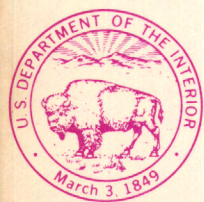
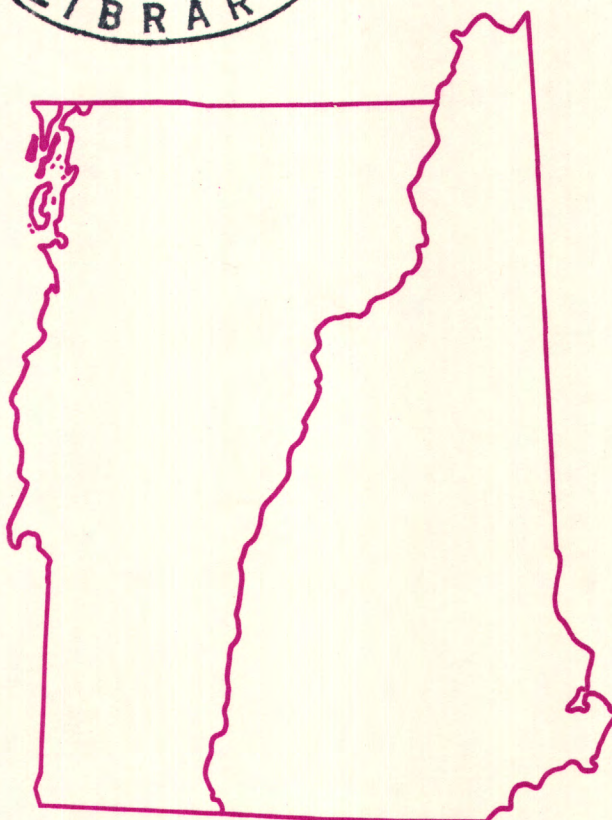
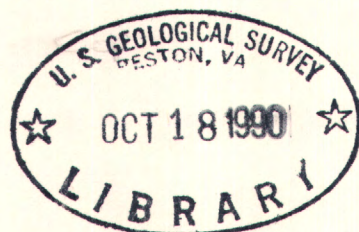


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Water Resources Data New Hampshire and Vermont Water Year 1989



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT NH-VT-89-1
Prepared in cooperation with the States of New Hampshire and
Vermont and with other agencies

CALENDAR FOR WATER YEAR 1989

1988

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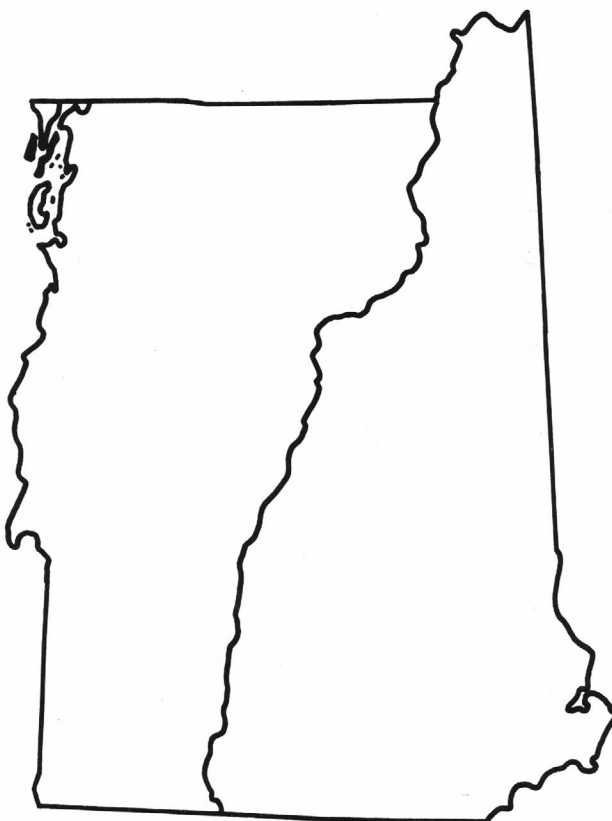
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Water Resources Data New Hampshire and Vermont Water Year 1989

by K.E. McKenna, J.E. Cotton, and J.C. Denner



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT NH-VT-89-1
Prepared in cooperation with the States of New Hampshire and
Vermont and with other agencies

DEPARTMENT OF THE INTERIOR

MANUEL LUJAN, JR., *Secretary*

U.S. GEOLOGICAL SURVEY

Dallas L. Peck, *Director*

For additional information, write to:

U.S. Geological Survey
Water Resources Division
525 Clinton Street
Bow, NH 03304

1990

PREFACE

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

This report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey who collected, compiled, analyzed, verified, and organized the data, and who typed, edited, and assembled the report. In addition to the authors, who had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to Geological Survey policy and established guidelines, the following individuals contributed significantly to the collection, processing, and tabulation of the data: R.O. Brown, M.F. Coakley, J.E. King, R.L. Perkins, and S.C. Shore.

Deborah Molnar typed the station analysis.

Debra H. Foster coordinated the word processing and publishing phases of the report.

This report was prepared in cooperation with the States of New Hampshire and Vermont and with other agencies under the general supervision of Wayne Lapham, Chief, New Hampshire-Vermont Office.

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15. Supplementary Notes This report was prepared in cooperation with the States of New Hampshire and Vermont and with other agencies.				
16. Abstract (Limit: 200 words) Water-resources data for the 1989 water year for New Hampshire and Vermont consist of records of stage, discharge, and water quality of streams; stage and contents of lakes and reservoirs; and ground-water levels. This report contains discharge records for 72 gaging stations, stage records for 4 lakes, monthend contents for 23 lakes and reservoirs, water-quality data for 2 gaging stations, and water levels for 28 observation wells. Also included are data for 7 crest-stage partial-record stations. Additional water data were collected at various sites, not part of the systematic data-collection program, and are published as miscellaneous measurements. Locations of gaging stations, partial-record stations, and observation wells are shown in figure 1. A few pertinent stations (not included above) in bordering States and Province of Quebec are also included in this report. These data represent that portion of the National Water Data System operated by the U.S. Geological Survey and by the cooperating State and Federal agencies in New Hampshire and Vermont.				
17. Document Analysis a. Descriptors *New Hampshire, *Vermont, *Hydrologic data, *Surface water, *Ground water, *Water quality, Flow rate, Gaging stations, Lakes, Reservoirs, Chemical analyses, Sediments, Water temperatures, Sampling sites, Water levels, Water analyses. b. Identifiers/Open-Ended Terms c. COSATI Field/Group				
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(c), chemical; (b), biological; (t), water temperature

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Water Resources Data for New Hampshire and Vermont, 1989

By K.E. McKenna, J.E. Cotton, and J.C. Denner

INTRODUCTION

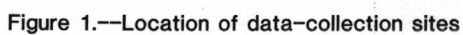
The Water Resources Division of the U.S. Geological Survey, in cooperation with State agencies, obtains a large amount of data pertaining to the water resources of New Hampshire and Vermont each water year. These data, accumulated during many water years, constitute a valuable data base for developing an improved understanding of the water resources of the States. To make these data readily available to interested parties outside the Geological Survey, the data are published annually in this report series entitled "Water Resources Data, New Hampshire and Vermont."

This report series includes records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and water levels of ground-water wells. This volume contains records for water discharge at 72 gaging stations; stage records for 4 lakes; monthend contents for 23 lakes and reservoirs; water quality at 2 gaging stations and water levels at 28 observation wells. Also included are data for 7 crest-stage partial-record stations. Locations of these sites are shown on figure 1. Additional water data were collected at various sites, not involved in the systematic data-collection program, such as, miscellaneous hydrologic data collected at 95 measuring sites. The data in this report represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating State and Federal agencies in New Hampshire and Vermont.

This series of annual reports for New Hampshire and Vermont began with the 1961 water year with a report that contained only data relating to the

quantities of surface water and published as "Water Resources Data for Massachusetts, New Hampshire, Rhode Island, and Vermont." For the 1964 water year, a similar report was introduced that contained only data relating to water quality. Beginning with the 1975 water year, the report format was changed to present, in one volume, data on quantities of surface water, quality of surface and ground water, and ground-water levels.

Prior to introduction of this series and for several water years concurrent with it, water-resources data for New Hampshire and Vermont were published in U.S. Geological Survey Water-Supply Papers. Data on stream discharge and stage and on lake or reservoir contents and stage, through September 1960, were published annually under the title "Surface-Water Supply of the United States, Parts 1 and 4." For the 1961 through 1970 water years, the data were published in two 5-year reports. Data on chemical quality, temperature, and suspended sediment for the 1941 through 1970 water years were published annually under the title "Quality of Surface Waters of the United States," and water levels for the 1939 through 1974 water years were published under the title "Ground-Water Levels in the United States." The above mentioned Water-Supply Papers may be consulted in the libraries of the principal cities of the United States and may be purchased from U.S. Geological Survey, Books and Open-File Reports Section, Federal Center, Bldg. 41, Box 25425, Denver, CO 80225.



Publications similar to this report are published annually by the Geological Survey for all States. These official Survey reports have an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this volume is identified as "U.S. Geological Survey Water-Data Report NH-VT-89-1." For archiving and general distribution, the reports for 1971-74 water years also are identified as water-data reports. These water-data reports are for sale in paper copy or in microfiche by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161. Additional information, including current prices, for ordering specific reports may be obtained from the Office Chief at the address given on the back of the title page or by telephone (617) 565-6860.

COOPERATION

New Hampshire: Department of Environmental Services, State Water Resources Division, D.F. Downing, chairman.

Vermont: Department of Environmental Conservation, J. Lash, commissioner.

Assistance in the form of funds or services was given by the Corps of Engineers, U.S. Army, in collecting records for 17 gaging stations.

Organizations supplying data are acknowledged in the station descriptions.

On waters adjacent to the international boundary, certain gaging stations are maintained by the United States (or Canada) under agreement with Canada (or the United States), and the records are obtained and compiled in a manner equally acceptable to both countries. These stations are designated as "international gaging stations."

SUMMARY OF HYDROLOGIC CONDITIONS

Surface-water runoff and annual mean discharge for the 1989 water year was normal at index stations in New Hampshire and Vermont. The runoff ranged from 22.9 inches to 25.5 inches; the mean discharge ranged from 85 to 106 percent of median. Monthly and yearly discharges and the median monthly and yearly discharges for the reference period 1951-80 for the index stations are shown in figure 2.

Runoff for both States was normal through October, except for the northwestern part of Vermont where it was below normal; November runoff was above

normal except in the central part of New Hampshire where it was normal. In December it returned to normal, except for the central part of New Hampshire where it was below normal.

Runoff during January and February was below normal in both States. In March, it returned to normal in northern Vermont and northward to about Conway in New Hampshire's coastal region. In April, runoff was below normal except for the northern area of the Connecticut Lakes Region in New Hampshire where it was normal. During May and June, runoff was above normal, except for the northernmost part of New Hampshire and the northwestern part of Vermont where it was normal. In July, runoff was normal, except for the northern border between New Hampshire and Maine where it was below normal. In August, it was above normal and, during September, remained above normal in Vermont and in the Connecticut River drainage area of New Hampshire. Runoff elsewhere in New Hampshire was normal.

Major-reservoir contents in New Hampshire and Vermont at the end of October ranged from 62 percent full at Lake Winnepesaukee in New Hampshire to 82 percent full. Contents of all reservoirs increased to 80 to 90 percent full in November and decreased slightly in December. From January through March, reservoir contents steadily decreased to an average of about 50 percent full, except in Lake Winnepesaukee where storage increased from 60 percent full at the end of February to 75 percent full in March. Warm weather during April caused increased runoff in the central part of New Hampshire filling Lake Winnepesaukee rapidly to 103 percent full. At the end of April, most reservoir contents were at least 80 percent full, except at First Connecticut Lake in northern New Hampshire, which was 65 percent full. In June, all major-reservoir contents in both States averaged nearly 90 percent full. From July through September, contents of Harriman and Somerset reservoirs, in the southern part of Vermont, declined to 70 percent full.

Contents of Lake Winnepesaukee decreased from 100 percent full at the end of June to 71 percent full on September 30. In northern New Hampshire, regulation maintained storage at about 90 percent full in Lake Francis and First Connecticut Lake from the end of June through September.

Selected water-quality characteristics--temperature, specific conductance, pH, bacteria (fecal coliform and fecal streptococci) counts, and concentrations of major inorganics, trace elements, major nutrients, and suspended sediment--were measured at the National Stream Quality Accounting Network (NASQAN) stations. The data collected are

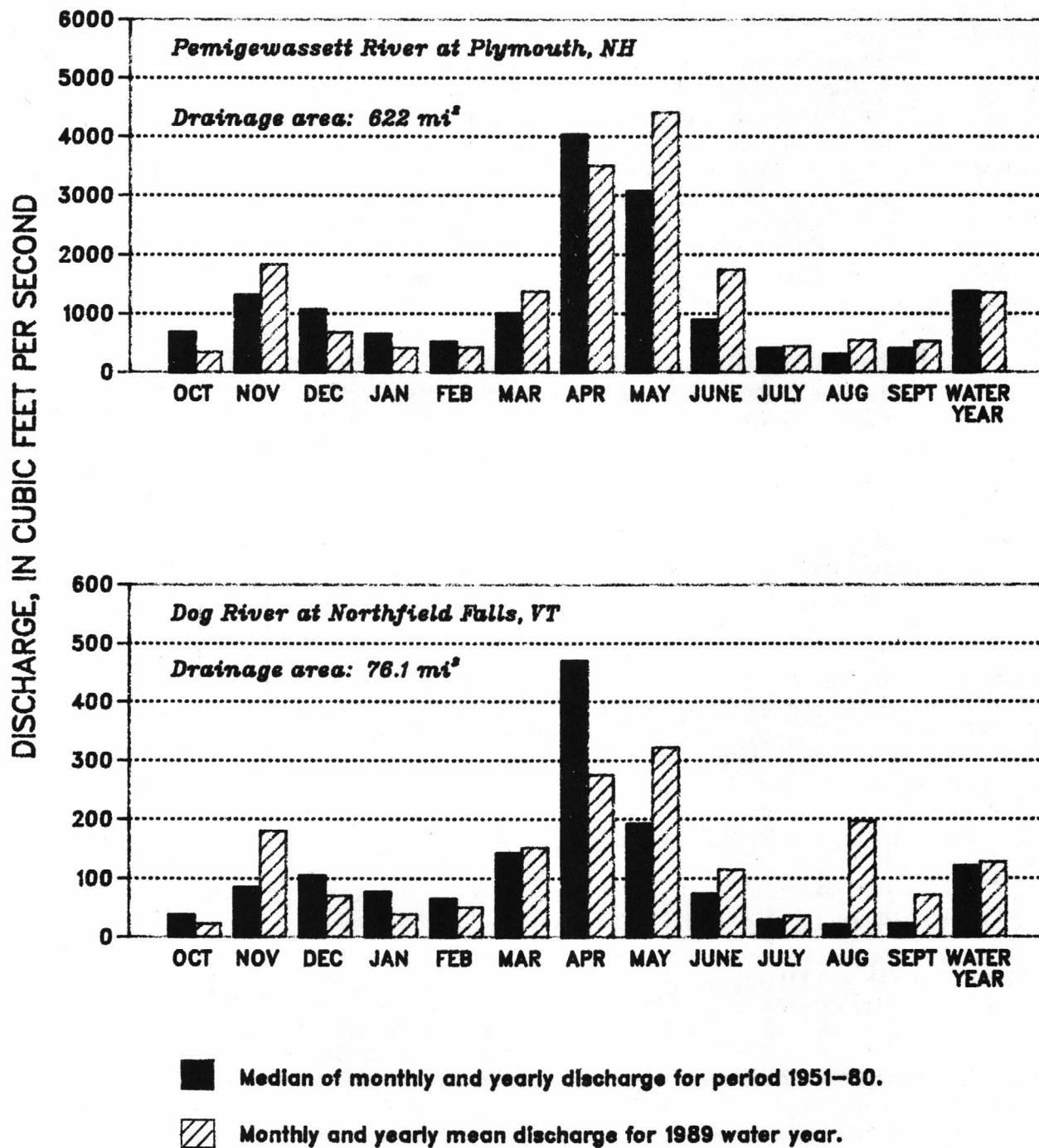


Figure 2.—Comparison of discharge at two long-term index gaging stations during 1989 water year with median discharge for period 1951-80.

in the normal range, and no values exceeded the extremes for the period of record.

Although ground-water levels were above normal in southern New Hampshire at the beginning of the water year, levels in both States were in the normal range by the end of October, except in northwestern Vermont where they remained in the below-normal range. Recharge to ground water occurred throughout both States during November and water levels increased to above normal in southern and northwestern Vermont, and in part of western Vermont. Elsewhere, water levels were normal.

Ground-water levels remained normal or decreased in both States during December, except in northwestern Vermont where they decreased to below normal. By the end of January, water levels were below normal, except in northeastern Vermont and northernmost and south-central New Hampshire where they remained in the normal range.

Recharge to ground water increased water levels during February in most of Vermont and water levels were normal at the end of the month. Water levels decreased in New Hampshire and were below normal, except in the northern part where they were normal.

Deficient snow pack and precipitation resulted in below-normal recharge to ground water during March and April. Water levels were below normal throughout most of the two States at the end of March. Water levels remained below normal at the end of April, except in the southern parts of both States and northeastern Vermont and northern New Hampshire where they were normal.

Localized recharge in much of New Hampshire and central Vermont, during May, resulted in normal water levels at the end of the month. Recharge occurred in southern Vermont and New Hampshire during June and water levels increased to above normal, except in the lower Merrimack River basin. Elsewhere in the two States, water levels decreased seasonally and were normal. During July, ground-water levels decreased throughout both States and were normal at the end of the month.

During August, recharge increased water levels in southern Vermont and reduced the rate of seasonal decline in southern New Hampshire. At the end of the month, water levels were above normal in these areas. Recharge also occurred in part of the central Green Mountains of Vermont and water levels were above normal. Elsewhere, water levels were normal. During September, water levels increased in most of Vermont and decreased in New Hampshire. At the end of the water year, ground-water levels were above normal in Vermont and in the Connecticut River

basin in New Hampshire. Water levels were normal elsewhere in New Hampshire.

SPECIAL NETWORKS AND PROGRAMS

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

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 figure 1. 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 surface-water stations and the "latitude-longitude" system is used for wells.

Downstream-Order System

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

The station-identification number is assigned according to downstream order. In assigning station numbers, no distinction is made between continuous-record stations and other types of stations; therefore, the station number for a continuous-record station 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 eight-digit number for each, such as 01076500, which is shown to the left of the station name, includes the two-digit Part number "01" plus the six-digit downstream-order number "076500". The Part number designates the major river basin; for example, Part "01" is the North Atlantic Slope Basins.

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 six digits denote the degrees, minutes, and seconds of latitude, the next seven digits denote degrees, minutes, and seconds of longitude, and the last two digits (assigned sequentially) identify the wells or other sites within a 1-second grid. This site-identification number, once assigned, is a pure number and has no locational significance. In the rare instance where the initial determination of latitude and longitude is 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 3.)

A local well-numbering system is also used in this report. The local well number consists of a two-letter code for the town in which the well is located followed by a "W" signifying that it is a well, and a sequential number. The local number is used to identify the location of observation wells on figure 1.

