2840	2900	1740	1600
6	1560	2540	2390	e2090	2040	1990	8040	27900	2810	7270	1560	1550
7	1520	6650	2200	1890	2000	2380	8920	38200	3410	5230	1810	1550
8	1480	4430	2090	1690	1720	2400	7980	23300	3500	4070	2220	1740
9	1540	3610	2290	1850	1970	2060	6800	16200	3490	3510	1910	1770
10	1460	2990	1730	2230	1680	1890	6240	14700	5090	3340	1890	1790
11	1770	2390	1350	1960	1380	1340	5310	25900	5480	3640	1740	2350
12	1570	2150	1700	1800	1050	1140	4730	23200	4370	3050	1550	2240
13	1610	1910	e1920	1700	1340	1450	4170	16900	3990	2690	1710	2140
14	1650	2880	2010	1790	1810	1170	4080	13300	4600	2610	1970	1770
15	1610	3860	1680	1580	1790	1170	3630	11800	7950	2150	1920	1900
16	1680	3290	1830	1660	2440	1300	4450	10600	13000	1520	1880	2150
17	1680	2880	e1730	2200	2360	2140	4850	18500	12300	1640	2060	1980
18	1690	3100	e1960	1730	1640	1650	4610	17900	12400	2300	1500	1350
19	1790	3170	e2010	1550	1250	1880	4140	13100	9790	2240	1260	1300
20	1730	3220	e1780	1540	1070	2650	3770	11100	8700	2050	1640	3140
21	1830	12100	1590	1440	2010	2400	3570	9690	7490	2710	1790	4860
22	1880	10800	1920	1150	8920	1970	3270	8550	8130	2550	2120	4630
23	1730	7250	1350	1560	6600	1730	3010	6880	7670	2240	2150	3760
24	2110	5310	1510	1760	4490	1980	2960	7620	9000	2320	2050	3150
25	1780	4710	2090	1670	3690	5980	2790	7240	11700	2820	1590	3310
26	1860	4090	2620	1650	2320	8870	2360	6160	10600	2800	1510	3600
27	1430	3300	2820	1980	2590	7800	2190	5430	8020	2860	1580	3370
28	1070	3440	1970	2010	2660	6810	2020	4580	7190	2790	1600	2490
29	1050	3400	e1990	1560	---	7230	2030	3980	6220	2140	1690	2200
30	1280	3500	e2110	2020	---	10600	1750	4090	5280	1530	1750	1830
31	1540	---	e1800	2250	---	13000	---	3970	---	1650	2190	---
TOTAL	49890	114590	63750	56210	68910	105490	153410	389980	200200	88290	56040	69860
MEAN	1609	3820	2056	1813	2461	3403	5114	12580	6673	2848	1808	2329
MAX	2110	12100	3170	2310	8920	13000	12900	38200	13000	7270	2220	4860
MIN	1050	1030	1350	1150	1050	1140	1750	1980	2810	1520	1260	1300

CAL YR 1988 TOTAL 1209560 MEAN 3305 MAX 25300 MIN 1030
WTR YR 1989 TOTAL 1416620 MEAN 3881 MAX 38200 MIN 1030

e Estimated

DELAWARE RIVER BASIN

01434000 DELAWARE RIVER AT PORT JERVIS, NY--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1957-60, 1964 to current year.
CHEMICAL DATA: 1958-59 (e), 1964-65 (c), 1966 (a), 1967-68 (c), 1969-76 (d), 1987 (b), 1988-89 (c).
MINOR ELEMENTS DATA: 1970 (a), 1972-73 (a), 1974-76 (c), 1987 (b), 1988-89 (c).
PESTICIDE DATA: 1974 (a).
ORGANIC DATA: OC--1974 (b), 1975 (d).
NUTRIENT DATA: 1968 (a), 1969-76 (d).
BIOLOGICAL DATA:
Bacteria--1973-76 (d).
Phytoplankton--1974 (b), 1975-76 (c).
Periphyton--1976 (a).
SEDIMENT DATA: 1959 (c), 1976 (c), 1988 (b), 1989 (c).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1973 to September 1973.
WATER TEMPERATURES: February 1957 to September 1960, January 1973 to September 1973, June 1974 to current year.
SUSPENDED-SEDIMENT DISCHARGE: February 1957 to September 1960, March 1970 to June 1976.

INSTRUMENTATION.--Water-temperature digital recorder since January 1973, provides one-hour-interval punches.

REMARKS.--Interruption of record was due to malfunction of recording instrument. Water-quality samples were collected by personnel of the New York State Department of Environmental Conservation, and were analyzed by USGS laboratories.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum (water years 1957-59, 1973-81, 1983-84, 1988-89), 30.0°C, July 13, 1981; minimum (water years 1958-60, 1973, 1975-89), 0.0°C, on many days during winter periods, except 1984.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum recorded, 27.0°C, July 26, but may have been higher during period of instrument malfunction; minimum, 0.0°C, on many days during winter period.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT												
18...	1000	1710	86	7.00	12.0	--	10.3	--	27	7.6	1.9	4.8
NOV												
15...	1000	3740	81	7.20	5.5	--	11.9	--	23	6.9	1.4	3.9
APR												
12...	1200	4820	81	6.90	6.0	760	10.5	85	21	6.2	1.4	4.7
MAY												
08...	1000	23700	65	8.40	9.5	746	10.9	97	17	5.2	1.0	4.9
JUN												
14...	1000	4220	81	7.30	17.5	750	6.4	68	22	6.5	1.3	4.7
AUG												
29...	1200	1590	96	8.90	22.0	751	7.9	91	25	7.3	1.7	5.1

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)
OCT												
18...	1.1	18	9.9	7.5	<0.10	20	10	<1	<1	4	2	80
NOV												
15...	0.90	13	12	6.9	<0.10	70	--	<1	--	7	--	150
APR												
12...	0.80	9.0	10	8.1	0.10	80	--	1	--	7	--	150
MAY												
08...	1.1	6.0	10	5.1	0.10	450	--	<1	--	6	--	720
JUN												
14...	0.90	10	9.0	7.5	0.10	80	--	<1	--	4	--	270
AUG												
29...	0.90	16	9.0	8.3	0.10	250	--	<1	--	6	--	260

01434000 DELAWARE RIVER AT PORT JERVIS, NY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT 18...	12	<5	5	20	3	<0.10	1	2	<10	4
NOV 15...	--	<5	--	30	--	<0.10	3	--	<10	--
APR 12...	--	<5	--	30	--	<0.10	5	--	20	--
MAY 08...	39	8	--	120	--	<0.10	3	--	10	--
JUN 14...	--	1	--	60	--	<0.10	1	--	10	--
AUG 29...	--	2	--	30	--	<0.10	3	--	20	--

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
OCT 18...	1000	1710	1	4.6
NOV 15...	1000	3740	3	30
APR 12...	1200	4820	2	26
MAY 08...	1000	23700	30	1920
JUN 14...	1000	4220	4	46
AUG 29...	1200	1590	3	13

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	19.0	17.0	18.0	5.0	4.5	4.5	4.0	3.0	3.5	.0	.0	.0
2	19.0	18.0	18.5	6.5	5.0	5.5	3.0	2.5	3.0	.5	.0	.0
3	19.0	17.5	18.5	6.5	5.5	6.0	3.0	2.0	2.5	.5	.0	.0
4	18.0	16.5	17.0	6.0	4.5	5.5	2.5	1.0	1.5	.0	.0	.0
5	16.5	15.5	16.0	8.5	6.0	7.0	2.0	.5	1.5	.0	.0	.0
6	15.5	13.5	14.0	9.0	8.0	8.5	2.0	1.0	1.5	.0	.0	.0
7	13.5	12.0	12.5	9.0	8.5	9.0	2.5	1.0	1.5	.0	.0	.0
8	12.5	11.5	12.0	8.5	8.0	8.0	2.5	1.5	2.0	.0	.0	.0
9	11.5	10.5	11.0	8.0	7.5	7.5	2.0	1.0	1.5	.0	.0	.0
10	12.0	10.5	11.5	7.5	6.5	7.0	1.5	.0	.5	.0	.0	.0
11	12.5	11.5	12.0	7.5	6.0	6.5	.5	.0	.0	.0	.0	.0
12	12.5	10.5	11.0	6.0	5.0	5.5	.0	.0	.0	.0	.0	.0
13	10.5	9.0	9.5	6.0	5.0	5.5	.0	.0	.0	.0	.0	.0
14	9.5	8.0	9.0	6.5	5.0	6.0	.0	.0	.0	.0	.0	.0
15	10.0	8.0	9.0	6.5	5.5	6.0	.0	.0	.0	.0	.0	.0
16	11.5	9.5	10.5	6.0	5.5	6.0	.0	.0	.0	.0	.0	.0
17	13.0	11.0	12.0	7.0	6.0	6.5	.0	.0	.0	.0	.0	.0
18	13.0	12.0	12.5	6.5	5.5	6.0	.0	.0	.0	.0	.0	.0
19	12.5	11.5	12.0	5.0	5.0	5.0	.0	.0	.0	.0	.0	.0
20	11.5	10.0	10.5	5.5	5.0	5.0	.5	.0	.0	.0	.0	.0
21	10.0	9.0	9.5	5.5	5.5	5.5	.5	.0	.5	.0	.0	.0
22	9.0	8.0	8.5	5.0	5.0	5.0	.5	.0	.0	.0	.0	.0
23	8.5	7.5	8.0	5.0	4.0	4.5	.0	.0	.0	.0	.0	.0
24	9.0	8.5	8.5	4.0	3.0	3.5	.0	.0	.0	.0	.0	.0
25	9.0	7.5	8.0	3.5	2.5	3.0	.5	.0	.0	.0	.0	.0
26	7.0	6.5	7.0	4.0	3.0	3.5	.0	.0	.0	.0	.0	.0
27	7.0	6.0	6.5	4.5	3.5	4.0	.0	.0	.0	.5	.0	.0
28	6.5	6.0	6.5	5.5	4.5	5.5	.5	.0	.5	.5	.0	.5
29	6.5	5.5	6.0	5.0	4.5	5.0	.0	.0	.0	.5	.0	.5
30	6.0	5.5	6.0	4.5	4.0	4.5	.0	.0	.0	.5	.0	.5
31	5.5	4.5	5.0	---	---	---	.0	.0	.0	1.5	.0	.5
MONTH	19.0	4.5	11.0	9.0	2.5	5.5	4.0	0.0	0.5	1.5	0.0	0.0

DELAWARE RIVER BASIN

01434000 DELAWARE RIVER AT PORT JERVIS, NY--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	2.5	.5	1.5	2.0	.5	1.0	5.0	4.5	4.5	15.0	13.5	14.0
2	2.0	1.0	1.5	2.0	.0	1.0	5.5	3.5	4.5	14.0	12.0	13.0
3	1.0	.5	1.0	3.0	.5	2.0	5.5	5.0	5.5	11.5	10.5	11.0
4	.5	.0	.0	2.5	1.5	2.0	6.5	5.5	6.0	11.5	9.5	10.5
5	.0	.0	.0	2.5	2.0	2.0	7.0	6.0	6.5	11.0	10.5	11.0
6	.0	.0	.0	2.0	1.0	1.5	7.0	7.0	7.0	11.0	10.5	11.0
7	.0	.0	.0	1.0	.0	.5	7.0	6.0	6.5	11.0	10.5	10.5
8	.5	.0	.0	1.5	.0	.5	7.0	6.0	6.5	10.0	9.0	9.5
9	.0	.0	.0	2.5	.0	1.5	7.0	6.0	6.5	9.5	8.5	9.0
10	.0	.0	.0	3.5	1.0	2.5	6.5	5.5	6.0	9.5	9.5	9.5
11	.5	.0	.0	3.5	1.5	2.5	6.5	4.5	5.5	9.5	9.0	9.0
12	.0	.0	.0	3.5	1.5	2.5	6.5	5.0	6.0	9.5	9.0	9.0
13	.0	.0	.0	3.0	.5	2.0	7.0	6.0	6.5	10.5	9.0	9.5
14	.0	.0	.0	4.5	2.0	3.0	8.0	5.5	7.0	10.5	10.0	10.0
15	.5	.0	.0	7.0	4.0	5.5	7.5	7.0	7.0	11.5	10.0	11.0
16	1.5	.0	1.0	7.5	6.0	7.0	7.5	7.0	7.0	11.5	11.0	11.5
17	.0	.0	.0	8.0	6.0	7.0	9.5	6.5	8.0	13.5	11.5	12.0
18	.0	.0	.0	7.5	6.5	7.0	11.0	9.0	10.0	15.0	13.0	14.0
19	.5	.0	.0	6.5	5.0	6.0	11.5	10.0	10.5	16.5	14.5	15.5
20	.5	.0	.5	5.5	3.0	4.0	12.0	9.5	11.0	17.5	15.5	16.5
21	1.5	.5	1.0	4.0	3.0	3.5	12.0	10.0	11.0	18.0	16.5	17.0
22	1.0	.0	.5	4.5	2.0	3.0	11.5	9.0	10.5	17.5	16.0	17.0
23	1.0	.0	.5	4.5	2.0	3.5	11.0	8.0	9.5	17.0	16.0	16.5
24	.5	.0	.0	4.5	3.5	3.5	11.0	8.0	9.5	16.0	14.5	15.0
25	.5	.0	.0	4.5	3.0	3.5	11.5	8.0	10.0	16.0	14.0	15.0
26	.5	.0	.0	5.0	3.0	4.0	12.5	9.5	11.0	17.0	16.0	16.5
27	1.0	.0	.5	6.5	4.0	5.5	14.5	10.5	12.5	17.0	16.0	16.5
28	1.5	.0	.5	9.0	6.5	7.5	14.5	11.5	13.5	17.5	15.5	16.5
29	---	---	---	10.0	8.5	9.5	14.0	12.5	13.0	18.0	15.5	17.0
30	---	---	---	10.0	7.5	8.5	15.5	12.0	13.5	18.0	16.5	17.0
31	---	---	---	7.5	5.0	6.0	---	---	---	18.5	17.0	17.5
MONTH	2.5	0.0	0.5	10.0	0.0	4.0	15.5	3.5	8.5	18.5	8.5	13.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	20.5	17.5	19.0	23.0	20.0	21.5	23.0	21.0	22.0	22.0	20.5	21.0
2	21.5	19.5	20.5	25.0	20.5	23.0	23.5	22.0	23.0	21.0	20.5	21.0
3	21.0	19.5	20.5	25.5	22.5	24.0	25.0	23.0	24.0	21.0	19.0	20.0
4	23.5	20.0	21.5	24.0	23.0	23.5	25.5	23.0	24.5	20.0	18.5	19.5
5	22.0	20.5	21.5	23.0	22.5	22.5	---	---	---	20.0	18.0	19.0
6	20.5	18.5	19.0	22.5	20.5	21.0	---	---	---	20.0	18.5	19.0
7	18.5	17.5	18.0	23.0	20.5	21.5	---	---	---	21.0	19.0	20.0
8	19.0	17.5	18.0	23.5	21.5	22.5	---	---	---	22.0	19.5	21.0
9	18.0	17.5	17.5	24.5	22.0	23.5	---	---	---	22.5	20.5	21.5
10	18.5	17.5	18.0	25.0	22.5	24.0	22.5	20.0	21.5	24.0	21.5	22.5
11	19.0	17.5	18.5	25.0	23.0	24.0	21.5	20.5	21.0	23.5	22.0	23.0
12	20.0	17.5	19.0	23.5	22.0	22.5	20.5	20.0	20.5	22.5	21.5	22.0
13	19.0	18.5	19.0	22.0	21.0	21.5	22.5	20.5	21.0	22.0	20.0	21.0
14	18.5	17.0	18.0	23.5	21.0	22.5	23.5	21.5	22.5	21.5	20.5	21.0
15	17.0	15.0	16.0	24.0	21.5	22.5	24.5	22.0	23.5	22.0	20.5	21.0
16	16.0	14.5	15.0	23.0	21.5	22.0	25.0	23.0	24.0	21.0	18.5	19.5
17	17.5	15.5	16.5	22.0	21.0	21.5	25.0	23.0	24.0	19.0	18.0	18.5
18	18.5	16.5	17.5	23.5	21.0	22.5	23.5	22.0	23.0	18.5	18.0	18.0
19	19.5	17.5	18.5	24.5	21.5	23.0	22.5	21.5	22.0	18.0	17.5	17.5
20	20.0	18.0	19.0	22.5	21.0	22.0	23.5	21.0	22.5	18.5	17.0	17.5
21	21.0	19.0	19.5	21.0	20.0	20.5	25.0	22.5	23.5	19.0	18.0	18.5
22	21.0	19.5	20.0	22.0	20.0	21.0	25.0	22.5	24.0	20.0	18.5	19.0
23	21.5	19.5	20.5	25.5	21.5	23.0	24.5	23.0	24.0	20.0	17.5	19.5
24	22.0	19.5	20.5	26.0	23.0	24.5	24.5	22.5	23.5	17.5	16.0	17.0
25	21.5	20.0	21.0	25.5	24.0	25.0	23.5	21.0	22.5	16.0	15.0	15.5
26	21.5	20.0	20.5	27.0	24.0	25.5	22.5	20.5	22.0	17.0	15.0	16.0
27	23.5	20.5	22.0	25.5	24.5	25.0	22.5	20.5	22.0	15.5	14.5	15.0
28	22.5	21.0	22.0	26.0	24.0	25.5	23.0	21.0	22.0	15.0	13.0	14.0
29	21.5	20.0	21.0	25.5	23.5	24.5	22.5	22.0	22.0	16.0	13.0	14.5
30	21.0	19.0	20.0	24.0	22.5	23.5	23.5	21.5	22.5	16.0	14.0	15.0
31	---	---	---	23.5	22.0	23.0	23.0	21.0	22.0	---	---	---
MONTH	23.5	14.5	19.5	27.0	20.0	23.0	---	---	---	24.0	13.0	19.0

DELAWARE RIVER BASIN

01434025 BISCUIT BROOK ABOVE PIGEON BROOK AT FROST VALLEY, NY

LOCATION.--Lat 41°59'43", long 74°30'05", Ulster County, Hydrologic Unit 02040104, on right bank 0.2 mi upstream fro Pigeon Brook, 0.6 mi upstream from mouth, and 0.8 mi northeast of Frost Valley.

DRAINAGE AREA.--3.80 mi^2.

PERIOD OF RECORD.--June 1983 to current year. February to May 1983 (occasional discharge measurements).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 2,060 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Sept. 11, 1987, at datum 1.00 ft higher.

REMARKS.--Records fair below 400 ft^3/s and poor above. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--6 years (water years 1984-1989), 10.01 ft^3/s, 35.77 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,560 ft^3/s, Apr. 4, 1987, gage height, 4.37 ft, present datum; minimum discharge, 0.40 ft^3/s, Sept. 16, 1983; minimum gage height, 0.97 ft, July 16, 1988, present datum.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 6	0615	*357	*3.39	May 16	2215	338	3.36

Minimum discharge, 0.62 ft^3/s, Sept. 10, 11-13, 14, gage height, 0.82 ft, present datum.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	5.3	10	e3.4	e3.3	e4.1	26	8.1	5.4	4.8	1.5	.89
2	2.3	8.7	9.0	e3.4	e3.6	e4.0	17	68	5.6	4.4	1.6	1.5
3	2.3	5.9	8.5	e3.2	e3.0	e3.9	17	28	4.7	3.9	1.9	.89
4	1.7	6.1	8.0	e3.0	e2.5	e4.0	22	18	4.6	3.9	1.4	.74
5	1.7	34	7.7	e2.9	e2.2	6.9	23	28	3.5	11	2.3	.70
6	1.7	55	e7.4	e2.8	e2.2	5.7	34	162	7.9	6.5	1.5	.70
7	1.7	21	e6.8	e2.7	e2.3	e4.0	24	56	6.2	5.3	1.3	.70
8	2.4	14	e6.2	e2.6	e2.2	e3.7	18	31	5.3	4.5	1.2	.69
9	2.2	12	e5.8	e3.0	e2.2	e3.5	16	25	5.4	3.8	1.1	.66
10	2.2	11	e5.6	e2.8	e2.1	e3.7	13	34	8.5	3.9	1.1	.65
11	2.8	9.7	e5.4	e2.7	e2.1	4.0	12	78	5.7	3.7	1.2	.62
12	2.3	8.3	e5.2	e2.6	e2.3	3.7	11	37	4.7	3.3	4.1	.62
13	2.0	16	e5.0	e2.6	e2.3	3.6	10	27	8.8	3.0	11	.62
14	1.9	14	e5.2	e2.8	e3.0	5.4	10	22	10	2.7	3.6	1.9
15	1.9	11	e4.8	e2.8	e4.0	19	12	19	20	2.6	2.0	1.2
16	1.9	9.9	e4.4	e2.8	e3.0	11	17	75	24	2.6	1.6	1.6
17	1.9	20	e4.2	e2.7	e2.6	12	13	116	17	2.8	1.4	3.0
18	3.5	14	e4.1	e2.6	e2.5	26	13	38	12	2.6	1.2	1.4
19	3.3	11	e3.9	e2.5	e2.5	14	12	25	9.9	2.3	1.2	3.8
20	2.6	44	e4.1	e2.4	e2.6	e11	11	19	8.2	4.0	1.7	80
21	2.7	45	4.5	e2.1	e54	e7.6	9.9	17	7.9	3.3	1.3	19
22	11	23	3.7	e2.0	e25	e7.0	8.9	14	7.1	2.7	1.1	24
23	6.0	17	3.5	e2.1	e10	e6.8	8.1	12	9.2	2.3	1.0	42
24	10	15	11	e2.4	e6.0	7.3	7.3	15	14	2.1	.95	18
25	7.0	13	8.8	e2.6	e3.5	14	7.0	11	8.6	1.9	.89	11
26	4.4	11	4.5	e2.5	e3.6	18	6.6	9.7	8.0	1.8	.80	15
27	3.5	11	4.2	e2.6	e5.0	34	6.1	9.0	8.1	1.7	.79	10
28	5.1	16	6.1	e2.4	e4.7	71	5.8	7.5	7.0	3.5	.78	8.5
29	4.8	11	5.4	e2.2	---	74	6.0	6.4	6.1	2.1	1.4	7.6
30	4.0	10	e3.8	e2.4	---	52	6.6	6.3	5.4	1.7	1.6	6.7
31	3.5	---	e3.5	e2.5	---	40	---	5.6	---	1.6	.90	---
TOTAL	106.1	502.9	180.3	82.1	164.3	484.9	403.3	1027.6	258.8	106.3	55.41	264.68
MEAN	3.42	16.8	5.82	2.65	5.87	15.6	13.4	33.1	8.63	3.43	1.79	8.82
MAX	11	55	11	3.4	54	74	34	162	24	11	11	80
MIN	1.7	5.3	3.5	2.0	2.1	3.5	5.8	5.6	3.5	1.6	.78	.62
CFSM	.90	4.41	1.53	.70	1.54	4.12	3.54	8.72	2.27	.90	.47	2.32
IN.	1.04	4.92	1.77	.80	1.61	4.75	3.95	10.06	2.53	1.04	.54	2.59

CAL YR 1988 TOTAL 2758.65 MEAN 7.54 MAX 128 MIN .55 CFSM 1.98 IN. 27.01
WTR YR 1989 TOTAL 3636.69 MEAN 9.96 MAX 162 MIN .62 CFSM 2.62 IN. 35.60

e Estimated

DELAWARE RIVER BASIN

01435000 NEVERSINK RIVER NEAR CLARYVILLE, NY

LOCATION.--Lat 41°53'24", long 74°35'25", Sullivan County, Hydrologic Unit 02040104, on left bank 50 ft downstream from covered bridge, 300 ft upstream from small tributary, 2.2 mi downstream from confluence of East and West Branches, and 2.2 mi southwest of Claryville.

DRAINAGE AREA.--66.6 mi^2.

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

REVISED RECORDS.--WDR NY-82-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,522.37 ft above National Geodetic Vertical Datum of 1929. Prior to October 1, 1974, at datum 6.00 ft higher. Oct. 1, 1974 to Sept. 30, 1979 at datum 5.00 ft higher.

REMARKS.--Records good below 2,000 ft^3/s and fair above, except those for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--38 years, 187 ft^3/s, 38.13 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,300 ft^3/s, Apr. 4, 1987, gage height, 13.26 ft; maximum gage height, 13.83 ft, present datum, July 10, 1952; minimum discharge, 6.8 ft^3/s, Sept. 24, 25, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Nov. 25, 1950, reached a stage of about 15.0 ft, present datum, from floodmarks, discharge, 23,400 ft^3/s, by slope-area measurement.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 5	2300	3,340	9.61	May 16	2345	4,800	10.22
May 6	0800	*6,990	*10.92				

Minimum discharge, 20 ft^3/s, Sept. 13, 14, gage height, 6.03 ft.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	62	154	e68	e56	e80	453	141	137	95	e40	25
2	39	123	142	e68	e70	e90	279	1120	134	89	e48	28
3	42	98	135	e64	e70	e76	282	577	128	84	e62	26
4	38	87	127	e62	e58	e70	365	339	120	80	e45	24
5	38	494	120	e58	e52	e92	381	439	113	156	e72	23
6	37	1240	115	e60	e50	e98	556	3360	131	129	e48	23
7	37	414	111	e64	e52	e88	430	1070	124	115	e41	23
8	37	272	106	e72	e52	e80	324	606	114	98	e39	22
9	38	217	e98	81	e50	e84	276	453	111	81	37	22
10	37	187	e90	e64	e48	e78	238	689	209	76	36	22
11	38	174	e86	e58	e48	e72	208	1460	131	79	36	22
12	37	150	e82	e60	e49	e68	187	662	107	69	51	22
13	36	228	e78	e70	e50	e66	177	463	139	65	122	21
14	35	259	e84	e68	e56	e72	171	374	150	62	81	28
15	35	190	e90	e76	e86	209	191	357	328	59	47	32
16	34	170	e86	e74	e72	164	315	929	362	59	39	29
17	34	306	e80	e64	e60	143	246	1900	292	62	34	45
18	35	250	e76	e60	e54	350	230	652	228	58	31	33
19	39	199	e72	e60	e52	e200	218	455	188	56	31	36
20	35	663	e68	e56	e54	e120	190	364	162	74	36	1330
21	35	881	e72	e52	506	e100	177	321	158	83	34	393
22	111	409	e70	e47	346	e94	165	271	148	65	30	257
23	124	308	e64	e46	160	e90	156	235	144	58	29	533
24	109	254	e96	e48	e130	e92	147	302	229	53	28	291
25	118	216	164	e54	e100	424	142	260	159	e49	26	190
26	80	193	e96	e54	e80	430	134	216	134	e46	26	244
27	67	176	e70	e52	e88	459	129	206	134	e44	25	191
28	64	234	e70	e50	e86	802	126	180	121	e90	25	151
29	76	192	e88	e48	---	905	124	161	114	e54	27	132
30	65	167	e70	e52	---	649	150	151	102	e45	32	118
31	61	---	e66	e56	---	597	---	145	---	e41	27	---
TOTAL	1651	8813	2926	1866	2635	6942	7167	18858	4851	2274	1285	4336
MEAN	53.3	294	94.4	60.2	94.1	224	239	608	162	73.4	41.5	145
MAX	124	1240	164	81	506	905	556	3360	362	156	122	1330
MIN	34	62	64	46	48	66	124	141	102	41	25	21
CFSM	.80	4.41	1.42	.90	1.41	3.36	3.59	9.13	2.43	1.10	.62	2.17
IN.	.92	4.92	1.63	1.04	1.47	3.88	4.00	10.53	2.71	1.27	.72	2.42

CAL YR 1988 TOTAL 52191 MEAN 143 MAX 2130 MIN 28 CFSM 2.14 IN. 29.15
WTR YR 1989 TOTAL 63604 MEAN 174 MAX 3360 MIN 21 CFSM 2.62 IN. 35.53

e Estimated

DELAWARE RIVER BASIN

01436000 NEVERSINK RIVER AT NEVERSINK, NY

LOCATION.--Lat 41°49'12", long 74°38'09", Sullivan County, Hydrologic Unit 02040104, on right bank at downstream end of outlet channel, 1,650 ft downstream from Neversink Dam and State Highway 55, 1.7 mi southwest of Neversink, and 2.6 mi upstream from Wynkoop Brook.

DRAINAGE AREA.--92.6 mi^2.

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

REVISED RECORDS.--WDR NY-72-1: 1961 (M), 1968 (M). WDR NY-82-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,255.24 ft Board of Water Supply, City of New York datum. Prior to Jan. 17, 1953, water-stage recorder at site 650 ft downstream at datum 0.20 ft lower. Jan. 17, 1953 to Apr. 16, 1954, water-stage recorder at present site at datum 0.41 ft higher.

REMARKS.--No estimated daily discharges. Records good. Subsequent to June 1953, entire flow from 92.5 mi^2 of drainage area controlled by Neversink Reservoir (see Reservoirs in Delaware River Basin). Part of flow diverted for New York City municipal supply (see Reservoirs in Delaware River Basin). Remainder of flow (except for conservation release and spill) impounded for release during periods of low flow in the lower Delaware River basin, as directed by the Delaware River Master.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,300 ft^3/s, Nov. 25, 1950, from rating curve extended above 2,600 ft^3/s on basis of contracted-opening and critical-depth measurements of peak flow; maximum gage height, 11.65 ft, Sept. 27, 1942, site and datum then in use; minimum discharge, no flow for all or part of each day Sept. 22-24, Oct. 26-29, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 897 ft^3/s, May 18, gage height, 4.51 ft; minimum, 2.3 ft^3/s, Nov. 28, gage height, 2.27 ft.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44	33	23	23	4.1	4.4	4.8	14	44	46	45	44
2	44	24	23	23	4.1	4.4	4.9	15	43	46	45	43
3	43	24	23	23	4.0	4.4	5.0	14	44	57	53	43
4	43	24	22	23	4.0	4.4	5.0	14	43	74	75	43
5	43	25	23	23	4.0	4.4	5.0	15	44	63	88	43
6	43	24	23	23	4.0	4.4	5.1	16	44	42	89	42
7	42	24	23	23	4.1	4.4	7.7	15	44	41	79	42
8	42	24	23	23	4.1	4.4	14	15	44	41	60	52
9	42	24	23	23	4.1	4.4	14	15	44	41	46	68
10	42	24	23	23	4.1	4.4	13	15	44	41	46	68
11	42	23	23	23	4.1	4.4	13	14	43	41	46	58
12	44	24	23	23	4.1	4.4	13	14	44	42	46	42
13	46	24	23	23	4.1	4.4	14	14	44	42	47	42
14	45	23	23	23	4.3	4.4	13	14	44	42	46	42
15	45	23	23	23	4.5	4.4	14	14	44	42	54	41
16	45	23	23	12	4.2	4.4	14	15	44	42	68	41
17	45	23	23	4.5	4.1	4.5	14	200	44	42	68	41
18	44	24	23	4.6	4.2	4.6	14	817	44	42	68	41
19	44	24	23	4.6	4.1	4.6	14	598	44	42	68	41
20	44	25	23	10	4.1	4.6	14	432	44	43	68	42
21	44	23	22	22	5.5	4.6	14	419	44	42	68	41
22	44	24	23	16	4.4	4.6	13	254	45	42	68	41
23	43	24	23	4.3	4.3	4.6	13	33	45	42	67	41
24	44	24	24	4.2	4.4	5.0	14	45	45	52	67	41
25	43	23	23	4.3	4.4	5.1	14	45	45	69	59	41
26	46	24	23	4.3	4.4	4.7	14	45	45	69	44	41
27	46	24	24	10	4.4	4.7	14	45	45	69	44	37
28	46	18	23	22	4.4	4.9	14	45	45	66	44	45
29	43	23	23	16	---	5.0	14	45	45	58	44	40
30	46	24	23	4.7	---	5.1	14	44	46	59	43	40
31	46	---	23	5.6	---	5.0	---	44	---	52	43	---
TOTAL	1363	717	713	494.1	118.6	142.0	353.5	3344	1327	1532	1796	1327
MEAN	44.0	23.9	23.0	15.9	4.24	4.58	11.8	108	44.2	49.4	57.9	44.2
MAX	46	33	24	23	5.5	5.1	14	817	46	74	89	68
MIN	42	18	22	4.2	4.0	4.4	4.8	14	43	41	43	37

CAL YR 1988 TOTAL 13962 MEAN 38.1 MAX 83 MIN 18
WTR YR 1989 TOTAL 13227.2 MEAN 36.2 MAX 817 MIN 4.0

DELAWARE RIVER BASIN

01436500 NEVERSINK RIVER AT WOODBOURNE, NY

LOCATION.--Lat 41°45'24", long 74°35'52", Sullivan County, Hydrologic Unit 02040104, on left bank 0.2 mi downstream from highway bridge at Woodbourne, 0.3 mi upstream from outlet of South Wind Lake. Water-quality sampling site at discharge station.

DRAINAGE AREA.--113 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1937 to September 1973, October 1977 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,180 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Sept. 20, 1938, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Subsequent to June 1953, entire flow from 92.5 mi^2 of drainage area controlled by Neversink Reservoir. Part of flow diverted for New York City municipal supply. Remainder of flow (except for conservation releases and spill) impounded for release during periods of low flow in the lower Delaware River basin, as directed by the Delaware River Master. Satellite gage-height and temperature telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,000 ft^3/s, Nov. 26, 1950, gage height, 11.19 ft, from rating curve extended above 15,000 ft^3/s; maximum gage height, 11.2 ft, July 22, 1938, from floodmarks; minimum discharge, 6.7 ft^3/s, June 27, 1953; minimum gage height, 0.80 ft, Aug. 25, 27, 28, 1949; minimum daily discharge, 8.2 ft^3/s, June 25, 1953.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,100 ft^3/s, May 6, gage height, 3.95 ft; minimum daily, 17 ft^3/s, Mar. 14, but may have been less during periods of ice effect.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	46	58	e56	e38	e22	92	46	72	66	56	51
2	49	41	55	57	e34	e21	66	288	75	65	56	50
3	50	38	54	54	32	e20	74	126	70	69	71	49
4	48	33	52	e45	e27	20	77	86	70	89	84	49
5	47	62	51	e35	e24	e21	74	89	68	122	106	51
6	47	131	51	e38	e22	25	120	541	77	78	104	50
7	45	64	51	e41	e21	e23	98	184	76	67	96	48
8	45	52	50	e43	e20	e22	81	124	73	64	76	51
9	46	46	50	e44	e20	e20	73	100	75	60	56	73
10	47	43	e48	e45	e19	e19	68	183	132	59	55	73
11	47	43	e46	e45	e18	18	61	249	84	58	55	69
12	48	40	e45	e50	e18	18	57	137	72	56	63	47
13	51	60	e56	e60	e18	e18	57	110	86	56	101	45
14	48	69	66	e45	e20	17	62	94	91	55	76	54
15	47	52	63	e70	e50	e24	65	87	187	54	66	50
16	47	46	e56	e60	e40	e26	103	169	156	55	80	52
17	46	66	e48	e47	e30	23	76	593	133	56	79	64
18	46	61	e48	e44	e22	38	69	982	104	55	78	52
19	45	53	e52	44	e19	37	64	777	91	53	80	57
20	45	202	e58	44	e20	24	58	581	83	67	84	275
21	47	207	e56	e56	e210	25	55	522	87	66	79	111
22	63	108	e54	e50	e100	22	52	395	90	59	77	87
23	56	87	e54	e36	e58	22	49	91	96	57	76	102
24	53	77	e56	e35	e50	35	47	121	126	59	75	76
25	52	69	e80	e36	e40	152	45	108	94	81	71	65
26	52	65	e60	e40	e30	102	44	94	83	81	52	107
27	53	62	e60	e60	e27	75	45	95	78	81	52	77
28	53	76	e62	e70	e24	71	42	86	77	90	51	74
29	52	66	e62	e64	---	114	41	81	73	72	55	63
30	52	60	e60	e45	---	112	46	78	69	69	59	61
31	52	---	e56	e42	---	110	---	75	---	66	51	---
TOTAL	1527	2125	1718	1501	1051	1296	1961	7292	2748	2085	2220	2133
MEAN	49.3	70.8	55.4	48.4	37.5	41.8	65.4	235	91.6	67.3	71.6	71.1
MAX	63	207	80	70	210	152	120	982	187	122	106	275
MIN	45	33	45	35	18	17	41	46	68	53	51	45

CAL YR 1988 TOTAL 23491 MEAN 64.2 MAX 292 MIN 26
WTR YR 1989 TOTAL 27657 MEAN 75.8 MAX 982 MIN 17

e Estimated

DELAWARE RIVER BASIN

01436500 NEVERSINK RIVER AT WOODBOURNE, NY--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964, 1965, 1972, 1978 to current year.
CHEMICAL DATA: 1964 (b), 1965 (c), 1972 (a).
NUTRIENT DATA: 1964 (b), 1965 (c), 1972 (a).

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: July and August 1978, May 1979 to current year.

INSTRUMENTATION.--Water-temperature digital recorder since July 1978, provides one-hour-interval punches. Also, water-temperature satellite telemeter since May 1985, provides one-hour-interval readings.

REMARKS.--Interruptions of record were due to malfunctions of recording instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum (water years 1979-83, 1985, 1988), 26.5°C, June 16, 1981; minimum (water years 1980-89), 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum recorded, 21.0°C, July 11, but may have been higher during period of instrument malfunction; minimum, 0.0°C on many days during winter period.

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	14.5	11.5	13.0	6.0	5.5	5.5	4.0	2.0	3.0	.5	.0	.0
2	15.0	12.5	13.5	6.5	5.5	6.0	3.0	2.0	2.5	.5	.0	.5
3	14.5	12.0	13.0	8.0	4.5	6.0	4.5	2.0	3.0	.5	.0	.5
4	12.5	10.5	11.0	8.0	4.5	6.0	3.5	1.0	2.0	.5	.0	.0
5	13.0	10.0	11.0	10.0	6.5	8.0	2.5	1.0	1.5	.5	.0	.0
6	10.5	8.0	9.0	10.5	8.5	9.5	3.5	1.0	2.0	.0	.0	.0
7	10.5	7.5	8.5	8.5	6.5	7.5	3.5	1.0	2.0	.0	.0	.0
8	10.0	8.0	9.0	6.5	5.5	6.5	4.0	2.0	2.5	.0	.0	.0
9	9.0	7.0	8.0	8.0	6.5	7.0	1.5	.5	1.0	.0	.0	.0
10	10.5	7.5	9.0	6.5	5.0	6.0	.5	.0	.5	.5	.0	.0
11	12.5	9.5	10.5	7.0	5.5	6.0	.5	.0	.0	.5	.0	.0
12	10.0	7.5	8.5	7.0	3.5	5.0	.5	.0	.5	.0	.0	.0
13	8.5	7.0	7.5	5.5	4.0	5.0	.5	.0	.0	.5	.0	.0
14	10.5	6.0	8.0	7.0	4.5	5.5	.5	.0	.5	.5	.0	.0
15	10.0	7.0	9.0	7.5	4.5	6.0	.5	.0	.0	.0	.0	.0
16	13.0	9.5	11.0	6.5	4.5	5.0	.5	.0	.5	.5	.0	.0
17	14.0	10.5	11.5	9.0	6.5	7.5	.5	.0	.0	.0	.0	.0
18	11.5	10.0	10.5	6.5	4.0	5.0	.5	.0	.0	.5	.0	.0
19	10.0	7.5	8.5	4.5	3.5	4.0	.5	.0	.0	.5	.0	.0
20	9.5	6.0	7.5	6.0	4.5	5.0	.5	.0	.0	.5	.0	.0
21	7.5	6.0	7.0	6.0	4.0	5.5	.5	.0	.0	.5	.0	.0
22	7.5	6.5	7.0	5.0	3.0	4.0	.5	.0	.0	.5	.0	.0
23	9.5	6.0	7.5	4.5	2.5	3.5	.0	.0	.0	.5	.0	.0
24	9.5	8.0	8.5	4.5	2.5	3.5	.0	.0	.0	.5	.0	.0
25	8.0	6.0	7.0	4.5	2.0	3.0	.5	.0	.0	.5	.0	.0
26	7.0	5.5	6.0	5.0	2.5	4.0	.5	.0	.0	.0	.0	.0
27	9.0	5.0	7.0	6.5	4.5	5.5	.5	.0	.0	.0	.0	.0
28	7.0	5.5	6.5	7.0	5.0	6.5	.5	.0	.0	.5	.0	.0
29	8.5	6.0	7.0	5.0	3.5	4.5	.5	.0	.0	.5	.0	.0
30	7.5	5.5	6.5	3.5	2.0	3.0	.5	.0	.0	1.0	.0	.5
31	7.5	4.0	5.5	---	---	---	.5	.0	.0	2.0	.5	1.0
MONTH	15.0	4.0	9.0	10.5	2.0	5.5	4.5	0.0	0.5	2.0	0.0	0.0

DELAWARE RIVER BASIN

01436500 NEVERSINK RIVER AT WOODBOURNE, NY--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	4.5	.5	2.0	1.5	.0	.5	4.0	2.0	3.0	13.5	11.0	12.0
2	2.5	1.0	1.5	1.5	.0	.5	8.0	1.0	4.0	11.0	7.5	8.5
3	1.0	.0	1.0	2.5	.0	1.0	5.5	3.0	4.0	10.5	6.0	8.0
4	.5	.0	.0	2.0	.0	1.0	4.0	2.5	3.5	14.0	5.5	9.5
5	.5	.0	.0	2.5	1.0	1.5	6.5	4.0	5.5	11.0	8.0	8.5
6	.5	.0	.0	2.0	.0	1.0	5.5	3.5	4.5	11.5	7.5	9.5
7	.5	.0	.5	2.0	.0	.5	6.0	2.0	4.0	10.0	7.5	9.0
8	.5	.0	.5	2.0	.0	.5	7.0	3.0	5.0	8.0	6.5	7.0
9	.5	.0	.5	3.0	.0	1.0	5.0	3.0	4.0	11.5	6.0	8.5
10	.5	.0	.5	5.0	.0	1.5	5.5	2.0	3.5	9.5	7.0	8.0
11	1.0	.0	.5	4.5	.0	2.0	7.5	1.0	4.0	8.0	6.5	7.0
12	.5	.0	.5	3.0	.5	2.0	8.5	2.0	5.0	9.5	7.5	8.5
13	.5	.0	.0	4.0	.0	1.5	6.0	3.5	4.5	9.5	7.0	8.5
14	.5	.0	.0	8.5	.5	3.5	9.0	1.5	5.0	8.5	7.0	8.0
15	.0	.0	.0	9.5	4.0	6.0	6.5	4.0	4.5	12.0	8.0	10.0
16	.5	.0	.0	9.5	2.5	5.0	6.0	3.5	4.5	10.0	9.0	9.5
17	.5	.0	.0	10.0	2.5	5.5	10.5	2.5	6.5	14.5	9.0	11.0
18	.5	.0	.5	6.5	3.0	5.5	12.5	7.0	9.5	13.5	10.0	11.5
19	.5	.0	.0	6.5	.5	3.0	12.5	6.5	9.5	14.5	10.5	12.0
20	.5	.0	.0	3.5	.5	1.5	12.0	5.0	8.5	16.0	11.0	13.5
21	.0	.0	.0	4.0	.0	1.5	12.0	6.0	9.0	16.5	13.0	14.5
22	.5	.0	.5	7.5	.0	2.5	9.0	5.0	7.5	17.0	12.0	14.0
23	2.0	.0	.5	8.5	.5	3.5	10.0	3.0	6.5	13.5	11.0	12.5
24	1.0	.0	.5	3.5	1.0	2.5	11.5	4.0	7.5	12.5	10.5	11.5
25	1.0	.0	.5	6.0	.5	2.5	12.5	5.5	8.5	16.0	9.5	12.5
26	.5	.0	.0	7.5	1.5	4.0	14.5	7.0	10.5	14.5	11.5	13.0
27	1.0	.0	.5	8.5	1.5	5.0	13.0	8.0	10.5	13.0	11.0	12.0
28	1.0	.0	.5	10.0	3.5	6.5	15.0	7.0	11.0	16.5	9.5	12.5
29	---	---	---	8.0	5.5	7.0	12.0	8.0	9.5	17.0	9.0	12.5
30	---	---	---	5.5	2.5	3.5	15.0	7.5	11.0	13.5	10.5	12.0
31	---	---	---	3.0	2.0	2.5	---	---	---	14.0	11.0	12.5
MONTH	4.5	0.0	0.5	10.0	0.0	3.0	15.0	1.0	6.5	17.0	5.5	10.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	19.5	11.5	15.0	---	---	---	17.0	12.0	14.0	15.0	13.0	14.0
2	18.0	13.5	15.5	---	---	---	---	---	---	18.0	13.0	15.0
3	19.0	12.0	15.5	---	---	---	---	---	---	17.0	11.5	14.0
4	17.0	12.5	15.0	---	---	---	---	---	---	17.0	11.0	13.5
5	15.0	11.0	13.5	---	---	---	---	---	---	17.0	11.0	13.5
6	13.5	11.5	12.0	17.5	13.5	15.0	---	---	---	17.5	12.5	15.0
7	12.0	11.0	11.5	20.5	13.5	16.5	---	---	---	16.5	13.0	14.5
8	14.5	10.5	12.5	20.0	14.5	17.0	14.0	9.5	11.5	18.0	13.0	15.0
9	13.5	12.0	12.5	20.0	13.5	16.5	14.5	10.0	12.0	16.0	12.0	14.0
10	16.5	11.5	13.5	17.5	14.5	16.5	16.5	11.0	13.5	17.0	12.0	14.5
11	18.0	12.0	14.5	21.0	14.0	17.0	14.5	12.5	13.5	15.5	12.5	14.5
12	18.0	11.0	14.5	17.5	14.5	15.5	13.5	12.0	12.5	17.0	13.0	14.5
13	15.5	11.5	13.0	16.5	12.0	14.0	16.5	12.5	14.0	17.0	12.5	14.5
14	11.5	11.0	11.5	18.5	13.0	15.5	18.0	14.0	16.0	14.5	13.5	14.0
15	11.5	11.0	11.0	18.0	13.0	15.5	18.0	14.0	16.0	17.0	13.0	14.5
16	13.0	11.0	11.5	15.5	12.5	13.5	17.0	12.5	15.0	14.5	13.0	14.0
17	17.0	12.0	14.0	15.5	12.0	13.5	17.0	11.5	14.0	14.0	12.5	13.0
18	17.0	11.5	14.0	18.5	12.0	15.0	14.5	10.5	12.5	15.5	12.5	13.5
19	18.5	11.5	15.0	19.5	14.0	16.5	13.0	11.0	12.5	13.5	12.5	13.0
20	17.0	13.0	15.0	17.0	12.5	14.0	15.0	11.0	13.0	15.5	13.0	14.5
21	16.0	13.5	14.5	13.5	13.0	13.0	17.0	12.0	14.0	15.5	14.5	15.0
22	17.0	13.5	15.0	15.5	12.5	13.5	17.0	11.5	14.5	16.0	14.5	15.0
23	17.5	14.0	15.5	20.0	13.0	16.0	16.0	12.0	14.0	16.5	12.0	15.0
24	16.5	13.0	15.0	20.0	14.5	17.0	16.0	11.0	13.5	14.0	10.0	11.5
25	19.5	13.5	16.0	18.0	12.0	15.0	16.0	10.0	13.0	12.5	8.5	10.5
26	20.0	13.5	16.5	18.5	12.0	15.0	16.5	10.5	13.5	14.0	11.5	12.5
27	20.5	14.5	17.5	18.0	12.0	15.0	15.5	11.5	13.5	13.0	9.5	11.0
28	---	---	---	18.5	12.5	15.5	15.0	12.5	14.0	13.0	8.0	10.5
29	---	---	---	18.0	11.5	14.5	15.0	13.0	14.0	14.0	9.0	11.5
30	---	---	---	15.5	11.5	13.5	18.5	12.5	15.0	13.5	10.5	12.0
31	---	---	---	14.0	11.5	13.0	18.5	13.5	15.5	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	18.0	8.0	13.5

DELAWARE RIVER BASIN

01437500 NEVERSINK RIVER AT GODEFFROY, NY

LOCATION.--Lat 41°26'28", long 74°36'07", Orange County, Hydrologic Unit 02040104, on right bank just upstream from highway bridge on Graham Road, 0.5 mi downstream from Basher Kill, 0.8 mi southeast of Godeffroy, 1.7 mi south of Cuddebackville, and 8.5 mi upstream from mouth.

DRAINAGE AREA.--307 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August to October 1903, July 1937 to current year. Gage heights and discharge measurements, August 1909 to April 1914. Twice-daily figures of discharge, January 1911 to December 1912, which do not represent daily mean discharges because of diurnal fluctuation. August to October 1903, published as "Navesink River at Godeffroy, NY."

REVISED RECORDS.--WSP 1502: 1951(M). WDR NY-82-1: Drainage area. WDR NY-87-1: 1986.

GAGE.--Water-stage recorder. Datum of gage is 459.66 ft above National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Apr. 30, 1914, nonrecording gages at same site (August to October 1903 at datum 0.98 ft higher).