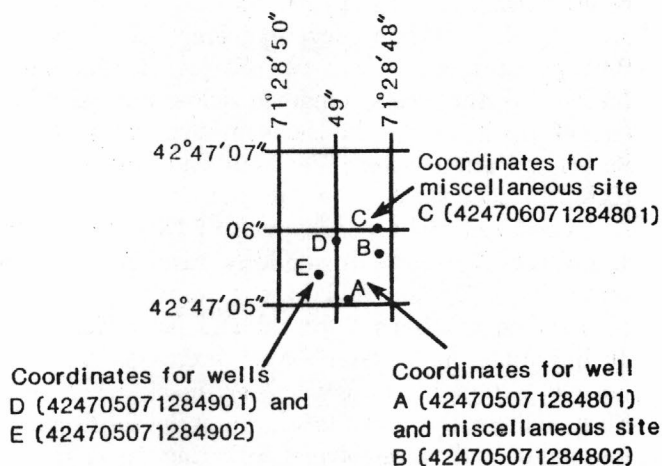


Figure 3.--System for numbering wells and miscellaneous sites (latitude and longitude).

Records of Stage and Water Discharge

Records of stage and water discharge may be complete or partial. Complete records of discharge are those obtained using a continuous stage-recording device through which either instantaneous or mean daily discharges may be computed for any time, or any

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

By contrast, partial records are obtained through discrete measurements without using a continuous stage-recording device and pertain only to a few flow characteristics, or perhaps only one. The nature of the partial record is indicated by table titles such as "Crest-stage partial records," or "Low-flow partial records." Records of miscellaneous discharge measurements or of measurements from special studies, such as low-flow seepage studies, may be considered as partial records, but they are presented separately in this report. There were no low-flow or crest-stage partial-record stations this year. Locations of all complete-record and for which data are given in this report are shown in figure 1.

Data Collection and Computation

The data obtained at a complete-record gaging station on a stream or canal consist of a continuous record of stage, individual measurements of discharge throughout a range of stages, and notations regarding factors that may affect the relationships between stage and discharge. These data, together with supplemental information, such as weather records, are used to compute daily discharges. The data obtained at a complete-record gaging station on a lake or reservoir consist of a record of stage and of notations regarding factors that may affect the relationship between stage and lake content. These data are used with stage-area and stage-capacity curves or tables to compute water-surface areas and lake storage.

Continuous records of stage are obtained with analog recorders that trace continuous graphs of stage or with digital recorders that punch stage values on paper tapes at selected time intervals. Measurements of discharge are made with current meters using methods adopted by the Geological Survey as a result of experience accumulated since 1880. These methods are described in standard textbooks; in U.S. Geological Survey Techniques of Water-Resources Investigations, Book 3, Chapter A6; and in U.S. Geological Survey Water-Supply Paper 2175, "Measurement and Computation of Streamflow: Volume 1--Measurement

of Stage and Discharge (p. 1-284); Volume 2--Computation of Discharge (p. 285-631)" by S. E. Rantz and others (1982).

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

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

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

In computing records of lake or reservoir contents, it is necessary to have available from surveys, curves or tables defining the relationship of

stage and content. The application of stage to the stage-content curves or tables gives the contents from which daily, monthly, or yearly changes then are determined. If the stage-content relationship changes because of deposition of sediment in a lake or reservoir, periodic resurveys may be necessary to redefine the relationship. Even when this is done, the contents computed may become increasingly in error as the lapsed time since the last survey increases. Discharges over lake or reservoir spillways are computed from stage-discharge relationships much as other stream discharges are computed.

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

Data Presentation

The records published for each 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 only a few stations, were determined by methods given in "River Mileage Measurement," Bulletin 14, Revision of October 1968,

prepared by the Water Resources Council or were provided by the U.S. Army Corps of Engineers.

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

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

REVISED 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. Secondary 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 seems to be 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 offices whose addresses are given on the back of the title page of this report to determine if the published records were ever revised after the station was discontinued. Of course, if the data 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 mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discharge for the month also is usually expressed in cubic feet per second per square mile (line headed "CFSM"), or in inches (line headed "IN."), or in acre-feet (line headed "AC-FT"). Figures for cubic feet per second per square mile and runoff in inches are omitted if there is extensive regulation or diversion or if the drainage area includes large noncontributing areas. In the yearly summary below the monthly summary, the figures shown are the appropriate discharges for the calendar and water years. At some stations monthly and (or) yearly observed discharges are adjusted for reservoir storage or diversion, or diversions or reservoir contents are given. These figures are identified by a symbol and corresponding footnote.

Data collected at partial-record stations follow the information for continuous-record sites. Data for partial-record discharge stations, if any, are presented in two tables. The first is a table of annual maximum stage and discharge at crest-stage stations, and the second is a table of discharge measurements at low-flow partial-record stations. The tables of partial-record stations are followed by a listing of discharge

measurements made at sites other than continuous-record or partial-record stations. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Identifying Estimated Daily Discharge

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

Accuracy of the Records

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

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

Daily mean discharges in this report are given to the nearest hundredth of a cubic foot per second for values less than 1 ft³/s; to the nearest tenth between 1.0 and 10 ft³/s; to whole numbers between 10 and 1,000 ft³/s; and to 3 significant figures for more than 1,000 ft³/s. The number of significant figures used is based solely on the magnitude of the discharge value. The same rounding rules apply to discharges listed for partial-record stations and miscellaneous sites.

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

to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the observed discharge.

Other Records Available

Information used in the preparation of the records in this publication, such as discharge-measurement notes, gage-height records, temperature measurements, and rating tables, is on file in the New Hampshire or Vermont offices of the New England District. Also, most of the daily mean discharges are in computer-readable form and have been analyzed statistically. Information on the availability of the unpublished information or on the results of statistical analyses of the published records may be obtained from the office whose address is given on the back of the title page of this report.

Records of Surface-Water Quality

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

Classification of Records

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

A careful distinction needs to be made between "continuing records," as used in this report, and "continuous recordings," which refers to a continuous graph or a series of discrete values punched at short

intervals on a paper tape. Some records of water quality, such as temperature and specific conductance, may be obtained through continuous recordings; however, because of costs, most data are obtained only monthly or less frequently. Locations of stations for which records on the quality of surface water appear in this report are shown in figure 1.

Arrangement of Records

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

On-site Measurements and Sample Collection

In obtaining water-quality data, a major concern 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 on-site 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 on-site 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. All of these references are listed under "Publications on Techniques of Water-Resources Investigations" which appears at the end of the introductory text. Detailed information on collecting, treating, and shipping samples may be obtained from the Office of the New England District.

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.

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

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 New England District Office whose address is given on the back of the title page of this report.

Water Temperature

Water temperatures are measured at most of the water-quality stations. 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.

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 discharges of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

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

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

Laboratory Measurements

Sediment samples, samples for biochemical-oxygen demand, samples for indicator bacteria, and daily samples for specific conductance are analyzed

locally. All other samples are analyzed in the Geological Survey laboratories in Arvada, Colorado, and Doraville, Georgia. Methods used in analyzing sediment samples and computing sediment records are given in *Techniques of Water Resources Investigations*, Book 5, Chap. C1. Methods used by the Geological Survey laboratories are given in *Techniques of Water Resources Investigations*, 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 ensure the most recent updates.

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

Remark Codes

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

Printed Output	Remark
E	Estimated value
>	Actual value is known to be greater than the value shown
<	Actual value is known to be less than the value shown

K	Results based on colony count outside the acceptance range (non-ideal colony count)
L	Biological organism count less than 0.5 percent (organism may be observed rather than counted)
D	Biological organism count equal to or greater than 15 percent (dominant)
&	Biological organism estimated as dominant

Records of Ground-Water Levels

Ground-water-level data from a basic network of 28 observation wells are given in this report and are placed in computer storage. These data are intended to provide a sampling and historical record of water-level changes in selected aquifers. Locations of the observation wells are shown in figure 1.

In New Hampshire, short-term networks of observation wells are established during areal assessments of ground-water resources. Water levels measured in these wells are included in the project reports. In Vermont, the Ground Water Management Section (Vermont Department of Water Resources and Environmental Engineering) monitors other wells in addition to the 15 wells that are in the basic network. Information about the availability of the data in the water-level file may be obtained from the District Chief, New England District (see address on back of title page).

Data Collection and Computation

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

Tables of water-level data are presented by counties arranged in alphabetical order. The prime identification number for a given well is the 15-digit number that is shown in the upper left corner of the table. The secondary identification number is the local well number, an alphanumeric number, derived from the municipality in which each well is located.

Water-level records are obtained from direct measurements with a steel or electric tape. The water-level measurements in this report are given in feet with reference to land-surface datum. Land-surface datum is a datum plane that is approximately at land surface at each well. If known, the elevation of the land-surface datum is given in the well description. The height of the measuring point above or below land-surface datum is given in each well description.

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

Data Presentation

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

LOCATION.--This paragraph follows the well-identification number and reports the latitude and longitude (given in degrees, minutes, and seconds); 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 the type of aquifer and the geologic age of the aquifer open to the well.

WELL CHARACTERISTICS.--This entry describes the well in terms of method of construction, diameter, depth, and casing depth and (or) screened interval.

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 casing), 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 NGVD of 1929 (National Geodetic Vertical Datum of 1929); it is reported with a precision depending on the method of determination.

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 Survey and the words "to current year" if the records are to be continued into the following year. Periods for which

water-level records are available, but are not published by the Geological Survey, may be noted.

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

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

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 cost 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 the office whose address is 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, VA 22092

DEFINITION OF TERMS

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

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 ft³ or about 326,000 gallons or 1,233 m³.

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

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

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

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

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

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, while 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 all the organisms that produce colonies with a golden-green metallic sheen within 24 hours when incubated at 35 °C plus or minus 1.0 °C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal coliform bacteria are bacteria that are present in the intestine or feces of warm-blooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms that produce blue colonies within 24 hours when incubated at 44.5 °C plus or minus 0.2 °C on M-F °C 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 the intestine of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at 35 °C plus or minus 1.0 °C on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

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

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by micro-organisms, 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, and periphyton and benthic organisms in grams per square mile.

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

Organic mass or volatile mass of the living substance is the difference between the dry mass and

ash mass and represents the actual mass of the living matter. The organic mass is expressed in the same units as for ash mass and dry mass.

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

Bottom material: See "Bed material."

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

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

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

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

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

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

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

Cubic foot per second (ft^3/s) is the rate of discharge representing a volume of 1 ft^3 passing a given point during 1 second and is equivalent to 7.48 gal/s or 448.8 gal/min or $0.02832 \text{ m}^3/\text{s}$.

Cubic-foot-per second day is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to $86,400 \text{ ft}^3$, approximately 1.9835 acre-ft, about 646,000 gal, or $2,445 \text{ m}^3$.

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

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 $0.45\text{-}\mu\text{m}$ membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate.

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

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

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded

surface water together with all tributary surface streams and bodies of impounded surface water.

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

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

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

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

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

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

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

Metamorphic stage refers to the stage of development that an organism exhibits during its transformation from an immature form to an adult form. This developmental process exists for most insects, and the degree of difference from the immature stage to the adult form varies from relatively slight to pronounced, with many

intermediates. Examples of metamorphic stages of insects are egg-larva-adult or egg-nymph-adult.

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

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

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

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

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

National Stream Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 500 or so sites in NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objectives of NASQAN are (1) to obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of

data collection, summarization, analysis, and reporting such that the data may be used for, (2) description of the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (3) detection of changes or trends with time in the pattern of occurrence of water-quality characteristics, and (4) providing a nationally consistent data base useful for water-quality assessment and hydrologic research.

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

Organism is any living entity.

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

Organism count/volume refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually milliliter or liter. 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 Survey's 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, of a particle determined by either sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

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

Classification	Size (mm)	Method of analysis
Clay.....	0.00024 0.004	Sedimentation
Silt.....	0.004 0.062	Sedimentation
Sand.....	0.062 2.0	Sedimentation or sieve
Gravel.....	2.0 64.0	Sieve

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

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

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

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

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

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

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

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

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

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

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

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

Milligrams of carbon per area or volume per unit time [$\text{mg C}/(\text{m}^2 \cdot \text{time})$] for

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

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

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

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

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

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

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

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

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

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

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

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

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

Total sediment discharge (tons/day) is the sum of the suspended-sediment discharge and the bed-load discharge. It is the total quantity of

sediment, as measured by dry mass or volume, that passes a section during a given time.

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

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

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

Solute is any substance that is dissolved in water.

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

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

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

Substrate is the physical surface upon which an organism lives.

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

Artificial substrate is a device which is purposely placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is taken. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multiplate 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 Survey topographic map as the boundary of the lake and measured by a planimeter in acres. In localities not covered by topographic maps, the areas are computed from the best maps available at the time planimeted. All areas shown are those for the stage when the planimeted map was made.

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

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

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

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

and (2) total recoverable concentrations of the constituent.

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

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

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

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

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

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water 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-ft of water. It is computed by multiplying the concentration of the constituent, in milligrams per liter, by 0.00136.

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

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

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

Total, recoverable is the amount of a given constituent that is in solution after a representative water-suspended sediment sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all particulate matter is not achieved by the digestion treatment, 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 are required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

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

precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States.

Water year in Geological Survey reports dealing with surface-water supply is the 12-month period October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 1988, is called the "1988 water year."

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

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

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

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

Forty-eight manuals by the U.S. Geological Survey have been published to date in the series on techniques describing procedures for planning and executing specialized work in water-resources investigations. Material is grouped under major subject headings called books and further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) is on surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises. Reports listed below are sold by the Books and Open-File Reports Section, U.S. Geological Survey, Box 25425, Federal Center, Denver, CO 80225 (authorized agent of the Superintendent of Documents, Government Printing Office).

Prepayment is required. Check or money order is payable to the U.S. Geological Survey. Prices, effective December 1987, are subject to change. When ordering, please give the series (U.S. Geological Survey Techniques of Water-Resources Investigations), title, book number, and chapter number.

- 1-D1 Water temperature-influential factors, field measurement, and data presentation, by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: Book 1, Chap. D1. 1975. 65 p. \$2.50.
- 1-D2 Guidelines for collection and field analysis of ground-water samples for selected unstable constituents, by W. W. Wood: Book 1, Chap. D2. 1976. 24 p. \$2.50.
- 2-D1 Application of surface geophysics to ground-water investigations, by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: Book 2, Chap. D1. 1974. 116 p. \$5.00.
- 2-E1 Application of borehole geophysics to water-resources investigations, by W. S. Keys and L. M. MacCary: Book 2, Chap. E1. 1971. 126 p. \$4.75.
- 3-A1 General field and office procedures for indirect discharge measurements, by M. A. Benson and Tate Dalrymple: Book 3, Chap. A1. 1967. 30 p. \$2.00.
- 3-A2 Measurement of peak discharge by the slope-area method, by Tate Dalrymple and M. A. Benson: Book 3, Chap. A2. 1967. 12 p. \$1.75.
- 3-A3 Measurement of peak discharge at culverts by indirect methods, by G. L. Bodhaine: Book 3, Chap. A3. 1968. 60 p. \$5.00.
- 3-A4 Measurement of peak discharge at width contractions by indirect methods, by H. F. Matthai: Book 3, Chap. A4. 1967. 44 p. \$2.25.
- 3-A5 Measurement of peak discharge at dams by indirect methods, by Harry Hulsing: Book 3, Chap. A5. 1967. 29 p. \$2.25.
- 3-A6 General procedure for gaging streams, by R. W. Carter and Jacob Davidian: Book 3, Chap. A6. 1968. 13 p. \$1.75.
- 3-A7 Stage measurements at gaging stations, by T. J. Buchanan and W. P. Somers: Book 3, Chap. A7. 1968. 28 p. \$4.50.
- 3-A8 Discharge measurements at gaging stations, by T. J. Buchanan and W. P. Somers: Book 3, Chap. A8. 1969. 65 p. \$3.25.
- 3-A9 Measurement of time-of-travel and dispersion in streams by dye tracing, by E. F. Hubbard, F. A. Kilpatrick, L. A. Martens, and J. F. Wilson, Jr.: Book 3, Chap. A9. 1982. 44 p. \$5.00.
- 3-A10 Discharge ratings at gaging stations, by E. J. Kennedy: Book 3, Chap. A10. 1985. 59 p. \$3.00.
- 3-A11 Measurement of discharge by moving-boat method, by G. F. Smoot and C. E. Novak: Book 3, Chap. A11. 1969. 22 p. \$2.00.
- 3-A12 Fluorometric procedures for dye tracing, by J. F. Wilson, Jr., E. B. Cobb, and F. A. Kilpatrick: Book 3, Chap. A12. Rev. 1986. 34 p. \$2.25.
- 3-A13 Computation of continuous records of streamflow, by E. J. Kennedy: Book 3, Chap. A13. 1983. \$4.50.
- 3-A14 The use of flumes in measuring discharge, by F. A. Kilpatrick and V. R. Schneider: Book 3, Chap. A14. 1983. 46 p. \$4.50.
- 3-A15 Computation of water-surface profiles in open channels, by Jacob Davidian: Book 3, Chap. A15. 1984. 48 p. \$2.50.
- 3-A16 Measurements of discharge using tracers, by F. A. Kilpatrick and E. D. Cobb: Book 3, Chap. A16. 1986. 52 p. \$2.50.
- 3-A17 Acoustic velocity meter systems, by Antonius Laenen: Book 3, Chap. A17. 1985. 38 p. \$1.75.
- 3-B1 Aquifer-test design, observation, and data analysis, by R. W. Stallman: Book 3, Chap. B1. 1971. 26 p. \$3.50.
- 3-B2 Introduction to ground-water hydraulics, a programed text for self-instruction, by G. D. Bennett: Book 3, Chap. B2. 1976. 172 p. \$7.00.
- 3-B3 Type curves for selected problems of flow to wells in confined aquifers, by J. E. Reed: Book 3, Chap. B3. 1980. 106 p. \$6.00.
- 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: Book 3, Chap. B5. 1987. 15 p.
- 3-B6 The Principle of Superposition and its Application in Ground-Water Hydraulics, by T. E. Reilly, O. L. Franke, and G. D. Bennett: Book 3, Chap. B6. 1987. 28 p.
- 3-C1 Fluvial sediment concepts, by H. P. Guy: Book 3, Chap. C1. 1970. 55 p. \$3.75.
- 3-C2 Field methods for measurement of fluvial sediment, by H. P. Guy and V. W. Norman: Book 3, Chap. C2. 1970. 59 p. \$5.50.
- 3-C3 Computation of fluvial-sediment discharge, by George Porterfield: Book 3, Chap. C3. 1972. 66 p. \$3.25.
- 4-A1 Some statistical tools in hydrology, by H. C. Riggs: Book 4, Chap. A1. 1968. 39 p. \$2.50.
- 4-A2 Frequency curves, by H. C. Riggs: Book 4, Chap. A2. 1968. 15 p. \$2.00.
- 4-B1 Low-flow investigations, by H. C. Riggs: Book 4, Chap. B1. 1972. 18 p. \$3.50.
- 4-B2 Storage analyses for water supply, by H. C. Riggs and C. H. Hardison: Book 4, Chap. B2. 1973. 20 p. \$3.25.
- 4-B3 Regional analyses of streamflow characteristics, by H. C. Riggs: Book 4, Chap. B3. 1973. 15 p. \$3.50.
- 4-D1 Computation of rate and volume of stream depletion by wells, by C. T. Jenkins: Book 4, Chap. D1. 1970. 17 p. \$1.75.
- 5-A1 Methods for determination of inorganic substances in water and fluvial sediments, by M. W. Skougstad, M. J. Fishman, L. C. Friedman, D. E. Erdmann, and S. S. Duncan, editors: Book 5, Chap. A1. 1979. 626 p. \$11.00.
- 5-A2 Determination of minor elements in water by emission spectroscopy, by P. R. Barnett and E. C. Mallory, Jr.: Book 5, Chap. A2. 1971. 31 p. \$2.75.
- 5-A3 Methods for analysis of organic substances in water, by D. F. Goerlitz and Eugene Brown: Book 5, Chap. A3. 1972. 40 p. \$2.50.
- 5-A4 Methods for collection and analysis of aquatic biological and microbiological samples, edited by P. E. Greeson, T. A. Ehke, G. A. Irwin, B. W. Lium, and K. V. Slack: Book 5, Chap. A4. 1977. 332 p. \$10.00.
- 5-A5 Methods for determination of radioactive substances in water and fluvial sediments, by L. L. Thatcher, V. J. Janzer, and K. W. Edwards: Book 5, Chap. A5. 1977. 95 p. \$6.50.
- 5-A6 Quality assurance practices for the chemical and biological analyses of water and fluvial sediments, by L. C. Friedman and D. E. Erdmann: Book 5, Chap. A6. 1982. 181 p. \$6.50.
- 5-C1 Laboratory theory and methods for sediment analysis, by H. P. Guy: Book 5, Chap. C1. 1969. 58 p. \$3.25.
- 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: Book 7, Chap. C1. 1976. 116 p. \$4.75.
- 7-C2 Computer model of two-dimensional solute transport and dispersion in ground water by L. F. Konikow and J. D. Bredehoeft: Book 7, Chap. C2. 1978. 90 p. \$3.25.
- 7-C3 A model for simulation of flow in singular and interconnected channels by R. W. Schaffranek, R. A. Baltzer, and D. E. Goldberg: Book 7, Chap. C3. 1981. 110 p. \$7.50.