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Prior to 1949, diurnal fluctuation at low and medium flow caused by powerplant at Cuddebackville. Subsequent to June 1953, entire flow from 92.5 mi^2 of drainage area controlled by Neversink Reservoir (see Reservoirs in Delaware River Basin). Part of flow diverted for New York City municipal supply. Remainder of flow (except for conservation releases and spill), impounded for release during periods of low flow in the lower Delaware River basin, as directed by the Delaware River Master.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,000 ft^3/s, Aug. 19, 1955, gage height, 12.49 ft, from rating curve extended above 11,000 ft^3/s, on basis of slope-area measurement of peak flow; minimum, practically no flow several times in July 1911.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,420 ft^3/s, May 17, gage height, 7.49 ft; minimum, 80 ft^3/s, Oct. 20, 21.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	100	124	456	186	217	e210	1140	239	443	337	179	126
2	98	174	403	184	227	e190	769	882	683	314	159	123
3	99	164	363	178	206	e190	719	938	500	287	232	120
4	96	147	334	e180	160	193	756	588	438	284	222	112
5	95	164	301	e170	e150	191	696	531	402	407	201	109
6	93	809	283	e180	e140	200	849	2870	466	457	199	108
7	90	479	267	e180	e130	e170	895	2010	575	348	193	107
8	93	361	249	e180	e120	e170	756	1470	498	311	177	104
9	95	308	228	e170	e120	e160	649	1160	482	276	154	108
10	92	273	203	167	e110	e150	610	1450	993	259	131	133
11	91	257	e200	154	e110	e140	543	3110	731	264	129	134
12	94	229	e190	150	e110	e150	494	2040	569	232	173	129
13	92	262	e190	199	109	e130	463	1550	625	219	247	104
14	93	467	181	198	117	e140	498	1280	649	211	313	117
15	90	354	190	195	140	158	473	1060	1240	197	214	149
16	89	298	162	242	201	188	670	1130	1550	192	187	147
17	85	300	150	205	e140	177	614	4140	1290	193	189	303
18	86	350	e140	178	e130	188	538	3060	1050	187	174	228
19	88	294	140	177	e120	224	501	2390	850	178	176	199
20	83	663	148	176	115	195	437	1850	709	182	227	1490
21	86	1560	160	e170	e300	206	399	1450	698	224	212	1140
22	181	1080	160	e160	e700	214	369	1300	703	205	185	832
23	224	886	157	e160	e400	204	339	870	677	197	180	873
24	156	747	172	151	e350	240	319	968	982	183	171	681
25	142	623	300	147	e280	713	299	1020	800	181	160	517
26	130	531	240	144	e260	827	281	839	624	186	150	792
27	123	474	201	198	e240	682	265	755	533	178	127	832
28	128	576	200	200	e220	640	259	659	482	188	123	607
29	131	531	257	194	---	748	249	564	447	190	126	509
30	122	473	217	213	---	815	242	510	380	168	152	457
31	116	---	183	224	---	906	---	479	---	169	140	---
TOTAL	3381	13958	7025	5610	5622	9709	16091	43162	21069	7404	5602	11390
MEAN	109	465	227	181	201	313	536	1392	702	239	181	380
MAX	224	1560	456	242	700	906	1140	4140	1550	457	313	1490
MIN	83	124	140	144	109	130	242	239	380	168	123	104

CAL YR 1988 TOTAL 110289 MEAN 301 MAX 1560 MIN 70
WTR YR 1989 TOTAL 150023 MEAN 411 MAX 4140 MIN 83

e Estimated

DELAWARE RIVER BASIN

01437500 NEVERSINK RIVER AT GODEFFROY, NY--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1987 to current year. Records prior to water year 1989 are unpublished and available in files of the Geological Survey.
CHEMICAL DATA: 1987 (b), 1988-89 (c).
MINOR ELEMENTS DATA: 1987 (b), 1988-89 (c).
SEDIMENT DATA: 1988 (b), 1989 (c).

REMARKS.--Water-quality samples were collected by personnel of the New York State Department of Environmental Conservation, and were analyzed in USGS laboratories.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	BAROMETRIC PRESSURE (MM OF HG)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
OCT 18...	0800	84	103	6.60	11.0	--	10.5	--	27	8.2	1.6	7.8
NOV 15...	0900	362	95	7.10	5.0	--	12.8	--	24	7.0	1.5	6.6
APR 12...	1000	502	101	6.40	5.5	759	13.0	103	23	6.9	1.4	7.9
MAY 08...	1200	1480	80	6.80	9.5	746	10.8	97	19	5.5	1.2	6.5
JUN 14...	1200	631	89	6.80	15.5	751	--	--	22	6.5	1.3	6.0
AUG 29...	1000	122	116	7.10	19.5	751	9.5	105	28	8.4	1.6	7.9

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)	ALUMINUM, DISSOLVED (UG/L AS AL)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)
OCT 18...	1.2	17	10	11	0.10	30	<10	<1	<1	19	3
NOV 15...	1.1	13	14	11	0.10	110	--	3	--	10	--
APR 12...	0.90	10	10	12	0.10	70	--	<1	--	4	--
MAY 08...	0.90	8.0	10	8.4	0.10	190	--	1	--	9	--
JUN 14...	0.70	12	9.0	9.5	0.10	150	--	<1	--	11	--
AUG 29...	1.1	18	10	12	0.10	20	--	<1	--	5	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, DISSOLVED (UG/L AS NI)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)
OCT 18...	80	21	<5	<5	<10	5	<0.10	5	<1	110	5
NOV 15...	200	--	<5	--	20	--	<0.10	10	--	<10	--
APR 12...	140	--	<5	--	40	--	<0.10	3	--	20	--
MAY 08...	290	72	6	--	60	--	<0.10	5	--	10	--
JUN 14...	330	--	4	--	60	--	<0.10	2	--	20	--
AUG 29...	150	--	1	--	20	--	--	2	--	<10	--

DELAWARE RIVER BASIN

01437500 NEVERSINK RIVER AT GODEFFROY, NY--Continued

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
OCT				
18...	0800	84	1	0.23
NOV				
15...	0900	362	3	2.9
APR				
12...	1000	502	4	5.4
MAY				
08...	1200	1480	9	36
JUN				
14...	1200	631	6	10
AUG				
29...	1000	122	4	1.3

DELAWARE RIVER BASIN

01438500 DELAWARE RIVER AT MONTAGUE, NJ

LOCATION.--Lat 41°18'33", long 74°47'44", Pike County, PA, Hydrologic Unit 02040104, on right bank 1,500 ft upstream from toll bridge (on U.S. Route 206) between Montague, NJ and Milford, PA, 0.8 mi downstream from Sawkill Creek, and at river mile 246.3.

DRAINAGE AREA.--3,480 mi^2.

PERIOD OF RECORD.--March 1936 to September 1939 (gage heights only, published as "at Milford, PA"). October 1939 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WDR-NJ-81-2: 1980.

GAGE.--Water-stage recorder. Datum of gage is 369.93 ft above National Geodetic Vertical Datum of 1929. Prior to Feb. 9, 1940, nonrecording gage on upstream side of left span of subsequently dismantled bridge at present site at datum 70 ft lower.

REMARKS.--Records excellent except for period of ice effect, Dec. 12 to Jan. 29, and Feb. 8-20, and periods of shifting control, Oct. 1 to Nov. 6 and Aug. 20 to Sept. 30, which are good. Diurnal fluctuations at medium and low flow caused by powerplants on tributary streams. Flow regulated by Lake Wallenpaupack and by Pepacton, Cannonsville, Swinging Bridge, Toronto, Cliff Lake, and Neversink Reservoirs (see Delaware River basin, reservoirs in) and smaller reservoirs. Diversion from Pepacton, Cannonsville, and Neversink Reservoirs (see Delaware River basin, diversions). Several measurements of water temperature were made during the year. Satellite telemeter at station.

AVERAGE DISCHARGE.--50 years, 5,734 ft^3/s, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 250,000 ft^3/s, Aug. 19, 1955, gage height, 35.15 ft, from rating curve extended above 90,000 ft^3/s on basis of flood-routing study; minimum, 382 ft^3/s, Aug. 24, 1954, gage height, 3.83 ft, minimum daily, 412 ft^3/s, Aug. 23, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of October 10, 1903, reached a stage of 35.5 ft, from floodmark, present datum.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 52,200 ft^3/s, May 6, gage height, 16.19 ft; minimum, 960 ft^3/s, Sept. 15.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1950	1740	3720	e1900	2500	3100	14100	2260	4810	4150	2240	1820
2	1810	1800	3730	e2100	2560	2730	11400	6340	5500	3330	2070	1650
3	1720	1350	3320	e2100	2770	2450	9240	15100	4690	3130	2210	1660
4	1640	1850	2560	e2100	2380	2230	8670	10600	3660	3160	2520	1590
5	1670	1850	2700	e2600	1730	1890	8670	7810	3340	3100	2310	1620
6	1750	2900	2940	e2400	1950	2250	9240	27000	3450	7550	1840	1600
7	1680	7180	2630	e2000	2440	2560	10200	41900	4190	5840	2000	1590
8	1650	5080	2520	e1800	e2000	2650	9380	26700	4330	4710	2600	1710
9	1700	4100	2560	e1900	e2100	2490	8060	18300	4250	3980	2200	1740
10	1650	3440	2370	e2300	e2000	2020	7430	16200	6260	3490	2250	1750
11	1900	2850	1630	e2200	e1750	1840	6420	29500	6770	4020	2040	2270
12	1760	2530	e1650	e1950	e1200	1380	5690	27200	5330	3480	2090	2350
13	1750	2290	e2300	e1900	e1300	1520	5030	19700	4910	3020	2040	2030
14	1810	3200	e2000	e2100	e2000	1510	4950	15100	5450	2850	2280	1870
15	1770	4400	e2100	e1800	e2000	1440	4470	13100	8870	2710	2390	1800
16	1810	3850	e1700	e1800	e2600	1450	5310	12100	14600	1820	2260	1980
17	1800	3290	e2100	e2200	e2500	2320	5940	22900	13700	1750	2570	2170
18	1810	3560	e2000	e2200	e2200	2020	5560	22700	13500	2470	1840	1530
19	1890	3670	e2100	e1800	e1500	2130	5070	16200	10900	2510	1700	1380
20	1830	3790	e2100	e1800	e1300	2950	4580	13400	9810	2420	1890	5040
21	1920	12800	e1900	e1600	1990	2770	4280	11600	8510	2790	2090	6770
22	2060	12100	e2000	e1400	9450	2380	3920	10400	9120	3060	2470	6400
23	2020	8560	e1800	e1500	7670	2010	3590	8460	8640	2460	2440	5280
24	2270	6510	e1600	e2000	5260	2330	3500	9180	9910	2440	2400	4510
25	2010	5610	e2300	e1800	4270	6490	3300	9110	12300	3110	1800	4150
26	2050	4930	e2900	e1700	2730	9780	2900	7700	11200	3080	1740	4790
27	1670	4090	e2800	e2200	2920	9010	2580	6780	8880	3100	1710	4910
28	1280	4120	e2400	e2400	3030	8010	2450	5910	7930	3150	1710	3570
29	1190	4190	e2000	e1750	---	8200	2410	4970	6960	2650	1860	3150
30	1370	4240	e2400	2210	---	11200	2100	4810	5970	1810	1860	2710
31	1630	---	e2200	2650	---	13500	---	4840	---	1830	2310	---
TOTAL	54820	131870	73030	62160	78100	118610	180440	447870	227740	98970	65730	85390
MEAN	1768	4396	2356	2005	2789	3826	6015	14450	7591	3193	2120	2846
MAX	2270	12800	3730	2650	9450	13500	14100	41900	14600	7550	2600	6770
MIN	1190	1350	1600	1400	1200	1380	2100	2260	3340	1750	1700	1380

CAL YR 1988 TOTAL 1374640 MEAN 3756 MAX 26900 MIN 1190
WTR YR 1989 TOTAL 1624730 MEAN 4451 MAX 41900 MIN 1190

e Estimated

DELAWARE RIVER BASIN

RESERVOIRS IN DELAWARE RIVER BASIN

01416900 PEPACTON RESERVOIR.--Lat 42°04'38", long 74°58'04", Delaware County, Hydrologic Unit 02040102, near release chamber at Downsville Dam on East Branch Delaware River, and 1.6 mi east of Downsville. DRAINAGE AREA, 371 mi^2. PERIOD OF RECORD, September 1954 to current year. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Board of Water Supply, City of New York).

Reservoir is formed by an earthfill rockfaced dam. Storage began Sept. 15, 1954. Usable capacity 140,190 mil gal between minimum operating level, elevation, 1,152.0 ft and crest of spillway, elevation, 1,280.0 ft. Capacity: at crest of spillway 149,799 mil gal; at minimum operating level, 9,609 mil gal; at sill of diversion tunnel, elevation, 1,143.0 ft, 6,098 mil gal; in dead storage below release outlet, elevation, 1,126.50 ft, 1,898 mil gal. Figures given herein represent total contents. Reservoir impounds water for diversion through East Delaware Tunnel to Rondout Reservoir on Rondout Creek, in Hudson River basin (see elsewhere in this section), for water supply to City of New York; for release during periods of low flow in the lower Delaware River basin, as directed by the Delaware River Master; and for conservation release. No diversion prior to Jan. 6, 1955. Records provided by Bureau of Water Resources Development and Department of Environmental Protection, City of New York.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 154,027 mil gal, Apr. 5, 1960, elevation, 1,282.27 ft; minimum observed (after first filling), 9,575 mil gal, Dec. 26, 1964, elevation, 1,151.92 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 149,929 mil gal, June 26, 28, 29, elevation, 1,280.07 ft; minimum observed, 74,543 mil gal, Feb. 5, elevation, 1,230.87 ft.

01424997 CANNONSVILLE RESERVOIR.--Lat 42°03'46", long 75°22'29", Delaware County, Hydrologic Unit 02040101, in emergency gate tower at Cannonsville Dam on West Branch Delaware River, and 1.8 mi southeast of Stilesville. DRAINAGE AREA, 454 mi^2. PERIOD OF RECORD, October 1963 to current year. REVISED RECORDS, WDR NY-71-1: 1966. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Board of Water Supply, City of New York).

Reservoir is formed by an earthfill rockfaced dam. Storage began Sept. 30, 1963. Usable capacity 95,706 mil gal between minimum operating level, elevation, 1,040.0 ft and crest of spillway, elevation, 1,150.0 ft. Capacity, at crest of spillway, 98,618 mil gal; at minimum operating level, 2,912 mil gal; at mouth of inlet channel to diversion tunnel, elevation, 1,035.0 ft, 1,892 mil gal; in dead storage below release outlet elevation, 1,020.5 ft, 328 mil gal. Figures given herein represent total contents. Impounded water is diverted for New York City water supply via West Delaware Tunnel to Rondout Reservoir in Hudson River basin (see elsewhere in this section); is released in Delaware River for downstream low flow augmentation, as directed by the Delaware River Master; and is released for conservation flow in the Delaware River. No diversion prior to January 29, 1964. Records provided by Bureau of Water Resources Development, City of New York.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 109,617 mil gal, Mar. 16, 1986, elevation, 1,156.73 ft; minimum observed (after first filling), 11,901 mil gal, Nov. 7, 1968, elevation, 1,066.24 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 100,452 mil gal, June 18, 19, elevation, 1,151.14 ft; minimum observed, 27,921 mil gal, Oct. 24, elevation, 1,090.74 ft.

01433000 SWINGING BRIDGE RESERVOIR.--Lat 41°34'25", long 74°47'00", Sullivan County, Hydrologic Unit 02040104, at dam on Mongaup River, and 1.8 mi northwest of Fowlersville. DRAINAGE AREA, 118 mi^2 excluding Cliff Lake, Lebanon Lake, and Toronto Reservoir. PERIOD OF RECORD, January 1930 to current year. REVISED RECORDS, WSP 1552: 1951-54. WDR NY-86-1: 1985. GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Orange and Rockland Utilities, Inc.). All capacity figures given herein are based on zero storage at minimum operating pool level, 1,010 ft.

Reservoir is formed by an earthfill dam. Storage began Jan. 19, 1930. Usable capacity, 1,436.6 mil ft^3 between elevations 1,010.0 ft, minimum operating pool, and 1,071.2 ft, top of flashboards. Capacity below elevation 1,010.0 ft, minimum operating pool, about 212.7 mil ft^3. Reservoir is used for storage of water for power. Figures given herein represent contents above 1,010.0 ft. Water is received from Cliff Lake, Lebanon Lake, and Toronto Reservoir. Records provided by Orange and Rockland Utilities, Inc.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,461.6 mil ft^3, Mar. 14, 1977, elevation, 1,071.8 ft; minimum (after first filling), -141.4 mil ft^3, Dec. 2, 1938, elevation, 987.5 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,375.2 mil ft^3, May 23, elevation, 1,069.7 ft; minimum, 1,059.5 mil ft^3, Aug. 23, elevation, 1,061.4 ft.

01433100 TORONTO RESERVOIR.--Lat 41°37'15", long 74°49'55", Sullivan County, Hydrologic Unit 02040104, at dam on Black Lake Creek, and 2.5 mi southeast of village of Black Lake. DRAINAGE AREA, 23.2 mi^2. PERIOD OF RECORD, January 1926 to current year. REVISED RECORDS, WSP 1552: 1951-54. WSP 1702: 1959 (M). WDR NY-85-1: 1984. WDR NY-86-1: 1985. GAGE, nonrecording gage. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Orange and Rockland Utilities, Inc.). All capacity figures given herein are based on zero storage at minimum operating pool level, 1,165.0 ft.

Reservoir is formed by an earthfill dam completed July 24, 1926. Storage began Jan. 13, 1926. Usable capacity 1,098.2 mil ft^3 between elevations 1,165.0 ft, minimum operating pool, and 1,220.0 ft, top of permanent flashboards. Capacity below elevation 1,165.0 ft, minimum operating pool, about 26.8 mil ft^3. Reservoir is used for storage of water for power. Figures given herein represent contents above 1,165.0 ft. Records provided by Orange and Rockland Utilities, Inc.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 1,171.2 mil ft^3, July 20, 1945, elevation, 1,222.0 ft; minimum observed (after first filling), -26.8 mil ft^3, Nov. 15, 1928, elevation, 1,144.5 ft.

EXTREMES OF CURRENT YEAR.--Maximum contents observed, 628.7 mil ft^3, July 7, elevation, 1,204.4 ft; minimum observed, 21.2 mil ft^3, Oct. 31, elevation, 1,169.5 ft.

01433200 CLIFF LAKE.--Lat 41°35'00", long 74°47'40", Sullivan County Hydrologic Unit 02040104, at dam on Black Lake Creek, and 2.5 mi northwest of Fowlersville. DRAINAGE AREA, 6.46 mi^2, excluding area above Toronto Reservoir. PERIOD OF RECORD, January 1939 to current year. REVISED RECORDS, WSP 1552: 1951-54. WDR NY-75-1: 1974(m). WDR NY-86-1: 1985. GAGE, nonrecording gage. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Orange and Rockland Utilities, Inc.). All capacity figures given herein are based on zero storage at minimum operating pool level, 1,043.3 ft.

Reservoir is formed by a concrete gravity-type dam. Storage began Jan. 6, 1939. Usable capacity, 136.06 mil ft^3 between elevations 1,043.3 ft, minimum operating pool, and 1,072.0 ft, top of permanent flashboards. Capacity below elevation 1,043.3 ft, minimum operating pool, about 6.54 mil ft^3. Reservoir is used for storage of water for power. Water is received from Toronto and Lebanon Lake reservoirs and is discharged through a tunnel into Swinging Bridge Reservoir. Figures given herein represent contents above 1,043.3 ft. Records provided by Orange and Rockland Utilities, Inc.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 145.44 mil ft^3, July 30, 31, 1945, elevation, 1,073.1 ft; minimum observed (after first filling), about -6.54 mil ft^3, Mar. 16, 1963, elevation, 1,038.0 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 122.09 mil ft^3, May 17, elevation, 1,070.3 ft; minimum observed, 63.35 mil ft^3, Dec. 23, elevation, 1,061.7 ft.

DELAWARE RIVER BASIN

RESERVOIRS IN DELAWARE RIVER BASIN--Continued

01435900 NEVERSINK RESERVOIR.--Lat 41°49'40", long 74°38'21", Sullivan County, Hydrologic Unit 02040104, at a gatehouse at Neversink Dam on Neversink River, and 2 mi southwest of Neversink. DRAINAGE AREA, 92.5 mi^2. PERIOD OF RECORD, June 1953 to current year. REVISED RECORDS, WDR NY-85-1: Drainage area. GAGE, nonrecording gage read daily at 0900. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Board of Water Supply, City of New York).

Reservoir is formed by an earthfill rockfaced dam. Storage began June 2, 1953. Usable capacity 34,941 mil gal between minimum operating level, elevation, 1,319.0 ft and crest of spillway, elevation, 1,440.0 ft. Capacity at crest of spillway 37,146 mil gal; at minimum operating level, 2,205 mil gal; dead storage below diversion sill and outlet sill, elevation 1,314.0 ft, 1,680 mil gal. Figures given herein represent total contents. Reservoir impounds water for diversion through Neversink-Grahamsville Tunnel to Rondout Reservoir on Rondout Creek, in Hudson River basin, for water supply of City of New York (see elsewhere in this section); for release during periods of low flow in the lower Delaware River basin, as directed by the Delaware River Master; and for conservation release. No diversion prior to Dec. 3, 1953. Records provided by Bureau of Water Resources Development and Department of Environmental Protection, City of New York.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 37,978 mil gal, Apr. 25, 1961, elevation, 1,441.67 ft; minimum observed (after first filling), 1,985 mil gal, Nov. 25, 1964, elevation, 1,316.98 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 37,385 mil gal, May 18, elevation, 1,440.48 ft; minimum observed, 10,378 mil gal, Dec. 24, elevation, 1,365.96 ft.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

Date	Elevation (feet) ‡‡	Contents (million gallons)	Change in contents (equivalent in ft^3/s)	Elevation (feet) ‡‡	Contents (million gallons)	Change in contents (equivalent in ft^3/s)	Elevation (feet) ‡	Contents (million ft^3)	Change in contents (equivalent in ft^3/s)
	01416900 Pepacton Reservoir			01424997 Cannonsville Reservoir			01433000 Swinging Bridge Reservoir		
Sept. 30	1,253.12	104,785		1,103.68	39,827		1,064.7	1,180	
Oct. 31	1,240.06	86,245	- 925	1,091.52	28,585	- 561	1,065.4	1,206	+ 9.7
Nov. 30	1,242.54	89,596	+ 173	1,114.29	51,160	+1,164	1,065.5	1,210	+ 1.5
Dec. 31	1,236.44	81,501	- 404	1,119.13	56,768	+ 280	1,062.9	1,114	-35.8
CAL YR 1988	-	-	- 149	-	-	- 178	-	-	- 1.4
Jan. 31	1,231.29	75,054	- 322	1,115.39	52,404	- 218	1,066.0	1,229	+42.9
Feb. 28	1,235.19	79,903	+ 268	1,113.04	49,770	- 146	1,067.5	1,288	+24.4
Mar. 31	1,240.85	87,304	+ 369	1,117.90	55,332	+ 278	1,067.8	1,299	+ 4.1
Apr. 30	1,251.20	101,917	+ 754	1,129.04	69,033	+ 707	1,065.7	1,218	-31.2
May 31	1,272.65	136,597	+1,731	1,150.23	98,988	+1,495	1,068.1	1,311	+34.7
June 30	1,279.85	149,523	+ 667	1,150.09	98,763	- 11.6	1,066.8	1,260	-19.7
July 31	1,276.79	143,945	- 278	1,145.21	91,331	- 371	1,063.3	1,128	-49.3
Aug. 31	1,269.55	131,235	- 634	1,138.81	82,143	- 459	1,063.2	1,124	- 1.5
Sept. 30	1,263.52	121,139	- 521	1,131.24	71,899	- 528	1,065.7	1,218	+36.3
WTR YR 1989	-	-	+ 69.3	-	-	+ 136	-	-	+ 1.2

Date	Elevation (feet) ‡	Contents (million ft^3)	Change in contents (equivalent in ft^3/s)	Elevation (feet) ‡	Contents (million ft^3)	Change in contents (equivalent in ft^3/s)	Elevation (feet) ‡‡	Contents (million gallons)	Change in contents (equivalent in ft^3/s)
	01433100 Toronto Reservoir			01433200 Cliff Lake			01435900 Neversink Reservoir		
Sept. 30	1,170.4	27		1,064.5	80.5		1,406.68	22,764	
Oct. 31	1,169.5	21	- 2.2	1,065.4	86.3	+2.2	1,375.81	12,883	-493
Nov. 30	1,175.0	69	+18.5	1,065.5	87.0	+0.3	1,369.59	11,267	- 83.3
Dec. 31	1,175.0	69	0.0	1,062.7	69.3	-6.6	1,367.63	10,782	- 24.2
CAL YR 1988	-	-	-11.7	-	-	-0.5	-	-	- 71.7
Jan. 31	1,175.3	72	+ 1.1	1,065.8	88.9	+7.3	1,373.20	12,190	+ 70.3
Feb. 28	1,177.6	100	+11.6	1,067.8	102.9	+5.8	1,381.39	14,423	+123
Mar. 31	1,180.5	141	+15.3	1,067.6	101.5	-0.5	1,398.89	19,955	+276
Apr. 30	1,186.7	240	+38.2	1,065.8	88.9	-4.9	1,414.29	25,706	+297
May 31	1,199.2	497	+96.0	1,068.5	108.1	+7.2	1,437.79	36,063	+517
June 30	1,204.1	621	+47.8	1,066.9	96.5	-4.5	1,436.85	35,608	- 23.5
July 31	1,202.0	566	-20.5	1,066.0	90.3	-2.3	1,432.89	33,732	- 93.6
Aug. 31	1,190.6	310	-95.6	1,063.5	74.2	-6.0	1,410.77	24,321	-470
Sept. 30	1,190.8	314	+ 1.5	1,065.1	84.3	+3.9	1,399.40	20,133	-216
WTR YR 1989	-	-	+ 9.1	-	-	+0.1	-	-	- 11.2

‡‡ Elevation at 0800 hours on first day of following month.
‡ Elevation at 2400 hours.

DELAWARE RIVER BASIN

DIVERSIONS FROM DELAWARE RIVER BASIN

01415200 Diversion from Pepacton Reservoir (see preceding pages) on East Branch Delaware River to Rondout Reservoir on Rondout Creek, in Hudson River basin, for municipal supply of City of New York. No diversion prior to Jan. 6, 1955. Records provided by Bureau of Water Resources Development and Department of Environmental Protection, City of New York.
REVISED RECORDS, WDR NY-71-1: 1970. WDR NY-81-1: 1980.

014239000 Diversion from Cannonsville Reservoir (see preceding pages) on West Branch Delaware River to Rondout Reservoir on Rondout Creek, in Hudson River basin, for municipal supply of City of New York. No diversion prior to Jan. 29, 1964. Records provided by Bureau of Water Resources Development, City of New York.
REVISED RECORDS, WDR NY-81-1: 1980.

01435800 Diversion from Neversink Reservoir (see preceding pages) on Neversink River to Rondout Reservoir on Rondout Creek, in Hudson River basin, for municipal supply of City of New York. No diversion prior to Dec. 3, 1953. Records provided by Bureau of Water Resources Development and Department of Environmental Protection, City of New York.
REVISED RECORDS, WDR NY-82-1: 1976, 1977.

DIVERSION, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

Month	01415200 Pepacton Reservoir	01423900 Cannonsville Reservoir	01435800 Neversink Reservoir
October.....	680	0	516
November.....	622	0	441
December.....	685	9.6	124
CAL YR 1988	572	301	217
January.....	545	530	1.8
February.....	157	709	0
March.....	301	560	3.8
April.....	240	564	0
May.....	62.3	245	138
June.....	128	606	200
July.....	578	354	133
August.....	678	3.3	468
September.....	701	133	350
WTR YR 1989	451	306	199

STREAMS TRIBUTARY TO LAKE ONTARIO

04250750 SANDY CREEK NEAR ADAMS, NY
(National stream-quality accounting network station)

LOCATION.--Lat 43°48'48", long 76°04'30", Jefferson County, Hydrologic Unit 04140102, on left bank 250 ft upstream from highway bridge on Liberty Street, 0.2 mi downstream from tributary, 2.5 mi downstream from Adams, and 10.0 mi upstream from mouth. Water-quality sampling site at discharge station.

DRAINAGE AREA.--128 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1957 to current year.

REVISED RECORDS.--WDR NY-85-1: 1963-64(M), 1976-77(M), 1980(M), 1984(M).

GAGE.--Water-stage recorder. Datum of gage is 523.71 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Moderate diurnal fluctuation at low flow caused by mills upstream from station. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--32 years, 273 ft^3/s, 28.96 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,690 ft^3/s, Feb. 25, 1985, gage height, 11.05 ft, from rating curve extended above 5,500 ft^3/s on basis of flow-over-dam measurement of peak flow; minimum discharge, 1.5 ft^3/s, Sept. 17, 18, 1963, Aug. 19, 1964; minimum daily, 2.2 ft^3/s, Sept. 7, 11, 1960, Sept. 17, 1963, Aug. 16, Sept. 22, 1964.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 6	0800	3,760	7.37	Mar. 29	0530	*4,380	*8.96

Minimum discharge, 7.6 ft^3/s, Aug. 29, gage height, 0.92 ft; minimum daily discharge, 7.8 ft^3/s, Aug. 29.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	513	345	126	769	e120	1160	127	161	40	13	43
2	18	650	315	e110	508	e120	858	397	162	36	12	153
3	52	744	289	e96	363	e120	1080	860	204	33	12	74
4	56	707	288	e88	262	e130	1330	569	141	32	13	43
5	76	1230	219	e84	223	e190	1450	324	122	31	159	30
6	90	2760	235	e82	189	353	1070	349	104	28	65	23
7	63	1550	245	e80	158	313	870	910	91	25	38	19
8	48	1250	231	e120	146	218	762	681	71	54	28	17
9	40	1090	e140	251	129	165	571	491	69	40	23	16
10	36	782	e110	222	128	141	470	342	137	38	19	14
11	170	623	e96	206	e120	129	378	458	125	33	16	14
12	142	482	e90	182	e120	113	343	843	93	28	15	13
13	96	524	e100	e170	e120	109	349	727	76	26	14	12
14	79	854	e110	e160	e120	128	358	496	70	25	14	13
15	67	492	e120	e160	e120	1310	352	378	71	22	13	30
16	58	382	e130	e150	e120	1260	425	303	69	19	12	36
17	48	398	e120	e150	e110	767	377	255	629	18	12	53
18	59	379	e120	e140	e110	739	619	207	441	17	11	52
19	102	299	e110	e140	e110	657	423	174	271	16	11	39
20	73	387	114	e140	e100	491	335	150	166	15	14	52
21	58	1020	330	e140	e130	377	284	145	141	15	14	69
22	460	572	230	e130	376	271	243	142	120	20	13	46
23	513	417	178	e130	358	250	208	127	99	47	12	256
24	766	343	149	e130	e260	266	185	135	88	28	11	180
25	722	296	170	126	e220	436	168	143	77	22	11	81
26	872	280	155	140	e180	835	154	148	68	21	9.4	57
27	1620	292	119	203	e150	1370	146	150	57	13	8.9	45
28	1580	397	151	183	e130	2030	138	123	54	15	8.4	37
29	1360	425	168	187	---	3240	129	105	48	15	7.8	31
30	886	327	154	267	---	1640	129	92	44	14	81	28
31	633	---	143	436	---	1570	---	116	---	13	61	---
TOTAL	10860	20465	5474	4929	5829	19858	15364	10467	4069	799	751.5	1576
MEAN	350	682	177	159	208	641	512	338	136	25.8	24.2	52.5
MAX	1620	2760	345	436	769	3240	1450	910	629	54	159	256
MIN	17	280	90	80	100	109	129	92	44	13	7.8	12
CFSM	2.74	5.33	1.38	1.24	1.63	5.00	4.00	2.64	1.06	.20	.19	.41
IN.	3.16	5.95	1.59	1.43	1.69	5.77	4.47	3.04	1.18	.23	.22	.46

CAL YR 1988 TOTAL 84775.1 MEAN 232 MAX 3570 MIN 3.5 CFSM 1.81 IN. 24.64
WTR YR 1989 TOTAL 100441.5 MEAN 275 MAX 3240 MIN 7.8 CFSM 2.15 IN. 29.19

e Estimated

STREAMS TRIBUTARY TO LAKE ONTARIO

04250750 SANDY CREEK NEAR ADAMS, NY--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1965, 1978 to current year.
CHEMICAL DATA: 1965, 1978 (c), 1979-80 (d), 1981-89 (c).
MINOR ELEMENTS DATA: 1978-79 (b), 1980 (c), 1981-89 (b).
ORGANIC DATA: OC--1978 (c), 1979-80 (d), 1981 (c).
NUTRIENT DATA: 1978 (c), 1979-80 (d), 1981-89 (c).
BIOLOGICAL DATA:
Bacteria--1978 (c), 1979-80 (d), 1981-89 (c).
Phytoplankton--1978-80 (c), 1981 (b).
Periphyton--1978-80 (b).
SEDIMENT DATA: 1978 (c), 1979-80 (d), 1981-88 (c), 1989 (b).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Once daily January 1978 to September 1980. Recorder July 1980 to September 1984.
WATER TEMPERATURES: Once daily January 1978 to September 1980. Recorder July 1980 to September 1984.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (water years 1978-84): Maximum recorded, 563 microsiemens, Jan. 21, 1983; minimum recorded, 86 microsiemens, Oct. 15, 1982.
WATER TEMPERATURES: Maximum (water years 1979-80, 1983-84), 33.0°C, July 24, 1979; minimum (water years 1978-84) 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT										
18...	1030	54	333	8.14	13.0	2.7	740	8.7	85	3700
JAN										
09...	1345	279	270	7.90	0.0	--	755	13.2	91	190
09...	1345	279	270	7.90	0.0	1.8	755	13.2	91	190
MAR										
07...	1000	389	260	7.86	0.0	1.4	765	14.6	100	53
APR										
18...	0930	752	155	7.80	6.5	16	750	11.5	95	55
JUN										
27...	1000	57	385	8.34	22.0	1.6	750	8.3	97	370
AUG										
08...	0930	28	363	8.18	17.0	0.80	750	9.5	100	530

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT										
18...	3800	170	58	5.0	10	2.2	132	29	13	<0.10
JAN										
09...	3000	--	--	--	--	--	106	--	--	--
09...	3000	130	46	3.4	6.9	1.7	97	17	11	0.10
MAR										
07...	880	120	42	3.2	7.3	1.5	97	17	12	0.10
APR										
18...	3000	77	27	2.2	4.0	1.0	59	10	6.2	0.10
JUN										
27...	15	170	61	4.2	13	1.9	160	13	16	0.10
AUG										
08...	160	160	55	4.7	14	2.1	133	21	14	0.10

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHOROUS TOTAL (MG/L AS P)	PHOS-PHOROUS DIS-SOLVED (MG/L AS P)	PHOS-PHOROUS ORTHO, DIS-SOLVED (MG/L AS P)
OCT											
18...	2.1	209	201	--	0.400	0.010	0.050	0.50	0.210	0.180	0.160
JAN											
09...	--	--	--	--	--	--	--	--	--	--	--
09...	3.9	160	154	--	1.30	0.060	0.070	0.40	0.030	0.020	<0.010
MAR											
07...	4.3	148	151	--	1.10	0.050	0.080	0.30	0.030	0.020	<0.010
APR											
18...	2.9	93	91	--	0.440	0.030	0.040	0.20	0.050	0.010	0.010
JUN											
27...	2.0	218	210	0.670	0.680	0.030	0.020	0.30	0.110	0.090	0.100
AUG											
08...	3.9	204	199	--	0.820	0.030	0.020	0.20	0.110	0.100	0.100

STREAMS TRIBUTARY TO LAKE ONTARIO

04250750 SANDY CREEK NEAR ADAMS, NY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)
OCT 18...	<10	<1	28	<0.5	3	<1	<3	4	29	<5
JAN 09...	--	--	--	--	--	--	--	--	--	--
09...	<10	<1	19	<0.5	<1	<1	<3	1	28	<5
MAR 07...	--	--	--	--	--	--	--	--	--	--
APR 18...	20	<1	12	<0.5	<1	<1	<3	1	32	<5
JUN 27...	--	--	--	--	--	--	--	--	--	--
AUG 08...	<10	<1	27	<0.5	<1	<1	<3	2	13	<1

DATE	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
OCT 18...	7	21	<0.1	<10	1	<1	<1.0	120	<6	29
JAN 09...	--	--	--	--	--	--	--	--	--	--
09...	5	8	<0.1	<10	<1	<1	<1.0	87	<6	3
MAR 07...	--	--	--	--	--	--	--	--	--	--
APR 18...	<4	3	<0.1	<10	<1	<1	<1.0	53	<6	4
JUN 27...	--	--	--	--	--	--	--	--	--	--
AUG 08...	5	5	<0.1	<10	1	<1	<1.0	120	<6	5

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
JAN 09...	1345	279	30	19	61
MAR 07...	1000	389	5	4.4	75
APR 18...	0930	752	55	123	78
JUN 27...	1000	57	2	0.32	89
AUG 08...	0930	28	3	0.24	78

STREAMS TRIBUTARY TO LAKE ONTARIO

04252500 BLACK RIVER NEAR BOONVILLE, NY

LOCATION.--Lat 43°30'42", long 75°18'25", Oneida County, Hydrologic Unit 04150101, on left bank at downstream side of bridge on Moose River Road, 0.8 mi upstream from Sugar River, and 2 mi northeast of Boonville.

DRAINAGE AREA.--304 mi^2.

PERIOD OF RECORD.--January 1911 to current year.

REVISED RECORDS.--WSP 784: 1934. WSP 1084: 1912(M), 1913, 1917-1919(M), 1922(M), 1924(M), 1926(M), 1928)M), 1930(M), 1933(M). WSP 1307: 1914(M). WDR NY-82-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 935.50 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 27, 1933, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Occasional regulation by several headwater reservoirs. Forestport feeder diverts water from State Pond at Forestport 9 mi upstream. That portion of diverted water which does not pass Black River Canal (flowing south), returns to Black River downstream from station through Mill Creek sluiceway. Slight diurnal fluctuation at medium and low flow caused by mill upstream from station. Several measurements of water temperature were made during the year. Telephone gage-height telemet and satellite gage-height telemeter at station.

AVERAGE DISCHARGE.--78 years, 704 ft^3/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,800 ft^3/s, Apr. 18, 1982, Dec. 30, 1984, gage heights, 11.31 ft and 11.41 ft, respectively; maximum gage height, 13.10 ft, Feb. 21, 1981 (ice jam); minimum observed discharge, about 5 ft^3/s, Aug. 26, 1918, gage height, 2.40 ft; minimum daily, 7 ft^3/s, Aug. 26, 1918.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,900 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 7	0630	5,060	a9.07	Apr. 6	1100	4,340	8.74
Mar. 30	2245	*5,150	b*9.11				

a Recorded in well; outside gage height was 8.84 ft, from crest-stage gage.
b Recorded in well; outside gage height was 8.87 ft, from crest-stage gage.

Minimum discharge, 82 ft^3/s, Aug. 18, gage height, 3.53 ft; minimum daily, 138 ft^3/s, Aug. 2.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	241	682	671	e380	e540	e400	4310	814	910	414	206	195
2	322	623	660	e350	e580	e340	2940	1140	1030	448	138	531
3	160	892	701	e330	e620	e300	2320	1490	993	379	189	440
4	142	1000	752	e310	e560	e300	2400	1190	1010	362	276	289
5	242	697	493	e300	e500	e350	3650	1030	1030	322	2050	193
6	301	2870	564	e320	e430	e420	4210	1650	797	300	2040	171
7	305	4550	624	e350	e390	e400	3510	2950	689	289	981	167
8	269	2860	605	e440	e350	e380	2780	2710	636	434	427	157
9	180	2160	540	e560	e320	e350	2110	2150	508	422	349	153
10	347	1640	474	e680	e300	e300	1680	1620	860	380	312	151
11	480	1520	412	e520	e290	e270	1370	1800	1000	668	311	155
12	1030	1320	330	e460	e270	e240	1140	2050	599	393	242	157
13	1030	1150	e330	e430	e270	e270	1070	1850	674	278	397	146
14	804	1420	e340	e400	e290	e280	1020	1520	781	250	228	149
15	722	1380	e350	e390	e310	e560	1030	1230	814	218	272	1230
16	525	1130	e350	e380	e300	e1100	1070	1030	911	204	261	1470
17	316	1160	e340	e370	e280	e1100	1170	896	998	162	264	1070
18	634	1260	e330	e360	e260	e1100	1360	790	955	204	160	908
19	1180	1070	e330	e350	e250	e1000	1590	689	778	172	144	693
20	1040	1010	e380	e340	e250	e1000	1500	645	700	199	308	2190
21	655	1770	e430	e330	e300	e900	1440	591	564	233	290	3330
22	759	1990	e470	e320	e350	e800	1450	529	496	244	314	2000
23	1100	1390	e450	e310	e600	e700	1300	550	402	481	270	2000
24	1370	1130	e430	e300	e820	e640	1010	608	442	351	210	2470
25	2010	949	e440	e280	e740	e680	797	790	521	243	162	1640
26	1550	711	e500	e280	e640	e860	806	703	480	211	165	1110
27	1130	715	e600	e300	e560	1090	844	776	431	199	162	785
28	983	865	e500	e320	e470	1610	841	785	857	324	177	611
29	1000	931	e440	e330	---	3500	763	700	1050	326	166	506
30	960	844	e430	e420	---	4770	707	617	673	230	171	462
31	838	---	e420	e490	---	4800	---	656	---	220	187	---
TOTAL	22625	41689	14686	11700	11840	30810	52188	36549	22589	9560	11829	25529
MEAN	730	1390	474	377	423	994	1740	1179	753	308	382	851
MAX	2010	4550	752	680	820	4800	4310	2950	1050	668	2050	3330
MIN	142	623	330	280	250	240	707	529	402	162	138	146

CAL YR 1988 TOTAL 223771 MEAN 611 MAX 4640 MIN 72
WTR YR 1989 TOTAL 291594 MEAN 799 MAX 4800 MIN 138

e Estimated

STREAMS TRIBUTARY TO LAKE ONTARIO

04256000 INDEPENDENCE RIVER AT DONNATTSBURG, NY

LOCATION.--Lat 43°44'50", long 75°20'05", Lewis County, Hydrologic Unit 04150101, on right bank at downstream side of highway bridge on Donnattsburg Road at Donnattsburg, 1.2 mi downstream from Chase Lake Outlet, 4.2 mi northeast of Glenfield, and 5.0 mi upstream from mouth.

DRAINAGE AREA.--88.7 mi^2.

PERIOD OF RECORD.--July 1942 to current year.

REVISED RECORDS.--WDR NY-87-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 972.84 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 16, 1949, 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 gage-height telemeter at station.

AVERAGE DISCHARGE.--47 years, 193 ft^3/s, 29.55 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,420 ft^3/s, Dec. 30, 1984, gage height, 13.34 ft, from rating curve extended above 4,600 ft^3/s on basis of slope-area measurement of peak flow; minimum observed discharge, 18 ft^3/s, Sept. 17, 1948, Aug. 4, 5, 1949, gage height, 2.85 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 6	2000	*2,280	*7.79	Apr. 6	0330	1,250	6.36
Mar. 29	2330	2,000	7.43	Sept. 21	0130	2,110	7.56

Minimum discharge, 29 ft^3/s, July 27, gage height, 3.39 ft.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	63	194	251	e96	e80	79	1200	158	151	57	50	61
2	63	215	217	e90	e150	e72	805	246	165	53	43	136
3	80	270	192	e82	e160	e66	636	455	206	49	43	183
4	95	235	180	e74	e130	e64	597	494	183	47	44	120
5	92	357	149	e70	e120	e68	1020	365	166	44	688	85
6	104	1680	157	e74	e98	e100	1190	422	143	43	722	67
7	97	1580	149	e80	e92	e150	875	769	129	46	287	57
8	85	885	140	e94	e86	e130	651	661	111	44	167	48
9	77	649	130	e140	e82	e110	477	503	99	42	118	44
10	71	540	125	e170	e78	e80	376	379	135	42	90	41
11	99	436	e110	e120	e74	e72	298	392	195	44	73	39
12	167	346	e90	e110	e72	e66	255	516	169	46	63	37
13	159	293	e88	e100	e72	e64	248	515	129	42	63	36
14	134	385	e90	e98	e74	e64	235	471	111	39	64	42
15	129	349	e96	e94	e76	e86	240	355	113	37	60	146
16	129	267	e90	e90	e74	e130	375	278	112	36	54	263
17	112	253	e90	e86	e72	e190	473	229	154	35	50	211
18	114	273	e90	e80	e70	e230	567	196	223	34	46	179
19	171	230	e90	e78	e68	e270	629	175	192	36	43	135
20	162	219	e96	e76	e68	e280	475	155	153	43	67	1210
21	131	483	e120	e74	e72	e220	388	141	125	40	99	1590
22	216	523	e130	e72	e78	e190	338	132	106	41	95	611
23	407	323	e120	e70	e130	e160	284	121	98	39	78	e400
24	429	246	e110	e70	e120	139	235	129	92	39	68	e560
25	706	206	e120	e68	e100	147	204	162	114	36	58	e400
26	490	184	e110	e66	e88	216	187	154	98	33	50	e260
27	343	198	e100	e66	e80	336	183	146	82	39	44	e200
28	295	307	e110	e68	90	652	177	136	79	94	41	e170
29	340	391	e120	e68	---	1510	163	124	75	108	38	e150
30	319	305	e110	e70	---	1650	156	114	64	77	51	e130
31	239	---	e110	e74	---	1320	---	122	---	59	68	---
TOTAL	6118	12822	3880	2668	2554	8911	13937	9215	3972	1464	3525	7611
MEAN	197	427	125	86.1	91.2	287	465	297	132	47.2	114	254
MAX	706	1680	251	170	160	1650	1200	769	223	108	722	1590
MIN	63	184	88	66	68	64	156	114	64	33	38	36
CFSM	2.22	4.82	1.41	.97	1.03	3.24	5.24	3.35	1.49	.53	1.28	2.86
IN.	2.57	5.38	1.63	1.12	1.07	3.74	5.85	3.86	1.67	.61	1.48	3.19

CAL YR 1988 TOTAL 66398 MEAN 181 MAX 1680 MIN 21 CFSM 2.05 IN. 27.85
WTR YR 1989 TOTAL 76677 MEAN 210 MAX 1680 MIN 33 CFSM 2.37 IN. 32.16

e Estimated

STREAMS TRIBUTARY TO LAKE ONTARIO

04256485 WOODS LAKE OUTLET NEAR BIG MOOSE, NY

LOCATION.--Lat 43°51'56", long 74°57'19", Herkimer County, Hydrologic Unit 04150101, on right bank 45 ft downstream from dam on Woods Lake.

DRAINAGE AREA.--0.80 mi^2.

PERIOD OF RECORD.--October 1977 to December 1981, December 1983 to current year.

REVISED RECORDS.--WDR NY-81-1: 1980(M).

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Elevation of gage is 1,980 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

AVERAGE DISCHARGE.--9 years (water years 1978-81, 1985-89), 1.83 ft^3/s, 31.06 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 69 ft^3/s, Oct. 30, 1978, from rating curve extended above 15 ft^3/s; minimum daily discharge, 0.00 ft^3/s Aug. 22-23, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 13 ft^3/s, Mar. 29, gage height, 2.89 ft; minimum, 0.07 ft^3/s, July 27, gage height, 1.42 ft.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	3.2	2.8	1.1	.90	.98	8.5	1.9	.90	.36	.17	.38
2	1.2	3.4	2.5	1.1	.96	.99	6.7	2.7	1.0	.32	.16	.43
3	1.4	3.4	2.3	1.1	1.0	.93	6.1	3.7	1.4	.31	.17	.96
4	1.3	3.2	2.1	1.0	.97	.93	6.5	4.3	1.3	.29	.29	1.5
5	1.3	3.7	1.9	.93	.94	1.1	8.2	4.2	.76	.31	3.7	1.2
6	1.3	e11	1.7	.89	.95	1.2	8.5	4.5	1.1	.29	4.1	.99
7	1.2	e9.4	1.6	.84	.95	1.1	7.9	4.7	1.3	.29	1.8	.86
8	1.1	e8.2	1.5	.90	.92	1.1	7.2	4.5	1.0	.31	1.5	.53
9	1.0	e7.2	1.4	1.1	.93	1.0	6.2	4.3	1.2	.28	2.7	.40
10	.99	e6.6	1.3	1.1	.89	.93	5.4	4.0	1.3	.26	2.0	.33
11	1.2	e6.0	1.2	1.1	.87	.88	4.6	3.9	.97	.21	1.7	.35
12	1.3	e5.4	1.1	1.0	.88	.88	4.2	4.0	.89	.21	.95	.36
13	1.3	e4.8	1.0	.99	.86	.82	3.8	4.1	1.4	.23	.57	.40
14	1.3	e5.2	.93	.95	.88	.78	3.5	4.1	1.9	.20	.54	.34
15	1.3	e5.7	1.0	1.0	.87	.99	3.2	3.6	1.7	.21	.51	.63
16	1.3	e4.3	.97	.99	.85	1.6	3.4	3.4	1.5	.16	.48	.75
17	1.3	3.6	.91	1.0	.77	1.9	3.7	3.3	1.5	.17	.49	.80
18	1.4	3.4	.85	.98	.71	2.4	4.4	2.9	1.8	.19	.45	.77
19	1.6	3.1	.79	.96	.67	2.9	4.6	2.5	1.3	.22	.44	.71
20	1.6	3.0	.79	.99	.65	2.8	4.7	2.0	1.6	.21	.41	4.1
21	1.5	3.8	.85	.98	.84	2.7	4.5	1.8	1.2	.19	.45	4.4
22	2.0	3.9	.86	.93	1.2	2.3	4.2	1.6	1.2	.22	.47	3.8
23	2.1	3.6	.87	.89	1.3	2.1	3.9	1.4	1.3	.22	.50	4.0
24	2.4	3.3	.90	.82	1.3	1.9	3.5	1.4	1.1	.23	.59	3.9
25	3.3	3.0	1.0	.77	1.2	1.9	3.2	1.4	.91	.20	.51	3.9
26	3.5	2.6	1.1	.83	1.1	2.0	2.9	1.4	.81	.20	.44	3.0
27	3.5	2.5	1.0	.92	1.0	2.7	2.7	1.2	.74	.11	.43	4.1
28	3.4	2.8	1.2	.94	1.0	4.7	2.4	1.2	.69	.20	.46	5.0
29	3.7	3.0	1.3	.88	---	13	2.2	1.1	.51	.10	.47	5.3
30	3.7	2.9	1.3	.88	---	11	2.1	1.0	.39	.10	.47	4.5
31	3.4	---	1.2	.89	---	10	---	.93	---	.17	.46	---
TOTAL	58.19	135.2	40.22	29.75	26.36	80.51	142.9	87.03	34.67	6.97	28.38	58.69
MEAN	1.88	4.51	1.30	.96	.94	2.60	4.76	2.81	1.16	.22	.92	1.96
MAX	3.7	11	2.8	1.1	1.3	13	8.5	4.7	1.9	.36	4.1	5.3
MIN	.99	2.5	.79	.77	.65	.78	2.1	.93	.39	.10	.16	.33
CFSM	2.35	5.63	1.62	1.20	1.18	3.25	5.95	3.51	1.44	.28	1.14	2.45
IN.	2.71	6.29	1.87	1.38	1.23	3.74	6.64	4.05	1.61	.32	1.32	2.73

CAL YR 1988 TOTAL 662.97 MEAN 1.81 MAX 11 MIN .00 CFSM 2.26 IN. 30.83
WTR YR 1989 TOTAL 728.87 MEAN 2.00 MAX 13 MIN .10 CFSM 2.50 IN. 33.89

e Estimated

STREAMS TRIBUTARY TO LAKE ONTARIO

04256500 STILLWATER RESERVOIR NEAR BEAVER RIVER, NY

LOCATION.--Lat 43°53'50", long 75°03'05", Herkimer County, Hydrologic Unit 04150101, in gatehouse at Stillwater Dam on Beaver River, 2.5 mi upstream from Moshier Creek, and 7.5 mi west of Beaver River Post Office.

DRAINAGE AREA.--171 mi^2.

PERIOD OF RECORD.--May 1908 to current year. Prior to February 1925, month-end contents only, published in WSP 1307. February 1925 to September 1937, published in WSP 824.

REVISED RECORDS.--WDR NY-85-1: Drainage area.

GAGE.--Nonrecording gage read once daily and prior to reservoir gate changes. Datum of gage is National Geodetic Vertical Datum, adjustment of 1912.

REMARKS.--Reservoir originally formed about 1885; enlarged at various times and in 1924 enlarged to a usable capacity of 4,623 mil ft^3 between elevations 1,650.3 ft and 1,679.3 ft (top of 24-inch flashboards in place throughout year). Elevation of gate sill of lowest outlet, 1,642.3 ft. Capacity below elevation 1,650.3 ft, 90 mil ft^3, is included in records presented herein, but is not ordinarily available for release. Reservoir is used to regulate flow of Beaver and Black Rivers for flood control, power development, and general public welfare.

COOPERATION.--Records provided by Board of Hudson River-Black River Regulating District.

EXTREMES FOR PERIOD OF RECORD.--Maximum observed elevation, 1,680.08 ft, May 20, 1969, contents, 4,939 mil ft^3; minimum observed since first filling, 1,644.80 ft, Mar. 25-27, 1949, contents, 8 mil ft^3.

EXTREMES FOR CURRENT YEAR.--Maximum observed elevation, 1,678.45 ft, May 14, contents, 4,469 mil ft^3; minimum observed, 1,665.35 ft, Mar. 15, contents, 1,575 mil ft^3.

Capacity table, current year (elevation, in feet, and contents, in millions of cubic feet)

1,658.0	604	1,670.0	2,431
1,660.0	821	1,675.0	3,556
1,665.0	1,518	1,680.0	4,916

ELEVATION, IN FEET, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
INSTANTANEOUS OBSERVATIONS AT 0800

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1669.29	1669.47	1671.69	1668.45	1667.99	1666.17	1671.60	1677.41	1677.61	1676.62	1673.38	1673.39
2	1669.25	1669.42	1671.59	1668.42	1668.00	1666.13	1672.14	1677.47	1677.56	1676.51	1673.23	1673.44
3	1669.25	1669.52	1671.42	1668.41	1668.02	1666.07	1672.61	1677.59	1677.56	1676.41	1673.11	1673.38
4	1669.20	1669.46	1671.20	1668.37	1668.03	1666.00	1673.02	1677.81	1677.53	1676.32	1672.98	1673.30
5	1669.18	1669.49	1671.03	1668.33	1668.08	1665.95	1673.65	1677.94	1677.49	1676.22	1673.49	1673.19
6	1669.16	1670.10	1670.81	1668.27	1667.97	1665.91	1674.36	1678.05	1677.47	1676.14	1673.99	1673.07
7	1669.11	1671.05	1670.59	1668.23	1667.95	1665.87	1674.97	1678.24	1677.44	1676.02	1674.11	1672.93
8	1669.15	1671.42	1670.34	1668.20	1667.93	1665.81	1675.50	1678.32	1677.38	1675.90	1674.29	1672.83
9	1669.22	1671.66	1670.10	1668.22	1667.94	1665.74	1675.84	1678.33	1677.33	1675.74	1674.42	1672.71
10	1669.28	1671.84	1669.90	1668.22	1667.83	1665.66	1676.15	1678.33	1677.32	1675.66	1674.54	1672.59
11	1669.22	1671.98	1669.63	1668.19	1667.71	1665.59	1676.40	1678.35	1677.33	1675.66	1674.58	1672.46
12	1669.39	1672.10	1669.33	1668.15	1667.61	1665.52	1676.53	1678.37	1677.33	1675.61	1674.60	1672.35
13	1669.50	1672.14	1669.16	1668.14	1667.52	1665.44	1676.60	1678.43	1677.30	1675.52	1674.62	1672.21
14	1669.59	1672.34	1669.05	1668.10	1667.40	1665.36	1676.68	1678.45	1677.22	1675.45	1674.65	1672.13
15	1669.68	1672.48	1668.98	1668.10	1667.29	1665.35	1676.75	1678.43	1677.16	1675.33	1674.65	1672.18
16	1669.78	1672.58	1668.87	1668.08	1667.18	1665.42	1676.86	1678.38	1677.07	1675.22	1674.64	1672.21
17	1669.84	1672.64	1668.79	1668.06	1667.07	1665.50	1677.00	1678.31	1677.06	1675.10	1674.63	1672.19
18	1669.76	1672.56	1668.70	1668.05	1666.97	1665.72	1677.18	1678.22	1677.00	1674.99	1674.59	1672.30
19	1669.70	1672.47	1668.58	1668.00	1666.87	1665.98	1677.41	1678.13	1676.98	1674.83	1674.55	1672.40
20	1669.61	1672.35	1668.55	1668.03	1666.76	1666.22	1677.58	1678.09	1676.98	1674.68	1674.53	1672.97
21	1669.51	1672.36	1668.55	1668.06	1666.65	1666.45	1677.63	1678.03	1676.97	1674.54	1674.51	1673.88
22	1669.50	1672.72	1668.53	1668.05	1666.65	1666.61	1677.68	1677.98	1676.95	1674.37	1674.49	1674.25
23	1669.55	1672.78	1668.48	1668.05	1666.62	1666.75	1677.69	1677.96	1676.93	1674.25	1674.44	1674.54
24	1669.55	1672.66	1668.47	1668.02	1666.59	1666.90	1677.66	1677.92	1676.90	1674.09	1674.40	1674.89
25	1669.58	1672.49	1668.48	1668.00	1666.52	1667.05	1677.59	1677.90	1676.93	1673.93	1674.35	1675.14
26	1669.60	1672.35	1668.48	1668.00	1666.43	1667.23	1677.58	1677.88	1676.90	1673.76	1674.20	1675.33
27	1669.58	1672.17	1668.46	1668.06	1666.35	1667.46	1677.57	1677.83	1676.86	1673.58	1674.05	1675.50
28	1669.54	1672.06	1668.44	1667.99	1666.27	1667.84	1677.53	1677.78	1676.81	1673.74	1673.92	1675.65
29	1669.57	1671.99	1668.49	1667.98	---	1668.77	1677.46	1677.72	1676.76	1673.67	1673.76	1675.75
30	1669.57	1671.84	1668.47	1667.98	---	1669.93	1677.41	1677.65	1676.70	1673.57	1673.64	1675.89
31	1669.64	---	1668.46	1667.99	---	1670.80	---	1677.62	---	1673.51	1673.51	---
MEAN	1669.46	1671.68	1669.41	1668.14	1667.29	1666.49	1676.15	1678.03	1677.16	1675.06	1674.16	1673.50
MAX	1669.84	1672.78	1671.69	1668.45	1668.08	1670.80	1677.69	1678.45	1677.61	1676.62	1674.65	1675.89
MIN	1669.11	1669.42	1668.44	1667.98	1666.27	1665.35	1671.60	1677.41	1676.70	1673.51	1672.98	1672.13
‡	2336	2798	2126	2039	1718	2709	4181	4236	3978	3177	3179	3798
‡‡	+16.4	+178	-251	-32.5	-133	+370	+568	+20.5	-99.5	-299	+0.75	+239

CAL YR 1988 MEAN 1672.20 MAX 1678.63 MIN 1667.45 ‡‡ -24.9
WTR YR 1989 MEAN 1672.23 MAX 1678.45 MIN 1665.35 ‡‡ +47.8

‡ Contents, in millions of cubic feet, at 2400 hours on last day of month by interpolation.
‡‡ Change in contents, equivalent in cubic feet per second.

STREAMS TRIBUTARY TO LAKE ONTARIO

04258000 BEAVER RIVER AT CROGHAN, NY

LOCATION.--Lat 43°53'50", long 75°24'16", Lewis County, Hydrologic Unit 04150101, on left bank 1,200 ft upstream from Black Creek, and 0.5 mi west of Croghan.

DRAINAGE AREA.--291 mi^2.

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

REVISED RECORDS.--WDR NY-82-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 806.20 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Stillwater Reservoir (see station 04256500). Between Stillwater Dam and this station, flow is further regulated by several powerplant ponds. Diurnal fluctuation at low and medium flow.

AVERAGE DISCHARGE.--59 years, 602 ft^3/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,100 ft^3/s, May 21, 1969, gage height, 6.98 ft; minimum, 11 ft^3/s, Jan. 22, 29, Feb. 4, 1967, gage height, 0.63 ft; minimum daily, 22 ft^3/s, July 18, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,350 ft^3/s, Nov. 6, gage height, 4.95 ft; minimum, 178 ft^3/s, Oct. 10, gage height, 1.80 ft; minimum daily, 195 ft^3/s, Oct. 17.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	343	915	1300	414	307	309	1300	739	653	438	638	598
2	299	993	1100	414	303	355	1050	723	742	381	552	737
3	397	1030	1160	446	452	418	714	727	748	289	566	674
4	313	944	1160	613	371	431	612	904	823	424	505	677
5	319	1020	1140	445	291	463	875	1120	805	288	730	571
6	277	1650	1140	391	289	415	1160	1180	802	235	1410	637
7	318	2040	1110	353	280	521	1190	1310	786	401	1020	597
8	208	1540	1110	416	313	561	1020	1430	602	460	646	578
9	197	1170	1120	337	321	466	682	1330	747	504	318	689
10	200	1290	1100	614	437	468	630	1010	670	568	298	527
11	201	1230	1070	533	470	422	380	1310	653	621	344	495
12	235	1190	726	419	466	424	351	1270	641	592	350	586
13	251	1170	1040	383	475	446	333	1420	690	517	344	500
14	267	1120	640	386	431	405	286	1250	632	497	432	454
15	240	988	590	391	470	461	505	1260	686	539	304	490
16	211	976	555	413	451	350	668	1210	618	536	386	566
17	195	876	580	372	445	284	757	1070	719	484	264	720
18	325	872	538	363	399	400	1000	1050	763	486	263	430
19	383	863	720	370	383	620	1090	976	822	593	259	335
20	568	1010	481	346	420	344	961	905	613	564	296	915
21	413	1250	357	378	426	385	965	928	506	573	624	2000
22	536	1190	339	362	459	268	1110	648	560	571	605	1090
23	683	1150	525	307	458	296	1080	513	625	538	290	871
24	1030	991	379	296	534	264	1070	651	592	473	265	821
25	962	798	320	267	461	301	957	649	477	575	467	417
26	897	1010	436	258	494	384	935	651	460	614	506	306
27	898	1160	519	259	450	666	880	636	380	621	552	283
28	1000	1150	451	256	422	910	847	549	291	759	573	379
29	996	1390	369	256	---	1330	834	633	302	667	514	437
30	1020	1350	385	259	---	1610	734	616	528	721	677	273
31	838	---	352	265	---	1520	---	606	---	730	637	---
TOTAL	15020	34326	22812	11582	11478	16497	24976	29274	18936	16259	15635	18653
MEAN	485	1144	736	374	410	532	833	944	631	524	504	622
MAX	1030	2040	1300	614	534	1610	1300	1430	823	759	1410	2000
MIN	195	798	320	256	280	264	286	513	291	235	259	273

CAL YR 1988 TOTAL 212721 MEAN 581 MAX 2040 MIN 195
WTR YR 1989 TOTAL 235448 MEAN 645 MAX 2040 MIN 195

STREAMS TRIBUTARY TO LAKE ONTARIO

04260500 BLACK RIVER AT WATERTOWN, NY
(National stream-quality accounting network station)

LOCATION.--Lat 43°59'08", long 75°55'30", Jefferson County, Hydrologic Unit 04150101, on downstream side of right abutment of Vanduzee Street Bridge at Watertown, and 3.5 mi upstream from Philomel Creek. Water-quality sampling site at discharge station.

DRAINAGE AREA.--1,864 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1920 to current year.

REVISED RECORDS.--WDR NY-77-1: 1974. WDR NY-85-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 373.88 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 3, 1921, nonrecording gage, and from Sept. 3, 1921 to Mar. 15, 1977, recording gage at same site at datum 1.00 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by Stillwater Reservoir (see station 04256500), Fulton Chain of Lakes, and other reservoirs. Extensive diurnal fluctuation at low and medium flow caused by mills and powerplants in and above Watertown. During canal season, water is diverted out of basin through Forestport feeder and Black River Canal (flowing south). Several measurements of water temperature were made during the year. Telephone and satellite gage-height telemeters at station.

AVERAGE DISCHARGE.--69 years, 4,043 ft^3/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,900 ft^3/s, Dec. 31, 1984, gage height, 13.15 ft; minimum, 10 ft^3/s, Sept. 2, 1934, gage height, 0.81 ft, present datum; minimum daily discharge, 137 ft^3/s, Sept. 4, 1939.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, about 39,700 ft^3/s, Apr. 23, 1869 (from New York State Museum Bulletin 85).

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. 8	2345	18,800	9.14	Mar. 31	1915	*25,300	*10.40

Minimum discharge, 320 ft^3/s, Jan. 13, gage height, 1.75 ft; minimum daily discharge, 1,050 ft^3/s, Aug. 20.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1470	5880	6060	2790	2840	e2000	24400	3730	3130	2710	1850	2320
2	1360	5260	5660	2420	3260	e1900	22000	4160	3680	1930	1560	2180
3	1280	5650	5190	e2100	3680	e1800	18900	6100	4180	1800	1460	3190
4	1690	6040	4910	e2000	3230	e1800	15800	7140	4180	1410	1260	3280
5	1530	6720	4570	e1900	3020	e1900	14600	7250	4000	1520	2820	2570
6	1410	9500	4240	e1800	2410	e2000	14800	6990	3870	1370	6700	2050
7	1620	11700	e4000	e1800	2000	e2100	16800	8070	3480	1170	6920	1500
8	1710	16200	e3700	e1800	e1900	e2100	17100	9360	2960	1540	6510	1540
9	1510	17700	e3400	2670	e1900	e2000	15000	10300	2670	1650	5860	1350
10	1370	15200	e3100	2980	e1800	e1900	12500	10300	2940	1700	4740	1390
11	1500	12800	e2900	3390	e1800	e1700	10500	9860	3580	1690	2930	1310
12	3090	11200	e2800	3220	e1800	e1700	8910	10500	3880	1970	2120	1170
13	4070	10000	e2700	2880	e1700	e1700	7590	10700	3270	2120	1710	1190
14	3910	9300	e2500	2700	e1700	1710	6540	10700	2870	1840	1640	1210
15	3140	8660	e2400	2530	e1700	3090	5840	9970	2990	1460	1670	1240
16	2690	8310	e2300	2390	e1700	5530	5920	9040	3150	1460	1640	3350
17	2410	7740	e2200	2340	e1700	5170	6310	7920	3700	1360	1400	5140
18	1930	6920	e2200	2300	e1700	5000	6780	6660	5260	1160	1450	5200
19	2420	6590	e2100	2240	e1700	5320	7180	5580	4910	1080	1350	4390
20	3990	6320	2130	2130	1710	5290	7400	4580	4290	1420	1050	4200
21	4080	6880	2590	e2000	1770	5040	7510	3850	3340	1390	1150	7730
22	3520	7410	3200	e2000	1990	4680	7260	3470	3000	1450	1820	10000
23	4590	7750	2940	e1900	3210	4210	6970	2990	2690	1550	1960	11600
24	5790	7680	2860	e1800	3570	4020	6480	2860	2280	1800	1750	11400
25	7490	7000	2460	e1800	e3000	3810	5840	3130	2410	1810	1510	10600
26	8070	6050	2590	e1800	e2800	4590	5060	3820	2640	1550	1210	9620
27	8650	5630	3130	1790	e2400	5900	4510	3830	2320	1440	1220	8300
28	8560	5360	2860	1950	e2200	9530	4290	3680	2080	1610	1280	6790
29	8180	5640	2820	2030	---	15700	4250	3600	2190	2340	1240	5310
30	7370	6110	2770	2150	---	18800	4040	3240	2910	2180	1250	3920
31	6610	---	2690	2310	---	24100	---	3010	---	2030	1680	---
TOTAL	117010	253200	99970	69910	64190	156090	301080	196390	98850	51510	72710	135040
MEAN	3775	8440	3225	2255	2292	5035	10040	6335	3295	1662	2345	4501
MAX	8650	17700	6060	3390	3680	24100	24400	10700	5260	2710	6920	11600
MIN	1280	5260	2100	1790	1700	1700	4040	2860	2080	1080	1050	1170

CAL YR 1988 TOTAL 1344109 MEAN 3672 MAX 18300 MIN 753
WTR YR 1989 TOTAL 1615950 MEAN 4427 MAX 24400 MIN 1050

e Estimated

STREAMS TRIBUTARY TO LAKE ONTARIO

04260500 BLACK RIVER AT WATERTOWN, NY--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1956-60, 1962 to current year.
CHEMICAL DATA: 1956 (e), 1959 (a), 1960 (b), 1965 (a), 1966-81 (d), 1982-87 (c), 1988-89 (d).
MINOR ELEMENTS DATA: 1970-71 (a), 1974-79 (b), 1980 (c), 1981-87 (b), 1988-89 (c).
PESTICIDE DATA: 1975-79 (b), 1980-82 (a).
ORGANIC DATA: OC--1973 (c), 1974 (a), 1975 (c), 1976-77 (b), 1978-81 (d).
PCB--1978-79 (b), 1980-82 (a).
NUTRIENT DATA: 1968 (b), 1969-81 (d), 1982-89 (c).
BIOLOGICAL DATA:
Bacteria--1973-81 (d), 1982-86 (c), 1987-88 (b), 1989 (c).
Phytoplankton--1975-77 (d), 1978-79 (c), 1980 (b), 1981 (c).
Periphyton--1975-80 (b).
SEDIMENT DATA: 1975-76 (d), 1977 (c), 1978-81 (d), 1982-89 (c).

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: October 1955 to September 1959, July 1962 to March 1969.

REMARKS.--Water-quality samples without turbidity analyses were collected by personnel of the New York State Department of Environmental Conservation.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT											
05...	1515	1550	--	93	6.80	13.0	--	--	14.3	--	--
18...	1245	1940	79	--	7.48	11.0	3.2	750	11.1	102	280
JAN											
09...	1545	2700	123	--	7.46	0.0	2.5	760	14.3	98	160
MAR											
07...	1330	E2100	125	--	7.78	0.0	2.4	770	13.6	92	93
APR											
18...	1000	6640	--	90	7.20	13.0	--	--	17.5	--	--
18...	1115	6560	84	--	6.96	6.0	1.7	760	13.6	110	100
MAY											
11...	1300	9710	--	70	7.35	9.0	--	--	14.1	--	--
JUN											
22...	1400	3050	--	98	7.40	24.0	--	--	13.1	--	--
27...	1430	2440	105	--	7.31	25.5	2.7	750	8.3	103	200
AUG											
08...	1215	6560	64	--	7.40	21.5	11	755	9.3	106	450
08...	1400	6530	--	69	7.85	21.0	--	--	11.7	--	--

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT											
05...	--	30	10	1.3	5.8	0.90	22	--	15	2.9	0.10
18...	92	33	11	1.4	4.0	1.0	--	25	18	2.9	0.10
JAN											
09...	340	47	16	1.7	6.1	0.90	--	38	14	4.8	0.10
MAR											
07...	52	47	16	1.7	7.0	1.1	--	35	19	6.8	0.20
APR											
18...	--	35	12	1.2	3.3	1.0	26	--	9.0	3.3	0.10
18...	78	35	12	1.3	3.3	0.80	--	27	9.0	3.3	0.10
MAY											
11...	--	29	9.8	0.98	2.0	0.70	20	--	5.0	2.3	0.10
JUN											
22...	--	40	14	1.3	3.8	0.60	31	--	10	3.0	0.10
27...	29	--	13	<0.01	4.5	0.70	--	32	10	3.0	0.10
AUG											
08...	110	29	10	0.95	2.3	0.70	--	21	8.0	1.9	0.10
08...	--	27	9.3	0.94	2.1	0.80	20	--	8.0	3.9	0.10

E Estimated daily discharge.

STREAMS TRIBUTARY TO LAKE ONTARIO

04260500 BLACK RIVER AT WATERTOWN, NY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHOROUS DIS-SOLVED (MG/L AS P)
OCT									
05...	--	58	49	--	--	--	--	--	--
18...	6.1	75	61	0.200	0.020	0.060	0.50	0.030	0.020
JAN									
09...	7.5	82	77	0.550	0.090	0.090	0.60	0.030	0.020
MAR									
07...	7.4	70	83	0.590	0.080	0.100	0.40	0.030	0.020
APR									
18...	--	--	45	--	--	--	--	--	--
18...	5.2	57	54	0.530	0.040	0.080	2.0	0.030	<0.010
MAY									
11...	--	--	33	--	--	--	--	--	--
JUN									
22...	--	--	51	--	--	--	--	--	--
27...	5.2	77	--	0.360	0.060	0.060	0.50	0.040	0.020
AUG									
08...	5.9	63	44	0.290	0.070	0.060	0.60	0.050	0.020
08...	--	--	37	--	--	--	--	--	--

DATE	PHOS-PHOROUS ORTHO, DIS-SOLVED (MG/L AS P)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)
OCT										
05...	--	170	--	--	--	--	2	--	--	--
18...	<0.010	--	90	<1	11	<0.5	--	1	<1	<3
JAN										
09...	<0.010	--	90	<1	14	<0.5	--	<1	<1	<3
MAR										
07...	<0.010	--	--	--	--	--	--	--	--	--
APR										
18...	--	250	--	--	--	--	1	--	--	--
18...	0.020	--	110	<1	13	<0.5	--	<1	<1	<3
MAY										
11...	--	320	--	--	--	--	5	--	--	--
JUN										
22...	--	180	--	--	--	--	<1	--	--	--
27...	0.010	--	--	--	--	--	--	--	--	--
AUG										
08...	0.030	--	90	<1	10	<0.5	--	<1	<1	<3
08...	--	450	--	--	--	--	<1	--	--	--

DATE	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)
OCT										
05...	17	--	450	--	<5	--	--	40	--	<0.10
18...	--	3	--	190	--	<5	<4	--	15	--
JAN										
09...	--	1	--	190	--	<5	<4	--	40	--
MAR										
07...	--	--	--	--	--	--	--	--	--	--
APR										
18...	9	--	340	--	13	--	--	100	--	<0.10
18...	--	1	--	91	--	<5	<4	--	24	--
MAY										
11...	7	--	380	--	9	--	--	40	--	<0.10
JUN										
22...	4	--	540	--	2	--	--	50	--	<0.10
27...	--	--	--	--	--	--	--	--	--	--
AUG										
08...	--	4	--	290	--	1	<4	--	7	--
08...	7	--	950	--	3	--	--	90	--	<0.10

STREAMS TRIBUTARY TO LAKE ONTARIO

04260500 BLACK RIVER AT WATERTOWN, NY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT										
05...	--	--	<1	--	--	--	--	--	20	--
18...	<0.1	<10	--	<1	<1	<1.0	28	<6	--	8
JAN										
09...	<0.1	<10	--	1	<1	<1.0	41	<6	--	8
MAR										
07...	--	--	--	--	--	--	--	--	--	--
APR										
18...	--	--	<1	--	--	--	--	--	20	--
18...	<0.1	<10	--	<1	<1	<1.0	32	<6	--	10
MAY										
11...	--	--	2	--	--	--	--	--	10	--
JUN										
22...	--	--	<1	--	--	--	--	--	<10	--
27...	--	--	--	--	--	--	--	--	--	--
AUG										
08...	<0.1	<10	--	3	<1	<1.0	25	<6	--	10
08...	--	--	3	--	--	--	--	--	20	--

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT					
18...	1245	1940	7	37	35
MAR					
07...	1330	E2100	4	23	70
APR					
18...	1000	6640	5	90	--
18...	1115	6560	4	71	91
MAY					
11...	1300	9710	12	315	--
JUN					
22...	1400	3050	7	58	--
27...	1430	2440	7	46	83
AUG					
08...	1215	6560	18	319	94
08...	1400	6530	5	88	--

E Estimated daily discharge.

STREAMS TRIBUTARY TO LAKE ONTARIO

LAKES AND RESERVOIRS IN STREAMS TRIBUTARY TO LAKE ONTARIO

04253300 SIXTH LAKE.--Lat 43°44'43", long 74°46'58", Hamilton County, Hydrologic Unit 04150101, on dam at outlet of Sixth Lake at Inlet, and 11.2 mi upstream from dam at Old Forge. DRAINAGE AREA, 18.6 mi^2. PERIOD OF RECORD, November 1911 to current year. GAGE, nonrecording gage read daily at 0800. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Hudson River-Black River Regulating District).

The Sixth and Seventh Lakes of Fulton Chain Lakes are partially formed and controlled by the concrete dam at Inlet, while the Eighth Lake is upstream and at approximately 5 ft higher elevation. Storage began around 1881. The present structure is a concrete dam with control gates which were installed in 1938. Usable capacity 296.6 mil ft^3 between minimum operating level, elevation 1,775.1 ft and crest of spillway, elevation 1,786.0 ft; no dead storage below minimum operating level. Figures given herein represent total contents. The dam is operated, records collected, provided, and stored by Board of Hudson River-Black River Regulating District.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 332 mil ft^3, Oct. 3, 1945, elevation, 1,787.1 ft; minimum observed, less than 0.90 mil ft^3, Nov. 18, 1943, water level below elevation 1,775.6 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 315.8 mil ft^3, Sept. 21, elevation, 1,786.60 ft; minimum observed, 86.2 mil ft^3, Dec. 19-20, elevation, 1,779.15 ft.

04253400 FIRST LAKE (formerly published as "Old Forge Reservoir").--Lat 43°42'44", long 74°58'12", Herkimer County, Hydrologic Unit 04150101, at dam on Middle Branch Moose River, 100 ft downstream from bridge on State Highway 28 at Old Forge, and 11.2 mi downstream from dam on Sixth Lake outlet at Inlet. DRAINAGE AREA, 53.6 mi^2. PERIOD OF RECORD, November 1911 to current year. REVISED RECORDS, WDR NY-85-1: Drainage area. GAGE, nonrecording gage read daily at 0800. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Hudson River-Black River Regulating District).

The First through Fifth Lakes of Fulton Chain Lakes are partially formed and controlled by a concrete dam with 12-inch flashboards. Storage began around 1881 or 1882 with a wooden crib dam. This dam was replaced with a concrete dam in 1905 and gates were installed in 1927. Usable capacity with flashboards, 895.6 mil ft^3, elevation, 1,707.0 ft. Usable capacity without flashboards, 764.3 mil ft^3, elevation, 1,706.1 ft; no dead storage below minimum operating level. Figures given herein represent total contents. The dam is operated, records collected, provided, and stored by Board of Hudson River-Black River Regulating District.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 1,019 mil ft^3, June 17, 1972, elevation, 1,707.9 ft; minimum observed, 6.50 mil ft^3, Nov. 3, 1939, elevation, 1,699.8 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 931.2 mil ft^3, Sept. 24-25, elevation, 1,707.30 ft; minimum observed, 368.4 mil ft^3, Feb. 20, elevation, 1,702.96 ft.

04256500 STILLWATER RESERVOIR NEAR BEAVER RIVER, NY (see station for daily elevation, skeleton capacity table, monthly contents, and change in contents).

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

Date	Elevation (feet) ‡	Contents (million ft^3)	Change in contents (equivalent in ft^3/s)	Elevation (feet) ‡	Contents (million ft^3)	Change in contents (equivalent in ft^3/s)
	04253300 Sixth Lake			04253400 First Lake		
Sept. 30	1,783.07	204.4		1,706.63	840.4	
Oct. 31	1,782.62	190.4	- 5.23	1,706.07	765.8	-27.8
Nov. 30	1,781.60	159.2	-12.0	1,705.09	638.4	-49.2
Dec. 31	1,779.43	94.3	-24.2	1,703.97	494.6	-53.7
CAL YR 1988	-	-	- 3.97	-	-	- 0.04
Jan. 31	1,780.58	128.6	+12.8	1,703.03	376.8	-44.0
Feb. 28	1,781.28	149.6	+ 8.68	1,703.07	381.8	+ 2.07
Mar. 31	1,784.82	259.0	+40.8	1,705.04	631.9	+93.4
Apr. 30	1,785.30	274.2	+ 5.87	1,706.03	760.6	+49.7
May 31	1,785.75	288.6	+ 5.39	1,707.00	890.2	+48.4
June 30	1,785.27	273.2	- 5.93	1,706.97	886.0	- 1.62
July 31	1,785.65	285.4	+ 4.55	1,706.86	871.5	- 5.42
Aug. 31	1,785.35	275.8	- 3.58	1,706.85	870.2	- 0.48
Sept. 30	1,785.40	277.4	+ 0.62	1,706.91	878.0	+ 3.01
WTR YR 1989	-	-	+ 2.31	-	-	+ 1.19

‡ Elevation at 2400 hours, by interpolation.

STREAMS TRIBUTARY TO ST. LAWRENCE RIVER

04262000 OSWEGATCHIE RIVER NEAR OSWEGATCHIE, NY

LOCATION.--Lat 44°13'21", long 75°04'29", St. Lawrence County, Hydrologic Unit 04150302, on left bank, 300 ft downstream from Niagara Mohawk Power Corporation Flat Rock powerplant, and 2.75 mi north of Oswegatchie.

DRAINAGE AREA.--259 mi^2.

PERIOD OF RECORD.--October 1924 to September 1968, July 1987 to current year. Prior to October 1958, published as East Branch Oswegatchie River near Oswegatchie.

REVISED RECORDS.--WDR NY-88-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,016.52 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Extensive diurnal fluctuation at low and medium flow caused by powerplant. Since 1867, flow regulated by Cranberry Lake.

AVERAGE DISCHARGE.--46 years (water years 1925-68, 1988-89), 512 ft^3/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,090 ft^3/s, Apr. 12, 1947; maximum gage height, 7.1 ft, Apr. 6, 1928; minimum daily discharge, 1 ft^3/s, July 25, 1926.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,600 ft^3/s, Mar. 29, Apr. 8, gage height, 5.84 ft; minimum, 46 ft^3/s, Oct. 22, gage height, 1.36 ft; minimum daily discharge, 159 ft^3/s, Mar. 1.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	178	720	966	394	473	159	2000	e560	464	267	201	321
2	178	714	646	475	382	222	1770	e800	1050	211	229	420
3	295	837	812	449	363	220	1610	e1100	1390	164	314	264
4	228	892	884	243	406	230	1760	e1100	1330	173	432	376
5	281	1030	589	268	301	259	2180	e1200	1130	165	1150	286
6	371	1830	810	284	318	340	2130	e1300	1050	166	783	269
7	465	2110	564	473	283	411	1940	e1200	929	166	758	255
8	319	1760	707	477	281	358	1870	e1100	791	208	1100	260
9	256	1490	713	529	259	349	1770	1270	795	170	1370	331
10	240	1450	701	491	342	302	1710	1080	788	631	1050	195
11	490	1430	526	356	299	308	1660	919	753	759	850	183
12	344	1300	501	372	245	160	1590	1160	830	372	575	181
13	416	776	307	294	247	243	957	1130	768	229	655	182
14	453	813	447	258	237	198	1060	1310	706	249	662	201
15	365	798	404	407	233	333	633	1170	740	278	671	274
16	353	942	516	342	241	630	898	906	491	259	669	448
17	337	912	615	342	267	535	1010	890	744	245	703	454
18	383	817	378	323	266	675	832	817	625	195	651	499
19	381	829	457	253	249	560	735	599	520	226	621	335
20	348	554	497	260	221	387	774	563	448	277	778	644
21	258	1090	439	288	215	354	771	530	446	344	644	893
22	532	1060	927	262	365	477	830	790	410	387	690	960
23	495	1000	497	252	268	367	628	572	531	391	687	1260
24	611	737	537	246	342	382	593	554	474	316	599	1440
25	917	926	410	284	323	381	448	662	278	262	529	1390
26	861	863	503	353	252	388	603	643	418	230	283	1210
27	934	880	383	317	296	705	e508	573	358	432	338	1120
28	593	901	521	306	221	1160	e520	448	471	461	386	1080
29	974	956	462	251	---	2380	e450	576	444	553	332	1020
30	535	1030	410	250	---	2130	e410	540	353	213	316	619
31	892	---	463	365	---	1890	---	511	---	194	555	---
TOTAL	14283	31447	17592	10464	8195	17493	34650	26573	20525	9193	19581	17370
MEAN	461	1048	567	338	293	564	1155	857	684	297	632	579
MAX	974	2110	966	529	473	2380	2180	1310	1390	759	1370	1440
MIN	178	554	307	243	215	159	410	448	278	164	201	181

CAL YR 1988 TOTAL 175057 MEAN 478 MAX 2110 MIN 120
WTR YR 1989 TOTAL 227366 MEAN 623 MAX 2380 MIN 159

e Estimated

STREAMS TRIBUTARY TO ST. LAWRENCE RIVER

04262500 WEST BRANCH OSWEGATCHIE RIVER NEAR HARRISVILLE, NY

LOCATION.--Lat 44°11'08", long 75°19'52", St. Lawrence County, Hydrologic Unit 04150302, on right bank just downstream from highway bridge, 0.5 mi northeast of Geers Corners, 1.5 mi downstream from Big Creek, and 4.0 mi downstream from Harrisville.

DRAINAGE AREA.--244 mi^2.

PERIOD OF RECORD.--July 1916 to current year.

REVISED RECORDS.--WSP 784: 1934. WDR NY-82-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 738.51 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 30, 1933, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since June 1985, extensive diurnal fluctuation and slight regulation caused by powerplant upstream from station. Several measurements of water temperature were made during the year. Telephone gage-height telemeter at station.

AVERAGE DISCHARGE.--73 years, 518 ft^3/s, 28.83 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,080 ft^3/s, Mar. 15, 1977, gage height, 9.31 ft; maximum gage height, 9.6 ft, Jan. 9, 1930; minimum discharge prior to regulation, 25 ft^3/s, Sept. 1, 1934, gage height, 0.86 ft; minimum discharge since regulation, 20 ft^3/s, Aug. 11, 1985, gage height, 0.83 ft.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 7	1645	3,310	a6.28	Mar. 30	0100	*4,690	b*7.60

a Recorded in well; outside gage height was 6.47 ft, from crest-stage gage.
b Recorded in well; outside gage height was 7.91 ft, from crest-stage gage.

Minimum discharge, 73 ft^3/s, Sept. 10, gage height, 1.43 ft.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	137	750	778	288	392	e170	3070	449	452	223	133	128
2	131	663	734	e260	412	e170	2340	563	717	190	120	278
3	174	722	670	e230	456	e160	1960	969	1430	160	113	547
4	279	720	623	e210	402	e170	1850	1600	1500	150	125	461
5	295	778	515	e200	e320	202	2060	1770	1160	137	498	351
6	308	1490	516	e190	e280	280	2470	1520	884	133	1310	281
7	307	3060	496	e190	e250	290	2500	1670	672	123	1220	214
8	264	3040	457	247	e230	252	2250	1930	539	115	875	168
9	223	2420	376	325	e220	218	1780	1680	455	111	620	141
10	201	1870	e330	357	e210	195	1410	1360	454	151	416	117
11	213	1490	e300	339	e200	182	1160	1120	538	410	278	113
12	287	1240	e270	306	e200	159	922	1080	555	488	205	109
13	314	1020	e250	300	e190	171	814	1150	474	301	175	109
14	307	887	e240	278	e190	174	755	1190	396	211	178	113
15	289	820	e230	261	e200	444	713	1150	348	170	172	198
16	295	730	e230	259	e200	742	777	965	324	135	159	396
17	293	659	e230	249	e190	838	883	820	395	134	230	420
18	274	654	e240	e230	e180	818	973	690	653	121	201	439
19	277	620	e240	e220	e170	824	1150	596	735	114	170	389
20	304	602	247	e220	e170	839	1190	506	653	143	174	451
21	270	911	309	e210	e180	776	1080	440	524	137	321	1070
22	334	1220	361	e210	287	650	968	408	415	125	307	1590
23	783	1170	347	e200	349	572	853	368	425	119	258	1290
24	1040	955	324	e190	e290	513	742	360	546	115	250	1090
25	1260	774	336	e190	e250	539	636	396	621	114	210	923
26	1590	656	338	e190	e220	741	561	405	500	100	169	708
27	1560	597	309	e200	e190	1090	521	445	385	91	135	524
28	1400	647	327	e210	e180	1950	502	433	326	99	129	418
29	1250	776	340	e220	---	3580	475	410	286	195	120	330
30	1100	825	335	e230	---	4360	453	350	255	194	113	274
31	933	---	312	310	---	3630	---	348	---	154	115	---
TOTAL	16692	32766	11610	7519	7008	25699	37818	27141	17617	5163	9499	13640
MEAN	538	1092	375	243	250	829	1261	876	587	167	306	455
MAX	1590	3060	778	357	456	4360	3070	1930	1500	488	1310	1590
MIN	131	597	230	190	170	159	453	348	255	91	113	109
CFSM	2.21	4.48	1.53	.99	1.03	3.40	5.17	3.59	2.41	.68	1.26	1.86
IN.	2.54	5.00	1.77	1.15	1.07	3.92	5.77	4.14	2.69	.79	1.45	2.08

CAL YR 1988 TOTAL 168645 MEAN 461 MAX 3730 MIN 55 CFSM 1.89 IN. 25.71
WTR YR 1989 TOTAL 212172 MEAN 581 MAX 4360 MIN 91 CFSM 2.38 IN. 32.35

e Estimated

STREAMS TRIBUTARY TO ST. LAWRENCE RIVER

04262895 OSWEGATCHIE RIVER AT RENSSELAER FALLS, NY

LOCATION.--Lat 44°35'21", long 75°19'17", St. Lawrence County, Hydrologic Unit 04150302, at State Highway 186 bridge at Rensselaer Falls.

DRAINAGE AREA.--950 mi^2.

PERIOD OF RECORD.--August 1989.
CHEMICAL DATA: 1989 (a).
MINOR ELEMENTS DATA: 1989 (a).
SEDIMENT DATA: 1989 (a).

REMARKS.--Water-quality samples were collected by personnel of the New York State Department of Environmental Conservation, and were analyzed in USGS laboratories. Water-discharge data based on records obtained for Oswegatchie River near Heuvelton (station 04263000).

WATER QUALITY DATA, AUGUST 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)
AUG 09...	1300	1720	7.10	23.5	11.6	33	9.7	2.1	2.5	0.70	22	11

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)
AUG 09...	4.0	0.20	100	<1	3	650	4	50	<0.10	2	20

SUSPENDED SEDIMENT DISCHARGE, AUGUST 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
AUG 09...	1300	1720	5	23

STREAMS TRIBUTARY TO ST. LAWRENCE RIVER

04263000 OSWEGATCHIE RIVER NEAR HEUVELTON, NY

LOCATION.--Lat 44°35'58", long 75°22'45", St. Lawrence County, Hydrologic Unit 04150302, on right bank 1.5 mi downstream from Beaver Creek, and 2.5 mi upstream from Heuvelton. Water-quality sampling site at discharge station.

DRAINAGE AREA.--965 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1916 to current year.

REVISED RECORDS.--WDR NY-82-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 288.85 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 16, 1916, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since 1867, seasonal flow regulated by Cranberry Lake; slight diurnal fluctuation at low flow and medium flow caused by powerplants. During high stages on Grass River, part of flow of that stream may pass through Upper Lake, Indian Creek and Lower Lake and enter Oswegatchie River at Rensselaer Falls, 4.5 mi upstream from station. In October 1973, a dike was installed on Indian Creek to prevent overflow of Grass River during high flows. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--73 years, 1,733 ft^3/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,600 ft^3/s, Apr. 6, 1960, gage height, 10.36 ft; minimum recorded, 130 ft^3/s, Aug. 17, 1949, gage height, 0.47 ft, but may have been less during period of no gage-height record Sept. 7, 1960.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,000 ft^3/s, Mar. 31, gage height, 7.47 ft; minimum, 310 ft^3/s, Sept. 15, gage height, 1.01 ft.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	701	2860	2480	1030	1900	e700	10900	1060	1130	979	509	527
2	553	2750	2560	e980	1930	e640	10000	1080	1210	833	411	646
3	439	3140	2270	e940	e1500	e600	8850	1540	2150	747	396	593
4	522	3420	2050	e860	e1300	e580	8160	2630	3580	641	413	801
5	563	3270	2060	e780	e1100	e560	8020	3460	3790	561	477	868
6	715	3830	1960	e680	e1000	585	7990	3700	3240	507	970	810
7	782	5410	1680	620	e900	673	8020	4170	2590	454	1930	666
8	842	6560	1730	955	e840	879	8030	5210	2110	451	2030	654
9	880	7110	1570	1720	e800	883	7640	5200	1770	431	1860	576
10	710	6790	e1340	1550	e760	748	6700	4710	1760	585	2080	430
11	627	5990	e1200	1370	e740	764	5540	4090	1970	740	1770	485
12	638	5150	e1200	1240	e720	696	4670	3710	2070	1380	1420	453
13	858	4410	e1100	1070	e700	680	4080	3850	1900	1490	1110	354
14	879	3610	e940	1030	e700	585	3360	4000	1700	1050	902	371
15	892	3110	e860	889	e680	2100	2730	3900	1530	690	868	323
16	902	2840	e900	868	e660	4590	2610	3610	1400	591	852	354
17	820	2690	e880	939	e660	4220	2490	3150	1840	552	869	565
18	773	2490	e900	864	e640	3290	2820	2570	2740	513	909	868
19	769	2190	e940	867	e640	2790	2830	2310	2670	535	946	907
20	804	2200	968	877	e640	2620	2760	2010	2400	436	936	936
21	841	2530	1050	e800	e640	2290	2680	1660	1990	422	943	871
22	855	3030	1180	e760	830	1940	2520	1460	1740	490	993	1440
23	1210	3500	1260	e720	1080	1630	2410	1400	1560	552	1050	2300
24	2340	3410	1580	e700	1240	1520	2200	1460	1540	626	1000	2550
25	3580	2940	1410	e680	e1000	1560	1940	1330	1440	608	931	2500
26	4730	2520	1340	e700	e940	2390	1630	1190	1470	492	877	2490
27	5440	2450	1210	e760	e840	3940	1450	1290	1230	433	748	2200
28	5130	2310	1160	e820	e740	5220	1400	1350	1160	440	519	1810
29	4660	2300	1210	959	---	6700	1220	1220	1070	563	542	1620
30	3980	2400	1260	1190	---	8720	1140	1120	1040	665	603	1460
31	3450	---	1120	1610	---	10800	---	1160	---	745	521	---
TOTAL	50885	107210	43368	29828	26120	75893	136790	80600	57790	20202	30385	31428
MEAN	1641	3574	1399	962	933	2448	4560	2600	1926	652	980	1048
MAX	5440	7110	2560	1720	1930	10800	10900	5210	3790	1490	2080	2550
MIN	439	2190	860	620	640	560	1140	1060	1040	422	396	323

CAL YR 1988 TOTAL 540598 MEAN 1477 MAX 8340 MIN 242
WTR YR 1989 TOTAL 690499 MEAN 1892 MAX 10900 MIN 323

e Estimated

STREAMS TRIBUTARY TO ST. LAWRENCE RIVER

04263000 OSWEGATCHIE RIVER NEAR HEUVELTON, NY--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960, 1966-69, 1971-72, 1978-86, 1988 to June 1989 (discontinued).
CHEMICAL DATA: 1960 (a), 1966 (b), 1968-69 (d), 1971-72 (a), 1978 (c), 1979-80 (d), 1981-82 (c), 1983-86, 1988-89 (b).
MINOR ELEMENTS DATA: 1978-79 (b), 1980 (c), 1981-86, 1988-89 (b).
ORGANIC DATA: OC--1978 (c), 1979-80 (d), 1981 (c).
NUTRIENT DATA: 1978 (c), 1979-80 (d), 1981-82 (c), 1983-86 (b).
BIOLOGICAL DATA:
Bacteria--1978 (c), 1979-80 (d), 1981-82 (c), 1983-86 (b).
Phytoplankton--1978-80 (c), 1981 (b).
Periphyton--1978-80 (b).
SEDIMENT DATA: 1978 (c), 1979-80 (d), 1981-85 (c), 1986 (b), 1988 (a).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1978 to September 1981.
WATER TEMPERATURES: January 1978 to September 1981.

REMARKS.--Water-quality samples were collected by personnel of the New York State Department of Environmental Conservation, and were analyzed in USGS laboratories.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (water years 1978-81): Maximum daily, 155 microsiemens Jan. 31, 1981; minimum daily, 22 microsiemens sometime in February 1980.
WATER TEMPERATURES (water years 1978-81): Maximum daily, 28.0°C July 28, 1978 and July 23-28, 1979; minimum daily, 0.0°C on many days during winter periods.

WATER QUALITY DATA, OCTOBER 1988 TO JUNE 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)
OCT												
04...	1300	532	7.05	16.5	13.0	38	11	2.6	2.8	1.1	22	15
APR												
25...	1500	2040	6.85	9.0	--	33	9.1	2.5	2.4	0.80	22	11
MAY												
10...	1300	4720	7.00	13.5	15.5	36	10	2.7	2.6	0.80	25	10
JUN												
21...	1300	2120	7.05	19.0	13.1	57	16	4.2	3.2	0.70	45	12

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)
OCT											
04...	3.7	0.20	60	<1	1	310	<5	20	<0.10	<1	<10
APR											
25...	3.7	0.10	160	<1	2	230	<5	50	<0.10	<1	20
MAY											
10...	3.3	0.20	220	<1	4	350	1	40	<0.10	3	10
JUN											
21...	4.0	0.10	170	<1	4	610	1	60	<0.10	2	10

ST. LAWRENCE RIVER MAIN STEM

04264331 ST. LAWRENCE RIVER AT CORNWALL, ONTARIO--NEAR MASSENA, NY
(National stream-quality accounting network station)
(National radiochemical network station)

LOCATION.--Lat 45°00'22", long 74°47'43", Stormont County, Ontario--St. Lawrence County, NY, Hydrologic Unit 04150301, at Robert Moses-Robert H. Saunders power dam on Lake St. Lawrence at the International Boundary at Cornwall, Ontario, 2.9 mi upstream from Grass River, 6.2 mi upstream from Raquette River, and 5.9 mi northeast of Massena, NY. Water-quality samples collected at power dam from taps at generators 17 and 30.

DRAINAGE AREA.--298,800 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1860 to current year. Monthly discharges only for some periods, published in WSP 1307. Prior to October 1971 published as 04264000 "St. Lawrence River at Ogdensburg."

REVISED RECORDS.--WSP 1437: 1870, 1874, 1881, 1883, 1890.

GAGE.--There is no gage. Discharge is determined from summation of discharge through the Robert Moses-Robert H. Saunders power dam, the Long Sault Dam, the Massena Diversion, the Rasin River Diversion, the Cornwall and Massena municipal water supply, and the Cornwall and the Wiley-Dondero navigation canals. U.S.-Canada coordinated discharge figures supplied by Corps of Engineers. Prior to 1956, base gage at lock 25 at Iroquois Ont. with supplementary gages. August 1956 to June 1958, base gage at lock 24 between Iroquois and Morrisburg, Ont., and supplementary gages. Prior to Aug. 1956, these were gages of the Canadian Hydrographic Service and from August 1956 to June 1958, were gages of the Hydro-Electric Power Commission of Ontario. Discharge in the reach of river at Cornwall, Ont.--near Massena, NY is considered to be the same as discharge at Ogdensburg, NY when adjusted for storage in Lake St. Lawrence.

REMARKS.--Since July 1958, flow regulated by international agreement administered by International St. Lawrence River Board of Control under the International Joint Commission. Records do not include water diverted from Lake Michigan by Illinois and Michigan Canal during period of its operation prior to 1910 and by Chicago Sanitary and Ship Canal, which began operation in 1900. Records include water diverted into Lake Superior from Hudson Bay drainage by the Long Lake Project, which began operation in July 1939, and by the Ogoki project, which began operation is July 1943.

COOPERATION.--Records of daily discharge provided by Buffalo District, Corps of Engineers through International St. Lawrence River Board of Control.