- 8-A1 Methods of measuring water levels in deep wells, by M. S. Garber and F. C. Koopman: Book 8, Chap. A1. 1968. 23 p. \$2.00.
- 8-A2 Installation and service manual for U.S. Geological Survey manometers, by J. D. Craig: Book 8, Chap. A2. 1983. 57 p. \$6.00.
- 8-B2 Calibration and maintenance of vertical-axis type current meters, by G. F. Smoot and C. E. Novak: Book 8, Chap. B2. 1968. 15 p. \$1.75.
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ANDROSCOGGIN RIVER BASIN

25

01052500 DIAMOND RIVER NEAR WENTWORTH LOCATION, N. H.

LOCATION.--Lat 44°52'40", long 71°03'25" Coos County, Hydrologic Unit 01040001, on left bank 1.0 mi upstream from mouth and 1.6 mi north of Wentworth Location.

DRAINAGE AREA.--152 mi².

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

Water-quality records: Water year 1954.

REVISED RECORDS.--WDR ME-81-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 1,259 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Dec. 1 to Mar. 29, July 11-19 and Aug. 8 to Sept. 14. Records good except for period of ice effect, Dec. 1 to Mar. 29 and periods of no gage-height record, Jan. 6-20, July 11-19 and Aug. 8 to Sept. 14, which are fair. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--48 years, 348 ft³/s, 31.09 in./yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,630 ft³/s, June 16, 1943, gage height, 10.66 ft, from rating curve extended above 4,300 ft³/s; maximum gage height, 12.23 ft, Feb. 21, 1981 (ice jam); minimum discharge, 6.8 ft³/s, Aug. 27, 28, 1949, Sept. 1, 1952, gage height, 0.81 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,600 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 7	0300	4,060	7.75	May 6	1700	4,130	7.80
May 2	1800	*5,520	*8.75	May 12	1600	3,740	7.50

Minimum discharge, 20 ft³/s, July 26, 27, gage height, 1.15 ft.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	96	165	e378	e97	e71	e80	698	1360	345	129	33	e58
2	92	935	e283	e95	e92	e77	526	3690	342	120	28	e112
3	117	1030	e228	e93	e100	e73	469	4020	761	123	25	e286
4	125	516	e186	e93	e89	e70	463	2460	495	102	44	e112
5	109	479	e152	e92	e80	e67	848	1870	372	90	341	e78
6	153	1200	e128	e91	e73	e64	2480	3250	335	84	390	e59
7	149	927	e115	e90	e71	e61	3640	3390	554	74	241	e50
8	130	745	e104	e94	e68	e59	1830	1780	385	69	e141	e45
9	129	587	e99	e107	e66	e56	1010	1060	325	62	e112	e40
10	141	534	e93	e103	e63	e54	816	804	506	55	e70	e37
11	295	501	e88	e100	e61	e52	620	970	1040	e108	e51	e4
12	508	402	e84	e98	e59	e51	502	2860	1030	e77	e260	e32
13	291	337	e82	e110	e57	e51	451	2690	569	e56	e387	e32
14	212	380	e80	e105	e56	e50	432	1460	416	e49	e280	e70
15	205	444	e78	e102	e55	e62	418	1080	321	e47	e215	656
16	220	374	e77	e110	e53	e373	520	823	504	e41	e100	393
17	189	711	e76	e104	e53	e880	661	643	819	e37	e178	498
18	231	985	e76	e100	e53	e375	1470	525	527	e41	e100	471
19	671	526	e75	e97	e53	e160	1420	443	495	e47	e72	224
20	369	411	e75	e92	e53	e130	1220	382	411	42	e56	483
21	263	763	e82	e87	e55	e115	909	334	300	28	e57	715
22	237	550	e90	e84	e83	e104	961	362	244	26	e93	343
23	311	405	e86	e81	e214	e96	657	346	200	25	e116	269
24	288	330	e84	e77	e565	e91	534	307	176	23	e86	269
25	276	227	e94	e75	e196	e86	455	322	157	22	e72	212
26	234	266	e92	e72	e115	e103	483	284	136	21	e53	180
27	202	311	e91	e70	e97	e115	623	559	133	21	e43	194
28	189	653	e91	e69	e88	e281	602	425	215	40	e38	158
29	244	814	e105	e68	---	e1960	500	327	290	63	e36	137
30	209	484	e102	e67	---	2470	897	265	179	43	e34	132
31	179	---	e100	e68	---	1160	---	341	---	35	e80	---
TOTAL	7064	16992	3574	2791	2739	9426	27115	39432	12582	1800	3832	6379
MEAN	228	566	115	90.0	97.8	304	904	1272	419	58.1	124	213
MAX	671	1200	378	110	565	2470	3640	4020	1040	129	390	715
MIN	92	165	75	67	53	50	418	265	133	21	25	32
CFSM	1.50	3.73	.76	.59	.64	2.00	5.95	8.37	2.76	.38	.81	1.40
IN.	1.73	4.16	.87	.68	.67	2.31	6.64	9.65	3.08	.44	.94	1.6

CAL YR 1988 TOTAL 123450 MEAN 337 MAX 3470 MIN 60 CFSM 2.22 IN. 30.21
WTR YR 1989 TOTAL 133726 MEAN 366 MAX 4020 MIN 21 CFSM 2.41 IN. 32.73

e Estimated

ANDROSCOGGIN RIVER BASIN

01053500 ANDROSCOGGIN RIVER AT ERROL, N. H.

LOCATION.--Lat 44°46'57", long 71°0'46", Coos County, Hydrologic Unit 01040001, on right bank 0.4 mi downstream from Errol Dam, 0.4 mi northeast of Errol, and 0.6 mi upstream from Clear Stream.

DRAINAGE AREA.--1,046 mi².

PERIOD OF RECORD.--Discharge: January 1905 to current year. Prior to 1922, published as "at Errol Dam."
Water-quality records: Water years 1955, 1958-59.

REVISED RECORDS.--WRD ME-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,227.30 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 8, 1943, nonrecording gage at Errol Dam at datum 5.0 ft higher.

REMARKS.--Estimated daily discharges: May 19 to July 20. Records excellent including period of no gage-height record, May 19 to July 20. Flow regulated by Rangeley, Mooselookmeguntic, Richardson, Aziscohos, and Umbagog Lakes (Reservoirs in Androscoggin River Basin), combined usable capacity, 28,100,000,000 ft³/s, with final regulation at Errol Dam, 0.4 mi upstream. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--84 years, 1,899 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,500 ft³/s, May 22, 1969, gage height, 9.40 ft; minimum daily, leakage only at various times when gates in dam were closed.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,550 ft³/s, May 17, gage height, 7.05 ft; minimum daily, 1,050 ft³/s, Aug. 6.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1780	1710	1720	2270	2020	1520	2350	1280	e1840	e1600	1530	1670
2	1820	1290	1720	2270	2020	1490	2350	2000	e1390	e1600	1530	1670
3	1830	1370	1720	2270	2020	1480	1970	2850	e1260	e1600	1530	1680
4	1830	1550	1720	2270	2020	1480	1820	4440	e1940	e1600	1490	1680
5	1830	1550	1450	2270	2020	1480	1650	5550	e2530	e1600	1230	1680
6	1840	1550	1840	2260	2030	1480	2180	5700	e3260	e1600	1040	1670
7	1830	2010	1840	2270	2030	1480	2630	5610	e3620	e1620	1110	1670
8	1840	2320	1780	2270	2030	1480	2840	5680	e4300	e1630	1110	1670
9	1800	2310	1820	2250	2030	1480	3420	3610	e4630	e1630	1110	1670
10	1810	1900	1940	2260	2040	1480	2880	3210	e4340	e1630	1160	1670
11	1810	1700	2020	2260	2030	1490	2180	3700	e3960	e1630	1280	1640
12	1740	1700	2100	2270	2030	1490	1980	4400	e3960	e1630	1280	1620
13	1730	1710	2150	2280	2030	1490	1660	6200	e3430	e1670	1280	1620
14	1730	1670	2090	2280	1880	1500	1500	6910	e2850	e1680	1440	1580
15	1710	1720	2000	2280	1800	1510	1510	8380	e2410	e1680	1720	1500
16	1750	1720	2160	2280	1800	1290	1500	9460	e2500	e1680	1770	1470
17	1730	1730	2210	2280	1800	1170	1510	9310	e2720	e1680	1810	1470
18	1730	1730	2210	2250	1790	1200	1510	7780	e2720	e1540	1830	1560
19	1750	1730	2210	2220	1790	1210	1520	e6750	e2720	e1490	1820	1770
20	1740	1730	2210	2080	1820	1240	1930	e5040	e2720	e1560	1820	1920
21	1730	1730	2040	1700	1840	1260	2290	e4280	e2430	1540	1820	1990
22	1730	1720	2140	1700	1710	1300	2400	e3230	e2160	1520	1820	2240
23	1730	1730	2240	1690	1630	1320	2400	e2610	e1890	1530	1810	2010
24	1730	1730	2250	1700	1640	1320	2390	e2610	e1790	1530	1810	1680
25	1650	1730	2250	1700	1640	1320	1790	e3020	e1790	1530	1810	1870
26	1610	1730	2260	1700	1600	1310	1510	e2610	e1590	1530	1810	2190
27	1600	1760	2260	1700	1590	1190	1510	e2610	e1680	1510	1820	2190
28	1630	1730	2150	1700	1590	1130	1510	e2610	e1550	1520	1820	2290
29	1640	1650	2270	1700	---	1100	1510	e2610	e1480	1530	1830	2340
30	1660	1720	2260	2000	---	1580	1510	e2370	e1510	1530	1690	2350
31	1680	---	2270	2070	---	2180	---	e2240	---	1530	1680	---
TOTAL	54020	51930	63300	64500	52270	43450	59710	138660	76970	49150	48610	54030
MEAN	1743	1731	2042	2081	1867	1402	1990	4473	2566	1585	1568	1801
MAX	1840	2320	2270	2280	2040	2180	3420	9460	4630	1680	1830	2350
MIN	1600	1290	1450	1690	1590	1100	1500	1280	1260	1490	1040	1470

CAL YR 1988 TOTAL 574295 MEAN 1569 MAX 2840 MIN 794
WTR YR 1989 TOTAL 756600 MEAN 2073 MAX 9460 MIN 1040

e Estimated

ANDROSCOGGIN RIVER BASIN

27

01054000 ANDROSCOGGIN RIVER NEAR GORHAM, N. H.

LOCATION.--Lat 44°26'10", long 71°11'27", Coos County, Hydrologic Unit 01040001, on right bank at Pulsifer Rips, 2.2 mi downstream from Dead River, and 4.0 mi upstream from Gorham.

DRAINAGE AREA.--1,361 mi².

PERIOD OF RECORD.--October 1913 to current year. October 1922 to February 1929, monthly discharge only, published in WSP 1301. Prior to October 1928, published as "at Berlin."

REVISED RECORDS.--WDR ME-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 832.88 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 30, 1922, nonrecording gage showing head and tailwater elevations at site 3 mi upstream at different datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Rangeley, Mooselookmeguntic, Richardson, Aziscohos, and Umbagog Lakes. These reservoirs have a combined usable capacity of about 28,100,000,000 ft³ with final regulation at Errol Dam 35 mi upstream. Diurnal fluctuations caused by powerplant 0.8 mi upstream. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--76 years, 2,460 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 20,000 ft³/s, June 18, 1917, Apr. 30, 1923; minimum daily, 795 ft³/s, Mar. 15, 1948.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,600 ft³/s, May 12, gage height, 8.00 ft; minimum daily, 1,380 ft³/s, Aug. 10.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1830	1930	2390	2370	2190	1750	3330	2710	2680	1640	1670	1790
2	1830	3630	2240	2380	2190	1650	3390	4590	2370	1820	1510	2030
3	2020	3540	2170	2420	2170	1640	3140	8550	3260	1760	1610	1980
4	2000	3010	2180	2360	2130	1640	2720	6630	2610	1760	1630	1880
5	2020	2540	2010	2320	1930	1650	3430	7310	3240	1710	2790	1850
6	1950	3160	1740	2290	2300	1640	6580	8810	3530	1740	2980	1810
7	2010	3240	2170	2310	2170	1630	9260	9300	4710	1670	1950	1810
8	2020	3360	2200	2500	2140	1640	6320	8180	4690	1770	1700	1810
9	1980	3220	2050	2470	2110	1610	5120	6310	5420	1770	1560	1800
10	2050	2970	2090	2430	2080	1620	4730	4090	6050	1780	1380	1790
11	2090	2500	2100	2420	2140	1620	3780	4770	5890	1930	1400	1800
12	2160	2460	2140	2400	2130	1640	3020	9570	5320	1680	1650	1760
13	2110	2250	2230	2450	2110	1620	2760	10500	4710	1690	1940	1740
14	1950	2350	2400	2390	2110	1630	2320	9020	3850	1730	1850	1770
15	1960	2360	2230	2430	1930	1810	2330	8860	3250	1760	1970	1970
16	1990	2390	2150	2440	1920	1850	2530	10100	3330	1760	2050	1920
17	1960	2410	2290	2430	1870	1540	2800	10200	3800	1860	2030	1800
18	2010	2860	2190	2410	1880	1510	3560	9530	3520	1770	1970	1940
19	2390	2510	2350	2360	1880	1480	3640	8060	3200	1490	2020	1920
20	2250	2360	2340	2360	1840	1460	3390	6350	3180	1610	1950	2330
21	2100	2760	2430	2310	1970	1500	3500	4850	3060	1640	1990	3060
22	2150	2890	2230	2280	2200	1490	3680	4760	2510	1610	1950	2720
23	2340	2590	2340	2360	1920	1530	3410	3500	2480	1590	1950	2550
24	2260	2370	2460	2350	1870	1520	3240	3260	2060	1610	1950	2070
25	2180	2260	2440	2340	1860	1540	3000	3400	2060	1550	1910	1960
26	2110	2070	2390	2310	1810	1640	2190	3410	2130	1630	1890	2380
27	1980	1970	2310	2360	1800	1730	2340	3580	1760	1630	1890	2490
28	1920	2180	2490	2340	1740	1930	2310	3510	1810	1650	1930	2460
29	1920	2690	2370	2350	---	4240	2190	3300	1670	1660	1960	2540
30	1920	2550	2260	2340	---	4310	2350	3150	1660	1630	1860	2510
31	1920	---	2440	2330	---	3130	---	2690	---	1670	1690	---
TOTAL	63380	79380	69820	73610	56390	57190	106360	192850	99810	52570	58580	62240
MEAN	2045	2646	2252	2375	2014	1845	3545	6221	3327	1696	1890	2075
MAX	2390	3630	2490	2500	2300	4310	9260	10500	6050	1930	2980	3060
MIN	1830	1930	1740	2280	1740	1460	2190	2690	1660	1490	1380	1740

CAL YR 1988 TOTAL 767140 MEAN 2096 MAX 7830 MIN 1390
WTR YR 1989 TOTAL 972180 MEAN 2664 MAX 10500 MIN 1380

SACO RIVER BASIN

01064300 ELLIS RIVER NEAR JACKSON, N. H.

LOCATION.--Lat 44°13'12", long 71°15'00", Carroll County, Hydrologic Unit 01060002, in White Mountain National Forest, on right bank 0.4 mi upstream from small left-bank tributary, 1.3 mi upstream from bridge on State Highway 16, and 6 mi northwest of Jackson.

DRAINAGE AREA.--10.9 mi².

PERIOD OF RECORD.--December 1963 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,500 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 14, 1969, at site 0.3 mi downstream at different datum.

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

AVERAGE DISCHARGE.--25 years (water years 1965-89), 34.2 ft³/s, 42.61 in./yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,500 ft³/s, Nov. 3, 1966, gage height, 10.34 ft, from recorder, affected by drawdown, 18.9 ft, from floodmarks, site and datum then in use, from rating curve extended above 390 ft³/s on basis of slope-area measurement at gage height 10.34 ft; minimum not determined, occurred during ice effect in March 1980. Minimum daily, 2.2 ft³/s, Mar. 2-4, 1980.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 29	0600	a689	3.75	May 6	1045	a1,160	4.74
Apr. 6	2400	a504	3.29	May 12	0530	a*1,460	*5.29
May 2	1215	a927	4.26	Aug. 5	1430	783	4.09

a From rating curve extended above 390 ft³/s.

Minimum discharge not determined, occurred during period of ice effect; minimum daily, 7.0 ft³/s, Mar. 8, 9.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	22	e30	e10	e12	e9.2	33	e65	37	21	11	15
2	16	199	e27	e10	e10	e8.8	24	493	62	21	11	31
3	16	65	e25	e9.8	e9.8	e8.2	21	172	56	20	12	15
4	15	39	e22	e9.4	e9.4	e7.8	39	102	49	20	12	13
5	15	e65	e20	e9.0	e9.0	e7.6	156	88	42	20	181	12
6	16	e120	e18	e8.8	e8.6	e7.4	285	590	62	18	47	12
7	15	e80	e16	e8.6	e8.2	e7.2	190	248	56	17	28	12
8	15	e60	e15	e8.4	e8.0	e7.0	62	107	56	16	26	11
9	15	e50	e14	e8.2	e7.8	e7.0	41	67	50	16	21	11
10	15	e43	e13	e7.8	e8.2	e7.2	e35	56	183	19	18	11
11	25	e38	e13	e7.8	e8.0	e7.4	e32	288	157	18	18	11
12	19	e35	e13	e7.6	e8.0	e8.0	e28	721	72	17	32	12
13	17	e35	e14	e7.6	e8.0	e9.2	e25	151	53	16	34	11
14	15	e45	e15	e7.8	e8.4	e12	e24	88	44	15	27	11
15	15	e40	e15	e8.0	e8.4	e16	e27	78	49	14	21	15
16	15	e35	e14	e8.4	e8.4	e23	40	72	101	13	18	13
17	17	e80	e13	e8.8	e8.0	e14	e85	72	64	13	17	13
18	91	e50	e12	e9.2	e7.8	e11	e80	75	50	13	16	13
19	63	e42	e12	e9.4	e7.6	e9.0	e65	70	42	12	15	12
20	32	e52	e11	e9.4	e8.0	e7.6	e52	66	37	12	16	32
21	25	e62	e12	e9.4	e10	e7.8	e55	76	35	12	15	27
22	30	e40	e12	e9.2	e35	e8.0	e45	67	32	12	14	18
23	42	e34	e13	e9.2	e16	e8.6	e30	57	36	11	14	29
24	36	e26	e13	e9.0	e13	e9.4	e26	50	38	11	13	23
25	37	e22	e13	e8.8	e12	e10	e27	47	32	11	12	19
26	29	e20	e12	e8.8	e11	e13	e30	52	29	10	12	23
27	25	e27	e12	e8.6	e10	e15	e35	62	27	11	12	28
28	24	e33	e12	e8.6	e9.6	e100	e31	51	26	13	12	21
29	25	e42	e12	e8.6	---	344	e35	40	24	12	11	19
30	21	e34	e11	e9.2	---	62	e50	36	22	12	11	17
31	20	---	e11	e9.8	---	35	---	37	---	11	11	---
TOTAL	777	1535	465	273.2	288.2	807.4	1708	4244	1623	457	718	510
MEAN	25.1	51.2	15.0	8.81	10.3	26.0	56.9	137	54.1	14.7	23.2	17.0
MAX	91	199	30	10	35	344	285	721	183	21	181	32
MIN	15	20	11	7.6	7.6	7.0	21	36	22	10	11	11
CFSM	2.30	4.69	1.38	.81	.94	2.39	5.22	12.6	4.96	1.35	2.12	1.56
IN.	2.65	5.24	1.59	.93	.98	2.76	5.83	14.48	5.54	1.56	2.45	1.74

CAL YR 1988 TOTAL 11439.4 MEAN 31.3 MAX 342 MIN 7.2 CFSM 2.87 IN. 39.04
WTR YR 1989 TOTAL 13405.8 MEAN 36.7 MAX 721 MIN 7.0 CFSM 3.37 IN. 45.75

e Estimated

SACO RIVER BASIN

29

01064400 LUCY BROOK NEAR NORTH CONWAY, N. H.

LOCATION.--Lat 44°04'10", long 71°10'30", Carroll County, Hydrologic Unit 01060002, on left bank 1.6 mi upstream from mouth and 2.5 mi northwest of North Conway.

DRAINAGE AREA.--4.68 mi².

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

GAGE.--Water-stage recorder. Elevation of gage is 710 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

AVERAGE DISCHARGE.--24 years, 10.8 ft³/s, 31.34 in./yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,320 ft³/s, Apr. 27, 1979, recorded gage height, 8.49 ft, affected by drawdown, river stage unknown, from rating curve extended above 140 ft³/s on basis of slope-area measurement at gage height, 8.14 ft recorded, 9.20 ft from floodmarks; minimum discharge, 0.32 ft³/s, Sept. 2, 3, 29, 30, 1968.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 190 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 2	0615	a238	6.72	May 6	1045	a500	7.38
Mar. 29	0245	a261	6.79	May 12	0245	a*640	*7.64
Apr. 6	--	unknown	unknown	Aug. 13	1600	a445	7.26
May 2	1215	a481	7.34				

a From rating curve extended above 140 ft³/s, as explained above.

Minimum discharge, 1.4 ft³/s, oct. 16, 17.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	4.0	8.4	e2.5	e2.1	e2.4	e8.0	e30	e12	6.7	2.1	2.6
2	1.7	102	8.0	e2.4	e2.3	e2.3	e7.0	e250	e18	6.5	2.0	3.1
3	1.7	26	e7.5	e2.4	e2.2	e2.2	e6.0	e85	e15	6.0	2.2	2.3
4	1.6	14	e7.0	e2.3	e2.0	e2.1	e12	e50	e13	5.9	2.5	2.2
5	1.7	11	e6.8	e2.3	e1.9	e2.0	e35	e45	e12	5.6	19	2.1
6	1.9	71	e6.4	e2.3	e1.7	e1.9	e80	e300	e18	5.5	9.0	2.1
7	1.8	26	e6.0	e2.2	e1.7	e1.9	e40	e130	e16	5.3	5.2	2.1
8	1.7	18	e5.4	e2.2	e1.7	e1.9	e20	e55	e15	5.0	4.2	2.0
9	1.7	14	e5.2	e2.1	e1.6	e2.0	e12	e35	e14	4.6	3.3	1.9
10	1.7	12	e5.0	e2.1	e1.6	e2.0	e10	e30	e58	5.2	3.0	1.8
11	2.1	11	e4.7	e2.1	e1.6	e2.1	e9.0	e160	e48	5.1	3.0	1.6
12	1.8	9.4	e4.5	e2.1	e1.5	e2.3	e8.0	e400	e20	4.3	6.0	1.4
13	1.6	9.6	e4.3	e2.2	e1.5	e3.0	e7.2	e100	18	3.8	79	1.4
14	1.6	15	e4.4	e2.2	e1.5	e3.5	e7.0	e60	16	3.8	34	1.6
15	1.6	15	e4.5	e2.2	e1.5	e5.0	e9.0	e50	18	3.7	14	2.8
16	1.4	12	e4.4	e2.2	e1.6	e5.6	e12	e45	54	3.5	9.0	1.9
17	1.4	17	e4.2	e2.2	e1.8	e3.7	e18	e45	31	3.4	6.8	3.1
18	3.9	16	e3.8	e2.2	e2.0	e3.1	e25	e45	27	3.2	5.6	2.2
19	3.6	13	e3.6	e2.1	e2.2	e2.7	e20	e45	21	3.0	4.9	1.9
20	2.3	13	e3.6	e2.1	e2.7	e2.4	e15	e40	17	3.2	4.9	8.5
21	2.1	24	e3.6	e2.0	e3.5	e2.2	e16	e45	15	3.2	4.7	7.2
22	4.3	16	e3.9	e1.9	e8.0	e2.1	e11	e40	13	2.8	4.2	4.5
23	8.3	13	e4.3	e1.9	e5.0	e2.1	e8.5	e35	12	2.6	4.0	5.4
24	6.2	11	e4.0	e1.9	e4.0	e2.1	e7.5	e25	12	2.5	3.6	5.7
25	6.2	9.9	e4.0	e1.8	e3.5	e3.0	e8.0	e25	10	2.3	3.3	4.6
26	5.2	9.4	e3.5	e1.8	e3.2	e7.0	e9.0	e30	9.5	2.1	3.1	6.6
27	4.6	8.8	e3.0	e1.8	e2.7	e10	e10	e35	8.7	2.9	2.9	7.7
28	4.2	10	e3.0	e1.8	e2.6	e50	e8.5	e30	9.8	3.8	2.9	5.9
29	4.1	11	e2.9	e1.8	---	e95	e9.5	e20	8.1	2.8	2.9	5.2
30	3.9	9.2	e2.8	e1.8	---	e25	e10	e15	7.3	2.1	2.8	4.6
31	3.6	---	e2.6	e2.0	---	e10	---	e12	---	2.2	2.3	---
TOTAL	91.2	551.3	145.3	64.9	69.2	262.6	458.2	2312	566.4	122.6	256.4	106.0
MEAN	2.94	18.4	4.69	2.09	2.47	8.47	15.3	74.6	18.9	3.95	8.27	3.53
MAX	8.3	102	8.4	2.5	8.0	95	80	400	58	6.7	79	8.5
MIN	1.4	4.0	2.6	1.8	1.5	1.9	6.0	12	7.3	2.1	2.0	1.4
CFSM	.63	3.93	1.00	.45	.53	1.81	3.26	15.9	4.03	.85	1.77	.75
IN.	.72	4.38	1.15	.52	.55	2.09	3.64	18.38	4.50	.97	2.04	.84

CAL YR 1988 TOTAL 3008.9 MEAN 8.22 MAX 142 MIN 1.2 CFSM 1.76 IN. 23.92
WTR YR 1989 TOTAL 5006.1 MEAN 13.7 MAX 400 MIN 1.4 CFSM 2.93 IN. 39.79

e Estimated

SACO RIVER BASIN

01064500 SACO RIVER NEAR CONWAY, N.H.

LOCATION.--Lat 43°59'27", long 71°05'29", Carroll County, Hydrologic Unit 01060002, on left bank at Odell Falls 1.8 mi downstream from Swift River and Conway.

DRAINAGE AREA.--385 mi².

PERIOD OF RECORD.--August 1903 to December 1909, January 1910 to June 1912 (gage heights only), February 1929 to current year. Monthly discharge only for some periods, published in WSP 1301. Prior to 1912, published as "at Center Conway."

REVISED RECORDS.--WSP 1301: 1908-09. WDR ME-81-1: Drainage area. WRD ME-87-1: 1936 (M), 1951 (M), 1953 (M), 1960 (M), 1977 (M).

GAGE.--Water-stage recorder. Datum of gage is 418.19 ft above National Geodetic Vertical Datum of 1929. Aug. 26, 1903, to June 30, 1912, nonrecording gage at site 0.8 mi downstream at different datum.

REMARKS.--Estimated daily discharges: Oct. 1-11, 13-18, and Dec. 5 to Mar. 27. Records good except for periods of ice-effect, Dec. 5 to Mar. 27, and period of doubtful gage-height record, Oct. 1-11, and 13-18, which are fair. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--66 years (water years 1904-09, 1930 to current year), 932 ft³/s, 32.87 in./yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 47,200 ft³/s, Mar. 27, 1953, gage height, 17.20 ft, maximum gage height, 19.03 ft Mar. 7, 1979, (ice jam); minimum discharge, 40 ft³/s, Mar. 16, 1932, gage height, 1.61 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 2	1415	9,530	8.19	May 2	2100	16,000	10.01
Nov. 6	1100	10,500	8.47	May 6	2000	19,100	10.79
Apr. 7	0645	9,070	8.05	May 12	1600	*23,200	*11.72

Minimum daily, 140 ft³/s, Oct. 4, 5, 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	e155	345	841	e290	e240	e290	1300	1180	768	477	180	189
2	e150	5360	774	e270	e350	e280	1070	7440	725	465	173	371
3	e145	3130	721	e256	e290	e270	1070	7170	1060	438	178	375
4	e140	1660	682	e247	e245	e260	1180	3480	839	415	182	268
5	e140	1240	e540	e240	e242	e250	2310	2720	850	403	896	231
6	e150	6120	e500	e235	e240	e245	6540	10100	782	399	1600	212
7	e180	3070	e440	e232	e238	e240	6950	8300	1200	424	541	202
8	e155	2060	e380	e250	e235	e235	3710	4250	1200	377	385	196
9	e140	1530	e340	e280	e230	e225	2460	2790	1280	343	322	189
10	e160	1250	e310	e330	e228	e220	2040	2220	3840	347	276	184
11	e190	1190	e280	e305	e225	e215	1670	3660	3050	481	251	179
12	293	1010	e255	e290	e222	e210	1450	e16600	2010	389	375	172
13	e245	908	e245	e285	e220	e208	1300	8580	1440	343	1200	167
14	e195	1170	e235	e275	e218	e215	1200	4640	1240	317	2020	165
15	e175	1150	e255	e270	e215	e245	1150	3320	1090	309	840	209
16	e165	995	e275	e315	e220	e485	1370	2660	2510	289	576	242
17	e160	1220	e265	e300	e232	e450	1600	2210	2060	272	454	233
18	e180	1590	e255	e285	e225	e400	2210	1930	1640	262	384	244
19	919	1120	e245	e275	e220	e355	2450	1740	1350	251	340	219
20	510	1010	e240	e265	e210	e340	1980	1550	1130	250	320	312
21	363	1750	e240	e255	e225	e310	1550	1390	1010	297	329	884
22	342	1380	e340	e250	e275	e295	1470	1370	890	256	304	480
23	1020	1090	e290	e248	e600	e270	1250	1180	840	239	275	406
24	721	967	e270	e245	e470	e280	1140	1090	1010	225	263	468
25	696	852	e350	e243	e400	e300	1050	1100	846	213	248	381
26	570	821	e325	e240	e350	e340	1020	988	717	203	231	369
27	471	791	e295	e238	e325	e575	1010	1370	641	195	219	593
28	416	970	e315	e235	e305	1220	999	1160	640	193	214	478
29	418	1210	e390	e232	---	5490	968	986	607	200	206	389
30	397	929	e350	e230	---	3080	1000	843	525	199	204	338
31	360	---	e310	e230	---	1650	---	783	---	186	196	---
TOTAL	10321	47888	11553	8141	7695	19448	56467	108800	37790	9657	14182	9345
MEAN	333	1596	373	263	275	627	1882	3510	1260	312	457	311
MAX	1020	6120	841	330	600	5490	6950	16600	3840	481	2020	884
MIN	140	345	235	230	210	208	968	783	525	186	173	165
CFSM	.86	4.15	.97	.68	.71	1.63	4.89	9.12	3.27	.81	1.19	.81
IN.	1.00	4.63	1.12	.79	.74	1.88	5.46	10.51	3.65	.93	1.37	.90

CAL YR 1988 TOTAL 283766 MEAN 775 MAX 15000 MIN 105 CFSM 2.01 IN. 27.42
WTR YR 1989 TOTAL 341287 MEAN 935 MAX 16600 MIN 140 CFSM 2.43 IN. 32.98

e Estimated

SACO RIVER BASIN

31

01065000 OSSIPEE RIVER AT EFFINGHAM FALLS, N. H.

LOCATION.--Lat 43°47'44", long 71°03'36", Carroll County, Hydrologic Unit 01060002, on left bank 0.3 mi upstream from bridge on State Highway 153 at Effingham Falls, 0.3 mi downstream from outlet of Ossipee Lake, and 4 mi northwest of Effingham.

DRAINAGE AREA.--330 mi².

PERIOD OF RECORD.--Discharge: September 1942 to current year.

Water-quality records: Water year 1955.

GAGE.--Water-stage recorder. Elevation of gage is 390 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Ossipee and Silver Lakes and Pine River Pond. These reservoirs have a combined usable capacity of about 1,430,000,000 ft³. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--47 years, 685 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,700 ft³/s, Mar. 28, 1953, gage height, 11.64 ft; minimum, about 5 ft³/s during part of several days Nov. 4-20, 1968 (caused by unusual regulation); minimum daily, 11 ft³/s, Oct. 10, 1944.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,360 ft³/s, May 14, gage height, 7.60 ft; minimum, 86 ft³/s, Sept. 13; minimum daily, 119 ft³/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	130	541	778	279	234	234	1490	528	557	443	187	170
2	129	613	750	276	233	234	1370	935	558	438	173	170
3	128	927	712	274	234	233	1230	2000	557	383	168	170
4	127	1030	688	267	234	232	1180	2460	560	306	168	170
5	127	1010	638	252	234	232	1420	2380	557	306	168	170
6	126	998	606	255	232	231	1950	2380	614	307	168	170
7	124	1030	588	251	231	231	2540	2860	678	308	177	170
8	123	999	573	251	231	231	2730	3070	712	309	188	169
9	123	959	557	254	231	229	3010	2840	1050	310	178	168
10	122	908	539	248	230	229	2750	2550	1400	312	166	168
11	122	872	519	245	229	229	2460	2330	1620	324	166	167
12	121	825	503	244	229	227	2120	2620	1920	333	168	166
13	120	795	494	245	227	227	1900	3190	1910	335	171	157
14	120	787	490	241	227	227	1850	3320	1600	335	173	154
15	120	781	488	243	227	227	1820	3110	1320	334	393	155
16	120	585	336	243	227	228	1810	2800	1450	337	628	154
17	120	485	238	240	226	229	1800	2510	1590	327	350	155
18	120	674	240	240	225	231	1620	2230	1630	322	174	155
19	120	769	241	240	225	232	1520	1680	1590	321	174	155
20	119	763	243	240	223	234	1570	1380	1500	317	175	157
21	265	780	247	240	224	234	1530	1290	1120	314	207	158
22	369	814	252	238	227	236	1470	1060	932	312	242	458
23	368	830	253	238	227	236	1390	908	902	309	241	598
24	514	826	258	237	229	236	1200	883	879	303	204	592
25	594	804	271	236	230	238	1090	874	854	303	174	584
26	587	779	279	236	231	241	1030	680	482	302	173	466
27	580	765	276	236	233	299	719	541	317	316	173	385
28	573	791	281	236	234	413	516	545	321	264	173	387
29	566	823	289	235	---	722	523	548	328	200	172	387
30	557	799	283	234	---	1210	526	552	385	200	171	386
31	549	---	284	234	---	1460	---	555	---	192	170	---
TOTAL	7983	24362	13194	7628	6424	10132	48134	55609	29893	9722	6413	7671
MEAN	258	812	426	246	229	327	1604	1794	996	314	207	256
MAX	594	1030	778	279	234	1460	3010	3320	1920	443	628	598
MIN	119	485	238	234	223	227	516	528	317	192	166	154

CAL YR 1988 TOTAL 184636 MEAN 504 MAX 3390 MIN 119
WTR YR 1989 TOTAL 227165 MEAN 622 MAX 3320 MIN 119

PISCATAQUA RIVER BASIN

01072100 SALMON FALLS RIVER AT MILTON, N. H.

LOCATION.--Lat 43°24'50", long 70°19'15", Strafford County, Hydrologic Unit 01060003, on right bank just downstream from Milton Pond at Milton.

DRAINAGE AREA.--108 mi².

PERIOD OF RECORD.--October 1968 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 405 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good. Flow regulated by Great East, and Lovell Lakes and Horn, Wilson, and Milton (also controls Northeast and Town House) Ponds. These reservoirs have a combined usable capacity of about 1,280,000,000 ft³.

AVERAGE DISCHARGE.--21 years, 193 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,000 ft³/s, Apr. 6, 1984, gage height, 6.70 ft; minimum daily, 19 ft³/s, Aug. 30, Sept. 13, 1970.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,130 ft³/s, May 12, gage height, 4.93 ft; minimum daily, 33 ft³/s, Sept. 16, 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	102	115	361	119	47	111	398	111	115	69	39	37
2	102	200	347	118	47	110	393	436	97	69	37	37
3	116	417	330	115	47	127	232	744	98	65	38	37
4	127	477	312	113	47	140	123	598	96	60	38	37
5	127	431	295	112	47	140	150	529	90	60	37	37
6	127	411	279	110	62	139	637	564	86	63	38	37
7	127	403	274	110	74	137	902	641	94	60	38	37
8	127	400	262	110	74	136	723	586	172	56	38	37
9	128	400	190	109	74	100	554	386	404	56	39	37
10	130	357	139	76	74	73	330	340	501	61	39	37
11	130	313	139	45	74	72	247	495	534	76	37	36
12	129	306	137	46	73	72	263	907	546	81	38	36
13	154	302	130	46	58	57	257	1040	471	86	41	36
14	175	217	124	46	46	46	251	851	289	84	49	36
15	175	131	124	46	46	46	240	677	213	79	52	34
16	175	132	124	46	46	47	302	432	274	76	55	33
17	175	135	124	46	46	50	405	208	370	78	56	33
18	175	173	124	46	46	51	430	130	379	78	57	43
19	175	204	124	47	46	52	406	176	340	77	52	60
20	142	206	121	47	46	52	284	219	299	74	51	81
21	113	367	121	46	46	52	233	234	188	70	50	149
22	113	512	121	46	47	52	249	237	144	66	49	202
23	113	372	97	47	66	63	243	231	165	61	47	205
24	115	209	78	47	97	105	233	239	185	57	44	187
25	115	214	80	47	119	150	214	256	171	52	43	167
26	115	211	80	47	119	154	206	246	155	50	42	177
27	115	210	80	47	117	235	202	232	140	44	41	193
28	115	291	80	47	113	330	131	207	125	43	39	182
29	118	367	103	47	---	368	87	181	104	42	38	154
30	118	368	121	47	---	422	99	164	78	42	37	144
31	116	---	121	47	---	411	---	156	---	41	37	---
TOTAL	4084	8851	5142	2068	1844	4100	9424	12453	6923	1976	1336	2558
MEAN	132	295	166	66.7	65.9	132	314	402	231	63.7	43.1	85.3
MAX	175	512	361	119	119	422	902	1040	546	86	57	205
MIN	102	115	78	45	46	46	87	111	78	41	37	33

CAL YR 1988 TOTAL 58411 MEAN 160 MAX 1050 MIN 35
WTR YR 1989 TOTAL 60759 MEAN 166 MAX 1040 MIN 33

PISCATAQUA RIVER BASIN

33

01073000 OYSTER RIVER NEAR DURHAM, N. H.

LOCATION.--Lat 43°08'55", long 70°57'56", Strafford County, Hydrologic Unit 01060003, on left bank 200 ft upstream from highway bridge, 2.5 mi west of Durham, and 7 mi upstream from mouth.