AVERAGE DISCHARGE.--129 years (water years 1861-1989), 245,000 ft^3/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 352,000 ft^3/s, June 22, 1976; minimum daily, 139,000 ft^3/s, Feb. 7, 1936; maximum monthly discharge, 350,000 ft^3/s, July 1973; minimum monthly, 154,000 ft^3/s, Feb. 1936.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 284,000 ft^3/s, July 1-7; minimum daily, 188,000 ft^3/s, Apr. 4.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	238000	240000	257000	219000	216000	234000	189000	220000	245000	284000	275000	265000
2	238000	240000	257000	219000	216000	234000	189000	220000	245000	284000	276000	263000
3	238000	240000	256000	219000	216000	234000	204000	220000	249000	284000	275000	263000
4	238000	240000	256000	219000	207000	222000	188000	220000	249000	284000	275000	263000
5	238000	240000	256000	219000	207000	220000	189000	220000	249000	284000	271000	263000
6	238000	240000	256000	219000	235000	221000	189000	220000	249000	284000	270000	263000
7	238000	240000	256000	203000	235000	221000	189000	220000	249000	284000	270000	263000
8	238000	240000	256000	203000	235000	221000	199000	220000	249000	283000	271000	264000
9	238000	240000	256000	217000	235000	221000	199000	220000	251000	283000	270000	261000
10	238000	240000	256000	217000	235000	221000	199000	220000	258000	283000	270000	262000
11	238000	240000	258000	217000	209000	218000	199000	220000	256000	283000	269000	262000
12	238000	246000	254000	216000	209000	218000	200000	220000	259000	283000	271000	262000
13	238000	246000	256000	217000	237000	219000	198000	219000	258000	283000	271000	262000
14	238000	246000	256000	204000	237000	217000	200000	219000	258000	283000	271000	262000
15	239000	246000	256000	208000	237000	218000	212000	219000	258000	282000	271000	263000
16	239000	246000	256000	223000	237000	218000	212000	219000	258000	282000	271000	265000
17	239000	246000	250000	223000	237000	218000	212000	219000	264000	282000	271000	263000
18	239000	246000	250000	223000	208000	215000	212000	219000	264000	282000	271000	264000
19	239000	251000	250000	223000	208000	215000	212000	220000	264000	282000	270000	264000
20	239000	251000	239000	223000	236000	215000	212000	240000	264000	282000	271000	264000
21	239000	251000	240000	200000	236000	215000	212000	240000	265000	282000	270000	264000
22	240000	251000	239000	200000	236000	215000	214000	240000	264000	277000	271000	265000
23	240000	251000	239000	214000	236000	215000	214000	240000	265000	277000	270000	261000
24	240000	251000	230000	214000	236000	215000	214000	240000	274000	277000	270000	261000
25	240000	251000	230000	214000	206000	219000	214000	240000	274000	277000	270000	260000
26	240000	257000	230000	214000	206000	219000	214000	240000	274000	276000	266000	261000
27	240000	257000	230000	213000	234000	219000	214000	245000	274000	277000	266000	261000
28	240000	257000	230000	201000	234000	220000	215000	245000	274000	277000	266000	261000
29	240000	258000	229000	197000	---	219000	220000	245000	274000	275000	266000	262000
30	241000	257000	223000	216000	---	204000	220000	245000	275000	275000	266000	258000
31	241000	---	219000	216000	---	204000	---	245000	---	275000	266000	---
TOTAL	7407000	7405000	7626000	6630000	6316000	6784000	6154000	7079000	7809000	8706000	8377000	7875000
MEAN	238900	246800	246000	213900	225600	218800	205100	228400	260300	280800	270200	262500
MAX	241000	258000	258000	223000	237000	234000	220000	245000	275000	284000	276000	265000
MIN	238000	240000	219000	197000	206000	204000	188000	219000	245000	275000	266000	258000

CAL YR 1988 TOTAL 90099000 MEAN 246200 MAX 270000 MIN 219000
WTR YR 1989 TOTAL 88168000 MEAN 241600 MAX 284000 MIN 188000

04264331 ST. LAWRENCE RIVER AT CORNWALL, ONTARIO--NEAR MASSENA, NY--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1955, 1966 to current year. Prior to October 1970, published as "near Massena, NY".
CHEMICAL DATA: 1955 (a), 1974 (c), 1975-81 (d), 1982-86 (c), 1987 (b), 1988-89 (c).
MINOR ELEMENTS DATA: 1974-77 (b), 1978 (a), 1979 (b), 1980 (c), 1981-87 (b), 1988-89 (c).
RADIOCHEMICAL DATA: 1974-89 (a).
ORGANIC DATA: OC--1974 (a), 1975 (b), 1977 (b), 1978-81 (d).
NUTRIENT DATA: 1974-75 (c), 1976-81 (d), 1982-86 (c), 1987-89 (b).
BIOLOGICAL DATA:
Bacteria--1974 (c), 1975-81 (d), 1982-86 (c), 1987-89 (b).
Phytoplankton--1974 (a), 1975-77 (d), 1978-81 (c).
Periphyton--1974 (a), 1975 (c), 1976-80 (b).
SEDIMENT DATA: 1975 (d), 1976-77 (c), 1978-81 (d), 1982-86 (c), 1987-89 (b).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1975 to September 1986.
WATER TEMPERATURES: October 1955 to October 1958, unpublished; January 1966 to September 1986.

REMARKS.--Temperature observations from October 1955 to October 1958 made at Aluminum Company of America Massena Cana power station and those from January 1966 to September 1986 made approximately 68 ft below normal forebay level. Water-quality samples without turbidity analyses were collected by personnel of the New York State Department of Environmental Conservation.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 400 microsiemens Aug. 7, 1978, Mar. 29, 1979; minimum daily, 250 microsiemens Dec. 21, 1978.
WATER TEMPERATURES: Maximum daily, 24.5°C on several days in August and September 1973 and August 1975; minimum daily, 0.0°C on many days during winter periods except 1972-74, 1979, 1982-85.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 350 microsiemens June 13, 14, 16-24; minimum daily, 280 microsiemens Nov. 25.
WATER TEMPERATURES: Maximum daily, 22.5°C Aug. 19, 21, 23; minimum daily, 0.5°C on several days during January, February, and March.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	*DISCHARGE, IN CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	SPECIFIC CONDUCTANCE LAB (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	BAROMETRIC PRESSURE (MM OF HG)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
OCT										
04...	1009	238000	--	310	7.40	13.0	0.80	--	--	--
NOV										
09...	0845	240000	310	--	8.00	8.5	1.2	765	11.0	94
FEB										
13...	0900	237000	310	--	7.56	0.5	--	760	14.3	100
APR										
25...	1200	214000	--	313	7.70	8.0	--	--	--	--
MAY										
10...	1000	220000	--	312	8.05	9.0	--	--	--	--
15...	0945	219000	313	--	7.94	10.0	0.60	760	10.8	96
JUN										
21...	1000	265000	--	313	8.05	17.0	--	--	--	--
AUG										
09...	1000	270000	--	306	9.10	22.0	--	--	--	--
14...	0830	271000	305	--	8.20	22.0	0.40	760	8.4	96

DATE	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT											
04...	--	--	130	36	8.8	12	1.7	92	--	27	20
NOV											
09...	15	20	130	37	8.7	12	1.4	--	93	27	20
FEB											
13...	0	0	--	--	--	--	--	--	118	--	--
APR											
25...	--	--	130	37	8.0	11	1.6	96	--	25	20
MAY											
10...	--	--	130	38	8.2	12	1.7	97	--	27	19
15...	1	1	130	39	8.3	12	1.6	--	93	24	19
JUN											
21...	--	--	120	36	7.8	12	1.4	95	--	25	19
AUG											
09...	--	--	120	35	7.9	11	1.5	93	--	26	18
14...	4	0	130	37	8.1	12	1.5	--	91	26	20

* Daily discharge.

ST. LAWRENCE RIVER MAIN STEM

04264331 ST. LAWRENCE RIVER AT CORNWALL, ONTARIO--NEAR MASSENA, NY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRATE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)
OCT										
04...	0.10	--	--	161	--	--	--	--	--	--
NOV										
09...	0.10	0.55	158	164	0.180	0.200	<0.010	0.010	0.30	0.020
FEB										
13...	--	--	--	--	--	0.330	0.010	0.020	0.40	0.010
APR										
25...	0.20	--	--	160	--	--	--	--	--	--
MAY										
10...	0.20	--	--	164	--	--	--	--	--	--
15...	0.10	0.18	215	161	--	0.270	0.020	0.040	0.50	0.010
JUN										
21...	0.10	--	--	158	--	--	--	--	--	--
AUG										
09...	0.10	--	--	155	--	--	--	--	--	--
14...	0.10	0.51	178	161	--	0.160	0.010	0.020	0.60	0.010

DATE	PHOSPHORUS DISSOLVED (MG/L AS P)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P)	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)
OCT											
04...	--	--	30	--	--	--	--	2	--	--	--
NOV											
09...	0.010	<0.010	--	<10	1	23	<0.5	--	<1	<1	<3
FEB											
13...	<0.010	<0.010	--	--	--	--	--	--	--	--	--
APR											
25...	--	--	70	--	--	--	--	<1	--	--	--
MAY											
10...	--	--	60	--	--	--	--	<1	--	--	--
15...	<0.010	<0.010	--	<10	<1	23	<0.5	--	<1	2	<3
JUN											
21...	--	--	40	--	--	--	--	<1	--	--	--
AUG											
09...	--	--	60	--	--	--	--	<1	--	--	--
14...	<0.010	<0.010	--	<10	<1	23	<0.5	--	<1	<1	<3

DATE	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)
OCT										
04...	32	--	270	--	<5	--	--	10	--	<0.10
NOV										
09...	--	<1	--	9	--	<5	4	--	2	--
FEB										
13...	--	--	--	--	--	--	--	--	--	--
APR										
25...	15	--	130	--	<5	--	--	10	--	<0.10
MAY										
10...	15	--	110	--	4	--	--	<10	--	<0.10
15...	--	3	--	9	--	<1	4	--	2	--
JUN										
21...	6	--	140	--	4	--	--	10	--	<0.10
AUG										
09...	16	--	640	--	4	--	--	20	--	<0.10
14...	--	2	--	13	--	<1	5	--	2	--

ST. LAWRENCE RIVER MAIN STEM

04264331 ST. LAWRENCE RIVER AT CORNWALL, ONTARIO--NEAR MASSENA, NY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT										
04...	--	--	<1	--	--	--	--	--	60	--
NOV										
09...	<0.1	<10	--	1	<1	<1.0	170	<6	--	11
FEB										
13...	--	--	--	--	--	--	--	--	--	--
APR										
25...	--	--	2	--	--	--	--	--	40	--
MAY										
10...	--	--	14	--	--	--	--	--	20	--
15...	<0.1	<10	--	3	<1	<1.0	180	<6	--	11
JUN										
21...	--	--	3	--	--	--	--	--	10	--
AUG										
09...	--	--	2	--	--	--	--	--	60	--
14...	<0.1	<10	--	1	<1	<1.0	180	<6	--	11

RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	DIS-CHARGE, IN CUBIC FEET PER SECOND	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L)
FEB										
13...	0900	--	237000	5.7	<0.4	3.1	2.5	<0.4	<0.4	0.03

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	*DIS-CHARGE, IN CUBIC FEET PER SECOND	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
FEB					
13...	0900	237000	4	2560	60
MAY					
15...	0945	219000	2	1180	90
AUG					
14...	0830	271000	4	2910	79

* Daily discharge.

STREAMS TRIBUTARY TO ST. LAWRENCE RIVER

04266500 RAQUETTE RIVER AT PIERCEFIELD, NY

LOCATION.--Lat 44°14'05", long 74°34'20", St. Lawrence County, Hydrologic Unit 04150305, on left bank 0.5 mi downstream from powerplant at Piercefield, and 1.5 mi upstream from Dead Creek.

DRAINAGE AREA.--721 mi^2.

WATER DISCHARGE RECORDS

PERIOD OF RECORD.--August 1908 to current year.

REVISED RECORDS.--WSP 604: 1924. WSP 1387: 1910, 1913, 1914(M), 1916, 1921. WDR NY-82-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,502.12 ft above National Geodetic Vertical Datum of 1929. Prior to Jan. 1, 1911, nonrecording gage at present site at datum 2.00 ft higher and Jan. 1, 1911 to Oct. 21, 1912, nonrecording gage at present site and datum.

REMARKS.--No estimated daily discharges. Records good. Seasonal distribution of flow modified by natural storage in lakes and ponds upstream from station and by regulation of Forked Lake, Round Lake, Lows Lake, and Raquette Pond (Tupper Lake) at Setting Pole Dam. Extensive diurnal fluctuation caused by powerplant at Piercefield.

AVERAGE DISCHARGE.--81 years, 1,306 ft^3/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,360 ft^3/s, May 8, 1972, gage height, 12.25 ft; minimum daily, 4.1 ft^3/s, Oct. 12, 1947.

EXTREMES FOR YEAR.--Maximum discharge, 4,880 ft^3/s, Apr. 8, gage height, 9.77 ft; minimum daily, 331 ft^3/s, Oct. 2.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	487	1120	2370	831	534	488	3500	1910	1950	778	1400	610
2	331	825	2280	925	612	529	3640	2000	2040	611	1190	783
3	383	1380	2210	1010	617	468	3740	2230	2290	747	1120	861
4	465	1340	2110	885	534	527	3840	2410	2350	677	841	993
5	588	1900	2060	817	613	531	4060	2500	2670	736	1130	913
6	660	2570	1970	879	595	470	4330	2590	2530	567	1480	870
7	686	2790	1830	730	555	547	4600	2730	2410	704	2020	824
8	660	3030	1570	806	603	509	4720	2820	2290	564	2520	766
9	711	3170	1370	754	556	458	4790	2900	2220	566	2710	709
10	714	3250	1120	806	547	454	4750	2940	2050	759	2550	785
11	584	3400	1050	753	515	512	4660	2990	1790	1120	2400	528
12	667	3350	1040	646	564	449	4520	3070	1700	1200	2260	466
13	836	3370	1060	732	555	458	4330	3160	1680	1280	2150	419
14	685	3300	1130	756	496	506	4090	3210	1680	1210	2100	471
15	474	3250	1090	653	559	448	3880	3180	1650	1160	2010	628
16	343	3220	1050	627	511	573	3660	3210	1560	968	1860	730
17	475	3120	1080	442	544	560	3460	3160	1470	875	1600	1250
18	443	3010	1040	374	497	658	3300	3100	1440	822	1400	1170
19	584	2950	1050	533	497	675	3190	3060	1180	961	1220	1520
20	769	2900	1020	487	495	778	3090	2950	1210	846	1160	2330
21	846	2860	929	561	537	925	3000	2820	742	749	1170	2910
22	913	2910	1030	501	503	1080	2860	2670	996	611	1090	3070
23	1010	2890	881	560	536	986	2790	2550	1060	602	1110	3200
24	993	2820	643	501	509	967	2680	2480	1190	761	1200	3200
25	1020	2760	573	528	573	1050	2580	2410	1020	574	945	3200
26	986	2690	624	531	498	1090	2420	2330	1200	705	856	3100
27	996	2610	610	533	535	1230	2130	2170	1040	670	584	2970
28	1100	2550	710	601	495	1360	2080	1870	919	1200	727	2900
29	1020	2490	759	535	---	2250	2050	1720	845	1420	573	2750
30	1060	2460	814	606	---	2960	1980	1730	597	1480	569	2620
31	1130	---	794	605	---	3250	---	1820	---	1450	671	---
TOTAL	22619	80285	37867	20508	15185	27746	104720	80690	47769	27373	44616	47546
MEAN	730	2676	1222	662	542	895	3491	2603	1592	883	1439	1585
MAX	1130	3400	2370	1010	617	3250	4790	3210	2670	1480	2710	3200
MIN	331	825	573	374	495	448	1980	1720	597	564	569	419

CAL YR 1988 TOTAL 416270 MEAN 1137 MAX 3720 MIN 128
WTR YR 1989 TOTAL 556924 MEAN 1526 MAX 4790 MIN 331

STREAMS TRIBUTARY TO ST. LAWRENCE RIVER

04266500 RAQUETTE RIVER AT PIERCEFIELD, NY--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1955, 1970-72, April 1988 to current year.
CHEMICAL DATA: 1955, 1970-72 (a), 1988-89 (b).
MINOR ELEMENTS DATA: 1955, 1970-72 (a), 1988-89 (b).
NUTRIENT DATA: 1970-72 (a).
SEDIMENT DATA: 1988-89 (a).

REMARKS.--Water-quality samples were collected by personnel of the New York State Department of Environmental Conservation, and were analyzed in USGS laboratories.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)
OCT												
06...	1500	483	6.85	11.0	13.0	13	3.8	0.80	1.8	0.60	9.0	8.3
APR												
26...	1200	2480	6.05	6.0	--	11	3.4	0.64	1.7	0.50	5.0	6.0
MAY												
09...	1000	2880	6.20	12.5	16.1	10	3.3	0.54	1.5	0.40	4.0	6.0
JUN												
20...	1200	1270	6.25	18.0	12.4	11	3.6	0.56	1.7	0.40	4.0	6.0
AUG												
10...	1100	2560	6.25	21.5	12.2	12	3.5	0.69	1.4	0.40	5.0	6.0

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)
OCT											
06...	1.8	0.10	130	2	52	380	<5	60	<0.10	<1	40
APR											
26...	1.9	0.10	110	<1	3	150	<5	20	<0.10	<1	20
MAY											
09...	1.7	0.10	180	<1	5	150	3	20	<0.10	7	10
JUN											
20...	2.1	0.10	100	<1	2	270	1	40	<0.10	1	<10
AUG											
10...	2.0	0.10	130	<1	2	260	1	40	<0.10	3	10

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
OCT				
06...	1500	483	7	9.1

STREAMS TRIBUTARY TO ST. LAWRENCE RIVER

04267500 RAQUETTE RIVER AT SOUTH COLTON, NY

LOCATION.--Lat 44°30'42", long 74°53'00", St. Lawrence County, Hydrologic Unit 04150305, on left bank 300 ft upstream from bridge on State Highway 56 at South Colton, 500 ft downstream from Niagara Mohawk Power Corporation powerplant, and 0.8 mi upstream from Cold Brook.

DRAINAGE AREA.--937 mi^2.

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

REVISED RECORDS.--WDR NY-82-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 882.05 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good for discharges greater than 200 ft^3/s, and fair below. Flow regulated 16 mi upstream by Carry Falls Reservoir since 1953; considerable natural storage in large lakes upstream from Piercefield. Large diurnal fluctuation caused by five powerplants upstream from gage. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--36 years, 1,781 ft^3/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,720 ft^3/s, May 11, 1971, gage height, 9.80 ft; minimum, 1.3 ft^3/s, Feb. 1, 1962, Aug. 8, 1964, gage height, 1.53 ft; minimum daily, 4.6 ft^3/s, June 2, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,900 ft^3/s, Apr. 11, gage height, 7.74 ft; minimum, 16 ft^3/s, June 27, 28, July 6, 8, 18, gage height, 1.69 ft; minimum daily, 40 ft^3/s, July 10.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	909	1590	3590	1580	1170	1100	2920	2090	2070	1220	1270	1280
2	862	1610	3370	1490	787	1150	2830	2940	1940	1150	1270	1300
3	997	1290	2570	1390	930	1270	2660	3290	2800	1070	1510	1380
4	949	1940	3100	1580	420	1290	2860	3360	3360	824	1690	1240
5	903	1520	2470	1450	596	1200	3110	3720	3350	1270	1220	1210
6	849	1040	2360	1450	631	1250	3670	3400	3200	1340	1370	1230
7	866	2040	1850	1640	853	1290	3330	4030	3110	1150	1400	1230
8	957	2140	1650	1240	804	1150	3250	3830	3020	518	1920	1340
9	780	2850	1480	1670	841	1100	3700	3760	2790	542	3500	1260
10	976	3070	1420	1240	970	1140	4290	3750	2360	40	2810	628
11	1370	3350	1600	1460	466	1390	5730	3540	2660	1130	2440	474
12	1140	3290	1910	1570	482	1300	5350	4170	2850	1340	2410	503
13	1500	3350	1690	1540	764	1140	5030	3820	2790	1320	2460	762
14	1500	3390	1970	1360	788	1020	4230	4400	2530	1310	2460	960
15	1410	3160	1830	1690	997	1680	4240	4230	2260	1170	2380	1070
16	1420	3480	1660	1510	884	1100	4300	3900	2040	1280	2240	525
17	1340	3490	1810	1320	743	1010	4270	3720	2100	1110	2320	412
18	1440	3630	1920	1220	557	485	4040	3710	1950	1090	2640	1040
19	1320	3590	1750	1210	554	367	4010	3710	1710	1260	2380	1270
20	1370	3570	1690	1170	726	476	4000	3500	1450	1500	2390	1240
21	1310	3620	1840	989	912	405	3850	3270	1500	1030	2390	1510
22	1490	3660	1910	1250	733	469	3790	3140	1570	1080	2470	1540
23	1320	3640	1530	1230	886	371	3590	2800	1290	1160	2510	2570
24	1290	3610	1890	829	1320	382	3330	2870	937	1270	2540	2670
25	1380	3600	1750	831	1330	469	2930	2950	719	1100	2550	2720
26	1440	3590	1800	749	921	350	2950	2790	1110	1170	2440	2520
27	1510	3600	1800	738	982	628	2650	2430	1270	1040	2400	2490
28	1510	3620	1760	795	1060	670	2600	2460	1180	1210	2300	2460
29	1900	3630	1710	532	---	1830	2440	2400	1080	1400	2450	2460
30	1550	3610	1190	624	---	2120	2150	2460	1600	1290	2120	2700
31	707	---	1540	779	---	3200	---	2310	---	1070	1410	---
TOTAL	38265	89570	60410	38126	23107	32802	108100	102750	62596	34454	67660	43994
MEAN	1234	2986	1949	1230	825	1058	3603	3315	2087	1111	2183	1466
MAX	1900	3660	3590	1690	1330	3200	5730	4400	3360	1500	3500	2720
MIN	707	1040	1190	532	420	350	2150	2090	719	40	1220	412

CAL YR 1988 TOTAL 538054 MEAN 1470 MAX 3720 MIN 272
WTR YR 1989 TOTAL 701834 MEAN 1923 MAX 5730 MIN 40

STREAMS TRIBUTARY TO ST. LAWRENCE RIVER

04268000 RAQUETTE RIVER AT RAYMONDVILLE, NY
(National stream-quality accounting network station)

LOCATION.--Lat 44°50'20", long 74°58'45", St. Lawrence County, Hydrologic Unit 04150305, on right bank 250 ft upstrea from bridge on Grant Road at Raymondville, 0.3 mi downstream from Trout Brook, 0.4 mi downstream from Niagara Mohawk Power Corporation powerplant, and 18.0 mi upstream from mouth. Water-quality sampling site at discharge station.

DRAINAGE AREA.--1,125 mi^2.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WDR NY-82-1: Drainage area. WDR NY-85-1: 1983-84.

GAGE.--Water-stage recorder. Datum of gage is 183.33 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Extensive diurnal fluctuation caused by power and industrial operations. Flow regulated since 1953 by Carry Falls Reservoir, about 46 mi upstream and by Niagara Mohawk Power Corporation powerplant, 0.4 mi upstream; considerable natural storage in larg lakes upstream from Piercefield. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--45 years (water years 1945-89), 2,084 ft^3/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,000 ft^3/s, Apr. 5, 1974, gage height, 8.40 ft; maximum gage height, 9.24 ft, Feb. 22, 1954 (backwater from ice); minimum discharge, 2.2 ft^3/s, Sept. 18, 19, 1966; minimum gag height, 0.42 ft, July 13, 1950; minimum daily discharge, 7.0 ft^3/s, Oct. 15, 1951.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,300 ft^3/s, Mar. 30, gage height, 5.48 ft; maximum gage-height, 6.51 ft, Jan. 7 (ice jam); minimum discharge, 17 ft^3/s, Oct. 2, Sept. 11, gage height, 0.57 ft; minimum daily, 201 ft^3/s, Sept. 12.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	982	1260	4270	e2000	e1400	e1200	4110	2950	2770	1380	1320	1720
2	1020	1870	4290	e1900	e1100	e1300	3330	3050	2160	1370	1460	1550
3	1050	1980	3620	e1800	e1200	e1300	3540	4220	3240	1280	1600	1290
4	1010	2190	3150	e2000	e860	e1400	4340	4510	3790	1230	1730	1430
5	1100	2270	3200	e1900	e700	e1400	4870	4280	4120	1130	1690	1340
6	1080	2830	3250	e2000	e860	e1400	5170	4340	3910	1330	1730	1330
7	1090	2950	2470	e2100	e1100	e1500	5060	4900	3770	1370	1690	1430
8	1040	3050	2260	e1800	e1000	e1400	4760	5200	3210	753	1640	1330
9	1010	3510	1840	e2100	e1100	e1300	4190	4520	3030	614	2850	1440
10	936	3400	1560	e1800	e1200	e1300	4490	4510	3420	645	3810	1470
11	1020	3950	e1900	e1900	791	e1400	5600	4510	4080	1030	2660	802
12	1560	4020	e2500	e2000	453	e1500	6140	4180	3710	1370	2590	201
13	1460	3960	e2400	e1900	929	e1400	5980	5030	3520	1410	2630	898
14	1580	3970	e2200	e1800	1180	e1300	5270	5050	3250	1580	2640	735
15	1650	3910	e2100	e1800	1240	e2200	4930	5100	2950	1380	2640	741
16	1360	3880	e2200	e1700	1170	4080	4880	4950	2340	1330	2630	731
17	1660	3850	e2400	1540	e1100	2530	4960	4350	2720	1330	2620	520
18	1500	3880	e2500	1550	e840	952	4620	4150	2800	1310	2630	809
19	1500	4000	e2300	1520	677	775	4610	3810	2530	1310	2640	1430
20	1540	4060	e2200	e1500	609	697	4700	4000	1980	1280	2710	1390
21	1680	4500	e2100	e1400	e1100	e620	4630	3930	1850	1220	2780	1650
22	1670	4650	e2200	e1500	e1100	e600	4530	3930	1820	1310	2900	1740
23	1870	4610	2300	e1300	e1200	673	4440	2960	1890	1240	2860	2650
24	1890	4560	2180	e1100	e1400	584	4310	3220	1570	1200	2730	2810
25	2010	4450	e2100	e1000	e1600	660	3510	3290	1140	1240	2720	2810
26	2030	3840	e2100	e1000	1330	1470	3410	3470	1090	1230	2680	2850
27	2140	3800	e2100	e940	1130	2220	3080	3220	1480	1270	2600	2850
28	2310	4250	e2100	857	e1200	3550	2550	2730	1470	1370	2790	2720
29	2130	4470	e1800	731	---	4570	2880	2750	1440	1330	2690	2750
30	1890	3790	e1600	919	---	5050	2900	2740	1420	1340	2610	2830
31	1720	---	e1800	1450	---	4580	---	2720	---	1340	1760	---
TOTAL	46488	107710	74990	48807	29569	54911	131790	122570	78470	38522	75030	48247
MEAN	1500	3590	2419	1574	1056	1771	4393	3954	2616	1243	2420	1608
MAX	2310	4650	4290	2100	1600	5050	6140	5200	4120	1580	3810	2850
MIN	936	1260	1560	731	453	584	2550	2720	1090	614	1320	201

CAL YR 1988 TOTAL 621804 MEAN 1699 MAX 4650 MIN 400
WTR YR 1989 TOTAL 857104 MEAN 2348 MAX 6140 MIN 201

e Estimated

STREAMS TRIBUTARY TO ST. LAWRENCE RIVER

04268000 RAQUETTE RIVER AT RAYMONDVILLE, NY--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1955, 1957, 1960-61, 1969-72, 1979 to current year.
CHEMICAL DATA: 1955, 1957 (a), 1960-61 (e), 1969 (a), 1970 (d), 1971 (b), 1972 (a), 1979-80 (d), 1981-82 (c), 1983-89 (b).
MINOR ELEMENTS DATA: 1969 (a), 1970, 1979 (b), 1980 (d), 1981-89 (b).
PESTICIDE DATA: 1970 (a).
ORGANIC DATA: OC--1979-80 (d), 1981 (c).
NUTRIENT DATA: 1955, 1957 (a), 1960-61 (e), 1969 (a), 1970 (d), 1971 (b), 1972 (a), 1979-80 (d), 1981-82 (c), 1983-89 (b).
BIOLOGICAL DATA:
Bacteria--1969-71 (a), 1979-80 (d), 1981-82 (c), 1983-89 (b).
Phytoplankton--1979-80 (c), 1981 (b).
Periphyton--1979-80 (b).
SEDIMENT DATA: 1979 (c), 1980 (d), 1981-82 (c), 1983-89 (b).

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
NOV										
08...	0845	3030	120	7.20	6.5	4.1	760	11.2	91	58
FEB										
15...	0815	1670	66	7.14	0.5	1.9	770	14.3	98	1600
MAY										
16...	1015	4440	45	6.77	14.5	0.70	760	10.3	101	22
AUG										
17...	1045	2300	43	6.60	22.5	0.30	760	9.0	104	86

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
NOV										
08...	1000	41	10	3.8	3.1	0.80	28	18	4.6	0.10
FEB										
15...	160	24	6.6	1.9	3.7	0.60	15	12	4.9	0.10
MAY										
16...	13	22	5.9	1.7	2.3	0.60	13	7.0	2.8	0.10
AUG										
17...	34	15	4.4	0.99	2.0	0.40	10	6.0	2.6	0.10

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHOROUS TOTAL (MG/L AS P)	PHOS-PHOROUS DIS-SOLVED (MG/L AS P)	PHOS-PHOROUS ORTHO, DIS-SOLVED (MG/L AS P)
NOV											
08...	5.1	60	63	0.150	0.160	0.020	0.020	0.40	0.030	0.010	<0.010
FEB											
15...	6.9	41	50	--	0.910	0.120	0.120	0.70	0.010	<0.010	<0.010
MAY											
16...	4.5	42	34	--	0.330	0.030	0.050	0.30	0.010	0.010	<0.010
AUG											
17...	3.5	44	27	--	0.210	0.010	0.020	1.0	0.010	<0.010	<0.010

DATE	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)
NOV										
08...	40	<1	14	<0.5	<1	<1	<3	1	210	<5
FEB										
15...	60	<1	13	<0.5	<1	<1	<3	2	140	<5
MAY										
16...	60	<1	11	<0.5	1	1	<3	5	75	1
AUG										
17...	30	<1	10	<0.5	<1	1	<3	2	150	1

STREAMS TRIBUTARY TO ST. LAWRENCE RIVER

04268000 RAQUETTE RIVER AT RAYMONDVILLE, NY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
NOV 08...	<4	13	<0.1	<10	<1	<1	1.0	33	<6	13
FEB 15...	<4	13	<0.1	<10	<1	<1	<1.0	26	<6	12
MAY 16...	<4	15	<0.1	<10	5	<1	<1.0	23	<6	5
AUG 17...	<4	15	<0.1	<10	1	<1	<1.0	20	<6	13

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 08...	0845	3030	8	65	55
FEB 15...	0815	1670	3	13	72
MAY 16...	1015	4440	3	36	77
AUG 17...	1045	2300	3	20	68

STREAMS TRIBUTARY TO ST. LAWRENCE RIVER

04269000 ST. REGIS RIVER AT BRASHER CENTER, NY
(National stream-quality accounting network station)

LOCATION.--Lat 44°51'49", long 74°46'45", St. Lawrence County, Hydrologic Unit 04150306, on left bank 600 ft upstream from highway bridge at Brasher Center, and 6.5 mi downstream from West Branch. Water-quality sampling site at discharge station.

DRAINAGE AREA.--612 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1910 to current year. Monthly discharge only for some periods, published in WSP 1307.

REVISED RECORDS.--WSP 1387: 1910-16, 1917(M), WDR NY-82-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 217.23 ft above National Geodetic Vertical Datum of 1929. Prior to June 24, 1916, nonrecording gage at site 600 ft downstream at different datum. June 24, 1916 to Nov. 10, 1917, and Jan. 1, 1919 to Aug. 13, 1920, nonrecording gage at present site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Slight diurnal fluctuation caused by powerplant operations upstream from station. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--79 years, 1,047 ft^3/s, 23.23 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,800 ft^3/s, Apr. 6, 1937, gage height, 12.82 ft; maximum gage height recorded, about 15.3 ft, Apr. 6, 1937 (ice jam); minimum discharge observed, about 34 ft^3/s, Aug. 8, 1917, gage height, 5.25 ft; minimum daily, 37 ft^3/s, Aug. 8, 1917.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,600 ft^3/s, and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 6	2245	7,280	9.90	Apr. 6	0945	6,160	9.47
Mar. 29	1900	*9,720	*10.75				

Minimum discharge, 220 ft^3/s, July 1, gage height, 5.87 ft; minimum daily, 260 ft^3/s, July 28.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	305	1100	1200	e500	e780	e400	4770	1050	716	285	305	370
2	332	1200	1110	e540	e900	e380	3670	1260	841	309	285	416
3	518	1470	1040	e540	e1000	e380	3650	2460	1600	306	283	681
4	646	1530	960	e500	e900	e390	4010	3260	1780	301	283	737
5	634	1920	858	e480	e760	e450	5110	2790	1740	309	384	660
6	947	5440	806	e480	e680	e560	6010	2610	1470	526	1330	529
7	1250	6460	e760	e470	e620	e680	5340	2940	1170	547	1340	459
8	1040	4990	e680	e500	e560	e560	4360	2660	958	431	1020	400
9	851	4060	e620	e660	e520	e500	3400	2260	825	373	792	366
10	663	3340	e560	e780	e500	e440	2810	1950	1160	617	604	347
11	619	2770	e500	e740	e480	e400	2380	1780	3040	1470	506	319
12	681	2390	e430	e720	e460	e380	2030	1850	2910	1530	437	289
13	667	2020	e410	e700	e450	e380	1860	1970	2060	1160	381	297
14	662	2020	e400	e680	e430	e410	1810	2090	1580	825	395	288
15	714	1740	e400	e660	e430	e580	1770	2020	1230	643	522	387
16	773	1550	e400	e640	e440	e1400	1990	1770	1040	511	593	605
17	829	1410	e400	e640	e440	e1300	2140	1530	1050	435	618	832
18	753	1210	e410	e620	e440	e1200	2460	1300	1200	395	526	813
19	682	1170	e440	e600	e430	e1200	2670	1130	1150	417	439	754
20	578	1060	559	e600	e430	e1200	2340	987	1010	409	422	764
21	534	1640	846	e600	e430	e1100	2060	915	921	361	424	984
22	673	1900	770	e580	e480	e1000	1870	846	826	344	1060	1140
23	1040	1700	748	e580	e760	e900	1720	811	816	334	1690	1390
24	1300	1550	749	e580	e620	746	1560	776	773	317	1620	1510
25	1770	1370	e560	e540	e560	796	1400	800	665	299	1380	1390
26	1950	1240	e490	e540	e500	1510	1280	722	579	277	1050	1220
27	1870	1160	e470	e560	e450	2630	1220	863	492	264	790	1080
28	1610	1250	e500	e600	e420	3830	1060	905	447	260	649	960
29	1570	1370	e580	e600	---	6670	1090	839	410	288	545	816
30	1480	1310	e580	e620	---	7540	1050	782	390	358	474	720
31	1310	---	e520	e660	---	6600	---	727	---	342	423	---
TOTAL	29251	63340	19756	18510	15870	46512	78890	48653	34849	15243	21570	21523
MEAN	944	2111	637	597	567	1500	2630	1569	1162	492	696	717
MAX	1950	6460	1200	780	1000	7540	6010	3260	3040	1530	1690	1510
MIN	305	1060	400	470	420	380	1050	722	390	260	283	288
CFSM	1.54	3.45	1.04	.98	.93	2.45	4.30	2.56	1.90	.80	1.14	1.17
IN.	1.78	3.85	1.20	1.13	.96	2.83	4.80	2.96	2.12	.93	1.31	1.31

CAL YR 1988 TOTAL 322267 MEAN 881 MAX 6460 MIN 167 CFSM 1.44 IN. 19.59
WTR YR 1989 TOTAL 413967 MEAN 1134 MAX 7540 MIN 260 CFSM 1.85 IN. 25.16

e Estimated

STREAMS TRIBUTARY TO ST. LAWRENCE RIVER

04269000 ST. REGIS RIVER AT BRASHER CENTER, NY--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1955, 1960, 1970-72, 1974 to current year.
CHEMICAL DATA: 1955 (a), 1960 (b), 1970-72 (a), 1975-81 (d), 1982 (c), 1983-89 (b).
MINOR ELEMENTS DATA: 1975, 1977-79 (b), 1980 (c), 1981-89 (b).
ORGANIC DATA: OC--1974 (b), 1978-81 (d).
NUTRIENT DATA: 1970-71 (a), 1975-81 (d), 1982 (c), 1983-89 (b).
BIOLOGICAL DATA:
Bacteria--1975-81 (d), 1982 (c), 1983-89 (b).
Phytoplankton--1975-77 (d), 1978-81 (c).
Periphyton--1975-80 (b).
SEDIMENT DATA: 1975 (d), 1976-77 (c), 1978-81 (d), 1982 (c), 1983-89 (b).

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: September 1974 to September 1981.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES (water years 1975-81): Maximum daily, 29.0°C Aug. 4, 1975; minimum, 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	BAROMETRIC PRESSURE (MM OF HG)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
NOV 07...	1015	6630	41	6.70	5.5	3.7	750	11.1	89	140
FEB 14...	1100	E430	76	7.42	0.0	1.5	765	13.0	89	30
MAY 16...	0915	1890	54	6.87	15.0	0.70	760	9.4	93	24
AUG 15...	0830	476	57	7.24	24.5	0.90	760	7.9	95	170

DATE	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
NOV 07...	190	19	4.8	1.7	1.3	0.70	13	17	2.1	0.10
FEB 14...	6	37	9.4	3.3	3.3	0.70	27	12	3.2	0.10
MAY 16...	7	25	6.5	2.1	2.0	0.70	15	8.0	2.4	0.10
AUG 15...	25	28	7.5	2.2	2.2	0.50	19	6.0	3.3	0.10

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRATE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS DISSOLVED (MG/L AS P)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P)
NOV 07...	5.2	44	42	0.140	0.150	0.030	0.030	0.60	0.030	<0.010	<0.010
FEB 14...	10	42	64	--	1.30	0.050	0.050	0.40	0.010	<0.010	<0.010
MAY 16...	3.5	38	35	--	<0.100	0.030	0.050	0.40	0.010	0.010	<0.010
AUG 15...	5.5	70	39	--	<0.100	0.030	0.040	1.0	0.020	<0.010	<0.010

E Estimated daily discharge.

STREAMS TRIBUTARY TO ST. LAWRENCE RIVER

04269000 ST. REGIS RIVER AT BRASHER CENTER, NY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)
NOV 07...	130	<1	13	<0.5	<1	<1	<3	<1	220	<5
FEB 14...	40	<1	14	<0.5	<1	<1	<3	1	230	<5
MAY 16...	70	<1	12	<0.5	<1	1	<3	2	170	1
AUG 15...	70	<1	13	<0.5	<1	<1	<3	1	490	<1

DATE	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
NOV 07...	<4	36	<0.1	<10	<1	<1	<1.0	15	<6	6
FEB 14...	<4	4	--	<10	<1	<1	<1.0	33	<6	13
MAY 16...	<4	12	<0.1	<10	<1	<1	<1.0	21	<6	5
AUG 15...	<4	31	0.1	<10	<1	<1	<1.0	27	<6	13

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
FEB 14...	1100	E430	2	2.3	60
MAY 16...	0915	1890	4	20	94
AUG 15...	0830	476	3	4.0	78

E Estimated daily discharge.

STREAMS TRIBUTARY TO ST. LAWRENCE RIVER

04270000 SALMON RIVER AT CHASM FALLS, NY

LOCATION.--Lat 44°45'22", long 74°13'09", Franklin County, Hydrologic Unit 04150307, on right bank 0.1 mi downstream from Niagara Mohawk Power Corp. powerplant at Chasm Falls, and 3.0 mi downstream from Duane Stream.

DRAINAGE AREA.--132 mi^2.

PERIOD OF RECORD.--July 1925 to September 1982, October 1986 to current year.

REVISED RECORDS.--WSP 729: 1931 (m). WSP 759: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,011.52 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Seasonal regulation of flow by upstream reservoirs. Diurnal fluctuation at low and medium flow caused by powerplant. A small diversion from tributary upstream from station is used as water supply for village of Malone.

AVERAGE DISCHARGE.--60 years, 228 ft^3/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,890 ft^3/s, Apr 25, 1926, gage height, 5.0 ft; minimum, 9.8 ft^3/s, Sept. 26, 27, 1963; minimum daily, 28 ft^3/s, Sept. 4, 1934.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 29, 1984, reached a stage of 5.63 ft, from floodmarks, discharge, 3,700 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,270 ft^3/s, Mar. 29, gage height, 4.44 ft; minimum, 28 ft^3/s, Oct. 8, gage height, 0.61 ft; minimum daily, 79 ft^3/s, Oct. 1.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	79	204	261	e130	163	134	833	277	189	91	100	152
2	87	198	246	e140	160	131	692	485	233	113	e110	348
3	154	260	237	e130	165	88	644	725	380	102	e307	286
4	137	267	229	e120	145	83	644	818	323	130	e255	183
5	144	344	e200	e120	138	90	919	649	286	177	e582	112
6	319	969	e180	e115	96	98	1170	621	222	138	e655	140
7	254	1340	e170	e110	89	92	1060	694	186	119	e400	135
8	209	1060	e150	e130	84	109	846	569	181	107	e281	130
9	188	796	e130	e170	92	134	666	471	169	107	e227	125
10	131	622	e120	162	96	167	554	401	232	299	e189	125
11	135	556	e110	157	99	173	453	368	496	670	e105	121
12	144	471	e100	140	97	123	393	374	449	331	e123	125
13	148	385	e94	139	117	112	368	325	347	246	e134	112
14	147	376	e100	128	124	127	358	341	279	156	e266	127
15	206	333	e120	131	166	166	378	340	238	140	e210	253
16	199	288	e120	150	176	216	427	306	216	128	e205	265
17	186	258	e110	145	156	215	461	279	170	126	e192	292
18	172	241	e105	146	118	181	589	234	179	121	e172	252
19	166	266	e96	143	116	231	554	235	208	120	e148	209
20	165	314	e110	145	116	183	488	224	186	103	e192	306
21	166	448	e150	127	120	167	456	213	174	107	e255	461
22	191	431	e220	147	198	145	438	210	149	106	e424	374
23	224	344	e180	144	178	154	390	209	125	102	e638	341
24	240	305	e160	141	143	173	353	143	159	102	e424	350
25	286	275	e160	133	150	178	338	183	147	87	e313	287
26	304	255	e160	141	144	209	332	216	126	90	e198	256
27	285	266	e170	143	139	293	278	226	134	100	e180	247
28	265	324	e170	141	136	556	211	232	127	174	e174	169
29	285	312	e170	146	---	1610	203	207	120	137	e158	148
30	259	280	e170	144	---	1620	225	178	121	118	159	166
31	242	---	e150	155	---	1210	---	188	---	100	142	---
TOTAL	6117	12788	4848	4313	3721	9168	15721	10941	6551	4747	7918	6597
MEAN	197	426	156	139	133	296	524	353	218	153	255	220
MAX	319	1340	261	170	198	1620	1170	818	496	670	655	461
MIN	79	198	94	110	84	83	203	143	120	87	100	112

CAL YR 1988 TOTAL 76268 MEAN 208 MAX 1340 MIN 56
WTR YR 1989 TOTAL 93430 MEAN 256 MAX 1620 MIN 79

e Estimated

STREAMS TRIBUTARY TO ST. LAWRENCE RIVER

04270200 LITTLE SALMON RIVER AT BOMBAY, NY

LOCATION.--Lat 44°56'24", long 74°33'26", Franklin County, Hydrologic Unit 04150307, on right bank 50 ft downstream from bridge on road to Fort Covington Center, 0.5 mi east of village of Bombay, and 7.2 mi upstream from mouth.

DRAINAGE AREA.--92.2 mi^2.

PERIOD OF RECORD.--August to November 1957, July 1958 to current year. Occasional low-flow measurements, water years 1954-55, 1957.

REVISED RECORDS.--WDR NY-82-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 173.91 ft above National Geodetic Vertical Datum of 1929. August to November 1957, at site 100 ft upstream at datum 0.72 ft higher.

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

AVERAGE DISCHARGE.--31 years (water years 1959-89), 119 ft^3/s, 17.53 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,250 ft^3/s, Apr. 4, 1974, gage height, 12.90 ft; minimum, 8.0 ft^3/s, Aug. 6, 7, 1965, gage height, 1.52 ft; minimum gage height, 0.85 ft, Sept. 2, 1957, site and datum then in use.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft^3/s, and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 6	1930	*2,170	10.30	Mar. 29	1330	1,600	8.74
Mar. 15	2100	ice jam	*12.56				

Minimum discharge, 15 ft^3/s, Aug. 1, 2, gage height, 1.50 ft.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	88	110	e80	e270	e45	293	83	62	26	17	31
2	25	154	100	e76	e170	e39	234	126	76	26	23	102
3	66	295	95	e70	e140	e35	421	392	155	25	41	68
4	76	246	93	e66	e130	e35	670	436	138	23	36	44
5	98	620	84	e66	e120	e43	757	226	146	26	61	34
6	242	1650	e76	e64	e100	e68	573	293	90	28	62	29
7	120	914	e68	e66	e90	e80	512	338	67	25	49	26
8	73	477	e58	e86	e82	e56	390	218	56	26	36	23
9	57	369	e52	e160	e72	e36	274	166	48	24	30	21
10	49	277	e45	e140	e66	e34	220	135	117	57	24	20
11	46	230	e38	e120	e60	e33	181	126	340	237	23	19
12	46	187	e29	e110	e54	e36	158	155	197	107	21	19
13	53	160	e30	e110	e49	e36	151	146	113	66	22	19
14	63	151	e33	e100	e45	e42	157	170	84	49	25	20
15	66	138	e33	e96	e43	e150	160	199	70	40	26	31
16	72	124	e32	e92	e41	e470	208	141	63	35	24	42
17	58	115	e32	e90	e41	e350	203	109	99	31	30	39
18	49	108	e31	e86	e40	e290	234	91	113	28	27	49
19	48	98	e31	e80	e40	e260	229	79	86	26	24	39
20	56	101	e31	e76	e42	e230	175	69	69	24	29	55
21	70	333	e41	e74	e52	e210	147	64	62	22	37	80
22	88	254	e80	e72	e80	e200	128	66	55	22	79	55
23	186	172	e94	e70	e150	e190	113	70	50	21	93	52
24	219	141	e88	e68	e110	e190	104	67	44	21	68	83
25	277	126	e84	e70	e90	e200	97	70	39	19	50	59
26	207	117	e86	e74	e76	e280	93	68	35	18	39	45
27	164	128	e86	e76	e66	e420	88	69	33	18	31	37
28	130	157	e84	e82	e56	e1300	85	65	33	21	28	33
29	132	148	e86	e82	---	1450	81	57	30	24	25	31
30	115	123	e88	e86	---	653	81	51	28	21	24	27
31	96	---	e84	e98	---	580	---	60	---	18	23	---
TOTAL	3069	8201	2002	2686	2375	8041	7217	4405	2598	1154	1127	1232
MEAN	99.0	273	64.6	86.6	84.8	259	241	142	86.6	37.2	36.4	41.1
MAX	277	1650	110	160	270	1450	757	436	340	237	93	102
MIN	22	88	29	64	40	33	81	51	28	18	17	19
CFSM	1.07	2.96	.70	.94	.92	2.81	2.61	1.54	.94	.40	.39	.45
IN.	1.24	3.31	.81	1.08	.96	3.24	2.91	1.78	1.05	.47	.45	.50

CAL YR 1988 TOTAL 33691 MEAN 92.1 MAX 1650 MIN 13 CFSM 1.00 IN. 13.59
WTR YR 1989 TOTAL 44107 MEAN 121 MAX 1650 MIN 17 CFSM 1.31 IN. 17.80

e Estimated

STREAMS TRIBUTARY TO ST. LAWRENCE RIVER

04270510 CHATEAUGAY RIVER BELOW CHATEAUGAY, NY

LOCATION.--Lat 44°57'49", long 74°07'53", Franklin County, Hydrologic Unit 04150307, on left bank 10 ft downstream from bridge on Sam Cook Road, 0.2 mi downstream from Marble River, 2.4 mi upstream from international boundary, and 4.1 mi northwest of Chateaugay.

DRAINAGE AREA.--151 mi^2.