DRAINAGE AREA.--12.1 mi².

PERIOD OF RECORD.--October 1934 to current year. October and November 1934 monthly discharge only, published in WSP 1301.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 70 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 1, 1964, at datum 1.00 ft higher.

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

AVERAGE DISCHARGE.--55 years, 19.5 ft³/s, 21.88 in./yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 862 ft³/s, Sept. 11, 1954, gage height, 6.47 ft, present datum; maximum gage height, 8.45 ft, present datum, Mar. 19, 1936; minimum discharge, 0.23 ft³/s, Aug. 18, 19, 25, 26, 27, 1971.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge 170 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 2	0630	*356	*4.41	May 12	1730	285	3.99

Minimum discharge, 1.7 ft³/s, Sept. 9, 13, 14.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	12	32	8.9	e6.6	e7.4	45	22	13	9.1	3.3	2.7
2	2.5	243	28	8.4	e10	e6.8	43	90	12	8.2	3.0	2.7
3	5.8	121	25	8.3	e8.0	e6.4	40	91	12	7.5	5.9	2.3
4	10	64	23	7.1	e7.0	e6.2	44	55	11	7.0	6.2	2.2
5	8.4	47	20	5.1	e6.4	e6.6	42	40	9.8	6.8	7.4	2.8
6	5.8	51	18	4.3	e5.6	e6.8	64	66	15	11	5.7	2.9
7	4.2	43	17	4.2	e5.1	e5.8	73	58	18	9.2	4.7	2.5
8	3.9	35	18	5.0	e4.7	e5.0	66	42	35	14	5.5	2.4
9	5.2	31	16	5.6	e4.5	e4.6	55	34	32	9.6	4.2	1.9
10	4.7	27	14	5.1	e4.7	e4.5	43	30	76	9.7	3.5	2.0
11	4.3	27	13	4.3	e4.0	e5.0	37	56	57	13	3.5	2.1
12	4.0	23	12	3.3	e4.2	e5.5	33	141	36	9.2	7.4	2.2
13	3.6	25	16	5.1	e4.0	7.6	29	87	29	7.1	17	1.9
14	3.3	39	20	4.6	e5.0	9.3	28	59	24	6.4	46	1.9
15	3.4	30	21	9.2	e8.0	20	27	46	24	6.3	29	10
16	3.5	26	18	e8.8	e11	25	79	38	58	5.7	21	6.6
17	3.4	27	14	e6.2	e8.0	22	74	33	43	18	14	6.6
18	3.5	28	11	e5.4	e5.0	28	53	29	36	16	11	6.1
19	4.8	23	8.0	e6.8	e4.2	27	47	26	27	10	9.1	5.4
20	3.3	34	7.2	8.1	e3.8	23	41	24	21	8.9	8.1	8.4
21	2.8	88	e7.0	6.0	e21	22	36	23	17	10	7.4	8.0
22	37	59	e6.6	5.0	e50	20	32	24	14	8.3	6.2	6.0
23	37	42	e6.4	4.7	e25	18	28	20	12	7.1	5.6	5.2
24	19	35	8.2	4.8	e20	16	26	24	9.9	6.1	5.7	6.0
25	17	30	e10	4.9	e13	54	24	28	9.0	5.5	4.9	4.1
26	14	26	e11	4.4	e11	61	22	23	7.7	4.9	4.0	14
27	13	25	e12	e4.8	e9.5	52	21	20	6.5	4.4	3.6	16
28	11	40	e10	e4.6	e8.0	48	20	19	13	6.7	3.2	8.1
29	9.8	48	e12	e4.8	---	47	19	17	13	5.3	3.1	6.9
30	9.0	37	e11	e5.4	---	44	23	15	10	4.2	3.4	6.1
31	9.5	---	9.9	e5.6	---	42	---	14	---	3.6	3.1	---
TOTAL	269.2	1386	455.3	178.8	277.3	656.5	1214	1294	700.9	258.8	265.7	156.0
MEAN	8.68	46.2	14.7	5.77	9.90	21.2	40.5	41.7	23.4	8.35	8.57	5.20
MAX	37	243	32	9.2	50	61	79	141	76	18	46	16
MIN	2.5	12	6.4	3.3	3.8	4.5	19	14	6.5	3.6	3.0	1.9
CFSM	.72	3.82	1.21	.48	.82	1.75	3.34	3.45	1.93	.69	.71	.43
IN.	.83	4.26	1.40	.55	.85	2.02	3.73	3.98	2.15	.80	.82	.48

CAL YR 1988 TOTAL 7585.6 MEAN 20.7 MAX 243 MIN 1.2 CFSM 1.71 IN. 23.32
WTR YR 1989 TOTAL 7112.5 MEAN 19.5 MAX 243 MIN 1.9 CFSM 1.61 IN. 21.87

e Estimated

PISCATAQUA RIVER BASIN

01073500 LAMPREY RIVER NEAR NEWMARKET, N. H.

LOCATION.--Lat 43°06'09", long 70°57'11", Rockingham County, Hydrologic Unit 01060003, on right bank 200 ft upstream from Packers Falls, 2 mi northwest of Newmarket, and 4.6 mi upstream from mouth.

DRAINAGE AREA.--183 mi².

PERIOD OF RECORD.--Discharge: July 1934 to current year.

Water-quality records: Water year 1954.

REVISED RECORDS.--WSP 1231: 1936-37.

GAGE.--Water-stage recorder. Elevation of gage is 40 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Some regulation by Pawtuckaway and Mendums Ponds. These reservoirs have a usable capacity of about 600,000,000 ft³. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--55 years, 282 ft³/s, 20.93 in./yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,570 ft³/s, Apr. 7, 1987, gage height, 15.14 ft; minimum daily, 1 ft³/s, Oct. 21, 1935.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,740 ft³/s, Nov. 4, gage height, 6.70 ft; minimum daily, 25 ft³/s, Sept. 14.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	174	555	192	103	e140	420	269	165	137	72	37
2	47	1300	490	e170	136	e130	401	548	164	121	69	35
3	48	1700	450	e150	127	e120	390	968	165	108	66	33
4	50	1650	415	e130	113	e115	418	1120	157	97	e40	35
5	46	1150	373	109	100	e110	446	945	138	89	e56	36
6	55	827	335	125	e90	121	562	839	134	113	e54	34
7	65	690	346	120	e85	107	719	905	173	116	e57	32
8	62	600	351	115	e84	100	818	965	257	120	e64	30
9	68	531	e300	e115	e75	95	783	768	351	120	e60	28
10	72	515	e270	e110	e70	90	646	590	625	108	e53	28
11	70	472	e240	e105	e68	91	536	611	768	154	e49	29
12	68	424	217	101	e65	102	449	1050	728	184	e57	28
13	112	392	221	e100	e65	111	385	1180	551	174	e107	26
14	171	465	256	102	70	116	344	1120	417	156	357	25
15	142	462	e230	e105	90	155	319	876	348	138	359	48
16	126	434	e210	e110	126	243	562	666	700	127	339	64
17	118	403	e200	e125	112	275	739	551	600	150	261	66
18	107	434	e190	e125	99	264	780	465	530	212	198	71
19	120	440	e180	127	85	226	720	394	437	209	153	64
20	125	453	e170	131	74	197	642	344	347	190	127	71
21	111	766	e165	123	166	176	573	304	292	182	109	86
22	229	821	e160	106	405	181	501	297	248	167	94	90
23	449	794	155	115	470	159	438	265	219	153	86	77
24	358	650	171	107	389	149	389	257	196	133	85	77
25	321	544	224	102	306	273	345	308	202	116	74	81
26	283	482	249	97	210	444	316	306	205	103	64	85
27	261	440	208	102	e165	433	293	280	179	86	55	141
28	240	485	231	97	e150	444	285	259	165	87	50	144
29	216	602	251	92	---	450	254	230	173	85	45	136
30	194	600	232	85	---	445	263	203	166	78	43	121
31	179	---	209	87	---	439	---	182	---	74	41	---
TOTAL	4561	19700	8254	3580	4098	6501	14736	18065	9800	4087	3344	1858
MEAN	147	657	266	115	146	210	491	583	327	132	108	61.9
MAX	449	1700	555	192	470	450	818	1180	768	212	359	144
MIN	46	174	155	85	65	90	254	182	134	74	40	25
CFSM	.80	3.59	1.45	.63	.80	1.15	2.68	3.18	1.79	.72	.59	.34
IN.	.93	4.00	1.68	.73	.83	1.32	3.00	3.67	1.99	.83	.68	.38
CAL YR 1988	TOTAL 103973	MEAN 284	MAX 1700	MIN 31	CFSM 1.55	IN. 21.14						
WTR YR 1989	TOTAL 98584	MEAN 270	MAX 1700	MIN 25	CFSM 1.48	IN. 20.04						

e Estimated

MERRIMACK RIVER BASIN

35

01075800 STEVENS BROOK NEAR WENTWORTH, N. H.

LOCATION.--Lat 43°50'12", long 71°53'07", Grafton County, Hydrologic Unit 01070001, on left bank 150 ft upstream from highway bridge, 0.2 mi upstream from mouth, and 2.5 mi southeast of Wentworth.

DRAINAGE AREA.--2.94 mi².

PERIOD OF RECORD.--May 1963 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 595 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair except those for periods of estimated daily discharges, and those below 1.0 ft³/s, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--26 years, 4.80 ft³/s, 22.17 in./yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,120 ft³/s, June 30, 1973, gage height, 6.36 ft, from rating curve extended above 320 ft³/s; minimum, 0.01 ft³/s several days in 1963-65, 1971, 1975, 1977, 1978.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 90 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 29	0415	90	2.76	May 6	1100	122	2.98
May 2	1215	*130	*3.02				

Minimum daily, 0.08 ft³/s, Mar. 11-13.

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	.10	.43	3.0	e.38	e.20	e.13	2.4	6.8	1.4	1.3	.13	.14
2	.10	36	2.4	e.32	e.37	e.12	2.6	59	1.2	1.0	.12	.22
3	.11	10	2.2	e.29	e.33	.12	5.5	22	1.0	.76	.15	.16
4	.11	4.3	1.7	e.26	e.30	e.11	17	12	1.2	.64	.13	.14
5	.11	3.2	1.1	e.23	e.25	e.11	43	9.2	1.4	.64	1.7	.13
6	.11	40	1.2	e.20	e.23	.11	52	55	1.9	.71	.85	.12
7	.11	16	1.3	e.22	e.22	e.10	26	20	2.7	.61	.45	.12
8	.12	9.0	1.2	e.25	e.21	e.10	13	12	5.2	.59	.37	.12
9	.12	6.8	.96	e.28	e.20	e.10	8.7	9.4	3.9	.47	.23	.12
10	.12	5.6	.75	e.25	e.19	e.09	6.6	7.3	17	8.8	.17	.11
11	.13	4.6	.50	e.22	e.18	e.08	6.0	13	8.4	7.7	.27	.11
12	.12	2.4	e.40	e.21	e.18	e.08	4.5	44	4.2	5.7	4.4	.11
13	.13	4.0	e.28	e.21	e.17	e.08	3.5	19	3.6	2.4	4.3	.11
14	.15	9.9	e.35	e.24	e.20	e.20	3.4	13	2.8	1.9	2.2	.11
15	.15	5.5	e.40	e.29	e.24	e.80	3.5	8.7	2.6	1.4	1.1	.25
16	.16	3.6	e.37	e.25	e.28	e3.0	24	7.1	18	.98	.74	.15
17	.17	3.7	e.33	e.24	e.26	e1.7	22	5.7	10	.80	.40	.22
18	.18	3.9	e.30	e.23	e.22	e.83	20	4.5	6.0	.65	e.54	.18
19	.16	2.6	e.28	e.22	e.19	.55	14	3.5	4.4	.65	.38	.13
20	.14	2.8	e.27	e.21	e.18	.34	10	2.7	3.5	.75	.31	1.1
21	.17	13	e.30	e.21	e.18	e.25	6.9	2.2	2.4	.70	.29	.89
22	.30	7.8	e.33	e.20	e2.0	e.17	6.3	1.8	1.7	.53	.24	.57
23	.27	5.1	e.32	e.20	e1.5	.17	4.3	1.5	2.1	.43	.21	.43
24	.37	3.6	e.31	e.19	e1.1	.17	3.9	1.5	4.1	.34	.21	.42
25	.47	2.6	e.40	e.18	e.45	.24	3.6	1.7	2.2	.29	.17	.40
26	.37	2.3	e.49	e.18	.27	2.8	3.3	3.0	1.5	.24	.16	.89
27	.26	2.1	e.48	e.17	e.19	12	3.4	5.7	1.1	.20	.15	1.9
28	.23	3.9	e.44	e.17	e.16	40	3.9	3.3	4.5	.17	.14	1.0
29	.26	5.4	e.50	e.16	---	51	3.2	2.2	4.2	.16	.12	.72
30	.23	3.6	e.48	e.16	---	6.7	3.9	1.5	2.2	.15	.13	.52
31	.19	---	e.42	e.15	---	2.6	---	1.3	---	.14	.12	---
TOTAL	5.72	223.73	23.76	6.97	10.45	124.85	330.4	359.6	126.4	41.80	20.88	11.59
MEAN	.18	7.46	.77	.22	.37	4.03	11.0	11.6	4.21	1.35	.67	.39
MAX	.47	40	3.0	.38	2.0	51	52	59	18	8.8	4.4	1.9
MIN	.10	.43	.27	.15	.16	.08	2.4	1.3	1.0	.14	.12	.11
CFSM	.06	2.54	.26	.08	.13	1.37	3.75	3.95	1.43	.46	.23	.13
IN.	.07	2.83	.30	.09	.13	1.58	4.18	4.55	1.60	.53	.26	.15

CAL YR 1988 TOTAL 1555.87 MEAN 4.25 MAX 176 MIN .10 CFSM 1.45 IN. 19.69
WTR YR 1989 TOTAL 1286.15 MEAN 3.52 MAX 59 MIN .08 CFSM 1.20 IN. 16.27

e Estimated

MERRIMACK RIVER BASIN

01076500 PEMIGEWASSET RIVER AT PLYMOUTH, N. H.

LOCATION.--Lat 43°45'33", long 71°41'10", Grafton County, Hydrologic Unit 01070001, on right bank 150 ft downstream from bridge at Plymouth and 0.3 mi downstream from Baker River.

DRAINAGE AREA.--622 mi².

PERIOD OF RECORD.--Discharge: October 1903 to current year. Records for April 1886 to September 1903, published in WSP 124, are unreliable and should not be used.
Water-quality records: Water years 1953, 1967-74, 1976-79.

REVISED RECORDS.--WSP 471: 1912-14. WSP 726: Drainage area. WSP 1231: 1904-11, 1913-14, 1917-18, 1919(M), 1920-25, 1926-27(M), 1929-31(M). WSP 1721: 1959(M). See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 457.07 ft above National Geodetic Vertical Datum of 1929. Prior to Jan. 1, 1910, nonrecording gage at sites 150 ft and 200 ft upstream at present datum or datum 1.11 ft lower.
Jan. 1, 1910, to Sept. 30, 1926, nonrecording gage at site 200 ft upstream at present datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Some diurnal fluctuation during period 1940-52 caused by powerplants upstream. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--86 years, 1,357 ft³/s, 29.63 in./yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 65,400 ft³/s, Mar. 19, 1936, gage height, 29.0 ft, from floodmarks, from rating curve extended above 43,000 ft³/s on basis of computations of flow over dam at gage heights 23.0 ft, 27.4 ft, and 29.0 ft; minimum, 39 ft³/s, Oct. 1, 3, 4, 1948; minimum daily, 45 ft³/s, Sept. 20, 1923.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 12,600 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 29	2000	17,200	11.41	May 6	2130	*23,400	*14.15
Apr. 7	0600	15,300	10.47	May 12	1500	14,700	10.22
May 2	2300	18,300	11.92				

Minimum discharge, 158 ft³/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	196	362	1040	734	e360	e475	e2700	1920	1160	591	192	201
2	195	4370	936	680	e390	e490	e2500	9400	1140	535	182	659
3	189	3870	854	653	e450	e460	e2400	10900	1220	481	197	568
4	189	1770	790	564	e425	e450	e2200	5580	1140	437	200	362
5	186	1300	685	496	e360	e430	e6000	4290	1270	420	786	292
6	191	4810	752	e375	e340	e460	12900	14400	1180	437	1840	258
7	190	3860	877	e390	e350	e530	12600	12600	1920	444	691	242
8	193	2640	757	e410	e340	e475	6840	6980	2050	418	497	231
9	190	1890	809	e370	e310	e380	4470	4570	2310	374	420	207
10	193	1550	714	e400	e330	e380	3750	3590	4340	575	335	209
11	204	1390	473	e360	e360	e370	2930	4230	4710	1460	306	192
12	427	1200	e300	e420	e290	e380	2320	11600	3020	988	662	182
13	350	1080	e400	e350	e350	e390	2020	8030	1940	688	1890	171
14	291	1840	e600	e420	e330	e325	1900	5210	1610	551	1970	175
15	261	1570	737	e370	e360	e275	1920	4040	1370	506	1060	226
16	248	1260	575	e340	e260	e900	2860	3410	3590	427	738	286
17	234	1310	500	e370	e340	e650	3600	2950	3240	372	579	260
18	236	2040	e450	e390	e300	e525	4750	2520	2260	339	473	333
19	799	1420	e400	e380	e340	e700	4800	2190	1890	321	404	281
20	565	1200	e500	e360	e360	e475	3860	1920	1480	335	374	571
21	403	2590	605	e410	e210	e625	2910	1700	1220	391	392	1980
22	359	2150	634	e380	e450	e500	2550	1610	1050	326	363	893
23	542	1460	528	e360	e800	e400	1970	1360	935	318	325	774
24	546	1220	570	e350	e1000	e375	1690	1250	1190	287	302	924
25	580	1050	701	e290	e700	e450	1490	1300	1020	254	281	690
26	530	1100	738	e410	e600	1280	1460	1200	831	237	255	731
27	439	939	608	e320	e560	1890	1520	2310	753	225	236	1420
28	392	1090	671	e360	e580	3110	1500	1800	854	220	224	974
29	428	1510	939	e320	---	12100	1380	1460	918	236	215	750
30	431	1180	1070	e380	---	8580	1400	1180	722	223	217	618
31	378	---	884	e360	---	e3920	---	1110	---	201	214	---
TOTAL	10555	55021	21097	12772	11845	42750	105190	136610	52333	13617	16820	15660
MEAN	340	1834	681	412	423	1379	3506	4407	1744	439	543	522
MAX	799	4810	1070	734	1000	12100	12900	14400	4710	1460	1970	1980
MIN	186	362	300	290	210	275	1380	1110	722	201	182	171
CFSM	.55	2.95	1.09	.66	.68	2.22	5.64	7.08	2.80	.71	.87	.84
IN.	.63	3.29	1.26	.76	.71	2.56	6.29	8.17	3.13	.81	1.01	.94

CAL YR 1988 TOTAL 393160 MEAN 1074 MAX 21800 MIN 175 CFSM 1.73 IN. 23.51
WTR YR 1989 TOTAL 494270 MEAN 1354 MAX 14400 MIN 171 CFSM 2.18 IN. 29.56

e Estimated

MERRIMACK RIVER BASIN

37

01077000 SQUAM RIVER AT ASHLAND, N. H.

LOCATION.--Lat 43°42'19", long 71°37'49", Grafton County, Hydrologic Unit 01070001, on right bank 200 ft upstream from highway bridge, 0.7 mi north of Ashland, and 1.4 mi downstream from Little Squam Lake.