PERIOD OF RECORD.--December 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is 411.33 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated at Forge Dam on Upper and Lower Chateaugay Lakes. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--23 years (water years 1967-89), 246 ft^3/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,200 ft^3/s, Apr. 4, 1974, gage height, 7.33 ft, from rating curve extended above 1,600 ft^3/s; maximum gage height, 10.99 ft, Feb. 11, 1966 (ice jam); minimum discharge, 14 ft^3/s, Sept. 5, 6, 1982, Nov. 3, 1985, Aug. 28, 1987; minimum gage height, 2.32 ft, Sept. 5, 6, 1982, Aug. 28, 1987; minimum daily discharge, 37 ft^3/s, Aug. 23, 26, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,910 ft^3/s, Nov. 6, gage height, 5.62 ft; maximum gage height, 8.41 ft, Mar. 15 (ice jam); minimum discharge, 20 ft^3/s, Aug. 17, gage height, 2.40 ft; minimum daily discharge, 76 ft^3/s, Sept. 12.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	117	155	205	e200	272	e140	957	109	197	78	91	121
2	144	207	200	e180	182	e130	870	186	228	79	95	145
3	170	264	206	e170	e160	e120	882	445	231	77	100	110
4	179	779	216	e160	e140	e120	1100	579	263	105	155	105
5	250	1230	253	e150	e130	e130	1140	714	304	100	236	105
6	303	1560	292	e160	e130	e140	1040	804	279	86	284	99
7	281	936	214	e180	e140	e160	1200	695	261	86	358	102
8	270	825	208	e190	e140	e150	961	664	256	84	323	100
9	270	799	e200	e180	e150	e140	826	588	249	83	302	99
10	266	733	e180	e170	e150	e140	713	463	306	151	190	98
11	268	648	e170	e150	e160	e130	630	409	399	219	95	80
12	261	657	e160	e140	e150	e130	503	433	294	218	86	76
13	242	651	e150	e140	e150	e130	358	449	260	323	105	78
14	222	604	e160	e140	e160	e200	297	432	254	246	214	84
15	114	576	e180	e150	e160	e600	264	426	251	100	104	104
16	115	565	e200	e140	e160	250	224	398	243	96	131	127
17	111	547	e250	e120	e160	175	220	345	251	98	98	146
18	113	512	e300	e120	e180	143	241	312	233	98	95	188
19	110	402	e370	e110	e200	e140	225	268	201	97	309	186
20	109	260	e290	e100	e190	e140	220	223	120	96	321	239
21	109	399	e250	e94	e180	146	395	228	101	95	190	505
22	125	515	355	e90	e170	197	458	230	91	93	110	713
23	141	494	561	e120	e160	246	423	219	86	94	303	585
24	179	388	343	e130	e160	328	347	210	84	100	227	424
25	191	250	210	e120	e150	382	296	210	83	95	197	220
26	172	249	229	e110	e150	577	295	205	83	91	327	226
27	151	308	406	e98	e140	878	261	196	83	88	311	199
28	148	330	e290	e88	e140	1310	195	185	82	99	110	168
29	144	225	e250	e92	---	1530	135	157	79	92	95	167
30	140	204	e230	e110	---	1150	110	167	78	93	103	167
31	139	---	e220	157	---	1120	---	173	---	92	100	---
TOTAL	5554	16272	7748	4259	4514	11272	15786	11122	5930	3552	5765	5766
MEAN	179	542	250	137	161	364	526	359	198	115	186	192
MAX	303	1560	561	200	272	1530	1200	804	399	323	358	713
MIN	109	155	150	88	130	120	110	109	78	77	86	76

CAL YR 1988 TOTAL 79605 MEAN 217 MAX 1560 MIN 66
WTR YR 1989 TOTAL 97540 MEAN 267 MAX 1560 MIN 76

e Estimated

STREAMS TRIBUTARY TO ST. LAWRENCE RIVER

04273500 SARANAC RIVER AT PLATTSBURGH, NY

LOCATION.--Lat 44°40'54", long 73°28'18", Clinton County, Hydrologic Unit 02010006, on right bank at Plattsburgh, 600 ft downstream from Imperial Paper and Color Corp. dam, 3.0 mi upstream from mouth, and 5.5 mi downstream from Mead Brook.

DRAINAGE AREA.--608 mi^2.

PERIOD OF RECORD.--March 1903 to September 1930, October 1943 to current year. Published as "near Plattsburgh," 1903-30.

REVISED RECORDS.--WSP 345: Drainage area. WSP 384: 1909-10 (monthly discharge only). WSP 1387: 1907-8. WSP 1437: 1908 (minimum daily only).

GAGE.--Water-stage recorder. Datum of gage is 155.74 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 12, 1919, nonrecording gage, and Nov. 12, 1919 to Sept. 30, 1930, water-stage recorder, at site 1.5 mi upstream at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Considerable diurnal fluctuation caused by power and industrial operations. Slight regulation by storage in Upper and Lower Saranac Lakes and elsewhere. During the year, the city of Plattsburgh diverted an average of 7.50 ft^3/s from Saranac River and Mead and West Brooks, tributaries upstream from station, for municipal supply. About 1 ft^3/s diverted from Great Chazy River basin into Saranac River for water supply of State Institutions at Dannemora. Several measurements of water temperature were made during the year. Telephone gage-height telemeter at station.

AVERAGE DISCHARGE.--73 years, 835 ft^3/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,500 ft^3/s, Apr. 8, 1928, from computation of flow over dam and through waste gates and powerplant; minimum daily discharge, 3.6 ft^3/s, June 26, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,730 ft^3/s, Mar. 29, gage height, 9.45 ft; minimum, 64 ft^3/s, June 30, July 1, gage height, 2.06 ft; minimum daily, 72 ft^3/s, July 1.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	302	736	1130	441	547	e270	2630	943	852	72	263	370
2	308	1040	1010	e440	585	e260	2300	1310	994	214	333	657
3	310	672	920	e460	474	e240	2330	2380	1620	293	482	588
4	323	539	859	e420	e390	e220	2420	2080	1510	265	459	431
5	417	637	863	e350	e370	217	3480	1740	1480	545	775	436
6	402	2200	954	e330	e400	281	3970	1950	1410	395	1330	476
7	461	2400	926	e400	e400	e240	3690	2300	1300	362	1130	367
8	392	2040	613	545	e390	e270	2940	2010	1210	288	984	413
9	486	1910	833	505	e370	285	2480	1810	1110	380	1100	467
10	444	1910	614	422	e350	283	2220	1660	1290	281	791	428
11	269	1710	467	391	e390	324	1890	1650	1570	1260	710	426
12	446	1680	395	388	e400	309	1670	1900	1360	1130	319	388
13	357	1520	266	421	e400	e280	1670	1920	1130	967	284	601
14	326	1420	271	445	e400	304	1500	1700	1050	768	564	286
15	439	1250	e290	528	e430	468	1220	1590	1000	929	517	652
16	330	1120	e320	525	e450	1090	1430	1480	986	489	567	847
17	391	1170	e360	444	e400	800	1460	1320	957	437	684	743
18	335	1110	e390	438	e390	647	1630	1240	691	391	673	962
19	420	1090	460	e410	e380	632	1630	1170	718	532	514	948
20	317	1110	569	e390	e360	635	1480	1120	924	363	400	2630
21	235	1600	788	e370	e320	604	1400	1070	768	254	364	3280
22	376	1460	624	e360	e280	e560	1350	1020	815	279	1010	2250
23	609	1280	553	478	e320	e540	1150	962	613	203	750	1880
24	623	1220	421	509	e300	e560	1270	815	649	394	793	1980
25	689	1180	472	457	e290	e640	1140	920	840	399	761	1730
26	578	1120	459	e350	e280	e800	1160	708	389	309	723	1590
27	752	1120	418	e320	e280	e1000	1080	902	461	267	572	1450
28	731	1140	497	e320	e280	1760	918	1070	810	815	542	1270
29	758	1160	698	435	---	6030	849	772	288	319	548	1180
30	675	1130	699	348	---	3860	902	741	103	375	590	1100
31	555	---	519	459	---	3040	---	868	---	289	354	---
TOTAL	14056	39674	18658	13099	10626	27449	55259	43121	28898	14264	19886	30826
MEAN	453	1322	602	423	379	885	1842	1391	963	460	641	1028
MAX	758	2400	1130	545	585	6030	3970	2380	1620	1260	1330	3280
MIN	235	539	266	320	280	217	849	708	103	72	263	286

CAL YR 1988 TOTAL 236720 MEAN 647 MAX 2820 MIN 174
WTR YR 1989 TOTAL 315816 MEAN 865 MAX 6030 MIN 72

e Estimated

STREAMS TRIBUTARY TO ST. LAWRENCE RIVER

04275000 EAST BRANCH AUSABLE RIVER AT AU SABLE FORKS, NY

LOCATION.--Lat 44°26'20", long 73°40'55", Essex County, Hydrologic Unit 02010004, on left bank 700 ft upstream from bridge on Burt Street in Au Sable Forks, and 0.5 mi upstream from confluence with West Branch.

DRAINAGE AREA.--198 mi^2.

PERIOD OF RECORD.--September 1924 to current year.

REVISED RECORDS.--WSP 759: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 545.37 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 21, 1938, nonrecording gage at lower highway bridge in Au Sable Forks, 400 ft upstream from confluence with West Branch at datum 3.54 ft lower.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Occasional regulation of storage in Upper and Lower Ausable Lakes and occasional small diurnal fluctuation, cause unknown. Several measurements of water temperature were made during the year. Telephone gage-height telemeter at station.

AVERAGE DISCHARGE.--65 years, 313 ft^3/s, 21.47 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,100 ft^3/s, Sept. 22, 1938, gage height, 12.91 ft, from rating curve extended above 5,800 ft^3/s, on basis of velocity-area studies; minimum observed, 20 ft^3/s, Aug. 11, 14, 28, 1934.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,700 ft^3/s, and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 6	1145	*8,790	*8.71	May 6	1430	5,320	6.93
Mar. 29	0615	5,730	7.17	Sept. 20	1415	7,740	8.22
May 2	1515	4,910	6.68				

Minimum daily discharge, 45 ft^3/s, Mar. 13.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	57	139	264	e180	e120	e78	865	588	243	83	67	60
2	55	183	226	e160	e190	e74	509	2690	715	77	62	727
3	63	210	206	e160	e150	e70	546	1950	1120	70	65	491
4	66	166	187	e140	e130	e66	895	1070	598	64	70	256
5	75	428	144	e100	e110	e62	2030	799	452	62	1190	157
6	104	5790	e130	e140	e110	e84	1490	2960	358	59	609	115
7	103	2280	e110	e170	e120	e140	1230	2190	316	56	311	92
8	88	1160	e110	e220	e110	e94	688	1260	253	56	197	79
9	83	742	e100	e270	e100	e76	461	796	213	52	142	70
10	79	548	e92	e130	e110	e64	356	603	617	185	110	64
11	93	787	e86	e90	e110	e56	271	981	807	488	93	59
12	153	523	e80	e74	e120	e50	237	1820	596	207	90	57
13	117	413	e78	e82	e120	e45	229	1340	394	138	110	55
14	97	777	e72	e130	e130	e50	210	948	356	115	232	79
15	90	526	e74	e190	e140	e130	209	768	288	101	152	1190
16	91	397	e76	e210	e170	e380	250	664	341	82	117	719
17	98	608	e80	e180	e200	e310	261	636	425	281	105	465
18	98	590	e84	e150	e140	e260	521	609	424	285	89	374
19	353	383	e90	e140	e130	e230	685	569	470	196	75	270
20	217	329	e150	e130	e120	e210	523	525	371	134	75	3850
21	156	1070	e310	e120	e110	e210	401	464	287	103	104	1920
22	150	720	e250	e120	e80	e200	363	426	228	88	129	852
23	164	476	e200	e150	e90	e200	296	344	185	97	129	1620
24	165	363	e170	e200	e88	e260	259	338	154	89	148	1100
25	424	289	e160	e160	e86	e300	227	451	130	73	110	648
26	304	260	e150	e130	e84	e350	221	371	117	63	88	439
27	229	259	e140	e110	e84	e440	247	451	122	58	73	335
28	191	394	e240	e100	e80	e1200	259	379	105	84	67	271
29	258	403	e330	e96	---	3680	254	306	115	165	62	226
30	197	305	e250	e94	---	1220	273	250	100	108	63	192
31	158	---	e210	e92	---	819	---	226	---	80	62	---
TOTAL	4576	21518	4849	4418	3332	11408	15266	27772	10900	3799	4996	16832
MEAN	148	717	156	143	119	368	509	896	363	123	161	561
MAX	424	5790	330	270	200	3680	2030	2960	1120	488	1190	3850
MIN	55	139	72	74	80	45	209	226	100	52	62	55
CFSM	.75	3.62	.79	.72	.60	1.86	2.57	4.52	1.84	.62	.81	2.83
IN.	.86	4.04	.91	.83	.63	2.14	2.87	5.22	2.05	.71	.94	3.16

CAL YR 1988 TOTAL 96168 MEAN 263 MAX 5790 MIN 36 CFSM 1.33 IN. 18.07
WTR YR 1989 TOTAL 129666 MEAN 355 MAX 5790 MIN 45 CFSM 1.79 IN. 24.36

e Estimated

STREAMS TRIBUTARY TO ST. LAWRENCE RIVER

04278000 LAKE GEORGE AT ROGERS ROCK, NY

LOCATION.--Lat 43°48'28", long 73°27'30", Essex County, Hydrologic Unit 02010001, on west shore about 500 ft north of Hooper's dock at Rogers Rock, and 0.4 mi west of Baldwin.

DRAINAGE AREA.--233 mi^2 at outlet at Ticonderoga.

PERIOD OF RECORD.--July 1913 to current year.

REVISED RECORDS.--WDR NY-87-1: Datum.

GAGE.--Water-stage recorder. Datum of gage is 316.06 ft above National Geodetic Vertical Datum, adjustment of 1912. Prior to Nov. 4, 1929, nonrecording gages at several sites within a half mile of present site at same datum. Nov. 4, 1929 to Sept. 26, 1936, nonrecording gage at present site and datum.

REMARKS.--Elevation of lake regulated by floodgates at Ticonderoga. Prior to October 1974, lake was regulated by powerplant wheel gate and floodgates. Lake George has been controlled by a dam at its outlet for more than 100 years. Area of water surface is 44 mi^2.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 5.09 ft, Apr. 9, 1936; minimum, 0.64 ft, Dec. 20, 1941.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 4.38 ft, May 14; minimum, 2.83 ft, Mar. 12.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.25	3.14	3.88	3.58	3.35	3.06	3.63	3.64	3.77	3.72	3.66	3.39
2	3.26	3.30	3.85	3.62	3.29	3.02	3.66	3.72	3.75	3.74	3.65	3.36
3	3.18	3.36	3.85	3.56	3.33	2.96	3.67	3.86	3.73	3.72	3.63	3.34
4	3.16	3.36	3.83	3.53	---	2.94	3.73	3.83	3.72	3.73	3.63	3.34
5	3.18	3.36	3.81	3.55	---	2.94	3.83	3.81	3.72	3.72	3.70	3.35
6	3.17	3.51	3.83	3.51	---	2.90	3.93	4.05	3.72	3.71	3.74	3.33
7	3.16	3.56	3.79	3.52	3.34	2.89	4.06	4.20	3.77	3.70	3.72	3.31
8	3.14	3.58	3.75	3.56	3.34	2.89	4.03	4.20	3.75	3.64	3.68	3.31
9	3.14	3.60	3.76	3.55	3.32	2.90	4.04	4.16	3.72	3.67	3.66	3.30
10	3.16	3.66	3.70	3.54	3.31	2.90	4.02	4.10	3.83	3.75	3.63	3.30
11	3.18	3.63	3.69	3.49	3.29	2.91	3.98	4.13	3.82	3.77	3.59	3.24
12	3.13	3.62	3.71	3.52	3.29	2.90	3.95	4.25	3.76	3.76	3.59	3.27
13	3.10	3.68	3.71	3.49	3.28	2.92	3.95	4.27	3.73	3.74	3.65	3.25
14	3.10	3.77	3.69	3.49	3.28	2.92	3.93	4.27	3.74	3.73	3.68	3.20
15	3.08	3.77	3.73	3.51	3.26	2.93	3.92	4.23	3.76	3.74	3.67	3.24
16	3.06	3.82	3.67	3.49	3.22	2.96	3.91	4.17	3.82	3.74	3.66	3.28
17	3.08	3.86	3.64	3.50	3.20	2.95	3.92	4.12	3.87	3.71	3.60	3.32
18	3.12	3.86	3.65	3.47	3.17	2.96	3.89	4.07	3.86	3.70	3.57	3.32
19	3.05	3.85	3.66	3.46	3.15	2.99	3.91	4.04	3.83	3.71	3.56	3.32
20	3.06	3.89	3.67	3.46	3.12	3.01	3.91	3.99	3.81	3.72	3.58	3.49
21	3.05	4.06	3.65	3.45	3.16	3.03	3.87	3.95	3.79	3.72	3.57	3.55
22	3.03	4.05	3.58	3.45	3.21	3.02	3.84	3.92	3.77	3.73	3.50	3.59
23	3.15	4.01	3.62	3.44	3.18	3.03	3.83	3.87	3.75	3.74	3.48	3.64
24	3.16	3.96	3.62	3.41	3.16	3.03	3.81	3.85	3.75	3.75	3.42	3.59
25	3.20	3.95	3.66	3.36	3.14	3.06	3.76	3.86	3.74	3.75	3.38	3.58
26	3.18	3.96	3.63	3.41	3.12	3.09	3.75	3.85	3.76	3.74	3.35	3.53
27	3.17	3.96	3.64	3.39	3.09	3.13	3.72	3.83	3.82	3.74	3.36	3.46
28	3.20	3.95	3.65	3.40	3.07	3.20	3.67	3.79	3.84	3.73	3.34	3.46
29	3.19	3.94	3.61	3.39	---	3.28	3.67	3.81	3.76	3.70	3.36	3.41
30	3.16	3.92	3.61	3.39	---	3.38	3.66	3.81	3.74	3.71	3.38	3.34
31	3.16	---	3.60	3.39	---	3.52	---	3.76	---	3.68	3.35	---
MEAN	3.14	3.73	3.70	3.48	---	3.02	3.85	3.98	3.77	3.72	3.56	3.38
MAX	3.26	4.06	3.88	3.62	---	3.52	4.06	4.27	3.87	3.77	3.74	3.64
MIN	3.03	3.14	3.58	3.36	---	2.89	3.63	3.64	3.72	3.64	3.34	3.20

CAL YR 1988 MEAN 3.54 MAX 4.07 MIN 2.70

STREAMS TRIBUTARY TO ST. LAWRENCE RIVER

04278300 NORTHWEST BAY BROOK NEAR BOLTON LANDING, NY

LOCATION.--Lat 43°39'48", long 73°36'14", Warren County, Hydrologic Unit 02010001, on left bank 10 ft downstream from county bridge on Padanarum Road, 7.7 mi north of Bolton Landing.

DRAINAGE AREA.--23.4 mi^2.

PERIOD OF RECORD.--October 1965 to September 1968, October 1971 to current year. Annual maximum, water years 1969-71.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 423.60 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1973, 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.

AVERAGE DISCHARGE.--21 years (water years 1966-68, 1972-89), 35.8 ft^3/s, 20.77 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,770 ft^3/s, Feb. 11, 1981, gage height, 6.35 ft, from rating curve extended above 590 ft^3/s on basis of slope-area measurement at gage height 5.53 ft; maximum gage height, 7.14 ft, Feb. 11, 1981 (ice jam); minimum discharge, 0.28 ft^3/s, Sept. 27, 28, 29, 1968, gage height, 0.18 ft, present datum.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 30	1730	432	3.45	May 6	0930	*841	*4.56

Minimum discharge, 1.4 ft^3/s, Sept. 13, 14, gage height, 0.73 ft.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	15	34	e9.0	6.2	e10	184	22	16	16	6.1	2.7
2	2.6	160	31	e8.0	6.2	e10	105	102	15	13	6.1	4.1
3	2.6	89	29	e8.0	5.9	e9.2	91	97	13	11	5.5	2.7
4	2.6	57	26	e7.4	e6.0	e9.0	146	65	13	9.3	5.8	2.3
5	2.8	52	24	e7.0	5.8	e9.6	256	54	14	11	25	2.0
6	3.1	152	24	e6.6	5.9	e9.2	206	418	18	9.7	14	1.7
7	3.2	96	22	e7.0	5.8	e8.6	234	192	16	8.2	10	1.6
8	2.9	69	21	e8.0	5.6	e8.0	136	113	14	7.4	7.9	1.6
9	2.5	57	e19	e9.0	5.5	e7.8	96	85	13	6.6	6.3	1.6
10	2.8	48	e15	e9.0	5.5	e8.0	73	68	59	64	5.5	1.5
11	3.3	43	e11	e8.0	5.7	e8.0	59	159	36	81	5.0	1.5
12	3.4	35	e9.0	e7.0	5.3	e7.8	50	172	23	31	7.2	1.5
13	3.0	66	e10	e7.8	4.9	e7.2	46	120	19	20	11	1.4
14	3.0	112	e11	e6.6	5.8	e8.8	43	88	17	19	9.3	1.5
15	2.9	70	e12	e7.4	6.4	e20	41	70	20	18	8.4	3.6
16	2.8	54	e11	e7.0	5.5	76	57	58	79	14	9.3	3.1
17	2.9	59	e11	e6.4	e5.2	37	56	48	59	12	6.9	5.3
18	4.0	53	e10	e6.6	e5.0	25	51	40	42	9.9	5.3	4.6
19	4.6	44	e10	e6.4	e5.0	e19	46	34	34	9.6	5.0	3.5
20	3.8	63	e11	e6.4	e5.4	e17	41	29	26	13	5.0	50
21	3.5	224	e13	e6.2	e15	e15	37	27	21	11	4.8	34
22	13	106	e12	e6.2	e70	e15	34	23	17	11	3.9	18
23	22	74	e11	5.9	e40	e15	32	20	15	20	3.3	25
24	33	58	e12	6.1	e23	14	31	22	13	14	3.1	29
25	40	48	e13	5.8	e18	20	29	20	11	10	2.9	18
26	25	42	e11	6.1	e15	59	27	18	25	8.4	2.6	14
27	18	39	e12	6.9	e13	114	25	17	36	8.4	2.3	11
28	17	45	e11	6.1	e11	211	24	14	41	12	2.3	8.7
29	17	43	e11	5.8	---	223	22	12	29	8.6	2.4	7.3
30	15	38	e9.6	5.9	---	226	22	11	20	7.2	3.1	6.7
31	14	---	e9.0	5.9	---	208	---	12	---	6.6	2.7	---
TOTAL	278.8	2111	475.6	215.5	317.6	1435.2	2300	2230	774	500.9	198.0	269.5
MEAN	8.99	70.4	15.3	6.95	11.3	46.3	76.7	71.9	25.8	16.2	6.39	8.98
MAX	40	224	34	9.0	70	226	256	418	79	81	25	50
MIN	2.5	15	9.0	5.8	4.9	7.2	22	11	11	6.6	2.3	1.4
CFSM	.38	3.01	.66	.30	.48	1.98	3.28	3.07	1.10	.69	.27	.38
IN.	.44	3.36	.76	.34	.50	2.28	3.66	3.55	1.23	.80	.31	.43

CAL YR 1988 TOTAL 8643.93 MEAN 23.6 MAX 324 MIN .69 CFSM 1.01 IN. 13.74
WTR YR 1989 TOTAL 11106.1 MEAN 30.4 MAX 418 MIN 1.4 CFSM 1.30 IN. 17.66

e Estimated

ST. LAWRENCE RIVER BASIN

04280000 POULTNEY RIVER BELOW FAIR HAVEN, VT.

LOCATION.--Lat 43°37'40", long 73°18'50", Rutland County, Hydrologic Unit 02010001, on right bank 0.3 mi downstream from Carver Falls, 1.9 mi upstream from Hubbardton River, and 3.2 mi northwest of Fair Haven.

DRAINAGE AREA.--187 mi².

PERIOD OF RECORD.--Discharge: October 1928 to current year.
Water-quality records: Water year 1954.

REVISED RECORDS.--WSP 1114: 1929(M), 1932-35.

GAGE.--Water-stage recorder. Elevation of gage is 105 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair except those periods of shifting control Nov. 20-29, which are poor. Flow regulated by powerplant upstream and Lake Bomoseen. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--61 years, 256 ft³/s, 18.59 in./yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,800 ft³/s July 20, 1945, gage height, 24.36 ft, from high-water mark in well, from rating curve extended above 2,600 ft³/s on basis of computations of flow over dam at gage heights 16.10 ft, 21.40 ft, and 24.36 ft; minimum daily, 2.1 ft³/s Aug. 8, 1965, Sept. 13, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,600 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 22	0730	ice jam	*12.16	May 7	0245	*2,160	10.32

Minimum daily discharge, 8.8 ft³/s, Sept. 9.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	81	62	279	117	e90	e170	1130	196	135	78	e40	69
2	66	267	259	109	186	e160	588	642	134	61	e44	51
3	95	334	245	e105	e105	e150	527	877	113	70	e25	65
4	62	221	236	e100	e88	e145	657	623	117	58	e57	27
5	66	198	191	e97	e95	e140	872	614	125	82	e180	53
6	63	224	187	e95	e86	e160	1020	1410	172	59	e320	43
7	73	202	184	e92	e76	e150	1620	1780	297	69	e280	36
8	61	185	189	e110	e78	e140	1090	1170	242	44	e260	47
9	45	171	176	e145	e76	e130	740	860	249	49	e220	8.8
10	68	165	e140	e110	e78	e125	601	645	329	113	e43	47
11	59	163	e115	e100	e74	e120	499	1050	305	258	e80	26
12	57	128	e110	e88	e70	e115	498	1150	260	117	e110	33
13	57	157	e105	e80	e70	e110	460	906	160	e100	e200	17
14	47	402	e120	e76	e77	e150	439	874	137	e110	e190	23
15	41	293	e130	e74	e120	e800	450	731	149	e60	e200	58
16	44	242	e140	178	e110	e900	571	625	225	e70	e190	49
17	48	293	e125	113	e100	e450	601	549	242	e56	e180	64
18	38	373	e145	101	e97	e250	576	459	218	e32	e170	95
19	43	278	e135	91	e94	e175	537	376	184	e45	e130	69
20	49	290	e130	88	e90	e130	466	319	245	e76	e125	215
21	35	1060	122	e82	e220	e140	419	220	233	e62	e130	438
22	65	803	124	e76	e1000	e145	385	207	181	e50	115	264
23	53	530	110	e70	e400	e120	348	177	123	e43	66	229
24	67	454	101	e68	e300	e125	325	184	132	e38	63	256
25	64	388	187	e65	e250	e130	300	176	80	e48	104	226
26	66	331	160	e56	e220	323	273	163	115	e35	30	188
27	57	298	116	e62	e210	356	217	200	85	e54	49	98
28	41	326	148	e56	e190	508	214	176	136	e62	88	84
29	73	371	240	e60	---	613	196	143	228	e54	38	88
30	58	304	159	e61	---	573	187	136	119	e45	44	80
31	54	---	132	e73	---	804	---	132	---	e56	54	---
TOTAL	1806	9513	4940	2798	4650	8507	16806	17770	5470	2154	3825	3046.8
MEAN	58.3	317	159	90.3	166	274	560	573	182	69.5	123	102
MAX	95	1060	279	178	1000	900	1620	1780	329	258	320	438
MIN	35	62	101	56	70	110	187	132	80	32	25	8.8
CFSM	.31	1.70	.85	.48	.89	1.47	3.00	3.07	.98	.37	.66	.54
IN.	.36	1.89	.98	.56	.93	1.69	3.34	3.53	1.09	.43	.76	.61

CAL YR 1988 TOTAL 70974.1 MEAN 194 MAX 2240 MIN 2.2 CFSM 1.04 IN. 14.12
WTR YR 1989 TOTAL 81285.8 MEAN 223 MAX 1780 MIN 8.8 CFSM 1.19 IN. 16.17

e Estimated

ST. LAWRENCE RIVER BASIN

04294500 LAKE CHAMPLAIN AT BURLINGTON, VT.

LOCATION.--Lat 44°28'52", long 73°13'27", Chittenden County, Hydrologic Unit 02010003, 50 ft south of Gulf Oil Co. dock at Burlington, 0.1 mi north of Burlington Water Department pumping station, and 0.5 mi north of railroad station.

PERIOD OF RECORD.--Gage heights: May 1907 to current year.
Water-quality records: Water year 1971.

REVISED RECORDS.--WSP 684: 1912-29 (datum correction). WSP 1207: 1938 (datum correction).

GAGE.--Water-stage recorder. Datum of gage is 92.86 ft above National Geodetic Vertical Datum of 1929. Prior to July 20, 1937, nonrecording gage at site 0.7 mi south, and July 20, 1937, to Sept. 7, 1939, nonrecording gage at site 0.1 mi south, both at present datum.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 8.80 ft Apr. 4, 1976; minimum observed, -0.25 ft Dec. 4, 1908.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 6.01 ft May 14, affected by seiche; minimum, 1.27 ft Oct. 28, affected by seiche.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.66	1.37	3.43	2.43	1.77	1.69	3.70	4.67	4.81	3.85	2.82	2.80
2	1.64	1.61	3.44	2.38	1.79	1.68	3.83	4.72	4.80	3.79	2.80	2.82
3	1.68	1.70	3.42	2.37	1.79	1.69	3.93	4.84	4.81	3.74	2.80	2.84
4	1.70	1.80	3.40	2.34	1.79	1.67	4.06	4.97	4.81	3.66	2.80	2.84
5	1.71	1.88	3.37	2.32	1.76	1.67	4.26	5.04	4.77	3.60	2.93	2.76
6	1.69	2.04	3.27	2.30	1.74	1.68	4.53	5.20	4.73	3.57	3.09	2.69
7	1.64	2.30	3.25	2.25	1.73	1.69	4.84	5.48	4.66	3.55	3.16	2.69
8	1.64	2.42	3.24	2.21	1.71	1.67	5.14	5.65	4.62	3.51	3.18	2.67
9	1.62	2.52	3.20	2.22	1.70	1.65	5.28	5.73	4.58	3.45	3.18	2.63
10	1.58	2.50	3.17	2.18	1.66	1.64	5.32	5.77	4.56	3.43	3.13	2.62
11	1.54	2.57	3.12	2.18	1.64	1.61	5.33	5.81	4.59	3.46	3.10	2.61
12	1.52	2.63	3.04	2.08	1.63	1.61	5.32	5.86	4.64	3.47	3.10	2.58
13	1.51	2.57	2.93	2.13	1.59	1.57	5.27	5.93	4.65	3.47	3.12	2.54
14	1.47	2.63	2.95	2.07	1.58	1.53	5.25	5.97	4.63	3.44	3.16	2.54
15	1.48	2.69	2.90	2.04	1.59	1.53	5.18	5.95	4.58	3.40	3.16	2.63
16	1.46	2.63	2.87	2.06	1.59	1.73	5.20	5.94	4.57	3.36	3.17	2.67
17	1.39	2.66	2.83	2.01	1.59	1.84	5.19	5.89	4.55	3.30	3.18	2.68
18	1.35	2.71	2.80	2.00	1.58	1.95	5.20	5.83	4.52	3.25	3.18	2.67
19	1.40	2.76	2.73	1.99	1.56	1.99	5.24	5.75	4.50	3.24	3.13	2.68
20	1.40	2.77	2.66	1.98	1.54	1.98	5.24	5.68	4.47	3.23	3.12	2.84
21	1.36	2.96	2.66	1.98	1.55	1.99	5.22	5.61	4.43	3.18	3.12	3.03
22	1.44	3.15	2.65	1.90	1.62	2.00	5.21	5.52	4.39	3.13	3.13	3.12
23	1.42	3.25	2.56	1.90	1.69	1.98	5.15	5.46	4.34	3.09	3.13	3.17
24	1.41	3.30	2.56	1.90	1.72	1.95	5.10	5.40	4.28	3.05	3.11	3.21
25	1.42	3.32	2.57	1.89	1.73	1.96	5.04	5.33	4.22	3.02	3.08	3.21
26	1.43	3.31	2.54	1.81	1.73	2.01	4.98	5.24	4.15	2.99	3.04	3.20
27	1.45	3.29	2.48	1.84	1.73	2.10	4.92	5.18	4.08	2.97	2.98	3.20
28	1.40	3.35	2.47	1.82	1.72	2.27	4.86	5.11	4.03	2.97	2.94	3.15
29	1.42	3.41	2.49	1.81	---	2.63	4.79	5.02	3.96	2.94	2.89	3.10
30	1.43	3.40	2.47	1.79	---	3.09	4.73	4.94	3.91	2.92	2.85	3.11
31	1.40	---	2.45	1.77	---	3.46	---	4.88	---	2.87	2.83	---
MEAN	1.51	2.65	2.90	2.06	1.67	1.92	4.91	5.43	4.49	3.32	3.05	2.84
MAX	1.71	3.41	3.44	2.43	1.79	3.46	5.33	5.97	4.81	3.85	3.18	3.21
MIN	1.35	1.37	2.45	1.77	1.54	1.53	3.70	4.67	3.91	2.87	2.80	2.54

CAL YR 1988 MEAN 2.64 MAX 4.94 MIN 1.35
WTR YR 1989 MEAN 3.07 MAX 5.97 MIN 1.35

STREAMS TRIBUTARY TO ST. LAWRENCE RIVER

04295000 RICHELIEU RIVER (LAKE CHAMPLAIN) AT ROUSES POINT, NY
(National stream-quality accounting network station)

LOCATION.--Lat 44°59'46", long 73°21'37", Clinton County, Hydrologic Unit 02010006, on left bank at outlet of Lake Champlain in Rouses Point, and 1.0 mi south of Fort Montgomery ruins. Water-quality sampling site at stage station.

DRAINAGE AREA.--8,277 mi^2.

WATER-STAGE RECORDS

PERIOD OF RECORD.--March 1871 to current year. Maximum and minimum monthly gage heights at St. Johns, Quebec, October 1863 to December 1870, published in WSP 97. Prior to October 1970, daily gage heights published in WSP 894. Discharge records for January 1875 to September 1916 at "Chambly, Quebec," published in WSP 65, 82, 97, 129, 170, 206, 424, and 1307 have been found to be unreliable and should not be used. Daily discharge record for "Richelieu River at Fryers Rapids, Quebec," published in Water Supply of Canada annual reports. Gage heights prior to October 1, 1925, published as "Richelieu River at Fort Montgomery, Rouses Point."

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. March 1871 to May 1923, nonrecording gage located in Fort Montgomery and May 1923 to October 1938, nonrecording gage at present site. Prior to October 1970, at datum 93.00 ft higher.

REMARKS.--Area of lake surface about 490 mi^2. Total volume below 92.5 ft elevation, reported by Lake Champlain Studies Center, 902.2 bil ft^3. Telephone gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation observed, 101.80 ft, Mar. 30, 1903; minimum observed, 92.17 ft, Oct. 23, 1941.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum elevation known since at least 1827, 102.1 ft, May 4, 1869, from marks at railroad bridge near present gage, according to data published on p. 428 of the Report of the Board of Engineers on Deep Waterways, 1900: U.S. 56th Cong., 2d sess. H. Doc. 149.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 98.88 ft, May 13; minimum, 93.73 ft, Oct. 22, Nov. 2.

ELEVATION, IN FEET, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	94.65	94.32	96.26	95.24	94.57	94.57	96.52	97.49	97.65	96.70	95.73	95.78
2	94.60	94.22	96.28	95.26	94.56	94.54	96.68	97.50	97.61	96.65	95.74	95.65
3	94.49	94.51	96.26	95.14	94.61	94.50	96.78	97.68	97.67	96.59	95.69	95.67
4	94.45	94.79	96.10	95.13	94.61	94.51	96.90	97.81	97.64	96.59	95.77	95.68
5	94.46	94.79	96.19	95.14	94.62	94.52	97.08	97.95	97.62	96.56	95.79	95.79
6	94.46	94.90	96.39	95.13	94.60	94.50	97.33	98.00	97.59	96.47	95.98	95.71
7	94.48	95.09	96.08	95.15	94.58	94.50	97.69	98.30	97.58	96.37	95.97	95.61
8	94.42	95.28	96.03	95.18	94.60	94.50	97.93	98.52	97.49	96.29	96.00	95.61
9	94.44	95.36	96.05	95.06	94.54	94.49	98.10	98.56	97.44	96.29	96.03	95.56
10	94.51	95.77	95.91	95.13	94.55	94.47	98.17	98.52	97.50	96.42	96.06	95.51
11	94.47	95.36	95.88	94.98	94.52	94.46	98.17	98.54	97.39	96.30	96.03	95.41
12	94.37	95.46	95.89	95.20	94.48	94.43	98.16	98.66	97.45	96.32	96.00	95.41
13	94.28	95.72	95.97	94.93	94.49	94.43	98.19	98.74	97.47	96.29	95.98	95.39
14	94.38	95.52	95.78	95.03	94.46	94.42	98.11	98.77	97.45	96.23	96.05	95.36
15	94.31	95.49	95.77	94.96	94.44	94.47	98.16	98.77	97.47	96.22	96.11	95.41
16	94.37	95.82	95.68	94.88	94.41	94.56	98.01	98.73	97.41	96.22	96.06	95.51
17	94.50	95.54	95.66	94.95	94.43	94.67	98.04	98.69	97.42	96.20	95.99	95.50
18	94.55	95.52	95.62	94.87	94.42	94.77	97.96	98.65	97.40	96.19	95.98	95.51
19	94.18	95.57	95.64	94.86	94.43	94.82	98.05	98.59	97.36	96.13	96.02	95.53
20	94.21	95.66	95.62	94.82	94.40	94.85	98.05	98.53	97.32	96.02	96.03	95.68
21	94.30	95.64	95.51	94.77	94.40	94.83	98.03	98.46	97.28	96.02	96.04	95.89
22	94.02	95.94	95.45	94.87	94.44	94.83	97.91	98.36	97.23	96.02	95.96	96.14
23	94.27	96.05	95.62	94.80	94.50	94.82	97.89	98.29	97.17	95.98	95.94	96.19
24	94.33	96.07	95.48	94.73	94.53	94.82	97.87	98.21	97.12	95.96	95.88	96.05
25	94.37	96.13	95.38	94.69	94.56	94.80	97.84	98.18	97.05	95.93	95.84	96.22
26	94.33	96.17	95.32	94.84	94.57	94.85	97.79	98.13	97.02	95.89	95.78	96.09
27	94.32	96.27	95.48	94.69	94.57	94.98	97.71	98.02	97.01	95.88	95.81	96.01
28	94.55	96.17	95.36	94.74	94.56	95.16	97.64	97.87	96.88	95.79	95.80	96.19
29	94.28	96.17	95.28	94.65	---	95.42	97.63	97.89	96.77	95.75	95.84	96.07
30	94.22	96.41	95.32	94.65	---	95.94	97.55	97.79	96.73	95.74	95.77	95.96
31	94.32	---	95.26	94.68	---	96.27	---	97.70	---	95.75	95.65	---
MEAN	94.38	95.52	95.76	94.94	94.52	94.76	97.73	98.25	97.34	96.19	95.91	95.74
MAX	94.65	96.41	96.39	95.26	94.62	96.27	98.19	98.77	97.67	96.70	96.11	96.22
MIN	94.02	94.22	95.26	94.65	94.40	94.42	96.52	97.49	96.73	95.74	95.65	95.36

CAL YR 1988 MEAN 95.49 MAX 97.75 MIN 94.02
WTR YR 1989 MEAN 95.92 MAX 98.77 MIN 94.02

STREAMS TRIBUTARY TO ST. LAWRENCE RIVER

04295000 RICHELIEU RIVER (LAKE CHAMPLAIN) AT ROUSES POINT, NY--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1966-67, 1969-72, 1974 to current year.
CHEMICAL DATA: 1966-67 (a), 1969 (b), 1970 (c), 1971-72 (b), 1974-82 (c), 1983-86 (b), 1987 (c), 1988 (d), 1989 (c)
MINOR ELEMENTS DATA: 1974-86 (b), 1987 (c), 1988 (d), 1989 (c).
PESTICIDE DATA: 1976-79 (b), 1980 (a), 1982 (b).
ORGANIC DATA: OC--1974 (a), 1975-77 (b), 1978 (a), 1979-81 (c).
PCB--1978-79 (b), 1980 (a), 1982 (b).
NUTRIENT DATA: 1970 (c), 1971-72 (b), 1974 (b), 1975-82 (c), 1983-86 (b), 1987-89 (c).
BIOLOGICAL DATA:
Bacteria--1974 (a), 1975-82 (c), 1983-89 (b).
Phytoplankton--1974 (a), 1975-78 (c), 1979 (b), 1980-81 (c).
Periphyton--1975 (c), 1976-80 (b).
SEDIMENT DATA: 1975-82 (c), 1983-89 (b).

REMARKS.--Water-quality samples without turbidity analyses were collected by personnel of the New York State Departmen of Environmetnal Conservation.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	BAROMETRIC PRESSURE (MM OF HG)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT										
19...	1600	171	7.80	10.0	1.2	762	10.8	96	--	--
20...	0930	163	7.60	9.5	--	765	9.9	86	34	--
NOV										
16...	1600	167	7.50	5.5	9.0	768	11.6	92	--	--
APR										
26...	0800	162	7.41	4.0	0.40	760	12.6	96	1	0
MAY										
17...	0930	147	8.40	11.5	--	765	13.3	122	--	--
JUN										
26...	0915	147	8.10	23.0	0.50	760	10.2	119	2	0
AUG										
16...	0900	162	7.80	23.0	0.20	760	8.3	97	20	0

DATE	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT										
19...	66	19	4.6	7.8	1.6	53	--	15	11	0.10
20...	--	--	--	--	--	--	50	--	--	--
NOV										
16...	63	18	4.5	6.8	1.6	51	--	15	11	0.10
APR										
26...	60	17	4.3	7.5	1.4	--	46	13	10	0.10
MAY										
17...	--	--	--	--	--	46	--	14	9.1	0.10
JUN										
26...	58	17	3.8	6.7	1.4	--	44	12	10	0.10
AUG										
16...	59	17	4.0	7.2	1.3	--	47	12	10	0.10

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHOROUS TOTAL (MG/L AS P)	PHOSPHOROUS DISSOLVED (MG/L AS P)
OCT									
19...	--	--	91	--	--	--	--	--	--
20...	--	--	--	<0.100	<0.010	0.030	0.40	0.020	0.010
NOV									
16...	--	--	88	--	--	--	--	--	--
APR									
26...	1.1	97	83	0.190	0.020	0.020	0.30	0.020	<0.010
MAY									
17...	--	--	--	--	--	--	--	--	--
JUN									
26...	0.50	81	79	0.150	0.020	0.020	0.30	0.020	<0.010
AUG									
16...	0.59	87	81	<0.100	<0.010	0.010	0.70	0.020	<0.010

STREAMS TRIBUTARY TO ST. LAWRENCE RIVER

04295000 RICHELIEU RIVER (LAKE CHAMPLAIN) AT ROUSES POINT, NY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	PHOS-PHOROUS ORTHO, DIS-SOLVED (MG/L AS P)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)
OCT										
19...	--	70	<10	--	--	--	1	<1	--	--
20...	<0.010	--	--	--	--	--	--	--	--	--
NOV										
16...	--	550	--	--	--	--	2	--	--	--
APR										
26...	<0.010	50	<10	<1	7	<0.5	1	<1	<1	<3
MAY										
17...	--	90	--	--	--	--	<1	--	--	--
JUN										
26...	<0.010	20	<10	<1	6	<0.5	<1	<1	<1	<3
AUG										
16...	0.010	<10	<10	<1	7	<0.5	<1	<1	1	<3

DATE	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)
OCT										
19...	5	2	120	8	<5	<5	--	<10	<1	<0.10
20...	--	--	--	--	--	--	--	--	--	--
NOV										
16...	9	--	920	--	9	--	--	50	--	<0.10
APR										
26...	5	1	160	9	<5	<5	<4	20	2	--
MAY										
17...	5	--	60	--	3	--	--	<10	--	<0.10
JUN										
26...	3	1	40	8	2	1	<4	10	6	--
AUG										
16...	3	1	60	9	1	<1	<4	10	<1	--

DATE	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT										
19...	--	--	3	<1	--	--	--	--	<10	<3
20...	--	--	--	--	--	--	--	--	--	--
NOV										
16...	--	--	7	--	--	--	--	--	<10	--
APR										
26...	<0.1	<10	<1	<1	<1	<1.0	84	<6	20	4
MAY										
17...	--	--	5	--	--	--	--	--	<10	--
JUN										
26...	<0.1	<10	2	<1	<1	<1.0	81	<6	<10	<3
AUG										
16...	<0.1	<10	1	1	<1	<1.0	83	<6	<10	7

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SEDI-MENT, SUS-PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT			
19...	1600	4	--
NOV			
16...	1600	37	--
APR			
26...	0800	1	91
JUN			
26...	0915	2	60
AUG			
16...	0900	1	67

STREAMS TRIBUTARY TO ST. LAWRENCE RIVER

LAKES AND RESERVOIRS IN STREAMS TRIBUTARY TO ST. LAWRENCE RIVER

04260990 CRANBERRY LAKE AT CRANBERRY LAKE, NY--Lat 44°13'14", long 74°50'55", St. Lawrence County, Hydrologic Unit 04150302, on right wall at outlet structure, at village of Cranberry Lake. DRAINAGE AREA, 140 mi^2. PERIOD OF RECORD, April 1923 to current year. GAGE, nonrecording gage read daily at 1200 hours. Datum of gage is 1,469.75 ft above National Geodetic Vertical Datum of 1929.

Dam completed in 1867 and controlled storage for which records are available began in 1923. Usable capacity above elevation 1,475.25 ft is 2,530 mil ft^3. Crest at spillway is at elevation, 1,486.43 ft. Length of spillway is 110 ft. Area of water surface at crest elevation is 10.9 mi^2. Records provided by Oswegatchie River-Cranberry Reservoir Commission.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 2,985 mil ft^3, May 13-15, 1971, gage height, 18.5 ft; minimum observed, 70 mil ft^3, Apr. 1-4, 1956, gage height, 6.0 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 2,560 mil ft^3, May 12, gage height, 17.1 ft; minimum observed, 1,412 mil ft^3, Mar. 9-19, gage height, 12.8 ft.

04266700 CARRY FALLS RESERVOIR NEAR SOUTH COLTON, NY--Lat 44°26'07", long 74°44'50", St. Lawrence County, Hydrologic Unit 04150305, near center of upstream wall of dam between Carry Falls and Stark Falls Reservoirs, 2.0 mi southeast of Stark, and 8.8 mi southeast of South Colton. DRAINAGE AREA, 872 mi^2. PERIOD OF RECORD, October 1954 to current year. REVISED RECORDS, WDR NY-86-1: Drainage area. GAGE, nonrecording gage read daily at 0800 hours. Datum of gage is National Geodetic Vertical Datum of 1929.

Dam completed January 1953 and controlled storage for which records are available began in October 1954. Usable capacity above elevation 1,332.0 ft is 5,114.9 mil ft^3. Crest at spillway is at elevation 1,386.0 ft. Length of spillway is 830 ft. Area of water surface at crest elevation is 5.16 mi^2 (3,300 acres). The pond has a length of 6 mi and a perimeter of 25 mi. Below crest elevation, capacity controlled by a taintor gate, 27 ft x 15 ft, and 2 sluice gates, 10 ft x 10 ft. Records provided by Niagara Mohawk Power Corporation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 5,146 mil ft^3, June 1, 5, 6, 1955, elevation, 1,386.1 ft; minimum observed, 8.64 mil ft^3, Mar. 27-30, 1963, Apr. 4-11, 1964, elevation, 1,331.0 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 4,994 mil ft^3, May 4-11, 13-14, 27-28, June 3-4, 10-11, 27, July 17, elevation, 1385.0 ft; minimum observed, 1,261 mil ft^3, Mar. 16, 18, elevation, 1,352.1 ft.

04278000 LAKE GEORGE AT ROGERS ROCK, NY (see station for daily mean gage heights).

04294500 LAKE CHAMPLAIN AT BURLINGTON, VT (see station for daily mean gage heights).

04295000 RICHELIEU RIVER (LAKE CHAMPLAIN) AT ROUSES POINT, NY (see station for daily mean elevations).

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

Date	Gage height (feet) *	Contents (million ft^3)	Change in contents (equivalent in ft^3/s)	Elevation (feet) *	Contents (million ft^3)	Change in contents (equivalent in ft^3/s)
	04260990 Cranberry Lake			04266700 Carry Falls Reservoir		
Sept. 30	15.2	2,022		1,375.3	3,693.6	
Oct. 31	15.0	1,970	- 19.4	1,371.4	3,210.6	-180
Nov. 30	15.0	1,970	0.0	1,379.5	4,237.9	+396
Dec. 31	13.4	1,556	-155	1,370.7	3,128.5	-414
CAL YR 1988	-	-	- 10.6	-	-	- 4.89
Jan. 31	12.9	1,436	- 44.8	1,362.0	2,194.6	-349
Feb. 28	12.9	1,436	0.0	1,360.4	2,028.7	- 68.6
Mar. 31	15.6	2,128	+258	1,369.6	3,005.0	+365
Apr. 30	16.0	2,240	+ 43.2	1,384.9	4,980.1	+762
May 31	16.3	2,324	+ 31.4	1,384.6	4,938.6	- 15.5
June 30	16.1	2,268	- 21.6	1,384.4	4,911.0	- 10.6
July 31	16.0	2,240	- 10.5	1,383.7	4,814.2	- 36.1
Aug. 31	15.1	1,996	- 91.1	1,372.6	3,355.8	-545
Sept. 30	15.4	2,074	+ 30.1	1,381.5	4,510.1	+445
WTR YR 1989	-	-	+ 1.65	-	-	+ 25.9

* Gage heights or elevations at 2400 hours, by interpolation.

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at partial-record stations are usually presented in two tables. The first is usually a table of discharge measurements at low-flow partial-record stations and the second is a table of annual maximum stage and discharge at crest-stage stations. Discharge measurements made at miscellaneous sites for both low flow and high flow are given in a third table. No discharge measurements were made at low-flow partial-record stations for the 1989 water year.

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 1989

Station No.	Station name	Location	Drainage area (mi^2)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (ft^3/s)
		Housatonic River basin					
01199477	Stony Brook near Dover Plains, NY	Lat 41°42'38", long 73°37'18", Dutchess County, Hydrologic Unit 01100005, on town road, 100 ft upstream from mouth, and 2.9 mi southwest of Dover Plains.	1.93	1976-89	5-17-89	2.58	144
		Hudson River basin					
01317000	Schroon River at Riverbank, NY	Lat 43°36'34", long 73°44'17", Warren County, Hydrologic Unit 02020001, on right bank, 30 ft upstream from highway bridge at Riverbank, and 11.8 mi downstream from Schroon Lake.	527	1908-25, 1926-70‡, 1987-89	3-30-89	6.42	3,430
01329154	Steele Brook at Shushan, NY	Lat 43°05'35", long 73°19'38", Washington County, Hydrologic Unit 02020003, at bridge on county road, 1.1 mi upstream from mouth, and 0.8 mi east of Shushan.	2.85	1979-89	3-31-89 5-11-89	3.68 d5.08	53 -
01329500	Batten Kill at Battenville, NY	Lat 43°06'05", long 73°25'55", Washington County, Hydrologic Unit 02020003, on left bank, 1.2 mi upstream from Trout Brook, and 1.0 mi southwest of Battenville.	394	1923-68‡, 1977, 1984, 1987-89	2-21-89 4- 7-89	b11.06 6.80	- 4,000
01330880	Saratoga Lake tributary near Bemis Heights, NY	Lat 42°59'43", long 73°43'06", Saratoga County, Hydrologic Unit 02020003, at culvert on State Highway 423, 1.4 mi upstream from mouth, and 4.6 mi northwest of Bemis Heights.	2.98	1968, 1970-71, 1973, 1975-89	5- 6-89	13.24	e100
01342800	West Canada Creek at Nobleboro, NY	Lat 43°23'47", long 74°51'35", Herkimer County, Hydrologic Unit 02020004, at bridge on State Highway 8, 2.9 mi northeast of Wilmurt, in village of Nobleboro.	193	1946, 1958-66, 1967-68‡, 1969,1972, 1974,1976, 1985, 1987-89	3-29-89	8.88	8,560
01348420	North Creek near Ephratah, NY	Lat 43°00'28", long 74°33'54", Fulton County, Hydrologic Unit 02020004, at culvert on town road, 0.4 mi upstream from mouth, and 1.2 mi northwest of Ephratah.	6.52	1975-89	8- 5-89	7.05	303

‡ Operated as a continuous-record gaging station.
d Backwater from dam.
b Ice jam.
e Estimated.

Annual maximum discharge at crest-stage partial-record stations during water year 1989--Continued

Station No.	Station name	Location	Drainage area (mi^2)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (ft^3/s)
		Hudson River basin--Continued					
01349850	Batavia Kill at Hensonville, NY	Lat 42°22'17", long 74°12'55", Greene County, Hydrologic Unit 02020005, on right bank, at downstream side of bridge, on County Highway 40, at Hensonville, 0.7 mi upstream from Silver Lake Outlet, and 1.8 mi upstream from Nauvo Stream.	13.5	1955, 1960-66, 1972, 1974, 1976, 1978-89	5-11-89	3.53	810
01361000	Kinderhook Creek at Rossman, NY	Lat 42°19'50", long 73°44'40", Columbia County, Hydrologic Unit 02020006, on right bank, 1.0 mi upstream from Claverack Creek, 2.25 mi downstream from Stuyvesant Falls, at Rossman.	329	1906-14‡, 1929-68‡, 1988-89	5- 6-89	6.88	5,010
01361500	Catskill Creek at Oak Hill, NY	Lat 42°24'16', long 74°09'07", Greene County, Hydrologic Unit 02020006, on right bank, just downstream from highway bridge in southernmost part of Oak Hill, 100 ft downstream from small tributary.	98.0	1911-77, 1987-89	5- 6-89	8.27	3,430
01362100	Roeliff Jansen Kill near Hillsdale, NY	Lat 42°09'14", long 73°31'14", Columbia County, Hydrologic Unit 02020006, at bridge on county highway off State Highway 22, 1.8 mi south of Hillsdale.	27.5	1958-60‡, 1963-64, 1968-89	5- 6-89	3.58	516
01368000	Wallkill River near Unionville, NY	Lat 41°15'36", long 74°32'58", Sussex County, New Jersey, Hydrologic Unit 02020007, on right bank, on downstream side of bridge on Quarryville-Milton Road, 2.0 mi south of New York-New Jersey State line, and 3.0 mi south of Unionville.	140	1938-47, 1948-81‡, 1989	5-17-89	387.91*	1,690
01368100	Wallkill River near Pine Island, NY	Lat 41°18'54", long 74°29'26", Orange County, Hydrologic Unit 02020007, on left bank, 15 ft downstream from bridge on County Highway 1, 0.4 mi upstream from Rutgers Creek, and 2.0 mi northwest of Pine Island.	162	1989	5-17-89	381.92*	-
01368500	Rutgers Creek at Gardnerville, NY	Lat 41°20'40", long 74°29'10", Orange County, Hydrologic Unit 02020007, on left bank, 2.2 mi upstream from mouth, and 1.7 mi southeast of Johnson.	59.7	1944-68, 1984, 1987-89	5-17-89	5.61	1,410
01369992	Wallkill River 0.45 mi above Pellets Island, near Middletown, NY	Lat 41°22'30", long 74°24'59", Orange County, Hydrologic Unit 02020007, on right bank, 0.45 mi upstream from bridge on County Highway 37 at Pellets Island, and 4.7 mi south of Middletown Post Office.	373	1989	5-17-89	373.29*	-
01369995	Wallkill River 0.35 mi above Pellets Island, near Middletown, NY	Lat 41°22'35", long 74°24'56", Orange County, Hydrologic Unit 02020007, on right bank, 0.35 mi upstream from bridge on County Highway 37 at Pellets Island, and 4.6 mi south of Middletown Post Office.	374	1989	5-17-89	372.58*	-
01370000	Wallkill River at Pellets Island, NY	Lat 41°22'50", long 74°24'50", Orange County, Hydrologic Unit 02020007, on right bank, 10 ft downstream from bridge on County Highway 37 at Pellets Island, and 4.3 mi south of Middletown Post Office.	380	1920-37, 1938-68‡, 1989	5-17-89	371.70*	4,720

‡ Operated as a continuous-record gaging station.
* Elevation, in feet, above National Geodetic Vertical Datum of 1929.

Annual maximum discharge at crest-stage partial-record stations during water year 1989--Continued

Station No.	Station name	Location	Drainage area (mi^2)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (ft^3/s)
		Hudson River basin--Continued					
01370030	Wallkill River at Denton, NY	Lat 41°24'07", long 74°23'24", Orange County, Hydrologic Unit 02020007, on right bank, 50 ft downstream from bridge on U.S. Highway 6 (State Highway 17M), and 0.7 mi southwest of Denton.	385	1989	5-17-89	365.62*	-
01370500	Wallkill River near Phillipsburg, NY	Lat 41°25'57", long 74°22'29", Orange County, Hydrologic Unit 02020007, on left bank, 0.3 mi upstream from Masonic Creek, 0.9 mi upstream from bridge on State Highway 17, 1.0 mi southwest of Phillipsburg, and 1.9 mi northeast of New Hampton.	406	1936-37, 1938-59‡, 1989	5-17-89	361.79*	5,690
01372800	Fishkill Creek at Hopewell Junction, NY	Lat 41°34'22", long 73°48'25", Dutchess County, Hydrologic Unit 02020008, on right bank, 400 ft upstream from bridge on State Highway 376, 500 ft upstream from small tributary, 0.6 mi south of State Highway 82, at Hopewell Junction.	57.3	1956-57, 1958-75‡, 1984, 1987-89	4- 5-87 5-17-89	Rf9.62 7.87	2,710 1,530
01374250	Peekskill Hollow Creek at Tompkins Corners, NY	Lat 41°23'18", long 73°48'47", Putnam County, Hydrologic Unit 02030101, at bridge on Bryant Pond Road, 0.9 mi southwest of Tompkins Corners, and 1.1 mi downstream from Wiccopee Brook.	14.9	1975-89	5-17-89	3.46	464
01376420	Saw Mill River at Elmsford, NY	Lat 41°03'19", long 73°49'16", Westchester County, Hydrologic Unit 02030101, at bridge on State Highway 119, 0.6 mi upstream from Rum Brook, and 0.8 mi downstream from Mine Brook at Elmsford.	15.4	1979-89	5-17-89	9.82	633
		Passaic River basin					
01387410	Torne Brook at Ramapo, NY	Lat 41°08'34", long 74°09'44", Rockland County, Hydrologic Unit 02030103, 0.2 mi upstream from mouth, and 0.5 mi east of Ramapo.	2.60	1960, 1962-89	5- 6-89	6.06	394
		Delaware River basin					
01427500	Callicoon Creek at Callicoon, NY	Lat 41°45'39", long 75°02'55", Sullivan County, Hydrologic Unit 02040101, on right bank, 0.7 mi southeast of Callicoon, 0.9 mi upstream from mouth, and 1.0 mi southwest of Hortonville.	110	1941-82‡, 1983-89	5- 6-89	5.66	4,050
01434010	East Branch Neversink River at Denning, NY	Lat 41°57'30", long 74°28'26", Ulster County, Hydrologic Unit 02040104, on downstream side of bridge on private road at Strauss Estate, 0.9 mi upstream from Erts Brook, 0.4 mi downstream from Riley Brook, and 1.0 mi northeast of Denning.	13.3	1984-87, 1989	5- 6-89	4.81	2,600
		Streams tributary to Lake Ontario					
042490673	North Branch Grindstone Creek near Altmar, NY	Lat 43°29'31", long 76°05'41", Oswego County, Hydrologic Unit 04140102, at culvert on Hong Kong Road, 4.1 mi upstream from confluence with South Branch Grindstone Creek, and 4.1 mi southwest of Altmar.	11.2	1976-89	3-29-89	7.80	190

* Elevation, in feet, above National Geodetic Vertical Datum of 1929.
‡ Operated as a continuous-record gaging station.
R Revised.
f From floodmark.

Annual maximum discharge at crest-stage partial-record stations during water year 1989--Continued

Station No.	Station name	Location	Drainage area (mi^2)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (ft^3/s)
		Streams tributary to Lake Ontario--Continued					
04249200	North Branch Salmon River at Redfield, NY	Lat 43°32'32", long 75°48'51", Oswego County, Hydrologic Unit 04140102, at highway bridge on Harvester Mill Road, 0.7 mi northeast of Redfield.	82.5	1962-64, 1985, 1987-89	8- 5-89	14.10	3,120
04254500	Moose River at McKeever, NY	Lat 43°36'36", long 75°06'35", Herkimer County, Hydrologic Unit 04150101, on left bank, 1.0 mi west of McKeever, and 1.9 mi downstream from confluence of Middle and South Branches.	363	1901-22, 1923-70‡, 1985, 1987-89	11- 6-88 3-29-89	11.02 b13.30	8,100 -
04258700	Deer River at Deer River, NY	Lat 43°55'49", long 75°35'27", Lewis County, Hydrologic Unit 04150101, on left bank, 350 ft upstream from bridge on State Highway 26 at Deer River, and 2 mi upstream from mouth.	94.8	1957-68‡, 1969, 1971-74, 1977-89	3-29-89 3-29-89	e6.1 b6.63	e6,900 -
		Streams tributary to St. Lawrence River					
04265100	Elm Creek near Hermon, NY	Lat 44°26'15", long 75°12'49", St. Lawrence County, Hydrologic Unit 04150304, at bridge, 2.7 mi southeast of Hermon, and 6.8 mi upstream from confluence with Tanner Creek.	32.6	1959-68‡, 1969-89	3-29-89	7.66	800
04268200	Plum Brook near Grantville, NY	Lat 44°52'46", long 74°54'54", St. Lawrence County, Hydrologic Unit 04150305, on right bank, 430 ft upstream from bridge at junction of Brouse and Grant Roads, 0.7 mi downstream from unnamed tributary, 1.1 mi upstream from mouth, 1.4 mi north of Grantville, and 2.3 mi southwest of Massena city limits.	43.9	1959-63‡, 1964-68, 1971-89	3-29-89	5.67	831
04268800	West Branch St. Regis River near Parishville, NY	Lat 44°35'55", long 74°44'15", St. Lawrence County, Hydrologic Unit 04150306, on right bank, 25 ft upstream from highway bridge, 4.1 mi downstream from Mud Pond Outlet, 4.2 mi southeast of Parishville, and 4.8 mi upstream from Niagara Mohawk Power Corp. dam.	171	1959-68‡, 1969-89	3-29-89 3-29-89	e5.6 b7.28	e3,600 -
04270162	East Branch Little Salmon River near Skerry, NY	Lat 44°47'13", long 74°22'12", Franklin County, Hydrologic Unit 04150307, at culvert on Adams Road, 100 ft downstream from Limekiln Brook, 1.1 mi northeast of Skerry, and 5.7 mi upstream from mouth.	7.11	1978-89	11- 6-88 3-29-89	4.47 b5.71	142 -
04270700	Trout River at Trout River, NY	Lat 44°59'23", long 74°17'56", Franklin County, Hydrologic Unit 04150307, on left bank, at downstream side of bridge on county highway, 0.2 mi east of State Highway 30, at Trout River, 0.5 mi upstream from international boundary, 1.5 mi downstream from unnamed tributary, and 3.3 mi downstream from Little Trout River.	107	1960-66‡, 1967-89	11- 6-88 3-15-89	7.04 b9.98	3,810 -
04271500	Great Chazy River at Perry Mills,NY	Lat 45°00'00", long 73°30'05", Clinton County, Hydrologic Unit 02010006, on left bank, 500 ft upstream from highway bridge, and 7.5 mi upstream from Corbeau Creek, at Perry Mills.	247	1929-68‡, 1985, 1987-89	3-15-89 3-29-89	b9.61 8.57	- 4,780

‡ Operated as a continuous-record gaging station.
b Ice jam.
e Estimate.

Annual maximum discharge at crest-stage partial-record stations during water year 1989--Continued

Station No.	Station name	Location	Drainage area (mi^2)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (ft^3/s)
		Streams tributary to St. Lawrence River--Continued					
04274000	West Branch Ausable River near Lake Placid, NY	Lat 44°18'40", long 73°55'00", Essex County, Hydrologic Unit 02010004, on right bank, 4 mi northeast of Lake Placid, 4 mi downstream from Lake Placid outlet, and 150 ft upstream from Monument Falls.	116	1917, 1920-27, 1928-68‡, 1983-89	11- 6-88	8.92	4,950
04276500	Bouquet River at Willsboro, NY	Lat 44°21'30", long 73°23'50", Essex County, Hydrologic Unit 02010004, on right bank, 0.5 mi upstream from bridge on State Highway 22, 2.5 mi downstream from North Branch Bouquet River, and 3.0 mi upstream from mouth, at Willsboro.	275	1924-68‡, 1985, 1987-89	3-29-89 9-20-89	b6.40 6.23	- 3,370

‡ Operated as a continuous-record gaging station.
b Ice jam.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at miscellaneous sites during water year 1989

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements Date	Measurements Discharge (ft^3/s)
		Hudson River basin				
01317395 Schroon River	Hudson River	Lat 43°29'28", long 73°34'16", Warren County, Hydrologic Unit 02020001, at bridge on State Highway 418, at Warrensburg.		1988	11- 9-88	1,640
01329907 Clover Mill Brook	Kayaderosseras Creek	Lat 43°04'09", long 73°56'20", Saratoga County, Hydrologic Unit 02020003, at culvert on Shaw Hill Road, 600 ft west of Route 29, and approximately 1.5 mi northwest of Rock City Falls.		1988	11- 9-88	*2.80
01330907 Fish Creek	Hudson River	Lat 43°05'42", long 73°36'47", Saratoga County, Hydrologic Unit 02020003, at Burgoyne Road bridge off Haas Road near Grangerville, and 1.0 mi south of Schuylerville.		1988	11- 9-88	558
0133335001 Hoosic River	Hudson River	Lat 42°48'34", long 73°17'13", Rensselaer County, Hydrologic Unit 02020003, at Route 346 on NY-VT border, 1.5 mi northwest of North Pownal, VT, and 4 mi northeast of North Petersburg, NY.	228	1988	11- 8-88	589
01335827 Mohawk River	Hudson River	Lat 43°20'23", long 75°21'57", Oneida County, Hydrologic Unit 02020004, at bridge on River Road, at North Western.			4-24-89 5-17-89 8-31-89	*154 *186 *46.8
01342602 Mohawk River	Hudson River	Lat 43°05'26", long 75°09'27", Oneida County, Hydrologic Unit 02020004, at bridge on Upper Dyke Road, 2.0 mi east of Utica, and 0.5 mi southwest of West Schuyler.	553	1988	4- 4-89 4- 6-89 5-16-89 6-27-89 8-30-89	3,760 4,040 *1,380 *598 *380
01349503 Cayadutta Creek	Mohawk River	Lat 43°59'13", long 74°25'50", Fulton County, Hydrologic Unit 02020004, at bridge on State Highway 334 at Sammonsville, 0.1 mi downstream from Crum Creek.	41.9	1981	4-24-89 5-16-89 6-27-89 8-30-89	*60.8 *82.3 *62.5 *35.0
01349530 Mohawk River	Hudson River	Lat 42°57'01", long 74°22'10", Montgomery County, Hydrologic Unit 02020004, at Route 30-A bridge, at Fonda.	2,118	1966-67, 1988	4- 4-89 4- 6-89 5-16-89 6-27-89 8-30-89	14,000 16,500 *5,720 *2,490 *1,340
01350500 Schoharie Creek	Mohawk River	Lat 42°35'58", long 74°20'12", Schoharie County, Hydrologic Unit 02020005, on right bank, 150 ft downstream from highway bridge in Middleburg, and 20 mi downstream from Gilboa Dam.	R534	1909, 1915, 1928-39‡	5-11-89	9,230
01362285 Woodland Creek	Esopus Creek	Lat 42°02'06", long 74°21'59", Ulster County, Hydrologic Unit 02020006, at bridge on private road, 0.9 mi upstream from Dougherty Branch, and 2.3 mi southeast of Woodland.	5.18	1983-85, 1988	11-15-88 12-29-88 1-25-89 2-14-89 3-17-89 5-24-89 7-18-89 8-14-89 9- 6-89	19.8 5.30 3.79 3.02 *3.95 16.9 *2.23 *2.26 *.89
01362342 Hollow Tree Brook	Stony Clove Creek	Lat 42°08'32", long 74°15'55", Greene County, Hydrologic Unit 02020006, at bridge on Diamond Notch Road, 0.9 mi north of Lanesville, and approximately 4.8 mi northeast of Phoenecia.	1.95	1985-86, 1988	11-15-88 12-29-88 1-25-89 2-14-89 3-17-89 5-24-89 7-18-89 8-14-89 9- 6-89	4.38 1.15 .88 .63 *1.24 8.56 *2.16 *1.66 *.84

* Base flow.
R Revised.
‡ Operated as a continuous-record gaging station.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at miscellaneous sites during water year 1989--Continued

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements Date	Measurements Discharge (ft^3/s)
		Hudson River basin--Continued				
01364959 Rondout Creek	Wallkill River	Lat 41°56'13", long 74°22'30", Ulster County, Hydrologic Unit 02020007, 500 ft upstream from mouth of Red Brook, 0.8 mi upstream from outlet of Peekamoose Lake, and 0.8 mi north of Peekamoose.	5.36	1984-86, 1988	11-15-88 12-31-88 1-28-89 3-24-89 5- 1-89 6-30-89 7-19-89 8- 8-89 9-13-89	17.6 6.73 *4.70 6.85 12.5 12.2 *5.38 *2.95 *1.36
01365500 Chestnut Creek	Rondout Creek	Lat 41°50'42", long 74°32'27", Sullivan County, Hydrologic Unit 02020007, on right bank, 600 ft downstream from Red Brook, 0.6 mi upstream from bridge on State Highway 55, at Grahamsville.	20.9	1939-87‡, 1988	9-15-89	7.73
		Delaware River basin				
01417820 Beaver Kill	East Branch Delaware River	Lat 42°00'40", long 74°36'15", Ulster County, Hydrologic Unit 02040102, 900 ft upstream from Black Brook, and 5.5 mi southeast of Turnwood.	8.08	1984-86, 1988	11-17-88 12- 6-88 2-14-89 3-21-89 4-27-89 5-25-89 7- 1-89 7-18-89 8- 9-89	45.6 13.7 5.47 16.6 15.0 29.5 14.6 *6.92 *3.46
01421200 Cadosia Creek	East Branch Delaware River	Lat 41°58'03", long 75°15'51", Delaware County, Hydrologic Unit 02040102, at bridge on State Highway 236, 0.3 mi upstream from mouth, at Cadosia.	17.9	1949-50, 1955, 1957-71, 1973-88	4-27-89 7-12-89 8- 8-89 8-29-89	*17.6 16.0 6.91 *2.87
01422642 West Branch Delaware River	Delaware River	Lat 42°12'29", long 74°58'35", Delaware County, Hydrologic Unit 02040101, at Bagley Brook Road, at De Lancey.		1988	10- 7-88 3-24-89	*37.9 193
01426000 Oquaga Creek	West Branch Delaware River	Lat 42°03'31", long 75°25'42", Broome County, Hydrologic Unit 02040101, on left bank, 150 ft downstream from Bone Creek, 0.3 mi upstream from mouth, and 400 ft upstream from Mill Street bridge, in Deposit.	67.6	1941-73‡, 1975-76, 1979-88	4-27-89 7-14-89	*50.4 28.6
01428000 Tenmile River	Delaware River	Lat 41°33'51", long 75°00'56", Sullivan County, Hydrologic Unit 02040101, on left bank, 0.5 mi downstream from East Branch Tenmile River, 0.8 mi upstream from mouth, and 0.6 mi northeast of Tusten.	45.6	1946-73‡, 1978-88	4-28-89 7-12-89	*32.9 21.8
01434009 Flat Brook	East Branch Neversink River	Lat 41°57'50", long 74°27'35", Ulster County, Hydrologic Unit 02040104, at bridge on Denning Road at Tison Estate, 2.3 mi northeast of Denning.	1.11		10-28-88 11-11-88 12-22-88 1-20-89 1-24-89 3-20-89 3-31-89	*1.77 4.34 2.52 2.15 1.97 4.24 11.5
0143402705 Pigeon Brook	Biscuit Brook	Lat 41°59'13", long 74°30'11", Ulster County, Hydrologic Unit 02040104, at bridge, 0.4 mi north of West Branch Road, and 250 ft upstream from mouth, at Frost Valley.	2.67	1983-86, 1988	10- 5-88	1.36
01438000 Neversink River	Delaware River	Lat 41°21'40", long 74°41'07", Orange County, Hydrologic Unit 02040104, at Tristates Bridge on East Main Street (U.S. Highway 6), 450 ft upstream from Clove Brook, and 0.6 mi upstream from mouth, in Port Jervis.	336	1902-03, 1943, 1945, 1960-62, 1965-88	12- 6-88 4-28-89 7-13-89 8-10-89 8-30-89 9-28-89	337 292 230 140 137 703

* Base flow.
‡ Operated as a continuous-record gaging station.

Discharge measurements made at miscellaneous sites during water year 1989--Continued

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements Date	Measurements Discharge (ft^3/s)
		Streams tributary to Lake Ontario				
04250500 Salmon River	Lake Ontario	Lat 43°33'00", long 76°05'45", Oswego County, Hydrologic Unit 04140102, at bridge on State Highway 2A, 2.5 mi downstream from Trout Brook, and 1.9 mi southeast of Pulaski.	260	1901-14	5-17-89 6-28-89 8-31-89	1,040 902 *68.0
04250503 Salmon River	Lake Ontario	Lat 43°33'57", long 76°07'40", Oswego County, Hydrologic Unit 04140102, at bridge on U.S. Highway 11, at Pulaski.	268	1971-72	4- 5-89	2,160
04258022 Black River	Lake Ontario	Lat 43°53'38", long 75°30'18", Lewis County, Hydrologic Unit 04150101, at bridge on State Highway 410, at Castorland.	1,612	1984-87	11-19-87 4- 5-88 4- 7-88 11-10-88	5,260 14,600 14,300 11,000
		Streams tributary to St. Lawrence River				
04279015 La Chute	Lake Champlain	Lat 43°50'59", long 73°25'20", Essex County, Hydrologic Unit 02010001, at Elk Drive bridge, at Ticonderoga.	234	1988	11- 5-88	*67.9

* Base flow.

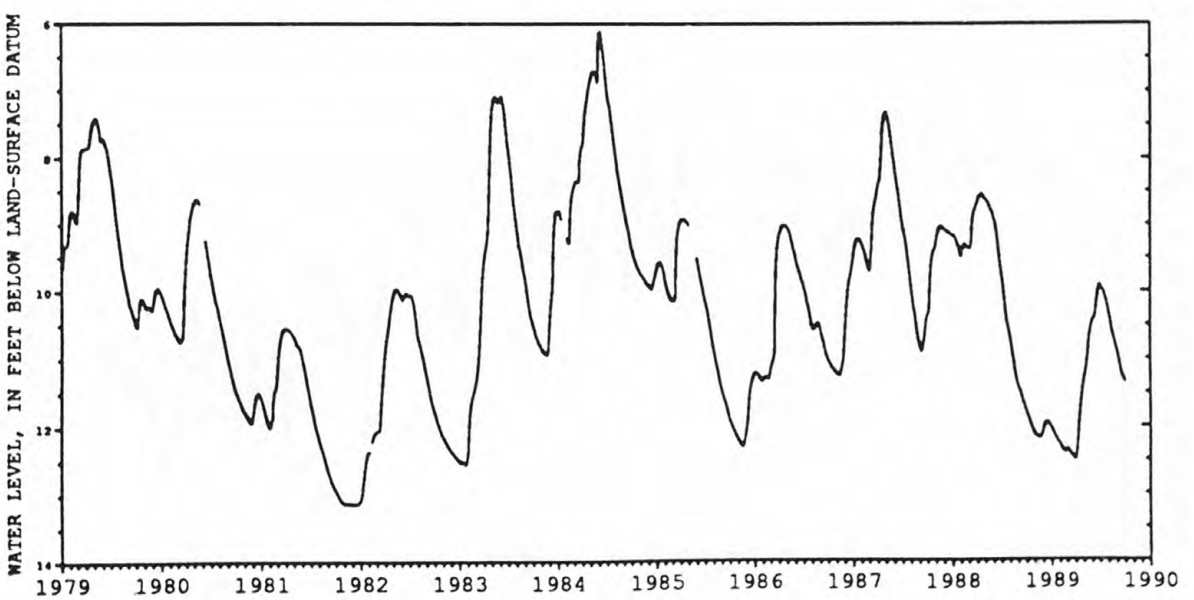
ALBANY COUNTY

424114073495402. Local number, A 636.
LOCATION.--Lat 42°41'14", long 73°49'54", Hydrologic Unit 02020006, Fuller Road, Albany.
Owner: State University of New York at Albany.
AQUIFER.--Water-table aquifer in sand of Pleistocene age.
WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 21.0 ft in August 1989, filled in from original depth of 24 ft, cased to 22 ft, 2-in. jet point (60-gauze screen 22 ft to 24 ft). Well gravel packed from original depth of 26 ft.
INSTRUMENTATION.--Water-stage recorder--hourly punch.
DATUM.--Elevation of land-surface datum is 260 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 2.40 ft above land-surface datum.
REMARKS.--Well was drilled May 1974 as a replacement for 424114073495401 (local number A 635), located 35 ft north, which has a period of record from November 1965 to May 1974 (unpublished).
PERIOD OF RECORD.--May 1974 to current year. Records prior to October 1976 are unpublished and available in files of the Geological Survey.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 6.12 ft below land-surface datum, Apr. 12, 13, 1978, June 5, 6-7, 8, 1984; lowest, 13.13 ft below land-surface datum, Oct. 29, Nov. 25, 26-Dec. 17, 18, 20, 21-22, 23, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11.78	12.11	12.07	12.03	12.26	12.34	12.48	11.31	10.46	9.93	10.32	10.89
2	11.79	12.12	12.05	12.03	12.27	12.34	12.47	11.29	10.45	9.94	10.34	10.90
3	11.81	12.13	12.04	12.04	12.28	12.34	12.45	11.27	10.44	9.94	10.35	10.92
4	11.82	12.13	12.02	12.05	12.29	12.35	12.42	11.25	10.43	9.96	10.37	10.94
5	11.83	12.14	12.01	12.06	12.29	12.35	12.39	11.23	10.43	9.97	10.39	10.96
6	11.85	12.14	12.00	12.07	12.30	12.36	12.35	11.21	10.42	9.98	10.41	10.98
7	11.86	12.14	11.99	12.08	12.31	12.37	12.30	11.18	10.42	9.98	10.44	11.00
8	11.87	12.15	11.98	12.08	12.31	12.37	12.24	11.16	10.41	9.98	10.46	11.02
9	11.88	12.15	11.97	12.09	12.32	12.38	12.19	11.14	10.41	9.99	10.49	11.05
10	11.89	12.15	11.96	12.10	12.33	12.39	12.13	11.11	10.39	10.00	10.52	11.07
11	11.90	12.16	11.95	12.11	12.33	12.39	12.07	11.08	10.37	10.00	10.55	11.09
12	11.91	12.16	11.95	12.12	12.34	12.40	12.02	11.05	10.35	10.00	10.57	11.11
13	11.93	12.16	11.95	12.12	12.34	12.41	11.96	11.02	10.32	10.01	10.59	11.14
14	11.94	12.16	11.94	12.13	12.35	12.41	11.91	10.98	10.29	10.02	10.60	11.16
15	11.95	12.17	11.94	12.14	12.36	12.42	11.86	10.95	10.25	10.03	10.61	11.18
16	11.96	12.17	11.94	12.15	12.36	12.42	11.81	10.91	10.21	10.05	10.63	11.20
17	11.97	12.17	11.94	12.16	12.37	12.43	11.76	10.86	10.16	10.06	10.65	11.21
18	11.99	12.17	11.94	12.17	12.37	12.43	11.72	10.82	10.12	10.08	10.67	11.23
19	12.00	12.18	11.94	12.17	12.38	12.44	11.68	10.78	10.09	10.09	10.69	11.24
20	12.01	12.18	11.94	12.18	12.38	12.44	11.64	10.74	10.06	10.11	10.71	11.25
21	12.02	12.17	11.95	12.19	12.38	12.45	11.60	10.70	10.03	10.12	10.72	11.26
22	12.03	12.17	11.95	12.20	12.38	12.45	11.56	10.67	10.00	10.13	10.74	11.27
23	12.04	12.17	11.96	12.21	12.38	12.46	11.53	10.64	9.98	10.14	10.75	11.28
24	12.05	12.16	11.97	12.22	12.37	12.47	11.50	10.61	9.96	10.16	10.76	11.29
25	12.05	12.15	11.97	12.23	12.36	12.47	11.46	10.59	9.94	10.18	10.78	11.30
26	12.06	12.14	11.98	12.23	12.35	12.48	11.43	10.56	9.93	10.20	10.79	11.30
27	12.07	12.13	11.99	12.24	12.35	12.48	11.41	10.54	9.92	10.22	10.81	11.31
28	12.08	12.11	11.99	12.25	12.34	12.49	11.38	10.52	9.91	10.24	10.83	11.33
29	12.09	12.10	12.00	12.25	---	12.49	11.36	10.51	9.92	10.26	10.85	11.34
30	12.10	12.08	12.01	12.25	---	12.49	11.33	10.49	9.93	10.28	10.86	11.35
31	12.11	---	12.02	12.26	---	12.49	---	10.47	---	10.30	10.87	---

WTR YEAR 1989 HIGHEST 9.91 June 27, 28, 29, 1989 LOWEST 12.49 Mar. 28, 29-30, 31, 1989



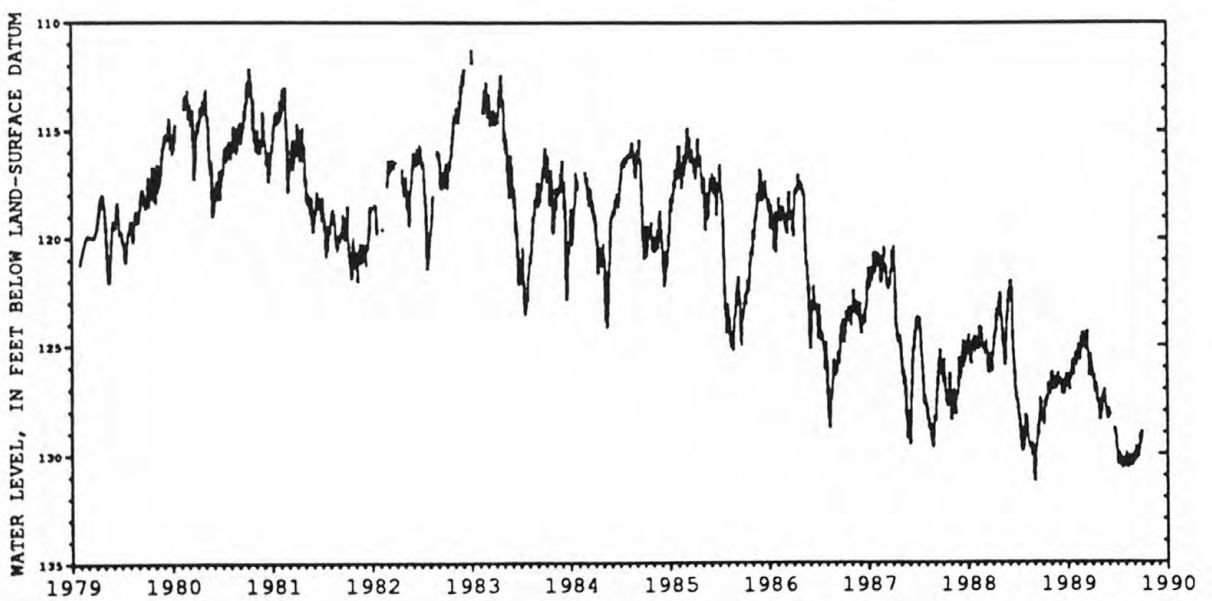
ALBANY COUNTY

424044073535101. Local number, A 637.
LOCATION.--Lat 42°40'44", long 73°53'51", Hydrologic Unit 02020006, Dr. Shaw Road, Guilderland.
Owner: DLM Construction Company Inc.
AQUIFER.--Confined aquifer in sand and gravel of Pleistocene age.
WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 198 ft, cased to 193 ft, 30-slot plastic screen 193 ft to 198 ft.
INSTRUMENTATION.--Water-stage recorder--hourly punch.
DATUM.--Elevation of land-surface datum is 220 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 3.50 ft above land-surface datum.
REMARKS.--Water level affected by pumping from distant municipal well field.
PERIOD OF RECORD.--September 1976 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 111.11 ft below land-surface datum, Jan. 7, 1983; lowest recorded, 131.25 ft below land-surface datum, Sept. 1, 2, 1988.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	128.19	126.92	126.63	126.86	125.34	124.58	126.02	128.40	127.88	129.81	130.52	129.92
2	128.05	126.26	126.68	126.49	125.79	124.72	126.38	127.88	127.89	129.82	130.34	129.95
3	128.07	126.58	126.49	126.33	125.67	124.83	126.30	127.93	128.05	130.01	130.09	130.23
4	128.28	126.71	126.72	126.50	125.92	124.77	126.40	128.09	128.06	130.25	129.93	130.38
5	128.38	126.42	126.79	126.67	125.76	124.42	126.54	127.93	128.24	130.48	129.93	130.27
6	128.58	126.21	126.65	126.96	125.42	124.59	126.39	127.49	128.09	130.36	130.01	130.07
7	128.65	126.41	126.52	126.77	125.42	124.92	126.29	127.35	128.21	130.09	130.11	129.87
8	128.44	126.67	126.87	126.30	125.31	125.11	126.34	127.47	---	130.11	130.28	129.70
9	128.25	126.79	126.85	126.56	125.35	125.10	126.41	127.62	---	130.06	130.59	129.63
10	127.79	126.54	126.71	127.05	125.21	125.20	126.63	127.51	---	129.91	130.65	129.70
11	127.45	126.65	126.94	126.84	124.94	124.92	126.91	127.26	---	130.07	130.54	129.97
12	127.66	127.06	127.21	126.45	124.97	124.77	127.12	127.15	---	130.23	130.42	130.18
13	127.83	126.75	126.99	126.37	125.33	124.82	127.14	127.26	---	130.13	130.25	130.25
14	127.82	126.61	126.67	126.56	125.09	124.54	127.10	127.27	---	130.12	130.16	130.15
15	127.71	126.86	126.59	126.09	125.12	124.30	126.96	127.13	---	130.41	130.10	130.04
16	127.70	126.76	127.26	126.11	125.33	124.99	126.72	127.00	---	130.51	130.06	130.13
17	127.64	126.52	126.71	126.07	125.67	125.26	126.80	127.02	---	130.46	130.28	129.88
18	127.29	126.85	126.63	126.05	125.59	125.16	126.98	127.20	---	130.50	130.58	130.09
19	127.33	127.02	126.99	125.89	125.24	125.52	127.22	127.35	---	130.38	130.49	130.11
20	127.47	126.43	126.72	125.66	125.13	125.53	127.46	127.39	---	130.43	130.24	129.86
21	127.52	126.42	126.77	126.23	124.61	125.35	127.53	127.58	---	130.65	130.06	129.79
22	126.73	126.95	127.23	126.22	124.63	126.01	127.65	127.81	128.78	130.59	130.12	129.38
23	126.81	126.84	126.89	126.09	124.92	126.37	127.63	128.02	128.83	130.43	130.06	129.09
24	126.79	126.67	126.51	126.02	125.09	126.31	127.54	127.95	128.90	130.33	130.24	129.55
25	126.79	126.65	126.49	126.38	124.78	125.82	127.59	128.05	129.05	130.35	130.40	129.55
26	126.92	126.64	126.89	125.85	124.42	125.93	127.70	128.02	129.09	130.39	130.34	129.12
27	127.21	126.42	126.87	125.66	124.40	125.76	127.69	128.22	129.13	130.26	130.47	129.47
28	127.10	126.24	126.29	125.88	124.61	125.38	127.85	128.38	129.24	130.15	130.54	129.34
29	127.14	126.72	126.72	125.67	---	125.54	128.29	128.35	129.60	130.39	130.40	128.92
30	127.22	126.71	126.66	125.34	---	125.80	128.38	128.09	129.80	130.45	130.08	129.11
31	127.27	---	126.65	125.34	---	125.70	---	127.97	---	130.53	130.16	---

WTR YEAR 1989 HIGHEST 124.14 Mar. 15, 1989 LOWEST 130.71 Aug. 10, 1989



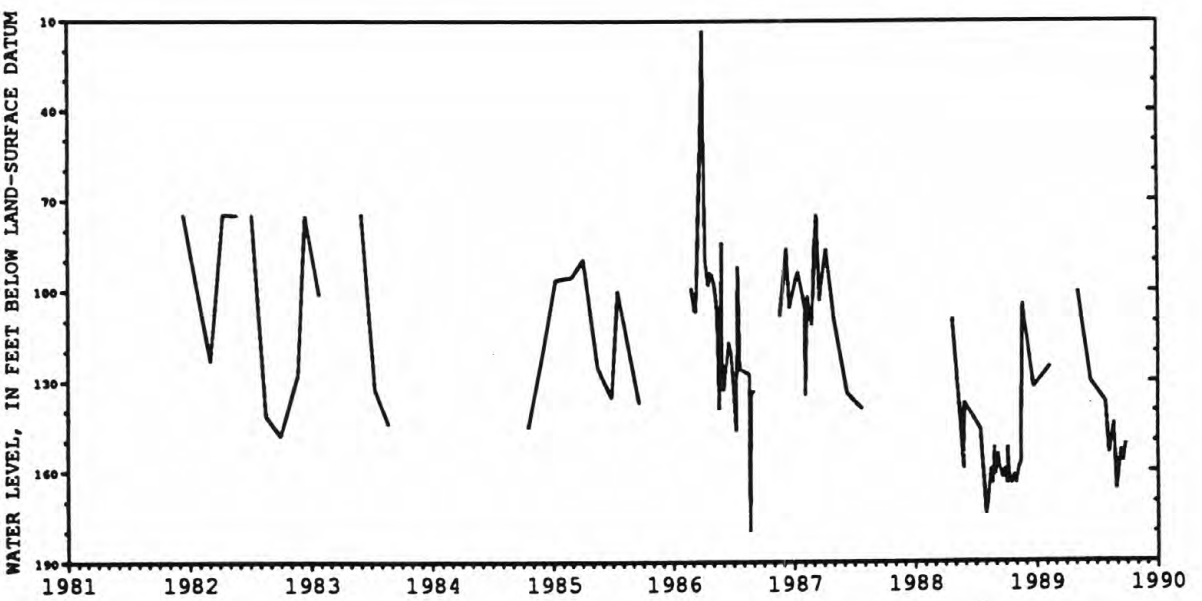
DELAWARE COUNTY

420748075043101. Local number, D 492.
LOCATION.--Lat 42°07'48", long 75°04'31", Hydrologic Unit 02040102, near Walton.
Owner: New York State Department of Environmental Conservation.
AQUIFER.--Water-table aquifer in shale and sandstone of Devonian age.
WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 199 ft, cased to 30 ft, open hole.
INSTRUMENTATION.--Weekly tape measurement by observer.
DATUM.--Elevation of land-surface datum is 2,180 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 0.75 ft above land-surface datum.
REMARKS.--Water levels subject to rapid response from heavy rains or snowmelt. Pump installed in well in spring 1986 for summer campground use. Water levels may be affected by recent pumping.
PERIOD OF RECORD.--September 1977 to August 1983, October 1984 to current year. Records prior to water year 1982 are unpublished and unreliable, and should not be used.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 13.18 ft below land-surface datum, Mar. 31, 1986; lowest measured, 179.64 ft below land-surface datum, Aug. 20, 1986.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	WATER LEVEL		DATE	WATER LEVEL		DATE	WATER LEVEL		DATE	WATER LEVEL	
OCT 04, 1988	164.00		NOV 07, 1988	159.00		JUN 13, 1989	130.00	Z	AUG 29, 1989	166.00	
05	152.00	Z	14	157.00		JUL 28	137.00	Z	SEP 08	157.00	
11	162.00		18	104.00	Z	AUG 07	154.00		12	153.00	
17	164.00		DEC 22	132.00	Z	14	149.00		19	157.00	
24	161.00		FEB 10, 1989	125.00	Z	22	144.00		26	151.00	
31	164.00		MAY 05	100.00	Z						

Z Measured by USGS personnel.



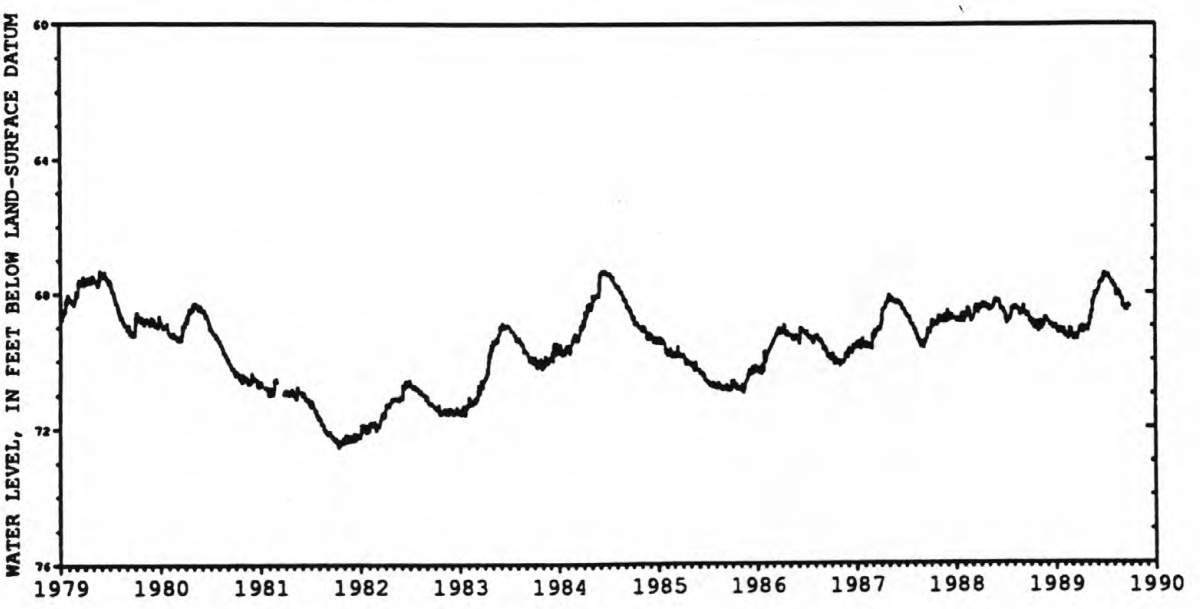
DUTCHESS COUNTY

414737073563301. Local number, Du 321.
LOCATION.--Lat 41°47'37", long 73°56'33", Hydrologic Unit 02020008, near Hyde Park.
Owner: U.S. National Park Service.
AQUIFER.--Confined aquifer in shale of Ordovician age.
WELL CHARACTERISTICS.--Drilled unused well, diameter 6 in., depth 127 ft, cased to unknown depth, open hole.
INSTRUMENTATION.--Water-stage recorder--hourly punch.
DATUM.--Elevation of land-surface datum is 170 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of extended casing, 3.10 ft above land-surface datum.
REMARKS.--Water level responds to semidiurnal earth tides (approximately 0.05 ft).
PERIOD OF RECORD.--September 1948 to April 1950, April 1953 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 65.62 ft below land-surface datum, June 22, 1953; lowest, 73.85 ft below land-surface datum, Sept. 13, 1966.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	68.86	69.14	68.81	69.04	69.07	69.16	69.03	69.17	68.01	67.50	67.81	68.18
2	68.81	68.92	68.83	69.02	69.14	69.23	69.10	69.03	67.97	67.50	67.82	68.19
3	68.77	68.85	68.82	68.97	69.19	69.28	69.15	68.92	67.95	67.50	67.79	68.26
4	68.80	68.91	68.83	68.95	69.26	69.32	69.14	68.96	67.93	67.51	67.77	68.36
5	68.83	68.92	68.87	69.01	69.31	69.29	69.12	69.01	67.94	67.51	67.76	68.43
6	68.88	68.84	68.89	69.09	69.28	69.27	69.07	68.86	67.92	67.47	67.77	68.45
7	68.95	68.85	68.85	69.15	69.26	69.30	69.01	68.73	67.89	67.44	67.79	68.44
8	68.96	68.93	68.87	69.12	69.25	69.39	68.99	68.74	67.85	67.43	67.85	68.41
9	68.93	69.01	68.92	69.10	69.25	69.42	69.01	68.81	67.82	67.44	67.95	68.39
10	68.88	69.03	68.91	69.17	69.26	69.41	69.08	68.82	67.71	67.43	68.05	68.37
11	68.81	69.02	68.92	69.22	69.24	69.36	69.16	68.62	67.68	67.43	68.10	68.39
12	68.82	69.09	68.99	69.21	69.23	69.30	69.21	68.54	67.73	67.47	68.03	68.44
13	68.91	69.10	68.98	69.13	69.30	69.29	69.22	68.56	67.71	67.49	67.95	68.50
14	68.99	69.00	68.93	69.16	69.31	69.28	69.20	68.59	67.70	67.48	67.93	68.52
15	69.03	68.99	68.89	69.10	69.32	69.24	69.17	68.58	67.69	67.52	67.93	68.47
16	69.06	69.01	68.93	69.06	69.32	69.25	69.08	68.51	67.63	67.58	67.91	68.49
17	69.08	68.96	68.94	69.06	69.39	69.31	69.04	68.26	67.60	67.59	67.93	68.46
18	69.04	68.96	68.93	69.06	69.40	69.30	69.02	68.23	67.62	67.60	68.00	68.48
19	69.00	69.02	68.95	69.05	69.34	69.32	69.02	68.27	67.64	67.61	68.04	68.54
20	69.02	68.95	68.99	69.03	69.29	69.38	69.05	68.25	67.65	67.59	68.02	68.50
21	69.07	68.72	68.98	69.08	69.19	69.32	69.07	68.19	67.67	67.59	67.99	68.45
22	68.95	68.76	69.05	69.17	69.06	69.34	69.06	68.15	67.66	67.64	67.99	68.42
23	68.86	68.82	69.09	69.20	69.05	69.41	69.07	68.13	67.64	67.68	67.99	68.34
24	68.87	68.82	69.03	69.19	69.12	69.42	69.08	68.05	67.51	67.71	68.02	68.36
25	68.89	68.82	68.94	69.23	69.14	69.27	69.07	67.98	67.45	67.73	68.08	68.45
26	68.95	68.83	68.98	69.22	69.10	69.21	69.07	67.97	67.43	67.72	68.13	68.40
27	69.03	68.82	69.05	69.13	69.08	69.22	69.08	67.98	67.39	67.69	68.17	68.37
28	69.09	68.72	68.98	69.15	69.12	69.19	69.09	68.02	67.38	67.65	68.20	68.42
29	69.11	68.72	68.98	69.14	---	69.14	69.12	68.07	67.41	67.67	68.21	68.40
30	69.15	68.79	69.01	69.10	---	69.15	69.15	68.07	67.47	67.72	68.14	68.40
31	69.18	---	69.00	69.07	---	69.09	---	68.04	---	67.77	68.15	---

WTR YEAR 1989 HIGHEST 67.35 June 28, 29, 1989 LOWEST 69.47 Mar. 24, 1989



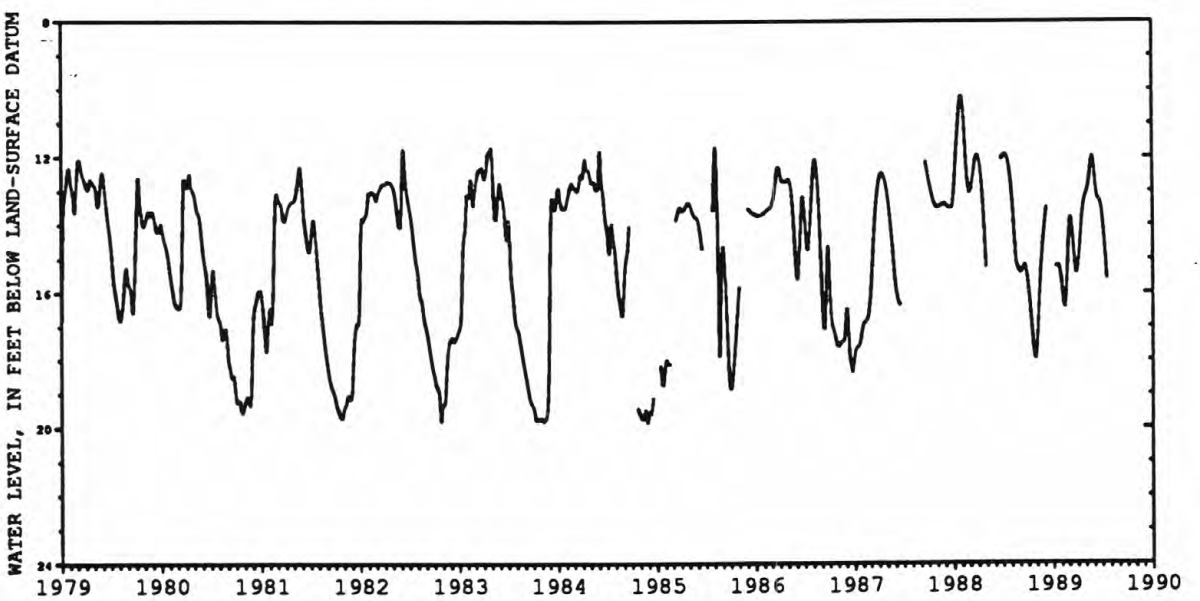
DUTCHESS COUNTY

414128073475201. Local number, Du 1009.
LOCATION.--Lat 41°41'28", long 73°47'52", Hydrologic Unit 02020008, James Baird State Park, near Pleasant Valley.
Owner: New York State Department of Environmental Conservation.
AQUIFER.--Water-table aquifer in sand and gravel of Pleistocene age.
WELL CHARACTERISTICS.--Bored observation well, diameter 2.5 in., depth 24.8 ft, filled in from original depth of 28 ft, cased to 25 ft, 1.25-in. well point (60-gauze screen 25 ft to 27 ft, damaged during well installation).
INSTRUMENTATION.--Bi-weekly tape measurement by observer.
DATUM.--Elevation of land-surface datum is 330 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 2.10 ft above land-surface datum.
PERIOD OF RECORD.--October 1965 to April 1969, June 1971 to current year. Records prior to October 1976 are unpublished and available in files of the Geological Survey.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.48 ft below land-surface datum, Feb. 3, 1988; lowest measured, 20.60 ft below land-surface datum, Nov. 24, 1965.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	WATER LEVEL		DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	
OCT 14, 1988	17.15		JAN 10, 1989	15.23	MAR 25, 1989	15.40	JUN 05, 1989	12.82	
31	17.70	Z	30	15.57	APR 17	13.65	22	13.32	
NOV 07	16.57		FEB 17	16.07	MAY 11	12.73	JUL 17	15.59	Z
DEC 06	13.48		26	14.23	30	12.15			

Z Measured by USGS personnel.