DRAINAGE AREA.--57.6 mi².

PERIOD OF RECORD.--Discharge: August 1939 to current year.

Water-quality records: Water year 1957.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 545 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good above 20 ft³/s, and fair below. Flow completely regulated by Squam and Little Squam Lakes.

AVERAGE DISCHARGE.--50 years, 88.4 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,090 ft³/s, July 4, 1973, gage height, 14.29 ft; minimum daily, 1.0 ft³/s, July 4-7, 1976.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 607 ft³/s, May 12, gage height, 12.24 ft; minimum daily, 4.5 ft³/s, Apr. 25, 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	59	59	60	59	59	60	8.4	5.3	118	53	59	6.9
2	59	61	60	59	59	60	9.3	33	118	9.1	59	6.9
3	59	60	60	59	60	60	8.4	63	117	9.2	59	6.9
4	59	60	60	59	61	61	8.9	96	117	9.5	59	6.5
5	59	60	59	59	61	61	9.7	118	118	9.5	59	6.5
6	59	60	59	59	61	60	12	123	118	7.0	59	6.5
7	59	60	59	59	61	60	11	122	118	7.6	58	6.5
8	59	60	60	59	61	60	10	120	118	11	57	6.5
9	59	59	60	59	61	60	9.5	160	152	11	57	6.5
10	59	59	60	59	60	59	9.5	183	176	13	57	6.5
11	58	60	60	59	60	59	10	324	174	13	57	6.2
12	59	60	60	58	60	59	11	515	247	11	59	6.0
13	61	60	60	58	60	59	9.0	581	290	43	59	6.0
14	61	61	60	58	60	59	7.5	575	289	73	60	6.2
15	61	61	59	58	60	59	7.0	244	204	79	59	6.5
16	61	60	59	59	60	59	7.7	121	165	80	86	6.2
17	60	60	59	59	60	59	7.9	120	165	80	118	6.4
18	60	60	59	59	60	59	8.5	157	165	80	118	6.5
19	60	60	59	58	60	59	8.5	172	226	80	48	6.5
20	60	60	59	59	60	59	7.4	171	250	80	18	7.4
21	60	60	59	59	60	59	7.4	169	248	80	18	7.5
22	60	60	59	59	60	59	7.3	134	245	80	17	7.4
23	58	60	59	59	60	59	6.2	120	154	80	16	7.4
24	59	60	59	59	60	34	5.0	118	118	80	16	7.1
25	59	52	59	59	60	20	4.5	118	118	80	16	53
26	59	59	59	60	60	16	4.5	119	141	80	6.8	82
27	59	60	59	61	60	16	5.0	119	155	81	11	82
28	59	60	59	61	60	17	5.3	118	154	67	19	82
29	59	60	59	61	---	15	6.0	118	154	59	11	82
30	58	60	59	59	---	9.0	5.6	118	154	59	7.2	82
31	59	---	59	59	---	8.4	---	118	---	59	6.9	---
TOTAL	1840	1791	1840	1831	1684	1503.4	238.0	5372.3	5086	1563.9	1409.9	622.5
MEAN	59.4	59.7	59.4	59.1	60.1	48.5	7.93	173	170	50.4	45.5	20.7
MAX	61	61	60	61	61	61	12	581	290	81	118	82
MIN	58	52	59	58	59	8.4	4.5	5.3	117	7.0	6.8	6.0

CAL YR 1988 TOTAL 22056.6 MEAN 60.3 MAX 120 MIN 5.6
WTR YR 1989 TOTAL 24782.0 MEAN 67.9 MAX 581 MIN 4.5

MERRIMACK RIVER BASIN

01078000 SMITH RIVER NEAR BRISTOL, N. H.

LOCATION.--Lat 43°34'04", long 71°44'54", Merrimack County, Hydrologic Unit 01070001, on right bank in Hill, 1.5 mi upstream from mouth, and 1.8 mi southwest of Bristol.

DRAINAGE AREA.--85.8 mi².

PERIOD OF RECORD.--Discharge: May 1918 to current year.

Water-quality records: Water years 1957, 1976-79.

REVISED RECORDS.--WSP 711: Drainage area. WSP 781: 1934. WSP 1231: 1919, 1920-21(M), 1922-31, 1932-33(M), 1941-43.

GAGE.--Water-stage recorder. Datum of gage is 449.80 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Nov. 25, 1933, nonrecording gage at site 1.5 mi upstream at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Prior to 1954, some diurnal fluctuation caused by small mill upstream; greater fluctuation prior to 1941. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--71 years, 144 ft³/s, 22.79 in./yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,100 ft³/s, Mar. 19, 1936, gage height, 16.09 ft, from floodmarks, from rating curve extended above 2,700 ft³/s on basis of contracted-opening measurement of peak flow; minimum daily, 2.7 ft³/s, Aug. 2, 1933.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1885, that of Mar. 19, 1936.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 1,150 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 6	2400	*1,520	*6.36	No other peak greater than base discharge			
Minimum discharge, 9.1 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	14	38	138	40	e21	e36	216	119	82	59	18	20
2	13	459	117	e35	39	e34	201	525	77	52	17	19
3	13	478	103	e31	36	31	248	887	69	47	17	17
4	12	256	93	e29	e31	30	370	689	85	41	16	15
5	13	161	82	e26	29	28	576	392	78	40	27	14
6	13	268	65	24	e26	29	1180	734	94	e40	42	13
7	13	340	67	22	e24	e26	1340	890	151	e41	34	13
8	13	236	69	23	e23	25	900	682	218	e38	26	12
9	14	173	58	27	e22	23	537	407	241	e35	21	12
10	16	138	50	29	e20	22	354	278	471	e50	19	12
11	17	133	41	27	e19	22	256	361	509	e160	19	11
12	23	114	32	24	e19	23	211	819	314	e130	80	10
13	18	108	31	23	e19	24	184	722	196	e103	169	9.4
14	17	182	37	23	e21	25	172	492	154	e76	175	10
15	16	166	44	24	24	50	172	321	140	e59	98	17
16	16	129	42	32	e29	139	353	252	322	e48	63	16
17	16	118	38	e28	e27	181	522	212	304	e47	46	22
18	18	115	33	e26	e24	128	470	195	224	e46	36	23
19	21	100	30	e24	e21	90	392	162	170	41	29	22
20	21	99	30	e23	e20	84	296	144	127	51	28	47
21	20	247	33	e23	e22	63	233	123	99	68	26	82
22	32	250	37	e22	e45	57	200	126	99	52	23	63
23	89	174	34	e22	e76	62	169	114	121	40	22	45
24	65	136	35	e21	e59	52	151	115	167	34	29	39
25	51	109	47	e20	e47	65	140	140	145	29	31	36
26	43	104	55	e20	e44	152	130	126	102	26	25	45
27	38	93	51	e19	e41	292	126	178	79	37	23	102
28	34	150	47	e18	e39	512	123	150	79	41	24	73
29	35	213	53	e18	---	883	118	116	89	30	61	49
30	35	169	52	e17	---	787	115	94	72	23	39	39
31	33	---	45	e17	---	375	---	86	---	20	24	---
TOTAL	792	5456	1689	757	867	4350	10455	10651	5078	1604	1307	907.4
MEAN	25.5	182	54.5	24.4	31.0	140	348	344	169	51.7	42.2	30.2
MAX	89	478	138	40	76	883	1340	890	509	160	175	102
MIN	12	38	30	17	19	22	115	86	69	20	16	9.4
CFSM	.30	2.12	.64	.28	.36	1.64	4.06	4.00	1.97	.60	.49	.35
IN.	.34	2.37	.73	.33	.38	1.89	4.53	4.62	2.20	.70	.57	.39

CAL YR 1988 TOTAL 41237.9 MEAN 113 MAX 1750 MIN 9.9 CFSM 1.31 IN. 17.88
WTR YR 1989 TOTAL 43913.4 MEAN 120 MAX 1340 MIN 9.4 CFSM 1.40 IN. 19.04

e Estimated

01080000 LAKE WINNIPESAUKEE AT WEIRS BEACH, N. H.

LOCATION.--Lat 43°36'27", long 71°27'30", Belknap County, Hydrologic Unit 01070002, 1,300 ft north of highway bridge at Weirs Beach.

DRAINAGE AREA.--363 mi², at outlet at Lakeport.

PERIOD OF RECORD.--Gage heights: September 1933 to current year. Prior to November 1937, monthend contents only, published in WSP 1301. Prior to October 1970, published as "at The Weirs."

REVISED RECORDS.--WDR NH-VT-78-1: 1938-77 (datum correction).

GAGE.--Water-stage recorder. Datum of gage is 499.92 ft above National Geodetic Vertical Datum of 1929. Prior to November 1937, nonrecording gage at lake outlet at Lakeport at datum 0.63 ft, corrected, higher. Nov. 24, 1937 to Nov. 7, 1965, water-stage recorder at site 500 ft south at present datum.

REMARKS.--Lake used for recreation and conservation for development of water power. Usable capacity, 7,220,000,000 ft³ between elevations 500.57 ft and 504.24 ft above National Geodetic Vertical Datum of 1929. Stage regulated at outlet and by Wentworth, Merrymeeting (Reservoirs in Merrimack River basin), and other lakes. Contents given herein are computed from gage height at 2400 on last day of month, eliminating the effect of seiche and wind action.

Capacity table (gage height, in feet, and contents, in millions of cubic feet), furnished by State of New Hampshire, Department of Environmental Services

2.0	13,880
3.0	15,840
4.0	17,840
5.0	19,850

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height, 5.94 ft, June 4, 1984; minimum daily, 0.63 ft, Dec. 11, 1941.

EXTREMES FOR CURRENT YEAR.--Maximum daily gage height, 4.96 ft, May 12, 13; minimum daily, 2.73 ft, Feb. 12, 13, Mar. 15.

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	3.24	2.96	3.59	3.26	2.80	2.86	e3.25	4.43	4.50	4.28	3.98	3.55
2	3.23	3.17	3.58	3.25	2.79	2.85	e3.29	4.54	4.46	4.24	3.97	3.54
3	3.21	3.17	3.59	3.22	2.79	2.85	e3.32	4.60	4.45	4.23	3.95	3.52
4	3.21	3.20	3.56	3.18	2.79	2.85	e3.40	4.63	4.44	4.20	3.93	3.51
5	3.19	3.23	3.57	3.15	2.79	2.84	3.50	4.64	4.43	4.19	3.93	3.49
6	3.16	3.28	3.58	3.15	2.80	2.79	3.69	4.77	4.45	4.19	3.93	3.46
7	3.15	3.28	3.57	3.13	2.79	e2.77	3.86	4.83	4.47	4.18	3.92	3.44
8	3.13	3.28	3.56	3.12	2.79	e2.79	3.97	4.82	4.55	4.18	3.88	3.43
9	3.09	3.28	3.55	3.11	2.75	e2.78	4.04	4.81	4.60	4.16	3.85	3.41
10	3.08	3.28	3.53	3.09	2.75	2.77	4.11	4.79	4.70	4.20	3.83	3.41
11	3.07	3.26	3.52	3.07	2.74	2.77	4.15	4.82	4.67	4.22	3.82	3.39
12	3.05	3.26	3.50	3.05	2.73	e2.75	4.18	4.96	4.66	4.22	3.89	3.37
13	3.02	3.30	3.49	3.03	2.73	e2.76	4.20	4.96	4.65	4.21	3.92	3.35
14	3.02	3.33	3.48	3.02	2.76	e2.76	4.21	4.94	4.62	4.22	3.93	3.35
15	3.03	3.33	3.44	3.05	2.77	e2.73	4.23	4.91	4.61	4.21	3.93	3.35
16	3.03	3.35	3.40	3.04	2.77	e2.74	4.34	4.86	4.68	4.20	3.90	3.34
17	3.04	3.35	3.43	3.03	2.77	e2.74	4.40	4.82	4.67	4.20	3.88	3.34
18	3.04	3.35	3.40	3.01	2.76	e2.74	4.44	4.78	4.64	4.18	3.85	3.34
19	3.04	3.35	3.40	3.00	2.77	e2.76	4.47	4.76	4.63	4.16	3.84	3.33
20	3.02	3.40	3.38	2.99	2.76	e2.77	4.50	4.74	4.60	4.17	3.83	3.37
21	3.03	3.43	3.35	2.94	2.80	e2.78	4.51	4.73	4.58	4.16	3.81	3.39
22	3.09	3.47	3.33	2.95	2.86	e2.77	4.49	4.70	4.56	4.15	3.78	3.38
23	3.08	3.48	3.33	2.94	2.87	e2.79	4.47	4.68	4.54	4.13	3.77	3.36
24	3.09	3.47	3.34	2.92	2.87	e2.81	4.48	4.69	4.52	4.12	3.72	3.33
25	3.07	3.45	3.35	2.89	2.86	e2.86	4.47	4.68	4.47	4.10	3.68	3.33
26	3.05	3.48	3.33	2.89	2.87	e2.88	4.47	4.67	4.44	4.08	3.63	3.35
27	3.03	3.50	3.33	2.88	2.87	e2.93	4.46	4.64	4.39	4.07	3.61	3.33
28	3.01	3.55	3.31	2.87	2.87	e2.99	4.44	4.59	4.36	4.05	3.60	3.31
29	2.98	3.56	3.29	2.85	---	e3.05	4.44	4.57	4.33	4.01	3.60	3.28
30	2.97	3.59	3.29	2.84	---	e3.14	4.43	4.55	4.31	4.00	3.60	3.26
31	2.95	---	3.27	2.82	---	e3.22	---	4.53	---	3.99	3.55	---
MEAN	3.08	3.35	3.44	3.02	2.80	2.84	4.14	4.72	4.53	4.16	3.82	3.39
MAX	3.24	3.59	3.59	3.26	2.87	3.22	4.51	4.96	4.70	4.28	3.98	3.55
MIN	2.95	2.96	3.27	2.82	2.73	2.73	3.25	4.43	4.31	3.99	3.55	3.26
(†)	15,730	17,020	16,340	15,490	15,540	16,620	18,680	18,900	18,420	17,800	16,940	16,320
(‡)	-235	498	-254	-317	33.1	392	795	82.1	-185	-231	-321	-239

CAL YR 1988 MEAN 3.42 MAX 4.55 MIN 2.49 (†) 33.2
WTR YR 1989 MEAN 3.61 MAX 4.96 MIN 2.73 (‡) -40.0

e Estimated

† Contents, in millions of cubic feet, at 2400 on last day of month.

‡ Change in contents, equivalent in cubic feet per second.

MERRIMACK RIVER BASIN

01080500 LAKE WINNIPESAUKEE OUTLET AT LAKEPORT, N. H.

LOCATION.--Lat 43°32'57", long 71°27'54", Belknap County, Hydrologic Unit 01070002, 100 ft upstream from highway bridge across Paugus Bay at Lakeport.

DRAINAGE AREA.--363 mi².

PERIOD OF RECORD.--Discharge: January 1860 to December 1911 (monthly gage heights only, published in WSP 301), June 1933 to September 1983. October 1987 to September 1989.

Water-quality records: Water years 1954-55.

GAGE.--Acoustic velocity meter, and measuring flume. Datum of gage is 500.55 ft above National Geodetic Vertical Datum of 1929. January 1860 to December 1911, nonrecording gage at site 150 ft downstream at same datum. June 1, 1933, to Sept. 30, 1936, nonrecording gage and continuous-recording current meter at present site and datum. Oct. 1, 1936, to May 23, 1944, discharge computed from flow over spillway and through gates and wheels at site 150 ft downstream.

REMARKS.--Records good except for periods less than 10 ft³/s (Oct. 12-22), which are poor. Flow completely regulated by Winnepesaukee (station 01080000), Wentworth, Merrymeeting (Reservoirs in Merrimack River basin), and other lakes. Daily discharge computed from the acoustic velocity meter.

AVERAGE DISCHARGE.--52 years, 534 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,890 ft³/s, Mar. 31, 1936; no flow Sept. 29, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 2,550 ft³/s, May 13, 14, minimum daily, 2.0 ft³/s, Oct. 13-22 (estimated leakage through closed gates).

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	213	498	347	359	e575	e418	212	734	1040	597	296	312
2	212	487	437	608	e458	e418	214	1070	807	613	309	241
3	277	530	213	707	e418	e385	306	1280	e685	598	285	213
4	273	422	200	703	e200	e200	430	1280	e685	589	279	213
5	274	214	424	704	e200	e200	486	1280	671	408	217	304
6	277	216	438	709	e310	e293	595	1460	616	370	216	311
7	276	396	437	489	e310	e285	549	1670	611	349	208	311
8	213	533	485	358	e310	e295	372	1680	651	227	301	311
9	249	531	576	402	e310	e295	376	1790	891	230	358	270
10	207	534	360	e608	e264	e295	604	1910	1160	330	360	213
11	65	477	356	e574	e200	e200	600	2170	1310	373	347	307
12	3.6	210	585	e575	e200	e200	613	2370	1240	362	211	305
13	e2.0	214	530	e575	e310	e295	735	2550	1410	320	216	304
14	e2.0	414	583	e352	e310	316	722	2550	1450	312	311	327
15	e2.0	412	592	e352	e310	e295	369	2530	1480	222	283	368
16	e2.0	413	581	e578	e310	e295	365	2280	1410	222	318	213
17	e2.0	409	358	e576	e310	e295	617	1900	1500	320	312	211
18	e2.0	414	364	e575	e310	e200	733	1640	1450	368	310	282
19	e2.0	217	586	e575	e200	e200	736	1120	1240	308	221	296
20	e2.0	211	585	e575	e200	e288	736	1100	1100	219	221	300
21	e2.0	403	587	e352	e310	290	740	1100	1070	219	314	290
22	e2.0	414	580	e352	e310	290	729	1100	1030	220	311	389
23	43	420	577	e575	e406	291	729	1090	1070	221	311	275
24	221	215	357	e575	e418	292	733	1080	1080	313	310	294
25	384	420	363	e575	e200	198	732	1090	1080	316	301	471
26	446	220	577	e575	e200	199	734	1080	1080	317	220	373
27	335	218	577	e575	e418	317	726	1080	1080	309	221	465
28	489	419	581	e352	e418	272	727	1170	884	307	310	441
29	199	417	577	e352	---	299	736	1080	702	214	308	443
30	199	426	582	e575	---	297	725	1030	605	216	313	235
31	406	---	356	e575	---	300	---	1030	---	281	307	---
TOTAL	5281.6	11324	14751	16387	8695	8713	17681	46294	31088	10270	8805	9252
MEAN	170	377	476	529	311	281	589	1493	1036	331	284	308
MAX	489	534	592	709	575	418	740	2550	1500	613	360	471
MIN	2.0	210	200	352	200	198	212	734	605	214	208	211

CAL YR 1988 TOTAL 148895.6 MEAN 407 MAX 1150 MIN 2.0
WTR YR 1989 TOTAL 188541.6 MEAN 517 MAX 2550 MIN 2.0

e Estimated

MERRIMACK RIVER BASIN

41

01081000 WINNIPESAUKEE RIVER AT TILTON, N. H.

LOCATION.--Lat 43°26'31", long 71°35'20", Belknap County, Hydrologic Unit 01070002, on right bank at Tilton and 0.3 mi upstream from Packer Brook.