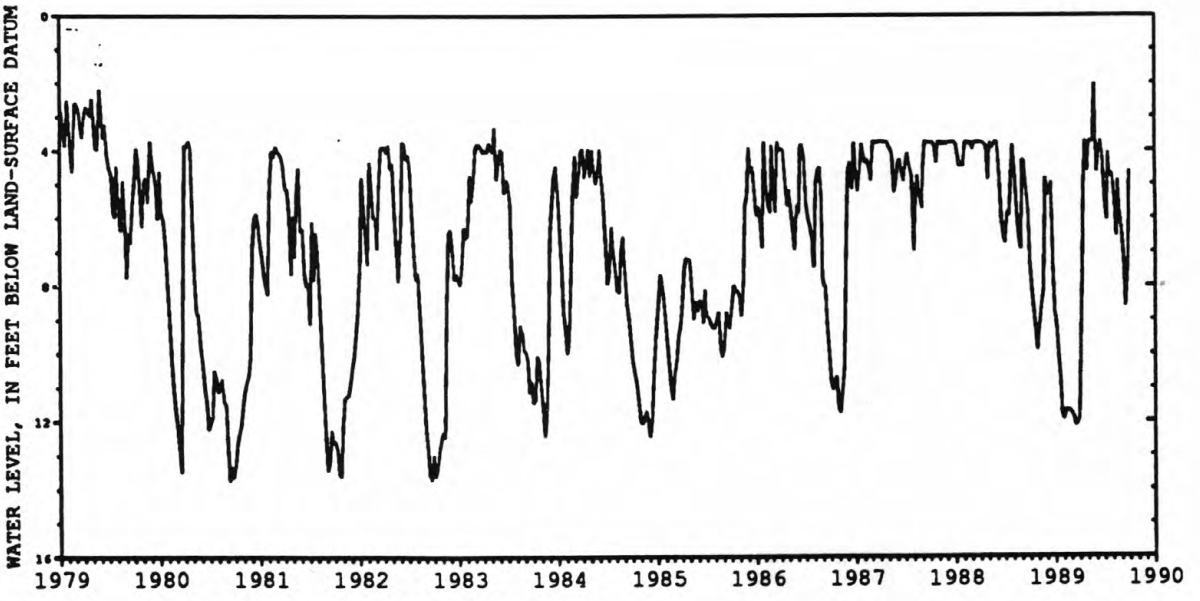
GREENE COUNTY

422319073482001. Local number, G 1.
LOCATION.--Lat 42°23'19", long 73°48'20", Hydrologic Unit 02020006, near West Coxsackie.
Owner: Harry Andrews.
AQUIFER.--Water-table aquifer in till of Pleistocene age.
WELL CHARACTERISTICS.--Dug domestic well, diameter 36 in., depth 17.6, filled in from original depth of 19 ft, tile-lined to 2 ft, stone-lined to 19 ft.
INSTRUMENTATION.--Weekly tape measurement by observer.
DATUM.--Elevation of land-surface datum is 130 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Chiseled square on top of inner step on curb, 0.18 ft below land-surface datum.
PERIOD OF RECORD.--December 1945 to current year.
EXTREMES FOR PERIOD OR RECORD.--Highest water level measured, 1.07 ft below land-surface datum, Mar. 15, 1962; lowest measured, 15.56 ft below land-surface datum, Feb. 27, 1963.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	WATER LEVEL		DATE	WATER LEVEL		DATE	WATER LEVEL		DATE	WATER LEVEL	
OCT 06, 1988	8.18		JAN 11, 1989	10.01		APR 12, 1989	5.13		JUL 12, 1989	4.07	
12	8.72		18	10.69		19	3.72		13	4.18	Z
19	9.31		25	11.81		27	4.61		19	4.80	
26	9.89		FEB 01	11.95		MAY 03	3.74		27	4.67	
NOV 09	8.58		08	11.67		10	3.73		AUG 03	5.42	
16	8.14		16	11.69		17	3.74		10	6.52	
23	4.83		22	11.69		24	2.04		16	4.89	
30	5.33		MAR 01	11.77		31	4.63		23	5.82	
DEC 07	5.19		09	11.89		JUN 07	4.08		30	6.43	
14	4.96		15	12.13		15	3.72		SEP 07	7.28	
21	7.43		22	12.07		21	4.10		13	8.60	
28	8.75		29	11.94		30	5.63		21	7.57	
JAN 05, 1989	9.22		APR 05	8.71		JUL 06	6.06		27	4.62	

Z Measured by USGS personnel.

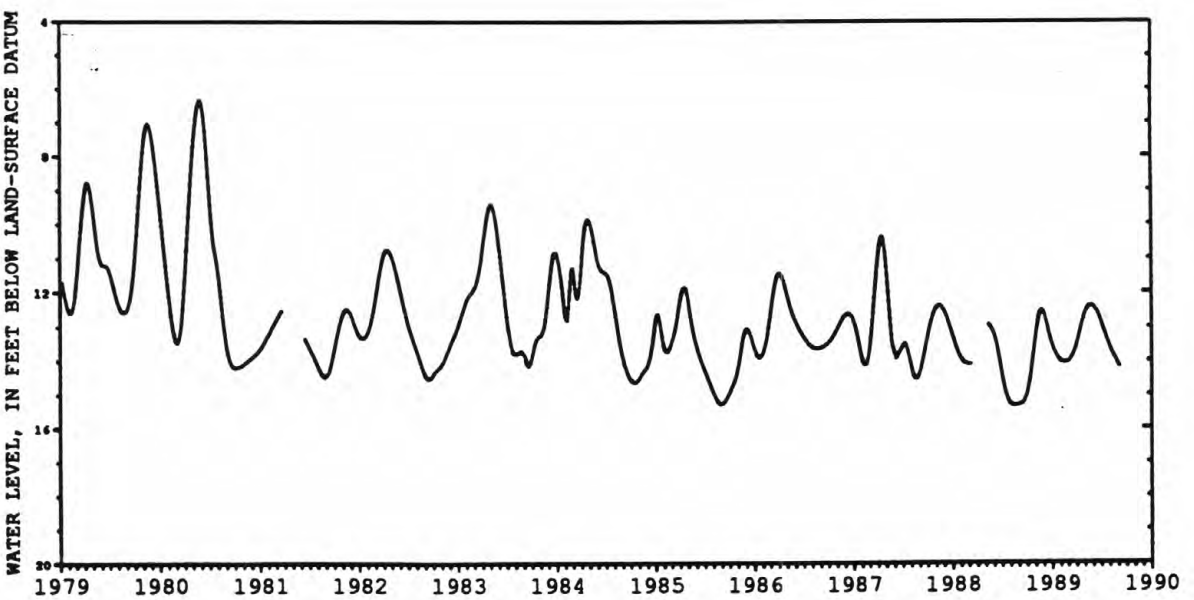


HAMILTON COUNTY

432832074122201. Local number, H 3.
LOCATION.--Lat 43°28'32", long 74°12'22", Hydrologic Unit 02020002, near Griffin.
Owner: F. B. Girard.
AQUIFER.--Water-table aquifer in sand of Pleistocene age.
WELL CHARACTERISTICS.--Bored observation well, diameter 2.5 in., depth 16.9 ft in Aug. 1988, filled in from original depth of 19 ft, cased to 16 ft, 1.25-in. well point (60-gauze screen 16 ft to 19 ft, damaged during well installation).
INSTRUMENTATION.--Tape measurement by USGS personnel every six weeks.
DATUM.--Elevation of land-surface datum is 1,290 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 1.55 ft above land-surface datum as of October 1984.
REMARKS.--Well casing believed to have settled about 0.75 ft shortly after installation. All published records prior to 1985 water year should be adjusted accordingly.
PERIOD OF RECORD.--November 1965 to current year. Records prior to October 1976 are unpublished and available in files of the Geological Survey.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 7.38 ft below land-surface datum, June 6, 1980; lowest measured, 16.19 ft below land-surface datum, Oct. 21, 1969.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

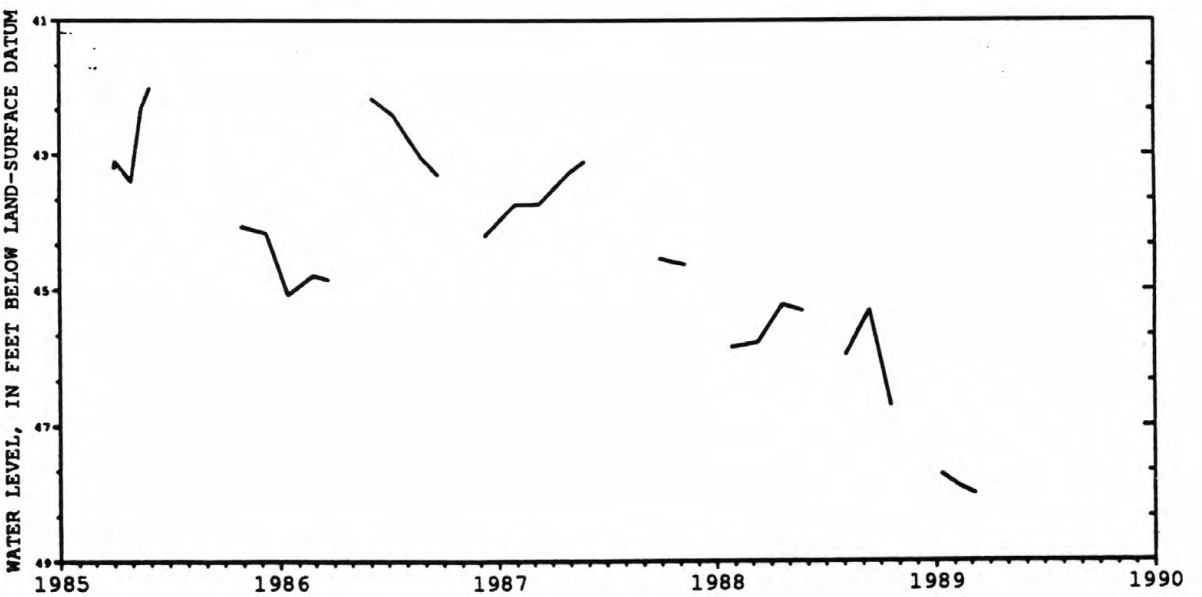
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 07, 1988	14.68	FEB 08, 1989	14.04	MAY 02, 1989	12.59	JUL 26, 1989	13.48
NOV 16	12.56	MAR 27	13.65	JUN 13	12.54	SEP 06	14.19
DEC 20	13.22						



440331075423901. Local number, Jf 123.
LOCATION.--Lat 44°03'31", long 75°42'39", Hydrologic Unit 04150303, at Fort Drum.
Owner: U.S. Army.
AQUIFER.--Water-table aquifer in sand of Pleistocene age.
WELL CHARACTERISTICS.--Drilled observation well, diameter 2 in., depth 74.5 ft, cased to 64.5 ft, plastic screen 64.5 ft to 74.5 ft.
INSTRUMENTATION.--Tape measurement by USGS personnel every six weeks.
DATUM.--Elevation of land-surface datum is 687.3 ft above National Geodetic Vertical Datum of 1929.
Measuring point: Top of casing, 4.00 ft above land-surface datum.
PERIOD OF RECORD.--April 1985 to March 1989, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 42.0 ft below land-surface datum, May 31, 1985; lowest measured, 48.00 ft below land-surface datum, Mar. 7, 1989.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, OCTOBER 1988 TO MARCH 1989

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18, 1988	46.70	JAN 10, 1989	47.70	FEB 08, 1989	47.88	MAR 07, 1989	48.00

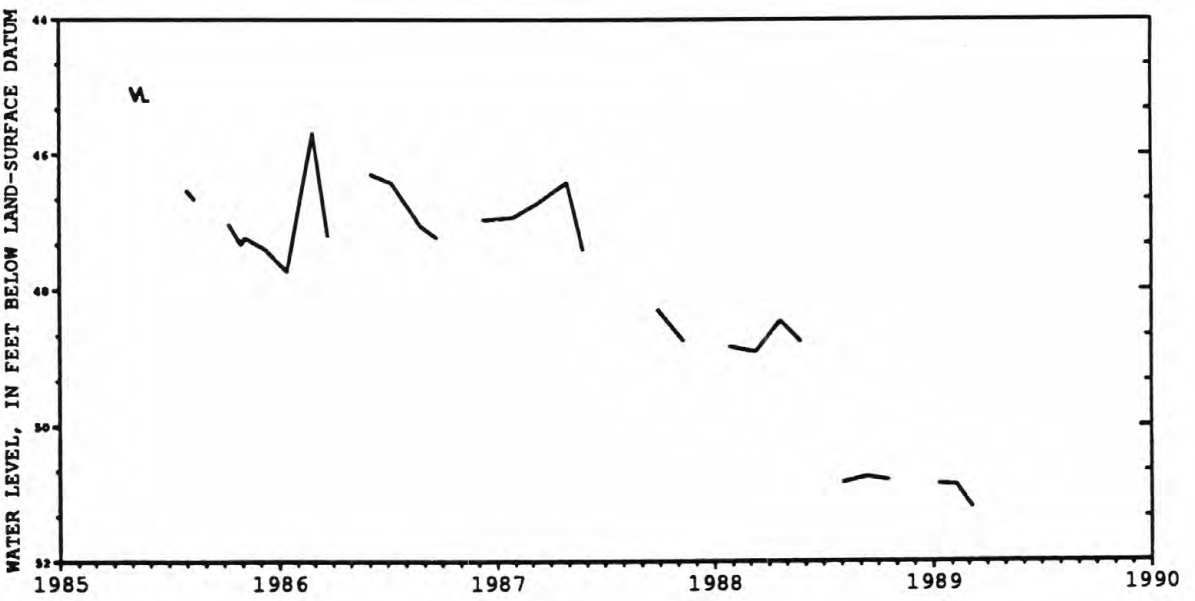


JEFFERSON COUNTY

440416075422901. Local number, Jf 124.
LOCATION.--Lat 44°04'16", long 75°42'29", Hydrologic Unit 04150303, at Fort Drum.
Owner: U.S. Army.
AQUIFER.--Confined aquifer in sedimentary rock of Cambrian age.
WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 184 ft, cased to 184 ft, open end.
INSTRUMENTATION.--Tape measurement by USGS personnel every six weeks.
DATUM.--Elevation of land-surface datum is 674.4 ft above National Geodetic Vertical Datum of 1929.
Measuring point: Top of casing, 1.00 ft above land-surface datum.
PERIOD OF RECORD.--April 1985 to March 1989, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 45.0 ft below land-surface datum, Apr. 30, 1985, May 17, 1985; lowest measured, 51.20 ft below land-surface datum, Mar. 7, 1989.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, OCTOBER 1988 TO MARCH 1989

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18, 1988	50.79	JAN 10, 1989	50.85	FEB 08, 1989	50.86	MAR 07, 1989	51.20



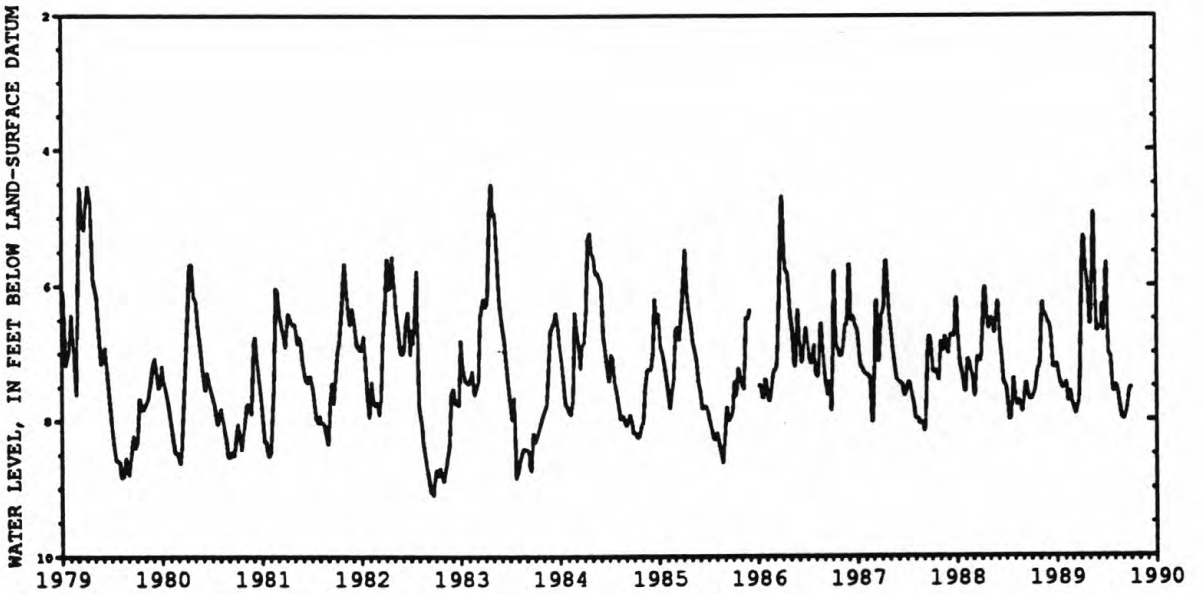
MONTGOMERY COUNTY

430141074423501. Local number, Mt 1.
LOCATION.--Lat 43°01'41", long 74°42'35", Hydrologic Unit 02020004, near St. Johnsville.
Owner: Keith Handy.
AQUIFER.--Water-table aquifer in till of Pleistocene age.
WELL CHARACTERISTICS.--Dug unused well, diameter 24 in., depth 12.0 ft, stone-lined.
INSTRUMENTATION.--Tape gage read weekly by observer.
DATUM.--Elevation of land-surface datum is 710 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top edge of limestone slab at northeast corner of well opening, at land-surface datum.
PERIOD OF RECORD.--October 1942 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.74 ft below land-surface datum, Apr. 10, 1971; lowest measured, 9.99 ft below land-surface datum, Aug. 28, 1949.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	WATER LEVEL		DATE	WATER LEVEL		DATE	WATER LEVEL		DATE	WATER LEVEL	
OCT 08, 1988	7.60		JAN 07, 1989	7.34		APR 15, 1989	5.76		JUL 15, 1989	7.04	
15	7.46		14	7.46		22	6.00		22	7.43	
22	7.24		21	7.53		29	6.53		27	7.58	Z
29	7.17		28	7.50		MAY 06	6.17		29	7.56	
NOV 05	6.34		FEB 04	7.43		13	4.92		AUG 05	7.48	
08	6.24	Z	11	7.72		20	6.00		12	7.58	
12	6.41		18	7.56		27	6.68		19	7.79	
19	6.44		25	7.74		JUN 03	6.63		26	7.94	
26	6.53		MAR 04	7.81		10	6.62		SEP 02	8.00	
DEC 03	6.58		11	7.91		14	6.27	Z	09	7.93	
10	6.80		18	7.78		17	6.61		16	7.76	
17	7.21		25	7.36		24	6.14		23	7.54	
24	7.20		APR 01	5.71		JUL 01	5.74		30	7.52	
31	7.16		08	5.30		08	7.00				

Z Measured by USGS personnel.



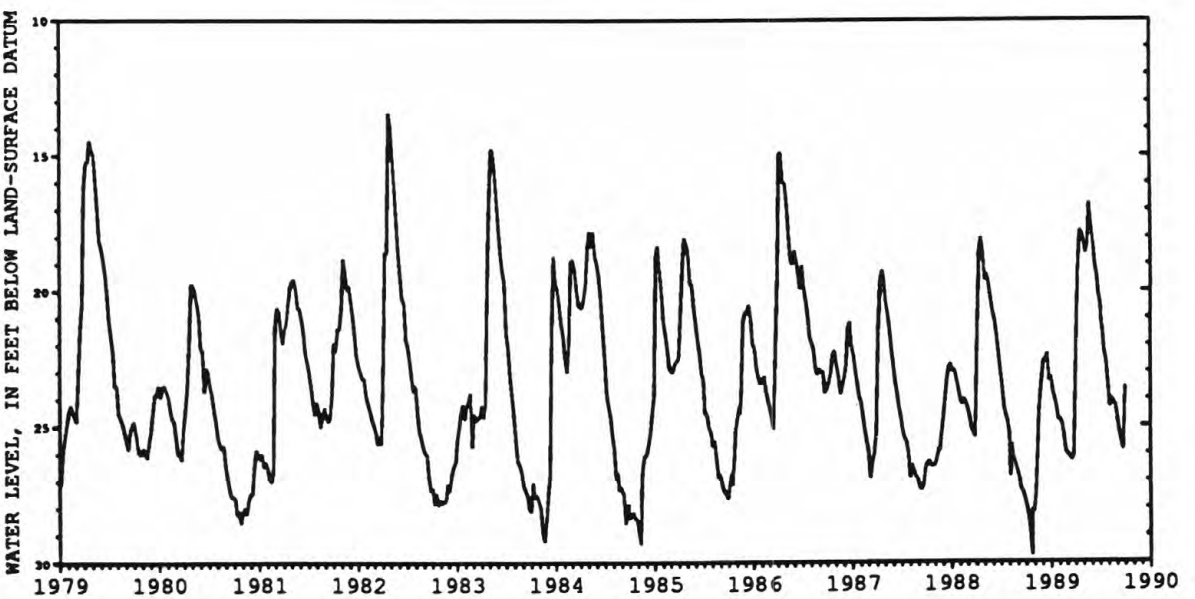
ONEIDA COUNTY

433112075091501. Local number, Oe 151.
LOCATION.--Lat 43°31'12", long 75°09'15", Hydrologic Unit 04150101, at Woodgate.
Owner: Henry Rubyor.
AQUIFER.--Water-table aquifer in sand of Pleistocene age.
WELL CHARACTERISTICS.--Dug domestic well, diameter 36 in., depth 31.1 ft in July 1984, stone-lined.
INSTRUMENTATION.--Tape gage read weekly by observer.
DATUM.--Elevation of land-surface datum is 1,484.94 ft above National Geodetic Vertical Datum of 1929.
Measuring point: Top of 2-ft square concrete well cover at midpoint of south side of rectangular opening, 1.00 ft above land-surface datum.
PERIOD OF RECORD.--July 1926 to August 1945, October 1948 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 11.43 ft below land-surface datum, Apr. 3, 1976; lowest measured, 30.31 ft below land-surface datum, Feb. 25, 1961.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	
OCT 01, 1988	27.90	DEC 24, 1988	23.31	APR 01, 1989	23.03	JUL 05, 1989	21.28	Z
08	28.25	31	23.20	08	19.28	08	21.36	
15	28.88	JAN 07, 1989	23.73	15	17.78	15	22.22	
22	29.77	14	24.00	22	17.86	22	22.57	
24	28.04	21	24.32	29	18.15	29	23.45	
29	28.17	28	24.78	MAY 06	18.61	AUG 05	24.31	
NOV 05	27.48	FEB 04	24.75	13	18.24	12	24.00	
12	25.79	11	24.95	20	16.76	19	24.15	
16	24.65	18	25.43	27	17.51	26	24.26	
19	24.12	25	26.00	JUN 03	18.23	SEP 02	24.78	
26	23.30	MAR 04	26.04	10	19.00	09	25.25	
DEC 03	22.61	11	26.15	17	19.42	16	25.62	
10	22.58	18	26.26	24	20.11	23	25.88	
17	22.35	25	26.13	JUL 01	20.55	30	23.56	

Z Measured by USGS personnel.



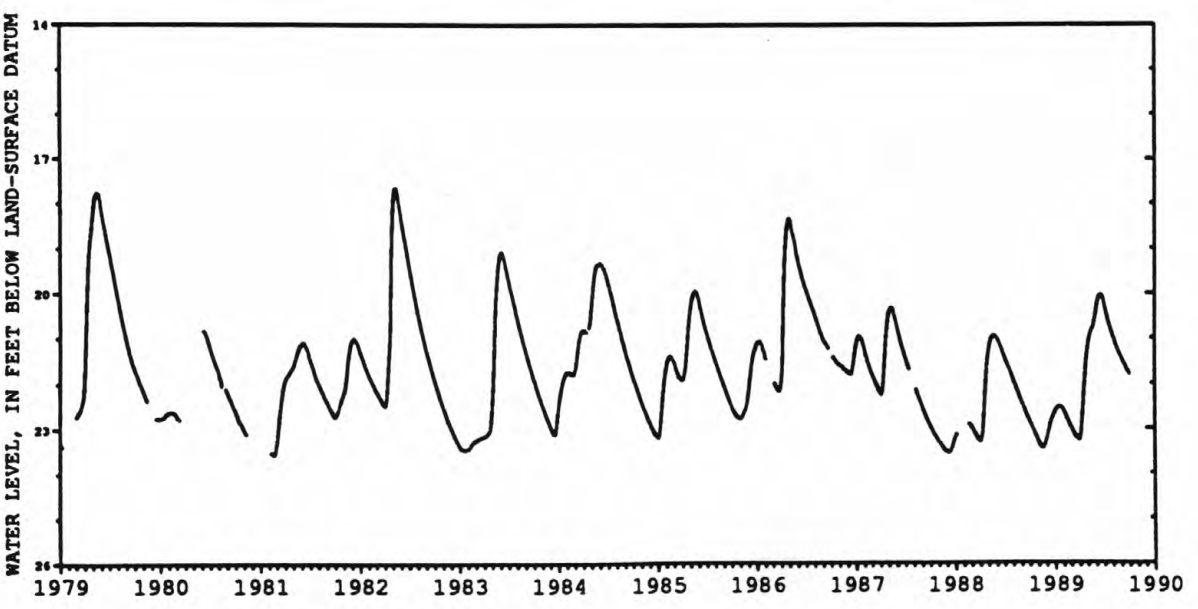
ONEIDA COUNTY

433012075134202. Local number, Oe 766.
LOCATION.--Lat 43°30'12", long 75°13'42", Hydrologic Unit 04150101, near Hawkinsville.
Owner: New York State Department of Environmental Conservation.
AQUIFER.--Water-table aquifer in sand of Pleistocene age.
WELL CHARACTERISTICS.--Driven-washed observation well, diameter 6 in., depth 30.7 ft in December 1983, filled in from original depth of 33 ft, cased to 33 ft, open end.
INSTRUMENTATION.--Water-stage recorder--hourly punch.
DATUM.--Elevation of land-surface datum is 1,190.22 ft above National Geodetic Vertical Datum of 1929.
Measuring point: Top of extended casing, 2.63 ft above land-surface datum.
REMARKS.--Well was driven-washed November 1968 as a replacement for 433012075134201 (local number Oe 765), located 15 ft east, which has a period of record from November 1965 to November 1968 (unpublished).
PERIOD OF RECORD.--November 1968 to current year. Records prior to October 1976 are unpublished and available in files of the Geological Survey.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 14.87 ft below land-surface datum, May 21, 1972; lowest recorded, 23.58 ft below land-surface datum, Feb. 20, 21, 22, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22.86	23.29	23.23	22.61	22.59	22.98	23.25	21.18	20.33	20.29	20.97	21.43
2	22.87	23.31	23.21	22.59	22.61	23.00	23.23	21.12	20.29	20.31	20.98	21.45
3	22.89	23.33	23.18	22.58	22.62	23.01	23.19	21.09	20.26	20.34	21.00	21.47
4	22.90	23.34	23.16	22.58	22.64	23.02	23.16	21.07	20.22	20.37	21.01	21.49
5	22.91	23.35	23.13	22.57	22.65	23.03	23.11	21.03	20.19	20.41	21.03	21.50
6	22.93	23.36	23.10	22.56	22.66	23.05	23.05	20.99	20.16	20.43	21.05	21.51
7	22.94	23.38	23.08	22.55	22.67	23.06	22.99	20.96	20.14	20.45	21.07	21.52
8	22.96	23.39	23.05	22.53	22.68	23.07	22.92	20.93	20.12	20.48	21.10	21.53
9	22.97	23.40	23.02	22.54	22.70	23.08	22.85	20.92	20.10	20.50	21.12	21.54
10	22.98	23.40	23.00	22.53	22.71	23.10	22.77	20.89	20.07	20.51	21.14	21.55
11	23.00	23.43	22.98	22.53	22.72	23.10	22.67	20.87	20.07	20.54	21.15	21.57
12	23.01	23.43	22.95	22.51	22.75	23.12	22.57	20.85	20.06	20.58	21.17	21.58
13	23.03	23.43	22.92	22.51	22.76	23.13	22.48	20.84	20.04	20.59	21.18	21.59
14	23.04	23.44	22.90	22.51	22.77	23.14	22.38	20.83	20.04	20.61	21.20	21.60
15	23.05	23.45	22.89	22.50	22.79	23.15	22.30	20.81	20.04	20.64	21.21	21.61
16	23.07	23.45	22.86	22.50	22.81	23.17	22.21	20.80	20.03	20.67	21.22	21.63
17	23.08	23.45	22.84	22.50	22.82	23.17	22.12	20.79	20.04	20.68	21.25	21.64
18	23.10	23.45	22.82	22.50	22.83	23.17	22.03	20.78	20.05	20.71	21.27	21.66
19	23.11	23.44	22.80	22.50	22.84	23.18	21.95	20.77	20.05	20.72	21.28	21.67
20	23.13	23.42	22.78	22.50	22.86	23.19	21.86	20.75	20.06	20.74	21.29	21.68
21	23.14	23,43	22.77	22.51	22.87	23.19	21.78	20.73	20.08	20.77	21.30	21.70
22	23.14	23.42	22.76	22.51	22.89	23.20	21.70	20.70	20.09	20.79	21.32	21.70
23	23.17	23.40	22.73	22.51	22.91	23.21	21.63	20.68	20.10	20.81	21.32	21.71
24	23.18	23.38	22.71	22.52	22.92	23.21	21.56	20.65	20.11	20.83	21.34	21.73
25	23.19	23.37	22.70	22.53	22.93	23.22	21.49	20.62	20.13	20.85	21.36	21.74
26	23.21	23.35	22.69	22.52	22.94	23.24	21.43	20.58	20.14	20.86	21.37	21.74
27	23.23	23.32	22.67	22.53	22.96	23.24	21.37	20.54	20.16	20.87	21.38	21.77
28	23.23	23.30	22.66	22.55	22.98	23.25	21.32	20.51	20.18	20.89	21.39	21.77
29	23.25	23.29	22.65	22.56	---	23.26	21.27	20.47	20.23	20.91	21.40	21.77
30	23.27	23.26	22.63	22.56	---	23.26	21.22	20.42	20.27	20.93	21.41	21.80
31	23.28	---	22.62	22.57	---	23.25	---	20.38	---	20.95	21.43	---

WTR YEAR 1989 HIGHEST 20.03 June 15, 16, 17, 1989 LOWEST 23.45 Nov. 14, 15-18, 19, 1988



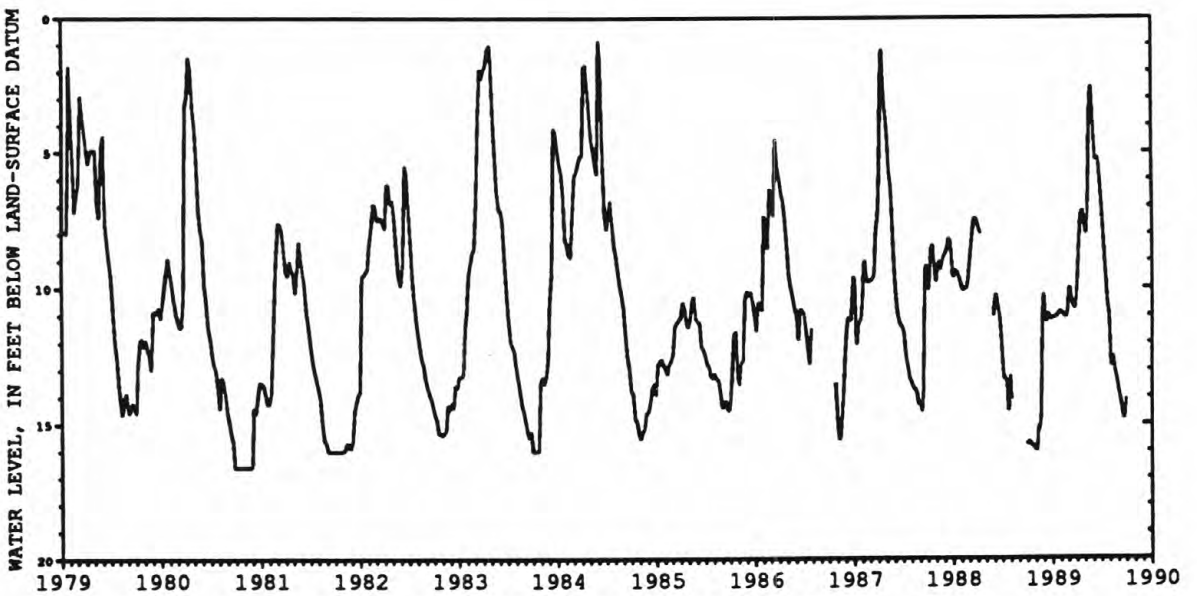
PUTNAM COUNTY

412450073413101. Local number, P 609.
LOCATION.--Lat 41°24'50", long 73°41'31", Hydrologic Unit 02030101, near Carmel.
Owner: New York City Board of Water Supply.
AQUIFER.--Water-table aquifer in till of Pleistocene age.
WELL CHARACTERISTICS.--Dug unused well, diameter 36 in., depth 16.2 ft in June 1984, stone-lined.
INSTRUMENTATION.--Weekly tape measurement by observer.
DATUM.--Elevation of land-surface datum is 540 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top (north side) of 3-in. coupling set in concrete well cover, at land-surface datum.
REMARKS.--Original depth measured at 17 ft. Depth measured at 16.6 ft October 1979, filled in to 16 ft September 1981.
PERIOD OF RECORD.--January 1935 to September 1945, September 1950 to current year. Records prior to October 1976 are unpublished and available in files of the Geological Survey.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.84 ft below land-surface datum, June 2, 1984; lowest measured, dry, Nov. 1, 30, 1935, Jan. 7, 1936, Sept. 1, 1939, several days in 1953, 1957, 1964, 1966, 1978, Sept. 25, 1980, several days in 1981, 1982, 1984.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	
OCT 07, 1988	15.66	JAN 12, 1989	11.10	APR 20, 1989	7.16	JUL 17, 1989	9.95	Z
14	15.80	19	11.00	27	7.66	20	10.45	
28	15.95	27	10.86	MAY 04	8.00	27	11.08	
NOV 04	16.00	FEB 09	10.96	11	6.23	AUG 04	12.86	
10	15.08	16	11.10	18	3.16	10	12.51	
18	14.75	23	11.00	25	2.74	17	12.95	
25	10.81	MAR 02	10.00	JUN 01	4.10	24	13.30	
DEC 02	10.60	09	10.30	08	5.30	31	13.75	
09	11.25	16	10.66	15	5.20	SEP 07	14.10	
15	10.92	24	10.76	22	5.80	14	14.50	
22	11.16	30	10.04	29	6.88	21	14.80	
29	11.16	APR 06	8.56	JUL 06	8.10	28	14.10	
JAN 05, 1989	11.06	13	7.32	13	9.30			

Z Measured by USGS personnel.

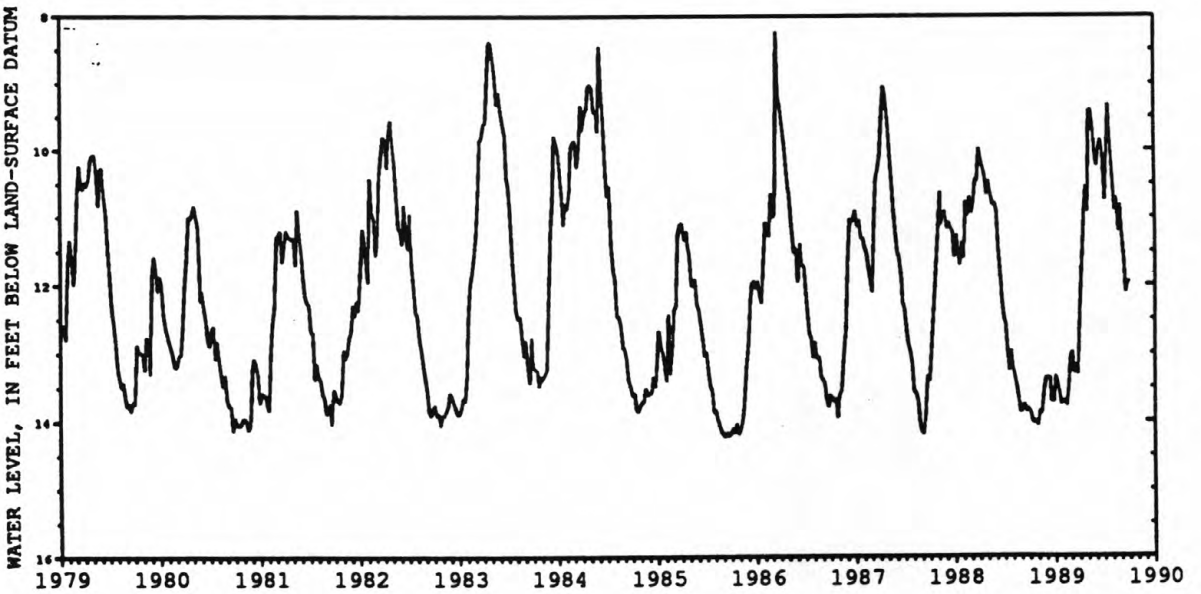


RENSSELAER COUNTY

423834073391001. Local number, Re 700.
LOCATION.--Lat 42°38'34", long 73°39'10", Hydrologic Unit 02020006, near Defreestville.
Owner: William P. Hofmann.
AQUIFER.--Water-table aquifer in sand and gravel of Pleistocene age.
WELL CHARACTERISTICS.--Dug domestic well, diameter 4 ft, depth 15.9 ft in June 1988, stone-lined.
INSTRUMENTATION.--Weekly tape measurement by observer.
DATUM.--Elevation of land-surface datum is 405 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top edge of concrete curbing at midpoint of north side of rectangular opening, 2.00 ft above land-surface datum.
PERIOD OF RECORD.--September 1954 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 8.23 ft below land-surface datum, Mar. 15, 1986; lowest measured, 15.49 ft below land-surface datum, Oct. 3, 1964.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 01, 1988	13.86	JAN 07, 1989	13.41	APR 15, 1989	10.96	JUL 08, 1989	10.18
09	13.99	15	13.57	22	10.55	16	9.33
16	14.02	23	13.75	29	10.93	22	9.80
22	13.99	28	13.71	MAY 06	9.43	29	10.29
30	14.06	FEB 07	13.70	13	9.41	AUG 06	10.90
NOV 05	13.85	12	13.77	21	9.67	13	10.72
12	13.89	18	13.52	28	10.13	20	11.21
20	13.52	25	13.05	JUN 03	10.24	27	10.82
27	13.37	MAR 04	12.99	11	9.94	SEP 02	11.30
DEC 05	13.36	11	13.29	17	9.86	09	11.64
12	13.37	18	13.17	21	9.96	16	12.10
17	13.70	25	13.31	24	10.07	24	11.95
26	13.71	APR 01	12.29	JUL 02	10.75	30	11.96
JAN 01, 1989	13.34	08	11.60				



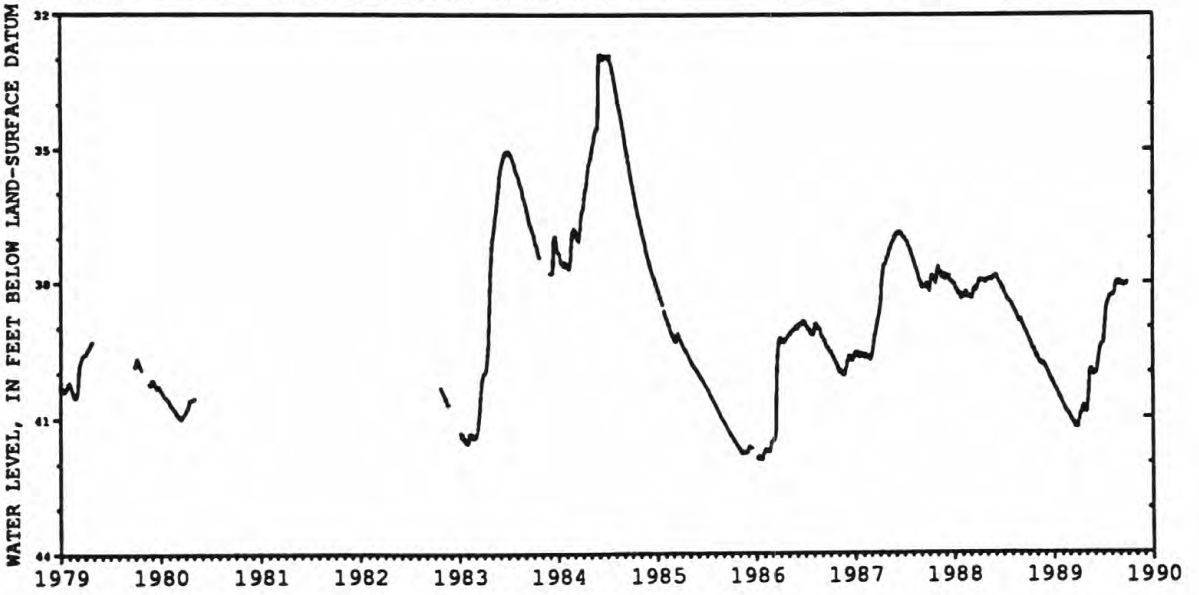
RENSSELAER COUNTY

423534073423401. Local number, Re 703.
LOCATION.--Lat 42°35'34", long 73°42'34", Hydrologic Unit 02020006, in East Greenbush.
Owner: Town of East Greenbush.
AQUIFER.--Confined aquifer in sand and gravel of Pleistocene age.
WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 80 ft, cased to 78 ft, 50-slot plastic screen 78 ft to 80 ft.
INSTRUMENTATION.--Water-stage recorder--hourly punch.
DATUM.--Elevation of land-surface datum is 275 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of flange, 2.9 ft above land-surface datum.
REMARKS.--The wrong measuring point value was used from November 1982 through the 1985 water year. A -.20 ft correction should be applied to all published record prior to the 1985 water year. Well was drilled October 1982 as a replacement for 423532073423701 (local number Re 701), located about 300 ft southwest and 15.8 ft lower in land-surface datum, which has a period of record from March 1961 to May 1980. Hydrograph shows water levels plotted for Re 701 (through 1980) adjusted to elevation of water levels plotted for Re 703. Water level may be affected by nearby pumping.
PERIOD OF RECORD.--October 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 32.86 ft below land-surface datum, June 4, 5, 6, 7, 8, 9, July 11, 1984; lowest recorded, 41.93 ft below land-surface datum, Jan. 23, 24, 1986.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39.21	39.66	39.85	40.27	40.64	40.96	41.21	40.91	40.05	39.37	38.31	37.97
2	39.21	39.59	39.87	40.25	40.68	40.98	41.20	40.87	40.05	39.36	38.29	37.99
3	39.25	39.67	39.86	40.26	40.68	41.00	41.13	40.88	40.05	39.36	38.28	38.05
4	39.26	39.68	39.89	40.29	40.71	41.00	41.09	40.87	40.03	39.36	38.27	38.06
5	39.28	39.67	39.91	40.31	40.71	40.99	41.07	40.83	40.04	39.35	38.26	38.04
6	39.31	39.67	39.91	40.33	40.71	41.02	41.05	40.76	40.02	39.28	38.26	38.01
7	39.32	39.70	39.91	40.35	40.73	41.04	41.02	40.68	40.03	39.17	38.27	38.00
8	39.33	39.73	39.95	40.32	40.73	41.06	40.97	40.57	40.01	39.08	38.28	37.99
9	39.34	39.75	39.95	40.37	40.75	41.06	40.94	40.50	39.99	39.00	38.31	37.99
10	39.33	39.72	39.96	40.39	40.76	41.07	40.93	40.44	39.95	38.93	38.30	37.99
11	39.33	39.76	39.99	40.40	40.77	41.06	40.92	40.36	39.91	38.86	38.28	38.03
12	39.38	39.80	40.01	40.37	40.79	41.07	40.92	40.26	39.86	38.75	38.27	38.05
13	39.42	39.77	39.98	40.40	40.82	41.09	40.90	40.16	39.81	38.64	38.25	38.06
14	39.43	39.77	40.01	40.43	40.82	41.09	40.90	40.07	39.78	38.58	38.22	38.05
15	39.44	39.80	40.03	40.41	40.83	41.10	40.88	40.01	39.74	38.57	38.15	38.05
16	39.46	39.79	40.06	40.44	40.86	41.13	40.86	39.96	39.69	38.53	38.10	38.07
17	39.47	39.78	40.06	40.45	40.87	41.14	40.84	39.95	39.65	38.49	38.08	38.04
18	39.46	39.82	40.07	40.47	40.87	41.13	40.80	39.94	39.60	38.48	38.08	38.08
19	39.49	39.83	40.10	40.48	40.86	41.18	40.77	39.94	39.56	38.46	38.05	38.09
20	39.51	39.77	40.11	40.48	40.88	41.18	40.76	39.92	39.53	38.45	38.01	38.05
21	39.53	39.78	40.12	40.53	40.86	41.16	40.74	39.93	39.50	38.45	37.99	38.05
22	39.46	39.83	40.16	40.54	40.88	41.21	40.73	39.95	39.47	38.43	37.99	38.00
23	39.52	39.81	40.14	40.54	40.91	41.23	40.74	39.97	39.44	38.40	37.97	38.00
24	39.54	39.80	40.14	40.55	40.92	41.22	40.75	39.98	39.42	38.38	37.99	38.07
25	39.56	39.82	40.17	40.58	40.91	41.20	40.77	40.00	39.41	38.35	38.00	38.06
26	39.58	39.82	40.21	40.54	40.90	41.24	40.79	40.01	39.39	38.34	37.98	37.99
27	39.62	39.80	40.20	40.56	40.92	41.23	40.81	40.03	39.37	38.31	37.99	38.07
28	39.62	39.80	40.16	40.60	40.95	41.22	40.84	40.06	39.37	38.30	37.98	38.04
29	39.65	39.85	40.24	40.61	---	41.24	40.88	40.06	39.39	38.32	37.97	37.98
30	39.66	39.84	40.24	40.61	---	41.25	40.89	40.05	39.38	38.32	37.95	38.04
31	39.68	---	40.24	40.63	---	41.21	---	40.05	---	38.32	37.99	---

WTR YEAR 1989 HIGHEST 37.95 Aug. 30, Sept. 1, 2, 22, 23, 1989 LOWEST 41.26 Mar. 29, 30, 1989

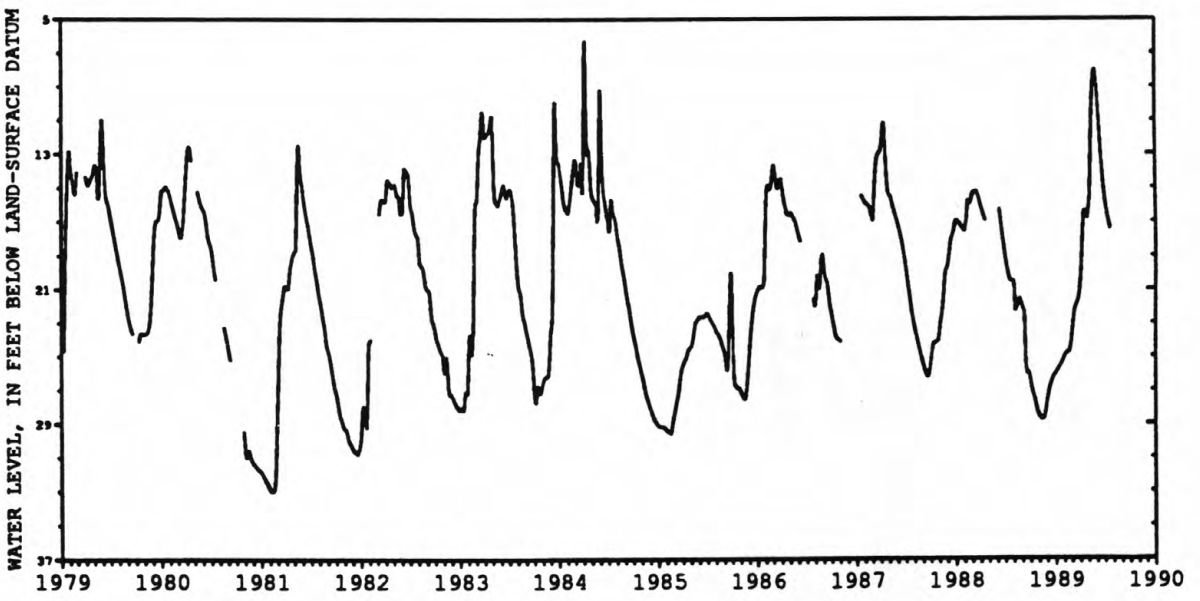


ROCKLAND COUNTY

411802073593001. Local number, Ro 18.
LOCATION.--Lat 41°18'02", long 73°59'30", Hydrologic Unit 02030101, in Bear Mountain State Park near Lemon Road and Seven Lakes Drive.
Owner: Palisades Interstate Park Commission.
AQUIFER.--Confined aquifer in Storm King Granite of Precambrian age.
WELL CHARACTERISTICS.--Drilled unused well, diameter 6 in., depth 60 ft, cased to 53 ft, open hole.
INSTRUMENTATION.--Tape gage read weekly by observer.
DATUM.--Elevation of land-surface datum is 390 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of extended casing, 3.65 ft above land surface datum.
PERIOD OF RECORD.--July 1949 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.32 ft below land-surface datum, Apr. 6, 1984; lowest measured, 33.02 ft below land-surface datum, Feb. 6, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 05, 1988	26.99	NOV 17, 1988	28.74	FEB 17, 1989	24.77	APR 12, 1989	16.42
11	27.33	DEC 01	27.45	24	24.20	MAY 03	15.64
19	27.87	30	26.02	MAR 03	22.97	12	10.61
25	28.31	JAN 17, 1989	25.53	09	22.21	JUN 16	13.28
31	28.53	25	25.27	23	21.52	JUL 03	16.22
NOV 08	28.74	FEB 10	24.78	31	20.17	18	17.43

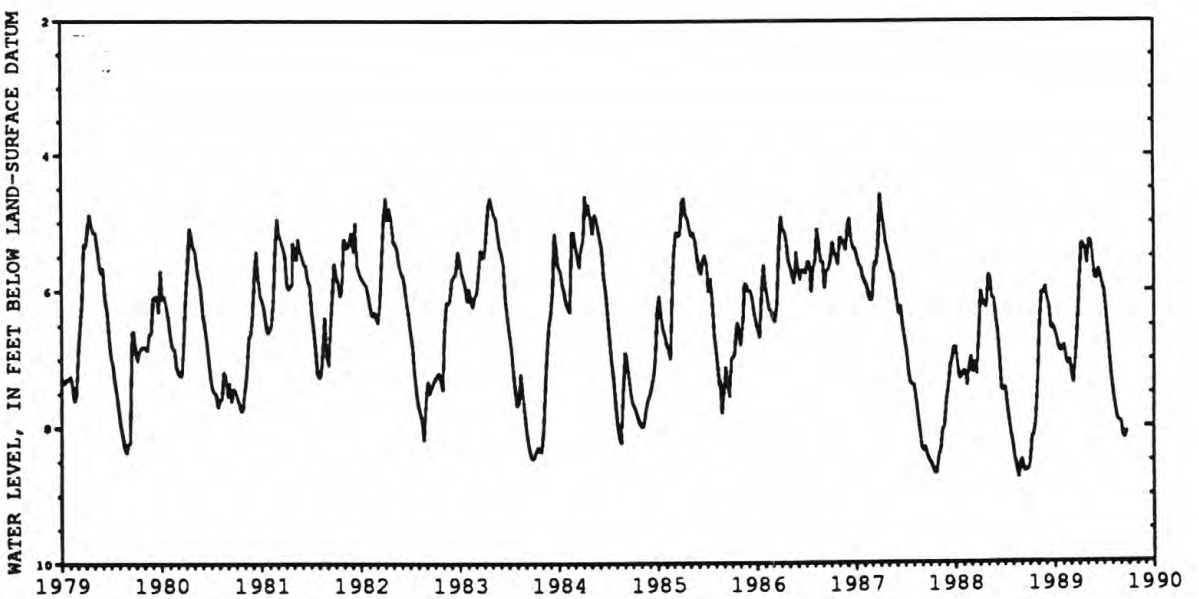


444904074455201. Local number, St 40.
LOCATION.--Lat 44°49'04", long 74°45'52", Hydrologic Unit 04150306, near Brasher Falls.
Owner: New York State Department of Environmental Conservation.
AQUIFER.--Water-table aquifer in sand of Pleistocene age.
WELL CHARACTERISTICS.--Dug unused well, diameter 36 in., depth 11.3 ft in October 1985, filled in from original depth of 12 ft, concrete cased to 12 ft, open end.
INSTRUMENTATION.--Tape gage read weekly by observer.
DATUM.--Elevation of land-surface datum is 300 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Chisled mark on top edge of 6-in. by 8-in. opening of concrete well cover, 0.65 ft above land-surface datum.
PERIOD OF RECORD.--May 1953 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.24 ft below land-surface datum, Apr. 21, 1971; lowest measured, 9.38 ft below land-surface datum, Oct. 24, 1964.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	WATER LEVEL		DATE	WATER LEVEL		DATE	WATER LEVEL		DATE	WATER LEVEL	
OCT 02, 1988	8.54		JAN 01, 1989	6.58		APR 09, 1989	5.31		JUL 09, 1989	6.30	E
06	8.35	Z	08	6.68		16	5.33		16	6.63	
09	8.16		15	6.80		23	5.40		23	6.99	
16	8.11		22	6.89		30	5.61		30	7.30	
23	7.90		29	6.84		MAY 07	5.26		AUG 06	7.54	
30	7.33		FEB 05	6.79		15	5.28		13	7.71	
NOV 06	6.45		12	6.99		21	5.50		20	7.90	
13	6.02		19	7.08		28	5.80		21	7.90	Z
20	6.03		26	7.01		JUN 04	5.83		27	7.92	
27	5.93		MAR 05	7.23		11	5.68		SEP 03	7.94	
DEC 04	6.12		12	7.36		18	5.75		10	8.13	
11	6.22		19	6.93		24	5.89		17	8.18	
18	6.55		26	6.50		JUL 02	6.00	E	24	8.07	
25	6.50		APR 02	5.88							

E Estimated.
Z Measured by USGS personnel.