DRAINAGE AREA.--471 mi².

PERIOD OF RECORD.--Discharge: January 1937 to current year.

Water-quality records: Water year 1953.

REVISED RECORDS.--WSP 1901: 1960.

GAGE.--Water-stage recorder. Datum of gage is 441.87 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated by powerplants prior to 1967 and by Winnepesaukee (station 01080000), Winnisquam 4.5 mi upstream, Wentworth, Merrymeeting (Reservoirs in Merrimack River basin), and other lakes upstream. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--52 years, 704 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,580 ft³/s, May 31, 1984, gage height, 8.68 ft; minimum daily discharge, 48 ft³/s, Aug. 31, 1941.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,790 ft³/s, May 15, 16, gage height, 6.76 ft, minimum daily, 102 ft³/s, Oct. 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	265	235	630	512	582	333	788	801	1070	886	340	265
2	265	343	604	508	570	334	786	1120	896	848	336	270
3	263	370	608	525	518	335	761	1730	889	745	332	267
4	264	308	608	628	508	335	737	1700	879	586	309	262
5	283	271	529	739	502	334	792	1770	862	530	275	260
6	323	270	360	752	426	332	1230	2020	956	424	329	259
7	324	270	340	752	254	348	1560	2270	1110	353	272	253
8	324	263	339	743	251	327	1390	2140	1200	304	254	253
9	323	257	339	685	245	326	1240	2030	1210	291	256	253
10	323	256	335	529	265	326	1170	2010	1420	333	260	253
11	509	266	334	500	229	328	1090	2100	1700	369	275	253
12	937	273	375	508	229	333	963	2480	1700	324	304	263
13	593	316	486	512	228	330	936	2720	1700	297	329	263
14	555	370	533	512	232	327	907	2760	1810	299	352	271
15	558	374	602	512	236	359	786	2770	1830	299	398	290
16	548	359	641	512	265	422	765	2770	1920	290	404	252
17	474	359	721	512	357	402	877	2570	1910	289	395	292
18	340	358	739	512	381	382	978	2180	1870	296	362	311
19	316	386	739	512	331	347	1060	1830	1740	288	294	374
20	286	400	685	512	328	330	1050	1460	1410	296	287	405
21	262	552	533	530	413	333	1130	1380	1210	301	284	408
22	271	684	508	555	611	326	1130	1310	1190	293	284	391
23	200	663	504	500	645	324	1110	1190	1190	286	284	391
24	212	632	500	500	552	330	1010	1190	1160	279	276	394
25	182	545	495	473	384	382	830	1180	1150	278	271	387
26	112	388	508	505	351	500	812	1060	1150	304	268	420
27	102	353	512	527	341	580	804	1170	1150	404	273	412
28	126	465	512	579	336	707	800	1220	1150	415	266	378
29	215	642	512	579	---	843	798	1190	1140	405	265	337
30	229	643	521	576	---	915	801	1170	1040	386	267	270
31	226	---	516	575	---	824	---	1160	---	362	266	---
TOTAL	10210	11871	16168	17376	10570	12954	29091	54451	39612	12060	9367	9473
MEAN	329	396	522	561	377	418	970	1756	1320	389	302	316
MAX	937	684	739	752	645	915	1560	2770	1920	886	404	420
MIN	102	235	334	473	228	324	737	801	862	278	254	253
CAL YR 1988	TOTAL 188274	MEAN 514	MAX 1200	MIN 102								
WTR YR 1989	TOTAL 233203	MEAN 639	MAX 2770	MIN 102								

MERRIMACK RIVER BASIN

01083000 NUBANUSIT BROOK NEAR PETERBOROUGH, N. H.

LOCATION.--Lat 42°53'10", long 71°58'24", Hillsborough County, Hydrologic Unit 01070003, on left bank 1.2 mi downstream from Edward MacDowell Reservoir, 1.3 mi northwest of Peterborough, and 1.5 mi upstream from mouth.

DRAINAGE AREA.--46.9 mi².

PERIOD OF RECORD.--October 1920 to September 1931, July 1945 to current year. Monthly discharge only October 1920, published in WSP 1301.

REVISED RECORDS.--WSP 561: 1921(M). WSP 1051: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 790 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 1, 1931, at site 550 ft downstream at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Records do not include flow diverted to Contoocook River basin Apr. 6-12, 1987. Flow regulated by mills and Nubanusit Lake, Edward MacDowell Reservoir since 1950 (Reservoirs in Merrimack River basin), and other reservoirs upstream. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--55 years, 85.0 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,130 ft³/s, Apr. 11, 1931, gage height, 5.59 ft, site and datum then in use, from rating curve extended above 380 ft³/s; minimum daily, 0.5 ft³/s, Aug. 1, 1926. Maximum discharge since construction of Edward MacDowell Reservoir in 1950, 722 ft³/s, Apr. 16, 1987, gage height, 4.55 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 572 ft³/s, Apr. 11, gage height, 4.04 ft; minimum daily, 9.7 ft³/s, Sept. 13.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	38	141	72	e39	e37	113	64	69	64	34	21
2	29	110	118	70	e40	e32	176	132	72	59	36	20
3	28	137	101	e66	e41	e30	222	257	71	47	34	18
4	42	157	99	e56	e42	e29	236	409	68	38	31	16
5	61	157	91	e54	e40	e28	172	275	47	35	32	14
6	52	155	75	e51	e39	e28	94	183	44	42	33	13
7	38	98	71	e39	e38	e25	192	220	71	51	36	12
8	39	48	54	e37	e38	22	291	364	141	53	35	13
9	39	49	40	e37	e40	23	308	470	124	48	32	13
10	39	51	40	e37	e41	27	351	285	167	44	28	11
11	39	53	50	e36	38	34	475	162	217	45	33	10
12	40	100	136	e34	35	e33	499	278	336	43	65	10
13	47	149	94	e33	e33	e32	320	322	376	38	58	9.7
14	55	165	50	e33	e33	e26	188	316	276	34	127	11
15	49	174	62	35	e34	e30	133	306	204	33	205	34
16	47	161	101	42	e38	52	156	207	267	33	150	54
17	46	126	128	47	e39	e70	206	131	286	35	76	54
18	46	118	165	48	e38	e73	210	130	220	36	62	48
19	45	104	170	53	e38	e74	181	102	145	36	47	43
20	44	108	86	58	e38	e73	137	91	128	35	45	48
21	43	151	47	e58	e37	e50	95	89	127	36	61	53
22	54	169	47	e56	e42	e33	92	81	115	36	76	39
23	49	191	47	e56	129	e37	93	77	88	35	76	60
24	90	206	49	e58	e140	e39	90	100	121	33	62	70
25	120	202	52	52	e135	37	84	186	147	31	47	60
26	114	186	52	49	e130	43	78	162	124	28	39	74
27	108	138	62	e48	e120	88	75	101	105	27	39	98
28	80	133	73	e39	e80	175	71	84	93	37	34	101
29	58	145	74	e37	---	279	67	58	63	40	29	93
30	40	148	73	e37	---	215	66	52	59	40	27	74
31	33	---	73	e39	---	61	---	57	---	35	25	---
TOTAL	1650	3927	2521	1467	1575	1835	5471	5751	4371	1227	1714	1194.7
MEAN	53.2	131	81.3	47.3	56.2	59.2	182	186	146	39.6	55.3	39.8
MAX	120	206	170	72	140	279	499	470	376	64	205	101
MIN	28	38	40	33	33	22	66	52	44	27	25	9.7

CAL YR 1988 TOTAL 28349 MEAN 77.5 MAX 518 MIN 13
WTR YR 1989 TOTAL 32703.7 MEAN 89.6 MAX 499 MIN 9.7

e Estimated

MERRIMACK RIVER BASIN

43

01085500 CONTOOCOOK RIVER BELOW HOPKINTON DAM, AT WEST HOPKINTON, N. H.

LOCATION.--Lat 43°11'31", long 71°44'51", Merrimack County, Hydrologic Unit 01070003, on right bank 400 ft downstream from covered bridge at West Hopkinton, 0.2 mi downstream from Hopkinton Dam, and 5.9 mi upstream from Warner River.

DRAINAGE AREA.--427 mi².

PERIOD OF RECORD.--August 1903 to April 1907 (no winter records), August 1963 to current year. Published as "at West Hopkinton" 1903-7.

GAGE.--Water-stage recorder. Elevation of gage is 355 ft above National Geodetic Vertical Datum of 1929, from topographic map. August 1903 to April 1907, nonrecording gage at site 400 ft upstream at different datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Flow regulated by powerplants and by Nubanusit Lake, Edward Macdowell Reservoir since 1950, Highland Lake, Lake Franklin Pierce, Hopkinton Lake since 1962 (Reservoirs in Merrimack River basin), and other reservoirs upstream. Diversion from Hopkinton Lake to Everett Lake on Piscataquog River during periods of high flow in March 1968, April 1969, March 1977, March 1979, May, June 1984, and April 1987. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--26 years (water years 1963-89), 709 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,530 ft³/s, Apr. 8, 1987, gage height, 10.89 ft; minimum daily, 15 ft³/s, July 22, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,470 ft³/s, May 4, gage height, 6.56 ft; minimum daily, 83 ft³/s, Oct. 6, 7.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	92	457	1210	e450	e240	e360	e1400	634	519	359	198	243
2	91	1230	1030	e420	e255	e330	e1300	1250	534	342	154	209
3	88	1770	938	e380	e280	e310	e1100	2770	424	338	187	193
4	84	1780	767	e360	288	e280	e1400	3190	444	240	117	169
5	84	1570	740	e330	e280	e250	1750	2460	468	178	107	135
6	83	1260	e700	e310	245	224	1890	2480	531	211	111	126
7	83	1260	e660	e300	233	204	2210	2940	704	314	119	112
8	93	1160	e630	e300	e220	e190	2610	3150	766	403	152	100
9	106	1120	e600	e310	e200	e180	2770	2770	1150	332	194	97
10	113	940	e550	e320	e190	e170	2890	2060	1800	345	190	97
11	117	914	489	e315	e180	161	3190	1800	2340	332	176	99
12	186	883	e470	e305	166	e160	2460	2380	2500	380	242	101
13	233	813	e600	e290	185	e165	1810	2720	1930	506	626	91
14	232	741	e530	242	e190	e180	1670	2690	1630	470	1280	84
15	327	865	e520	194	e215	366	1300	2430	1470	367	1190	97
16	272	910	e500	270	e225	807	1510	1960	1840	320	933	151
17	209	1010	e470	e310	e230	788	2040	1550	2050	189	1010	155
18	247	919	423	e320	e240	631	2020	1220	1720	259	703	158
19	241	907	389	e340	e230	589	1750	909	1430	180	584	174
20	206	699	e380	e340	e220	407	1350	822	e975	182	339	233
21	171	1300	e380	e310	e220	407	1190	669	e940	220	360	341
22	272	1720	e400	e300	e350	398	1040	682	e695	375	392	314
23	464	1740	e380	e270	e700	328	867	690	e615	370	384	e337
24	520	1550	e370	e265	e640	371	735	816	635	369	381	e402
25	621	1360	347	e260	e580	453	688	879	614	408	323	e412
26	581	1250	402	e260	e520	683	671	920	623	373	303	e481
27	523	1050	e500	e250	e470	984	618	1020	568	340	291	e605
28	535	1100	e500	e240	e425	1510	662	816	483	305	288	e550
29	472	1370	e500	e235	---	2070	637	650	446	261	282	e532
30	360	1360	e500	e230	---	1870	571	491	394	181	251	e521
31	380	---	e480	e235	---	e1600	---	521	---	149	170	---
TOTAL	8086	35008	17355	9261	8417	17426	46099	50339	31238	9598	12037	7319
MEAN	261	1167	560	299	301	562	1537	1624	1041	310	388	244
MAX	621	1780	1210	450	700	2070	3190	3190	2500	506	1280	605
MIN	83	457	347	194	166	160	571	491	394	149	107	84

CAL YR 1988 TOTAL 232367 MEAN 635 MAX 3040 MIN 73
WTR YR 1989 TOTAL 252183 MEAN 691 MAX 3190 MIN 83

e Estimated

MERRIMACK RIVER BASIN

01085800 WEST BRANCH WARNER RIVER NEAR BRADFORD, N. H.

LOCATION.--Lat 43°15'33", long 72°01'35", Merrimack County, Hydrologic Unit 01070003, on left bank 75 ft downstream from small right-bank tributary, 200 ft upstream from highway bridge, and 3.5 mi west of Bradford.

DRAINAGE AREA.--5.75 mi².

PERIOD OF RECORD.--Discharge: May 1962 to current year.

Water-quality records: Water year 1976.

REVISED RECORDS.--WDR NH-VT-1: 1984.

GAGE.--Water-stage recorder. Elevation of gage is 950 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

AVERAGE DISCHARGE.--27 years, 11.5 ft³/s, 27.16 in./yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 800 ft³/s, May 29 or 30, 1984, from rating curve extended above 210 ft³/s; minimum, about 0.06 ft³/s, about Sept. 20, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 110 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 29	0230	128	6.06	May 6	1315	*206	*6.74
Apr. 5	1315	120	5.98	June 10	0330	174	6.48

Minimum discharge, 0.93 ft³/s, Aug. 3, 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	1.2	6.4	12	e4.6	e2.2	3.6	13	9.0	6.7	3.0	1.3	1.5
2	1.3	54	11	e4.0	e2.7	3.3	16	44	5.8	2.8	1.2	2.0
3	1.3	27	9.9	e3.6	e3.0	2.9	28	44	5.1	2.4	1.1	1.8
4	1.2	15	8.8	e3.2	e2.8	2.8	38	27	4.3	2.3	1.3	1.5
5	1.2	12	7.5	e2.8	e2.5	2.8	56	20	3.9	e3.1	e2.5	1.4
6	1.2	55	7.2	e2.6	e2.2	3.0	43	86	14	4.8	e4.2	1.3
7	1.4	25	7.5	e2.8	e2.1	2.5	47	49	13	3.5	e4.6	1.3
8	1.6	16	7.5	e2.7	e1.9	1.9	31	29	44	3.5	e2.9	1.4
9	1.7	12	6.4	e2.6	e1.8	1.9	22	21	23	2.8	2.1	1.3
10	1.7	11	5.8	e2.5	e1.7	2.0	19	18	99	11	1.7	1.3
11	2.0	10	5.2	e2.4	e1.6	2.2	15	42	37	11	4.8	1.2
12	2.2	8.6	4.3	e2.3	e1.6	2.8	13	60	18	6.2	23	1.2
13	1.9	13	4.3	e2.3	e1.6	2.7	12	40	13	4.1	24	1.2
14	1.8	22	5.0	e2.3	e1.5	3.5	11	26	11	4.4	18	1.2
15	1.8	14	5.4	e2.4	e1.9	33	12	20	19	3.9	e2.4	2.2
16	1.8	11	5.0	e2.5	e2.7	19	42	17	58	e3.0	5.0	1.9
17	1.7	12	4.6	e2.6	e2.4	14	40	14	30	2.6	e3.4	3.0
18	1.9	11	4.3	e2.7	e2.2	11	31	12	19	2.6	2.8	2.6
19	2.4	9.5	4.2	e2.8	e2.0	9.8	23	10	12	2.3	2.4	e2.4
20	2.3	15	e4.0	e2.8	e1.7	8.0	19	9.1	9.4	2.1	3.0	e8.4
21	2.1	46	e3.8	e2.9	e3.0	5.2	16	9.4	8.2	2.6	e3.1	7.2
22	14	21	e3.7	e2.7	e4.5	5.1	14	9.6	6.5	e2.4	2.4	e3.9
23	12	15	e3.6	e2.5	e10	5.1	12	7.5	6.6	2.4	2.2	e3.6
24	6.7	12	e3.5	e2.5	e12	4.6	11	13	9.5	2.0	2.8	e3.5
25	5.4	10	e4.2	e2.6	5.7	6.7	10	12	6.9	1.7	2.1	3.1
26	4.5	9.6	e5.0	e2.3	4.8	25	9.5	11	5.0	1.6	1.8	e8.0
27	4.1	9.3	e5.4	e2.2	4.2	42	9.5	13	4.2	1.4	1.6	9.3
28	3.7	29	e4.8	e2.3	3.8	77	9.2	10	4.5	1.7	1.6	5.2
29	3.8	21	e5.4	e2.1	---	80	9.0	7.8	4.4	1.9	1.5	e3.3
30	3.6	14	e5.2	e2.0	---	26	8.8	6.6	3.5	1.6	1.6	3.1
31	3.4	---	e5.0	e2.0	---	14	---	6.1	---	1.5	1.6	---
TOTAL	96.9	546.4	179.5	82.6	90.1	423.4	640.0	703.1	504.5	102.2	134.0	90.8
MEAN	3.13	18.2	5.79	2.66	3.22	13.7	21.3	22.7	16.8	3.30	4.32	3.03
MAX	14	55	12	4.6	12	80	56	86	99	11	24	9.3
MIN	1.2	6.4	3.5	2.0	1.5	1.9	8.8	6.1	3.5	1.4	1.1	1.2
CFSM	.54	3.17	1.01	.46	.56	2.38	3.71	3.94	2.92	.57	.75	.53
IN.	.63	3.53	1.16	.53	.58	2.74	4.14	4.55	3.26	.66	.87	.59

CAL YR 1988 TOTAL 3677.60 MEAN 10.0 MAX 94 MIN .63 CFSM 1.75 IN. 23.79
WTR YR 1989 TOTAL 3593.5 MEAN 9.85 MAX 99 MIN 1.1 CFSM 1.71 IN. 23.25

e Estimated

01087000 BLACKWATER RIVER NEAR WEBSTER, N. H.

LOCATION.--Lat 43°17'45", long 71°41'46", Merrimack County, Hydrologic Unit 01070003, on left bank 0.2 mi west of Dingit Corner, 2.4 mi downstream from Blackwater Dam, 2.5 mi southeast of Webster, and 6.5 mi upstream from mouth.

DRAINAGE AREA.--129 mi².

PERIOD OF RECORD.--Discharge: May 1918 to September 1920, February 1927 to current year. Published as "near Contoocook" 1918-20, 1927-35. Records published for both sites October 1934 to September 1935.

Water-quality records: Water year 1957.