ST. LAWRENCE COUNTY

445216074593001. Local number, St 404.
LOCATION.--Lat 44°52'16", long 74°59'30", Hydrologic Unit 04150305, near Raymondville.
Owner: New York Power Authority.
AQUIFER.--Confined aquifer in Beekmantown dolomite of Cambrian age.
WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 179.6 ft, cased to 54 ft, open hole.
INSTRUMENTATION.--Monthly tape measurement by observer.
DATUM.--Elevation of land-surface datum is 247.7 ft above National Geodetic Vertical Datum of 1929.
Measuring point: Top of casing, 3.90 ft above land-surface datum.
PERIOD OF RECORD.--June 1958 to November 1964, November 1985 to current year. Records prior to November 1985 are unpublished and available in files of the Geological Survey.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 11.83 ft below land-surface datum, Nov. 24, 1986; lowest recorded, 16.33 ft below land-surface datum, Oct. 13, 1960.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	WATER LEVEL		DATE	WATER LEVEL	DATE	WATER LEVEL		DATE	WATER LEVEL
OCT 28, 1988	13.25		JAN 24, 1989	12.63	MAY 19, 1989	12.31		JUL 17, 1989	13.02
NOV 17	12.42	Z	FEB 24	13.07	JUN 19	12.39		AUG 16	13.68
29	12.40		MAR 17	13.30	23	12.39	Z	SEP 18	14.00
DEC 19	12.27		APR 20	12.74					

Z Measured by USGS personnel.

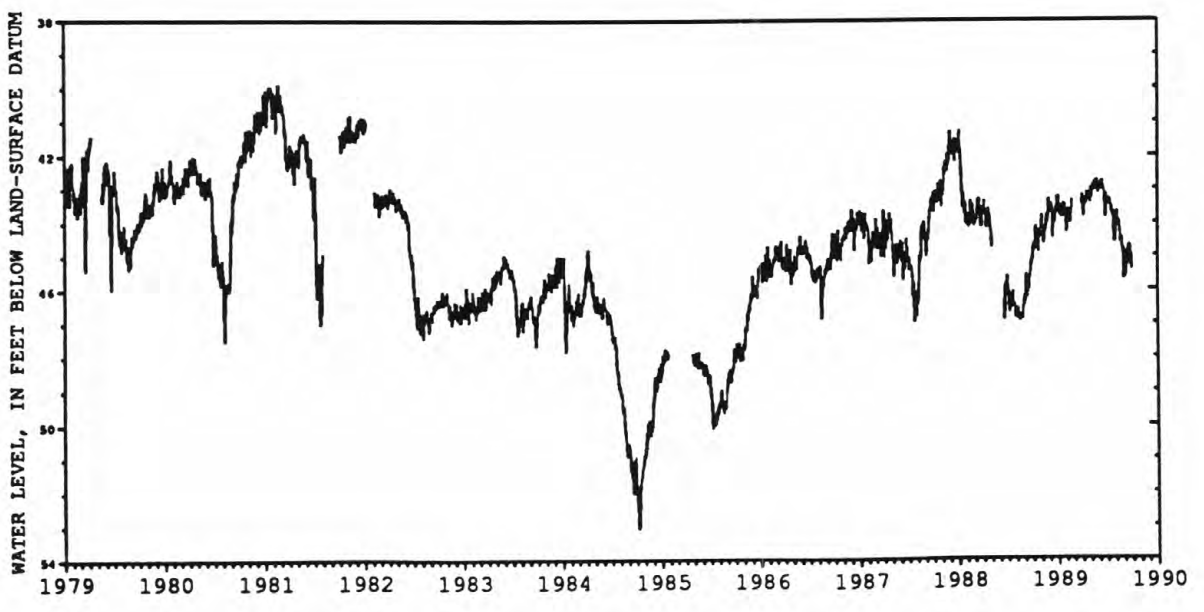
SARATOGA COUNTY

430327073475401. Local number, Sa 529.
LOCATION.--Lat 43°03'27", long 73°47'54", Hydrologic Unit 02020003, at Saratoga Springs.
Owner: Saratoga Springs Authority, New York State.
AQUIFER.--Confined aquifer in dolomite of Ordovician age.
WELL CHARACTERISTICS.--Drilled unused well, diameter 6 in., depth 288 ft as of March 1989, filled in from original depth of 304 ft, cased to 189 ft, open hole.
INSTRUMENTATION.--Water-stage recorder--15-minute punch.
DATUM.--Elevation of land-surface datum is 305 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 3.38 ft above land-surface datum.
REMARKS.--Water level affected by earthquakes and distant pumping.
PERIOD OF RECORD.--May 1949 to November 1961, August 1964 to current year. Records prior to October 1976 are unpublished and available in files of the Geological Survey.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 39.70 ft below land-surface datum, Jan. 7, 1981; lowest, 56.20 ft below land-surface datum, July 29, 1949.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44.81	44.13	43.50	43.65	44.09	---	43.29	43.38	43.07	43.41	44.09	45.44
2	44.64	43.79	43.55	43.37	44.29	---	43.54	42.99	42.94	43.38	43.92	45.23
3	44.70	44.22	43.46	43.22	44.05	---	43.47	43.04	42.92	43.39	43.77	45.30
4	44.67	44.41	43.68	43.38	44.09	---	43.63	43.24	42.86	43.41	43.71	45.25
5	44.63	44.33	43.68	43.58	43.97	---	43.83	43.29	42.91	43.45	43.66	45.49
6	44.76	44.28	43.53	43.71	43.72	---	43.77	43.03	42.91	43.38	43.68	45.63
7	44.80	44.41	43.45	43.79	43.66	---	43.57	42.95	43.02	43.34	43.69	45.39
8	44.68	44.53	43.67	43.52	43.60	---	43.42	43.00	43.00	43.43	43.77	45.10
9	44.58	44.62	43.64	43.68	43.67	---	43.44	43.08	42.95	43.48	44.01	44.96
10	44.32	44.48	43.59	43.75	43.67	---	43.50	43.04	42.79	43.28	44.10	44.88
11	44.13	44.43	43.76	43.81	43.59	---	43.47	42.91	42.86	43.35	44.12	44.89
12	44.34	44.56	44.45	43.64	43.65	---	43.45	42.89	42.86	43.50	44.07	44.88
13	44.52	44.28	44.45	43.66	43.86	---	43.43	42.99	42.77	43.48	44.04	44.88
14	44.52	44.11	44.16	43.85	43.65	---	43.45	42.99	42.89	43.50	43.97	44.84
15	44.49	44.17	44.01	43.58	43.68	---	43.38	42.89	42.96	43.65	44.09	44.79
16	44.57	44.05	44.12	43.56	43.88	---	43.29	42.80	42.93	43.69	44.20	44.84
17	44.51	43.90	43.94	43.50	44.02	---	43.24	42.84	42.96	43.53	44.38	44.67
18	44.26	44.15	43.87	43.52	43.93	---	43.12	42.99	43.06	43.55	44.61	44.90
19	44.48	44.26	43.93	43.50	43.76	---	43.17	43.04	43.10	43.59	44.61	45.26
20	44.74	43.85	43.76	43.43	43.68	---	43.20	42.96	43.07	43.64	44.51	45.16
21	44.87	43.76	43.75	43.80	43.34	---	43.17	42.90	43.12	43.78	44.43	45.20
22	44.44	44.02	44.03	43.81	---	---	43.26	42.89	43.38	43.81	44.45	44.96
23	44.47	43.93	43.83	43.70	---	---	43.28	42.86	43.49	43.84	44.46	44.69
24	44.30	43.81	43.58	43.59	---	---	43.20	42.74	43.77	43.79	44.62	44.91
25	44.21	43.82	43.52	43.82	---	---	43.14	42.84	43.85	43.93	44.74	44.98
26	44.24	43.73	43.70	43.54	---	---	43.16	42.87	43.49	44.31	44.75	45.00
27	44.39	43.51	43.63	43.47	---	---	43.22	42.98	43.22	44.47	44.86	45.38
28	44.31	43.31	43.25	43.68	---	---	43.29	43.14	43.16	44.59	44.83	45.42
29	44.36	43.54	43.60	43.61	---	43.36	43.43	43.11	43.32	44.54	44.94	45.03
30	44.40	43.50	43.55	43.69	---	43.44	43.41	42.90	43.41	44.37	45.50	44.95
31	44.38	---	43.48	43.94	---	43.19	---	43.06	---	44.21	45.69	---

WTR YEAR 1989 HIGHEST RECORDED 42.67 May 24, 1989 LOWEST 46.03 Aug. 30, 1989



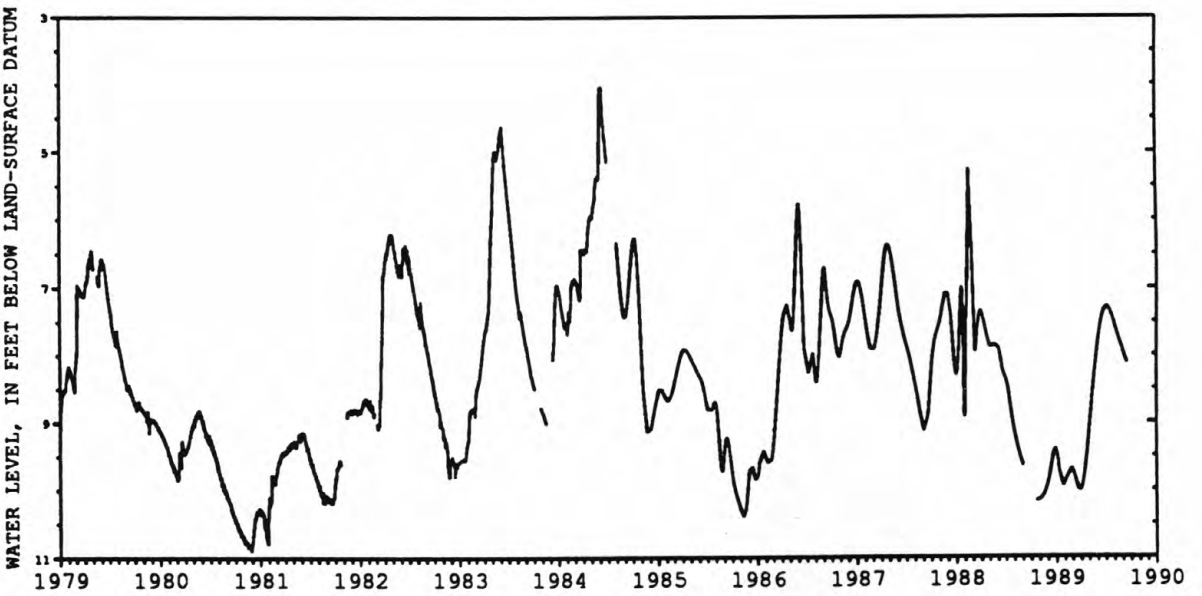
SARATOGA COUNTY

430013073370401. Local number, Sa 1072.
LOCATION.--Lat 43°00'13", long 73°37'04", Hydrologic Unit 02020003, Saratoga National Historical Park near Stillwater.
Owner: U.S. National Park Service.
AQUIFER.--Water-table aquifer in sand of Pleistocene age.
WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 19.8 ft, filled in from original depth of 24 ft, cased to 21 ft, 2-in. well point (30-gauze screen 21 ft to 24 ft).
INSTRUMENTATION.--Monthly tape measurement by observer.
DATUM.--Elevation of land-surface datum is 223.8 ft above National Geodetic Vertical Datum of 1929.
Measuring point: Top of casing, 3.31 ft above land-surface datum.
REMARKS.--Water level affected by adjacent wells pumping.
PERIOD OF RECORD.--July 1959 to current year. Records prior to October 1976 are unpublished and available in files of the Geological Survey.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 3.94 ft below land-surface datum, May 25, 1976; lowest, 11.91 ft below land-surface datum, Oct. 8, 1965.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	WATER LEVEL		DATE	WATER LEVEL		DATE	WATER LEVEL		DATE	WATER LEVEL	
OCT 20, 1988	10.17	Z	JAN 09, 1989	9.72	Z	MAY 15, 1989	8.39	Z	AUG 02, 1989	7.58	Z
DEC 06	9.76	Z	FEB 24	9.69	Z	JUN 20	7.33	Z	SEP 14	8.12	Z
JAN 03, 1989	9.50		MAR 28	10.01	Z						

Z Measured by USGS personnel.



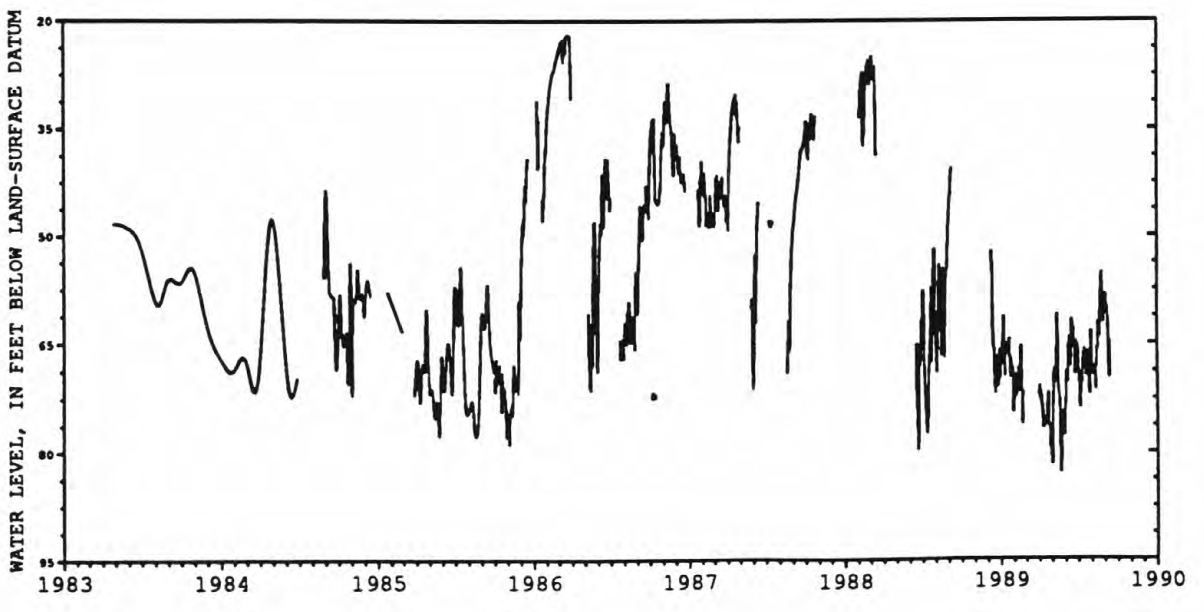
SARATOGA COUNTY

425242073473201. Local number, Sa 1100.
LOCATION.--Lat 42°52'42", long 73°47'32", Hydrologic Unit 02020004, near Clifton Park.
Owner: Country Knolls Water Works.
AQUIFER.--Confined aquifer in sand and gravel of Pleistocene age.
WELL CHARACTERISTICS.--Drilled unused well, diameter 6 in., depth 180 ft, cased to 180 ft, open end.
INSTRUMENTATION.--Water-stage recorder--hourly punch.
DATUM.--Elevation of land-surface datum is 248 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 3.00 ft above land-surface datum.
REMARKS.--Water level affected by pumping from nearby public-supply well.
PERIOD OF RECORD.--April 1983 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 21.84 ft below land-surface datum, Mar. 23, 24, 1986; lowest recorded, 85.38 ft below land-surface datum, May 21, 1989.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	67.37	69.53	---	70.74	81.70	72.04	68.95	67.00	59.55
2	---	---	---	67.62	69.88	---	72.50	74.36	68.68	69.71	69.22	58.25
3	---	---	---	66.15	69.16	---	71.38	70.84	68.87	70.56	68.40	58.27
4	---	---	---	63.71	70.34	---	73.14	69.07	69.76	72.68	69.33	60.26
5	---	---	---	64.29	72.23	---	72.28	69.48	70.23	73.45	67.94	61.05
6	---	---	---	61.24	71.80	---	73.47	68.27	67.16	68.93	68.37	60.27
7	---	---	53.70	65.13	71.09	---	73.47	70.20	65.11	69.58	69.35	59.85
8	---	---	52.15	67.97	71.32	---	74.73	70.04	65.53	69.06	68.25	62.91
9	---	---	52.77	69.38	70.28	---	76.44	70.16	63.96	70.38	69.31	65.89
10	---	---	55.11	67.00	68.24	---	76.60	66.53	64.93	68.41	71.27	69.57
11	---	---	59.45	65.03	69.10	---	76.32	62.97	66.64	66.17	68.44	69.49
12	---	---	65.23	65.19	71.63	---	76.08	60.93	68.10	67.14	66.56	64.55
13	---	---	63.57	64.87	70.93	---	76.00	64.14	64.88	67.98	65.56	---
14	---	---	65.45	65.08	67.00	---	76.25	69.77	62.04	65.58	65.86	---
15	---	---	65.90	65.33	65.56	---	75.06	71.41	61.66	66.14	65.08	---
16	---	---	69.02	66.28	65.24	---	75.67	72.00	62.34	66.81	62.09	---
17	---	---	69.27	65.25	66.09	---	76.10	71.88	63.57	67.87	64.23	---
18	---	---	71.77	64.36	69.62	---	73.83	73.88	64.82	69.33	63.64	---
19	---	---	70.03	67.10	74.59	---	73.16	77.78	62.84	68.64	64.05	---
20	---	---	67.17	64.24	75.94	---	72.21	80.70	64.69	66.40	62.62	---
21	---	---	66.61	67.39	71.48	---	71.63	82.82	66.18	66.02	59.88	---
22	---	---	66.83	69.43	---	---	71.79	81.36	69.19	66.64	57.77	---
23	---	---	67.46	69.55	---	---	76.07	77.04	68.60	67.78	57.21	---
24	---	---	68.41	66.79	---	---	76.58	75.57	67.06	68.66	55.15	---
25	---	---	69.78	69.41	---	---	76.56	74.43	64.49	71.42	57.20	---
26	---	---	70.85	69.36	---	---	78.53	75.03	65.41	70.90	59.61	---
27	---	---	67.70	68.09	---	---	79.32	74.16	65.56	71.86	61.22	---
28	---	---	65.83	69.73	---	---	76.61	74.51	65.83	67.97	62.13	---
29	---	---	69.71	74.33	---	71.71	79.12	76.65	65.00	65.19	60.12	---
30	---	---	69.57	74.18	---	71.90	81.53	77.54	66.61	63.38	58.15	---
31	---	---	67.83	71.34	---	71.86	---	73.50	---	65.13	58.95	---

WTR YEAR 1989 HIGHEST RECORDED 50.10 Dec. 9, 1988 LOWEST RECORDED 85.38 May 21, 1989



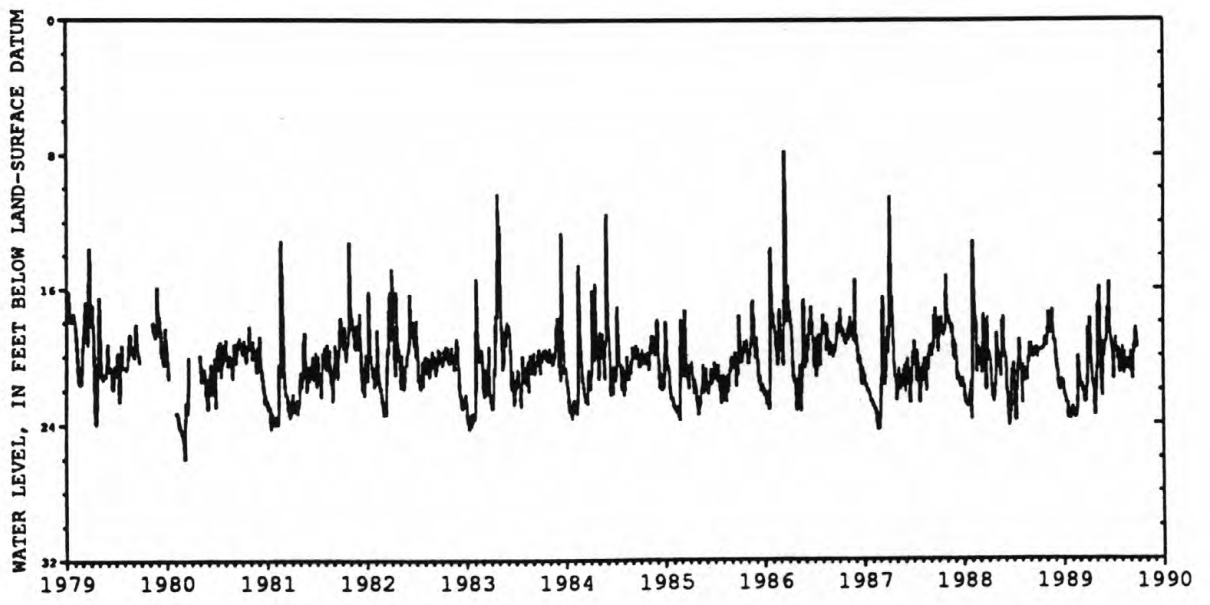
SCHENECTADY COUNTY

424910073591401. Local number, Sn 363.
LOCATION.--Lat 42°49'10", long 73°59'14", Hydrologic Unit 02020004, in Schenectady.
Owner: City of Schenectady.
AQUIFER.--Water-table aquifer in sand and gravel of Pleistocene age.
WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 54.5 ft in April 1980, filled in from original depth of 57 ft, cased to 57 ft, open end.
INSTRUMENTATION.--Water-stage recorder--hourly punch.
DATUM.--Elevation of land-surface datum is 228.50 ft above National Geodetic Vertical Datum of 1929.
Measuring point: Top of casing, 2.47 ft above land-surface datum.
REMARKS.--Water level affected by stage of Mohawk River, and by pumping (average 16.65 Mgal/d in 1989) from adjacent municipal well field. Well was drilled June 1960 as a replacement for 424926073592201 (local number Sn 128), located 1,540 ft northwest, which has a period of record from April 1946 to March 1961.
PERIOD OF RECORD.--June 1960 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 3.62 ft below land-surface datum, Dec. 27, 1973; lowest, 31.27 ft below land-surface datum, Feb. 10, 1966.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.82	19.45	19.32	21.70	23.24	21.16	18.56	22.69	20.06	20.11	20.50	20.55
2	19.79	19.12	19.13	21.55	23.23	21.10	18.34	22.22	19.70	20.40	20.75	20.34
3	19.79	18.93	19.46	21.95	23.02	21.49	18.68	21.02	19.34	20.78	20.70	19.89
4	19.78	18.71	19.59	22.17	22.97	21.30	18.93	20.66	19.19	21.40	20.71	19.78
5	19.71	18.78	19.99	22.27	23.04	21.62	18.96	20.91	19.31	20.41	20.62	20.11
6	19.62	18.55	20.01	22.15	23.17	21.87	18.60	20.24	19.17	19.70	19.47	20.54
7	19.65	17.55	20.34	22.42	23.14	21.81	18.07	17.43	18.92	19.76	19.93	20.73
8	19.71	17.42	20.63	22.35	23.34	21.71	17.80	16.85	19.13	19.49	19.79	20.83
9	19.63	17.73	20.83	22.39	23.34	21.89	17.95	17.34	19.15	19.33	20.69	21.02
10	19.64	17.91	20.55	22.52	23.53	21.74	18.61	18.08	18.14	19.40	20.82	21.12
11	19.68	18.15	20.89	22.61	23.55	21.64	19.03	17.58	17.17	19.18	21.14	21.26
12	19.68	18.26	20.85	22.70	23.63	21.89	19.57	15.92	17.76	18.91	20.06	21.40
13	19.65	18.14	21.24	22.78	23.65	22.08	20.21	15.91	18.16	19.14	19.86	21.15
14	19.58	18.26	21.54	22.84	23.66	22.16	20.68	16.84	17.72	19.76	19.77	20.95
15	19.55	18.30	21.58	22.79	23.66	22.13	21.02	18.09	17.49	19.55	19.92	20.38
16	19.66	18.52	21.68	22.79	23.55	21.86	20.89	18.77	16.52	19.66	20.27	19.93
17	19.71	18.66	21.81	22.75	23.42	22.15	21.24	19.07	15.60	20.02	20.28	19.32
18	19.69	18.67	21.92	23.26	23.37	22.44	21.48	19.20	16.20	19.96	20.68	19.32
19	19.64	18.63	22.03	23.54	23.45	22.55	21.67	20.47	17.06	20.31	20.58	19.29
20	19.63	18.39	22.02	23.73	23.55	22.57	21.87	21.81	17.72	20.24	20.28	19.69
21	19.59	18.07	21.97	23.39	23.59	22.78	21.84	22.11	18.19	19.73	20.20	18.88
22	19.55	17.26	21.95	23.26	22.88	22.68	21.47	21.71	18.62	19.58	20.80	18.34
23	19.32	17.72	21.98	23.60	20.99	22.69	21.92	22.19	19.11	19.56	20.46	18.63
24	19.25	18.19	21.74	23.40	20.08	22.71	22.14	22.40	19.05	20.15	20.30	18.70
25	19.06	18.26	21.38	23.26	20.04	22.72	22.49	22.21	18.84	20.63	20.55	18.73
26	18.90	18.38	21.62	23.75	20.36	22.55	23.07	21.43	19.39	20.91	20.43	18.78
27	19.10	18.94	21.79	23.58	20.66	22.30	23.52	19.99	19.12	21.07	20.59	19.08
28	19.09	19.20	21.83	23.47	20.93	22.11	23.35	19.54	19.10	20.89	20.51	19.18
29	19.16	19.01	21.64	23.40	---	21.87	23.20	19.19	19.55	20.62	20.86	19.37
30	19.27	19.15	21.62	23.18	---	21.72	22.34	20.11	19.78	19.96	20.23	19.57
31	19.37	---	21.43	23.19	---	19.99	---	19.89	---	19.78	20.89	---

WTR YEAR 1989 HIGHEST 15.27 June 17, 1989 LOWEST 23.84 Jan. 20, 26, 1989



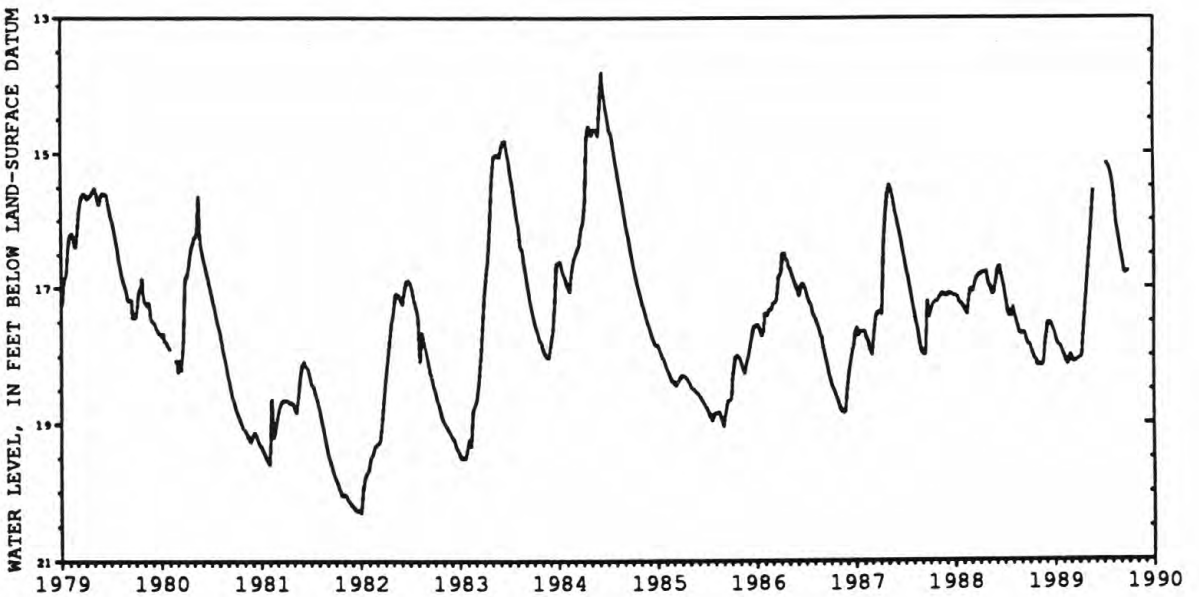
ULSTER COUNTY

414948074035101. Local number, U 405.
LOCATION.--Lat 41°49'48", long 74°03'51", Hydrologic Unit 02020007, Grist Mill Road, Tillson.
Owner: City School District of Kingston.
AQUIFER.--Water-table aquifer in sand of Pleistocene age.
WELL CHARACTERISTICS.--Bored observation well, diameter 2.5 in., depth 36 ft, cased to 34 ft, 2-in. well point (60-gauze screen 34 ft to 36 ft).
INSTRUMENTATION.--Weekly tape measurement by observer.
DATUM.--Elevation of land-surface datum is 240 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 0.47 ft above land-surface datum.
REMARKS.--Originally a dug well, diameter 36 in., depth 21 ft, stone-lined. Well deepened by power auger, October 1965.
PERIOD OF RECORD.--October 1964 to July 1965, March 1966 to December 1974, April 1976 to current year. Records prior to October 1976 are unpublished and available in files of the Geological Survey.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 13.80 ft below land-surface datum, June 9, 1984; lowest measured, 20.71 ft below land-surface datum, Jan. 24, 1967.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	WATER LEVEL		DATE	WATER LEVEL		DATE	WATER LEVEL		DATE	WATER LEVEL	
OCT 01, 1988	17.83		DEC 03, 1988	17.58		FEB 04, 1989	18.00		AUG 14, 1989	16.04	Z
08	17.94		05	17.53	Z	11	18.08		17	16.11	
15	18.02		10	17.51		18	18.14		24	16.27	
22	18.06		17	17.52		27	17.98	Z	31	16.46	
24	18.07	Z	24	17.60		MAR 04	18.02		SEP 07	16.61	
29	18.15		31	17.66		11	18.10		15	16.79	
NOV 05	18.12		JAN 07, 1989	17.78		APR 10	18.02	Z	21	16.79	Z
12	18.15		15	17.85		MAY 22	15.56	Z	22	16.78	
19	18.12		21	17.85		JUL 10	15.16	Z	29	16.75	
26	17.79		28	17.93		AUG 10	15.83				

Z Measured by USGS personnel.



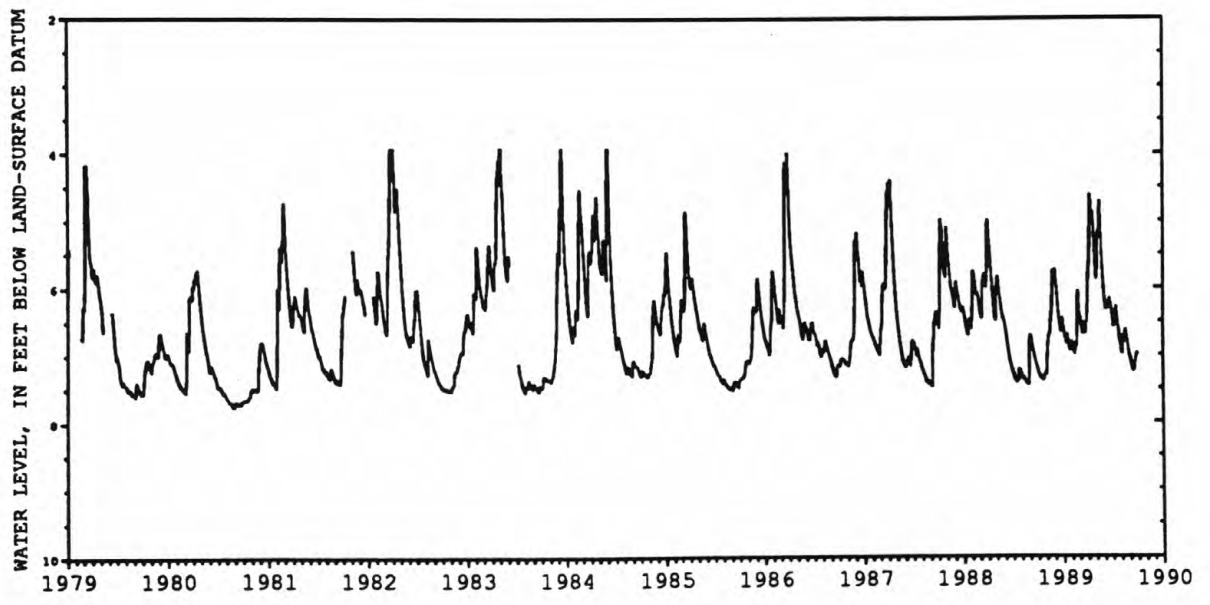
WASHINGTON COUNTY

431030073192101. Local number, W 533.
LOCATION.--Lat 43°10'30", long 73°19'21", Hydrologic Unit 02020003, in Salem.
Owner: Salem Central High School.
AQUIFER.--Water-table aquifer in sand and gravel of Pleistocene age.
WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in., depth 15 ft, cased to 16 ft, open end. Well backfilled 1.6 ft with coarse gravel.
INSTRUMENTATION.--Water-stage recorder--hourly punch.
DATUM.--Elevation of land-surface datum is 489.5 ft above National Geodetic Vertical Datum of 1929.
Measuring point: Top of casing, 3.10 ft above land-surface datum.
REMARKS.--Well was drilled March 1974 as a replacement for 431032073192401 (local number W 532), located 350 ft northwest, which has a period of record from October 1965 to June 1973 (unpublished).
PERIOD OF RECORD.--March 1974 to current year. Records prior to October 1976 are unpublished and available in files of the Geological Survey.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 3.82 ft below land-surface datum, Mar. 25, 1986; lowest recorded, 7.75 ft below land-surface datum, Aug. 26, 27-29, 30, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.23	7.29	5.74	6.54	6.85	6.40	5.88	5.88	6.15	6.46	6.91	7.02
2	7.25	7.20	5.76	6.57	6.80	6.45	5.75	5.86	6.18	6.49	6.94	7.04
3	7.26	7.05	5.79	6.60	6.82	6.49	5.71	5.76	6.22	6.54	6.97	7.05
4	7.28	6.97	5.85	6.63	6.85	6.53	5.64	5.73	6.27	6.59	6.99	7.06
5	7.29	6.89	5.90	6.68	6.88	6.53	5.56	5.73	6.31	6.58	6.84	7.08
6	7.30	6.83	5.94	6.71	6.91	6.44	5.37	5.57	6.33	6.53	6.72	7.10
7	7.31	6.78	5.99	6.74	6.92	6.49	4.84	5.24	6.30	6.56	6.73	7.12
8	7.32	6.74	6.05	6.75	6.93	6.56	4.63	5.15	6.31	6.51	6.75	7.14
9	7.33	6.72	6.09	6.75	6.95	6.59	4.62	5.15	6.32	6.49	6.77	7.16
10	7.34	6.70	6.14	6.77	6.96	6.61	4.66	5.18	6.29	6.49	6.79	7.17
11	7.34	6.70	6.19	6.79	6.97	6.63	4.73	5.09	6.26	6.38	6.82	7.19
12	7.34	6.70	6.27	6.81	6.98	6.65	4.82	4.88	6.25	6.29	6.81	7.21
13	7.34	6.69	6.32	6.81	7.00	6.69	4.91	4.74	6.27	6.28	6.73	7.22
14	7.35	6.60	6.37	6.83	6.98	6.70	4.98	4.71	6.28	6.30	6.68	7.24
15	7.35	6.52	6.40	6.77	6.88	6.63	5.02	4.77	6.31	6.34	6.65	7.24
16	7.36	6.48	6.44	6.69	6.83	6.52	4.97	4.86	6.28	6.38	6.63	7.24
17	7.37	6.44	6.48	6.71	6.82	6.53	4.87	4.97	6.23	6.42	6.64	7.21
18	7.37	6.37	6.52	6.75	6.85	6.56	4.88	5.09	6.18	6.47	6.66	7.19
19	7.37	6.32	6.55	6.77	6.87	6.56	4.93	5.20	6.16	6.51	6.68	7.20
20	7.37	6.27	6.59	6.80	6.89	6.60	5.01	5.31	6.17	6.56	6.70	7.18
21	7.38	6.02	6.61	6.83	6.74	6.62	5.08	5.42	6.20	6.59	6.73	7.11
22	7.37	5.81	6.63	6.85	6.15	6.65	5.16	5.52	6.22	6.62	6.76	7.09
23	7.35	5.76	6.66	6.88	6.05	6.68	5.25	5.61	6.23	6.65	6.78	7.08
24	7.33	5.75	6.66	6.90	6.08	6.70	5.33	5.70	6.23	6.69	6.81	7.04
25	7.31	5.78	6.51	6.91	6.16	6.66	5.42	5.78	6.27	6.72	6.84	7.01
26	7.31	5.82	6.51	6.94	6.24	6.58	5.51	5.84	6.31	6.75	6.87	7.00
27	7.30	5.86	6.56	6.92	6.30	6.54	5.60	5.89	6.35	6.78	6.90	6.99
28	7.30	5.86	6.56	6.93	6.36	6.51	5.68	5.95	6.37	6.79	6.93	6.98
29	7.29	5.77	6.45	6.92	---	6.45	5.75	6.01	6.39	6.82	6.96	6.98
30	7.29	5.73	6.46	6.89	---	6.34	5.82	6.07	6.42	6.84	6.98	7.00
31	7.29	---	6.50	6.87	---	6.12	---	6.13	---	6.87	7.01	---

WTR YEAR 1989 HIGHEST 4.61 Apr. 8, 9, 1989 LOWEST 7.38 Oct. 20, 21, 22, 1988

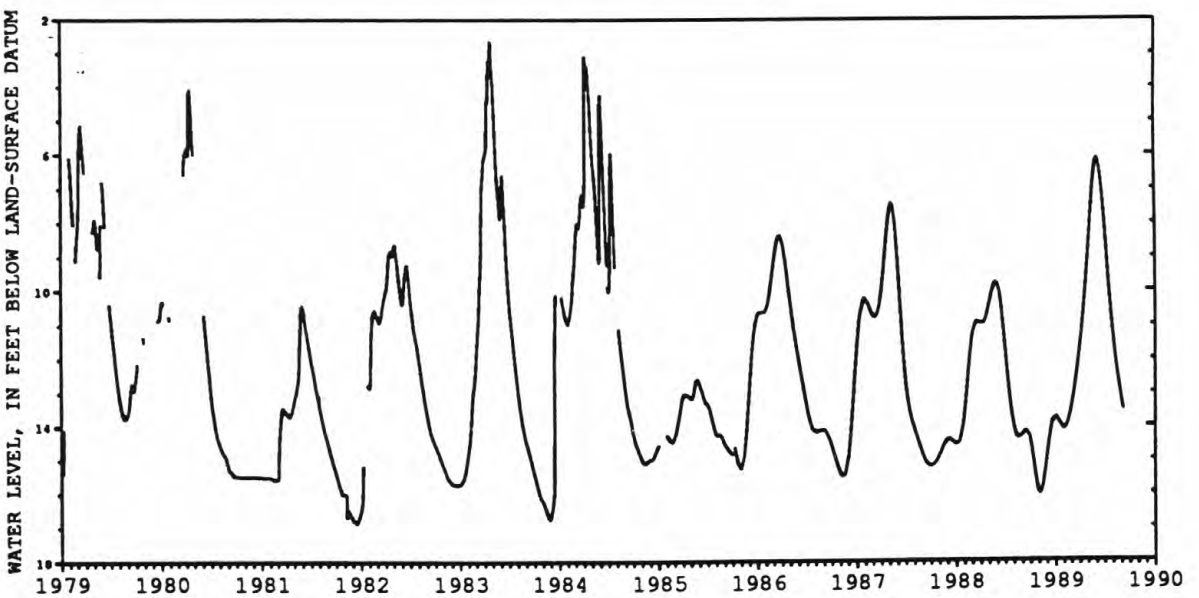


WESTCHESTER COUNTY

411421073481201. Local number, We 3.
LOCATION.--Lat 41°14'21", long 73°48'12", Hydrologic Unit 02030101, near Yorktown Heights.
Owner: New York City Board of Water Supply.
AQUIFER.--Water-table aquifer in sand of Pleistocene age.
WELL CHARACTERISTICS.--Dug unused well, diameter 36 in., depth 17.2 ft, original depth reported to be 18.2 ft, filled in to 17.1 ft as of November 1956, to 16.3 ft as of June 1971, to 15.5 ft as of October 1977, to 15.3 ft as of November 1978, cleaned out to 16.1 ft September 23, 1981, and 17.6 ft November 9, 1981, stone lined.
INSTRUMENTATION.--Tape measurement by USGS personnel every six weeks.
DATUM.--Elevation of land-surface datum is 252.5 ft above National Geodetic Vertical Datum of 1929.
Measuring point: Top edge of hole in wooden well cover, 1.13 ft above land-surface datum.
PERIOD OF RECORD.--April 1934 to September 1937, April 1938 to September 1945, March 1951 to current year.
Records prior to October 1976 are unpublished and available in files of the Geological Survey.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.58 ft below land-surface datum, Apr. 26, 1983; lowest measured, dry Nov. 30, 1935, Jan. 7, 1936, Feb. 1, 1936, Jan. 6 to Feb. 4, 1965, Nov. 12, 1970, Sept. 10 to Nov. 9, 1977, Oct. 30 to Nov. 7, 1978, Nov. 28, 1978 to Jan. 8, 1979, Sept. 6 to 30, 1980, Oct. 1, 1980 to Mar. 3, 1981, Oct. 25 to Nov. 8, 1981.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 02, 1988	16.02	JAN 30, 1989	14.09	APR 24, 1989	9.44	JUL 17, 1989	10.03
DEC 19	13.86	MAR 13	12.69	JUN 05	6.15	SEP 05	13.52



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October 1, 1978

FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI).

Multiply inch-pound units	By	To obtain SI units
	Length	
inches (in)	2.54×10^{1}	millimeters (mm)
	2.54×10^{-2}	meters (m)
feet (ft)	3.048×10^{-1}	meters (m)
miles (mi)	1.609×10^{0}	kilometers (km)
	Area	
acres	4.047×10^{3}	square meters (m^2)
	4.047×10^{-1}	square hectometers (hm^2)
	4.047×10^{-3}	square kilometers (km^2)
square miles (mi^2)	2.590×10^{0}	square kilometers (km^2)
	Volume	
gallons (gal)	3.785×10^{0}	liters (L)
	3.785×10^{0}	cubic decimeters (dm^3)
	3.785×10^{-3}	cubic meters (m^3)
million gallons	3.785×10^{3}	cubic meters (m^3)
	3.785×10^{-3}	cubic hectometers (hm^3)
cubic feet (ft^3)	2.832×10^{1}	cubic decimeters (dm^3)
	2.832×10^{-2}	cubic meters (m^3)
cfs-days	2.447×10^{3}	cubic meters (m^3)
	2.447×10^{-3}	cubic hectometers (hm^3)
acre-feet (acre-ft)	1.233×10^{3}	cubic meters (m^3)
	1.233×10^{-3}	cubic hectometers (hm^3)
	1.233×10^{-6}	cubic kilometers (km^3)
	Flow	
cubic feet per second (ft^3/s)	2.832×10^{1}	liters per second (L/s)
	2.832×10^{1}	cubic decimeters per second (dm^3/s)
	2.832×10^{-2}	cubic meters per second (m^3/s)
gallons per minute (gal/min)	6.309×10^{-2}	liters per second (L/s)
	6.309×10^{-2}	cubic decimeters per second (dm^3/s)
	6.309×10^{-5}	cubic meters per second (m^3/s)
million gallons per day	4.381×10^{1}	cubic decimeters per second (dm^3/s)
	4.381×10^{-2}	cubic meters per second (m^3/s)
	Mass	
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons

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