REVISED RECORDS.--WSP 696: Drainage area. WSP 821: 1936(M). WSP 851: 1936. WSP 867: 1936 (flood-report data). WSP 1231: 1919-20, 1927, 1928(M), 1929-32, 1933-34(M), 1936 (calendar-year summaries).

GAGE.--Water-stage recorder. Elevation of gage is 430 ft above National Geodetic Datum of 1929, from topographic map. Prior to Oct. 1, 1935, chain gage at site 5 mi downstream at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. High flow regulated by Blackwater Reservoir since 1941 (Reservoirs in Merrimack River basin). Some regulation at low flow prior to 1933 by mill above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--64 years, 214 ft³/s, 22.53 in./yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,000 ft³/s, Mar. 19, 1936, gage height, 11.78 ft, from floodmarks, from rating curve extended above 6,700 ft³/s on basis of slope-area and critical-depth measurements of peak flow; minimum, 3 ft³/s, Sept. 17, 1941; minimum daily, 7.6 ft³/s, Sept. 29, 1964. Maximum discharge since construction of Blackwater Reservoir in 1941, 2,390 ft³/s, Apr. 16, 1951, Apr. 10, 1952, gage height, 7.18 ft.

Maximum stage since at least 1733, that of Mar. 19, 1936.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,640 ft³/s, May 4; gage height, 6.37 ft³; minimum, 24 ft³/s, Oct. 7, 8.

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	29	55	288	98	54	78	738	194	163	125	46	41
2	28	195	241	90	62	71	683	349	154	112	42	42
3	27	403	211	86	67	68	364	680	151	102	40	40
4	28	516	191	80	69	63	435	1260	146	93	39	38
5	25	347	167	69	67	61	513	989	135	89	40	37
6	25	270	147	66	62	59	572	676	137	90	43	34
7	24	337	151	66	60	56	643	949	203	94	56	32
8	24	389	144	67	57	54	764	1410	296	93	67	50
9	25	310	133	70	56	51	813	1140	361	87	61	100
10	26	233	112	72	53	48	910	639	501	90	52	110
11	27	195	110	71	51	47	1040	566	665	133	47	110
12	27	174	89	67	50	47	1040	721	849	199	62	108
13	29	160	104	65	49	48	e760	889	545	181	128	106
14	30	184	104	64	48	51	e680	965	347	144	351	105
15	29	221	105	64	49	71	e620	1010	295	123	388	108
16	28	219	101	70	52	129	e580	624	380	111	278	105
17	28	194	97	72	53	222	e540	499	515	100	189	102
18	28	181	92	72	52	235	e520	418	563	90	140	99
19	28	169	85	72	50	187	e500	337	473	81	107	95
20	29	163	82	71	48	150	497	276	375	77	89	97
21	29	266	85	70	50	134	497	240	310	89	80	119
22	37	363	87	63	66	115	547	233	266	113	74	136
23	59	389	84	62	98	107	607	224	211	103	69	137
24	96	321	87	60	144	104	658	209	209	85	64	111
25	98	254	97	58	153	111	396	226	248	74	61	93
26	83	210	115	57	133	191	253	232	234	67	58	89
27	71	189	117	55	107	320	229	263	189	61	54	123
28	63	204	112	54	90	456	215	320	160	58	49	138
29	59	270	113	52	---	640	205	282	147	55	45	127
30	56	320	112	51	---	789	199	215	138	53	45	110
31	53	---	106	52	---	778	---	180	---	49	43	---
TOTAL	1248	7701	3869	2086	1950	5541	17018	17215	9366	3021	2907	2742
MEAN	40.3	257	125	67.3	69.6	179	567	555	312	97.5	93.8	91.4
MAX	98	516	288	98	153	789	1040	1410	849	199	388	138
MIN	24	55	82	51	48	47	199	180	135	49	39	32
MEAN†	40.3	271	111	67.3	69.6	210	535	555	312	97.2	93.8	91.4
CFSM†	.31	2.10	.86	.52	.54	1.63	4.15	4.30	2.42	.75	.73	.71
IN.†	.36	2.34	1.00	.60	.56	1.88	4.63	4.96	2.70	.87	.84	.79

CAL YR 1988 TOTAL 65331 MEAN 178 MAX 1500 MIN 24 MEAN† 178 CFSM† 1.38 IN.† 18.78
WTR YR 1989 TOTAL 74664 MEAN 205 MAX 1410 MIN 24 MEAN† 205 CFSM† 1.59 IN.† 21.53

e Estimated

† Adjusted for change in contents in Blackwater Reservoir.

MERRIMACK RIVER BASIN

01089100 SOUCCOOK RIVER AT PEMBROKE ROAD NEAR CONCORD, N.H.

LOCATION.--Lat 43°12'47", long 71°28'49", Merrimack County, Hydrologic Unit 01070002, on left bank 500 ft east of U.S. Highway 106, 1.4 mi downstream from U.S. Highways 4, 202, and 9.

DRAINAGE AREA.--81.9 mi².

PERIOD OF RECORD.--Discharge: March 1988 to September 1989. October 1951 to September 1987, at site 0.9 mi upstream (station 01089000).

GAGE.--Water-stage recorder. Elevation of gage is 270 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,700 ft³/s, Mar. 14, 1977, gage height, 14.50; minimum, 1.5 ft³/s, Aug. 7, 1965, at site 0.9 mi upstream (station 01089000).

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 7	0045	*1,260	*a10.20	May 7	0215	855	a8.12
May 3	0615	1,080	a9.37	May 12	2000	744	a7.79

a backwater from tree.

Minimum discharge 20 ft³/s; Oct. 5, Sept. 6-14.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	34	159	e60	e30	e45	257	122	83	47	26	21
2	22	342	139	e54	e40	e43	274	468	75	45	24	22
3	22	353	126	e48	e38	e40	336	962	69	41	30	25
4	22	201	118	e42	e35	e37	471	579	63	38	26	23
5	20	159	116	e38	e33	e35	491	381	58	37	26	21
6	22	156	133	e35	e29	e37	1090	553	66	42	26	20
7	21	148	113	e38	e27	e33	1120	784	104	44	26	20
8	22	126	91	e36	e25	e31	796	500	195	44	27	20
9	24	110	e90	e35	e23	e28	572	354	240	39	25	20
10	27	97	e85	e33	e22	e27	439	282	449	44	22	20
11	30	92	e78	e32	e22	e27	342	319	468	96	23	20
12	34	86	72	e31	e21	e30	275	644	258	91	61	20
13	33	79	e68	e31	e21	e38	233	610	178	74	115	20
14	49	114	e72	e31	e21	48	207	411	149	63	292	20
15	44	115	e76	e33	e25	102	191	310	133	64	170	44
16	39	99	e68	e35	e37	239	416	253	350	60	115	50
17	38	94	e64	e37	e35	197	542	212	347	57	84	51
18	34	111	e60	e37	e30	157	406	181	237	62	62	54
19	34	101	e56	e37	e25	123	334	157	181	54	50	47
20	32	101	e54	e40	e23	115	283	138	146	50	44	58
21	29	359	e52	e40	e40	86	232	126	127	81	44	76
22	35	291	e50	e33	e90	99	199	127	107	75	38	64
23	64	205	e48	e35	e140	100	176	117	85	57	31	67
24	54	165	e48	e34	e120	95	159	136	77	47	33	85
25	46	141	e60	e33	e100	155	146	184	71	41	32	73
26	42	125	e70	e30	e70	411	133	147	65	38	28	91
27	39	117	e75	e30	e55	484	127	137	61	35	25	158
28	37	174	e65	e30	e50	437	126	121	60	39	24	105
29	34	252	e75	e28	---	505	119	102	59	36	22	79
30	33	193	e72	e27	---	440	118	86	51	31	22	64
31	32	---	e68	e26	---	282	---	83	---	28	22	---
TOTAL	1036	4740	2521	1109	1227	4526	10610	9586	4612	1600	1595	1458
MEAN	33.4	158	81.3	35.8	43.8	146	354	309	154	51.6	51.5	48.6
MAX	64	359	159	60	140	505	1120	962	468	96	292	158
MIN	20	34	48	26	21	27	118	83	51	28	22	20

WTR YR 1989 TOTAL 44620 MEAN 122 MAX 1120 MIN 20 CFSM 1.49 IN. 20.27

e Estimated

MERRIMACK RIVER BASIN

47

01090800 PISCATAQUOG RIVER BELOW EVERETT DAM, NEAR EAST WEARE, N.H.

LOCATION.--Lat 43°05'29", long 71°39'36", Hillsborough County, Hydrologic Unit 01070002, on right bank 500 ft downstream from Everett Dam and 1.4 mi southeast of East Weare.

DRAINAGE AREA.--63.1 mi².

PERIOD OF RECORD.--March 1963 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 320 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by Everett Lake (Reservoirs in Merrimack River basin). Diversion from Hopkinton Lake on Contoocook River to Everett Lake during periods of high flow in the spring of 1968, 1969, 1977, 1979, 1984, and 1987. Occasional regulation by small reservoirs upstream. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--26 years, 103 ft³/s, 22.17 in./yr, adjusted for storage and diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,770 ft³/s, June 12, 1984, gage height, 9.09 ft; no flow for part of Aug. 27, Nov. 18, 1964, Oct. 22, 1968, Oct. 4, 1978, and Oct. 27, 1987, caused by unusual regulation; minimum daily discharge, 0.39 ft³/s, Sept. 6, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,080 ft³/s, Apr. 12, gage height, 8.03 ft; minimum daily, 5.9 ft³/s, Sept. 14.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	e62	e131	e62	33	148	119	86	e63	e33	e22	10
2	13	e122	e114	e56	41	97	174	77	e63	e30	e20	11
3	14	154	e104	e50	40	46	253	86	e35	e35	e19	9.8
4	13	e163	e97	e33	37	36	291	222	e63	e44	e18	8.9
5	12	e71	e95	e26	35	33	176	537	e65	e40	e18	8.4
6	12	e29	e80	e26	32	31	36	455	e69	e33	e18	8.2
7	11	e91	76	e28	29	27	88	105	e102	e29	e16	8.0
8	12	e144	75	e36	26	26	e192	229	e144	e38	19	7.6
9	13	e144	73	e37	24	24	e232	603	e107	e42	16	7.3
10	13	e187	67	e34	22	23	504	e587	e200	e35	14	6.8
11	17	e209	63	e30	21	23	862	e45	e396	e37	15	6.7
12	42	e209	54	e26	20	26	903	e176	e400	e44	41	6.2
13	55	e181	51	e27	19	24	534	e283	e434	e40	80	6.1
14	57	e122	55	e26	19	26	180	286	e249	e32	97	5.9
15	57	e95	58	e31	22	50	155	447	e133	39	76	21
16	57	e95	55	e33	26	101	176	e540	e265	35	58	27
17	57	e95	50	e34	24	89	176	489	e359	35	45	31
18	58	e91	48	e34	23	84	176	123	e271	38	34	32
19	57	e88	45	e34	22	73	e201	103	e192	36	28	29
20	54	56	44	37	21	62	e238	109	e144	33	25	33
21	e48	e28	45	36	25	57	283	104	e110	50	24	41
22	75	e79	48	33	31	52	229	109	e85	55	22	31
23	88	e165	47	34	33	48	156	99	e66	e51	19	39
24	74	e209	49	33	33	41	134	101	e67	e43	18	40
25	66	e329	e69	31	34	30	120	135	e66	e39	18	31
26	65	e416	e100	30	34	31	112	135	e73	e29	16	39
27	65	e180	e85	31	85	85	107	128	e70	e27	14	69
28	e66	e136	e77	29	153	202	104	120	e51	e28	13	60
29	66	e168	e93	28	---	311	100	119	e45	e28	11	80
30	61	152	e75	28	---	204	96	117	e34	e28	12	43
31	e62	---	e69	30	---	58	---	e65	---	e24	11	---
TOTAL	1373	4270	2192	1043	964	2168	7107	6820	4421	1130	857	756.9
MEAN	44.3	142	70.7	33.6	34.4	69.9	237	220	147	36.5	27.6	25.2
MAX	88	416	131	62	153	311	903	603	434	55	97	60
MIN	11	28	44	26	19	23	36	45	34	24	11	5.9
MEAN†	45.2	144	69.4	33.2	39.1	75.3	228	220	147	36.0	27.2	25.7
CFSM†	.72	2.28	1.10	.53	.62	1.19	3.61	3.49	2.33	.57	.43	.41
IN.†	.83	2.54	1.27	.61	.65	1.38	4.03	4.02	2.59	.66	.50	.45

CAL YR 1988 TOTAL 29685.5 MEAN 81.1 MAX 588 MIN 8.4 MEAN† 81.0 CFSM† 1.28 IN.† 17.47
WTR YR 1989 TOTAL 33101.9 MEAN 90.7 MAX 903 MIN 5.9 MEAN† 90.7 CFSM† 1.44 IN.† 19.52

e Estimated

† Adjusted for change in contents in Everett Lake.

MERRIMACK RIVER BASIN

01092000 MERRIMACK RIVER NEAR GOFFS FALLS, BELOW MANCHESTER, N. H.

LOCATION.--Lat 42°56'54", long 71°27'52", Hillsborough County, Hydrologic Unit 01070002, on right bank 600 ft upstream from bridge on Interstate Highway 193, 0.8 mi downstream from Bowman Brook, 1.3 mi north of Goffs Falls, and 2.3 mi downstream from Piscataquog River.

DRAINAGE AREA.--3,092 mi².

PERIOD OF RECORD.--Discharge: October 1936 to current year. October 1936 monthly discharge only, published in WSP 1301.

Water-quality records: Water years 1952-53, 1957, 1971.

REVISED RECORDS.--WSP 1231: 1937. WSP 1271: 1937(M, m).

GAGE.--Water-stage recorder. Datum of gage is 109.27 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by powerplants, by Franklin Falls Reservoir since 1942, and by Squam, Newfound, Winnepesaukee, Winnisquam, and other lakes and reservoirs upstream (Reservoirs in Merrimack River basin). Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--53 years, 5,284 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 102,500 ft³/s, Sept. 23, 1938, gage height, 25.87 ft, from rating curve extended above 48,000 ft³/s on basis of computations of flow over dam at gage heights 25.87 ft and 35.19 ft; minimum daily, 98 ft³/s, Oct. 11, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1722, 150,000 ft³/s, Mar. 20, 1936, gage height, 35.19 ft, from floodmarks, from rating curve extended above 48,000 ft³/s by method explained above.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 22,000 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 7	1715	26,800	10.01	May 8	0630	*27,200	*10.10
May 4	0530	24,200	9.48	May 14	0230	24,500	9.54

Minimum daily discharge, 739 ft³/s, Oct. 7.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	894	2450	6400	2690	e1600	e1900	11200	5070	5080	3490	1710	1200
2	950	5180	5890	2090	e1800	1970	9990	8160	4600	3060	1540	1050
3	960	10400	5300	e2100	e2100	1970	9550	20000	4080	2470	1140	1200
4	1230	11200	4820	e2200	1500	1880	10400	23600	3990	2170	1180	1500
5	872	8550	4490	e1900	2010	1720	12200	20800	4260	2600	1120	1390
6	836	6620	3210	e2100	1850	1760	20600	18500	4460	2090	1510	1370
7	739	7370	3880	e2200	1460	e1500	26300	23600	5330	2090	1880	1230
8	879	8600	3370	2270	e1500	1550	25200	26700	6690	2030	2650	1100
9	1020	7530	3360	2350	e1500	1560	21100	23700	8830	2260	1700	1100
10	961	6300	2920	1610	e1000	1290	16700	19000	11600	2170	1600	1090
11	1070	5500	2980	2170	e1050	1430	14800	15600	16100	2950	1660	1070
12	1280	5210	2000	1860	e1050	1460	14000	17600	15800	4500	1600	1070
13	1530	4510	2720	1790	e1030	1540	11500	23100	13700	3300	1760	898
14	1720	4990	2790	1610	1200	1490	9900	23800	11300	3800	2960	850
15	1530	5340	2440	1730	e1100	2130	8640	20300	9440	1940	5980	1600
16	1440	4990	3300	1990	e1400	4420	8630	16900	10300	2510	5180	1440
17	1520	5480	2750	1790	e1300	4290	12000	13900	13500	2190	3570	1430
18	1480	4840	2650	2090	e1400	3480	13100	12000	12800	2460	3750	1430
19	1350	4900	2250	e1900	1550	3230	13300	9400	10800	2480	2110	1440
20	1270	5520	2510	e1900	1400	2880	13100	8340	9250	1590	2110	2010
21	1400	7310	2490	e1700	2480	2360	11600	7630	8090	2240	2060	2790
22	2520	8690	2230	e1500	3300	e2300	10200	6890	6610	1810	1930	3230
23	2010	8750	2240	1710	4930	e2500	8930	6410	5520	2530	1680	2870
24	2300	8130	2170	1960	4410	2260	8310	6460	5020	2180	1900	2030
25	2500	6730	2170	1760	3320	3020	7790	6770	5540	1760	1880	1610
26	2200	6330	2180	1670	2890	4430	6640	6400	5090	1620	1220	3290
27	2190	4810	2510	1830	e2500	6290	5670	5960	5210	1920	1190	3490
28	1720	5330	2490	1570	e2300	8110	4440	6430	3650	1810	1200	3170
29	1450	6970	3010	1980	---	11400	5540	6660	4250	1770	1310	3050
30	1900	7020	2890	1800	---	16500	5600	5800	3910	1890	1290	3090
31	2350	---	2910	1820	---	14200	---	4940	---	1590	1660	---
TOTAL	46071	195550	97320	59640	54930	116820	356930	420420	234800	73270	64030	54088
MEAN	1486	6518	3139	1924	1962	3768	11900	13560	7827	2364	2065	1803
MAX	2520	11200	6400	2690	4930	16500	26300	26700	16100	4500	5980	3490
MIN	739	2450	2000	1500	1000	1290	4440	4940	3650	1590	1120	850

CAL YR 1988 TOTAL 1550346 MEAN 4236 MAX 28200 MIN 739
WTR YR 1989 TOTAL 1773869 MEAN 4860 MAX 26700 MIN 739

e Estimated

MERRIMACK RIVER BASIN

49

01093800 STONY BROOK TRIBUTARY NEAR TEMPLE, N. H.

LOCATION.--Lat 42°51'36", long 71°50'00", Hillsborough County, Hydrologic Unit 01070002, on left bank 150 ft downstream from highway bridge, 2.9 mi north of Temple, and 5.5 mi upstream from mouth.

DRAINAGE AREA.--3.60 mi².

PERIOD OF RECORD.--May 1963 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 920 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

AVERAGE DISCHARGE.--26 years, 7.04 ft³/s, 26.56 in./yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 508 ft³/s, Apr. 5, 1987, gage height, 5.32 ft, from rating curve extended above 230 ft³/s; maximum gage height, 7.81 ft, Feb. 3, 1970, Dec. 21, 1973 (ice jam); no flow for part of Sept. 26, 1976.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 110 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 2	0200	*195	*4.26	May 2	1200	111	3.85
Feb. 21	1645	110	3.84	June 10	0430	132	3.96

Minimum discharge, 0.55 ft³/s, Sept. 13.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e1.0	7.6	4.9	e2.0	2.5	e2.1	7.5	4.8	3.2	2.8	1.3	.98
2	e1.1	71	5.3	e1.8	1.4	e2.0	6.4	55	2.3	2.5	1.5	1.1
3	e1.1	12	5.6	e1.7	2.0	e1.9	9.3	22	3.2	2.2	.91	.98
4	e1.2	7.6	3.7	e1.6	1.6	e1.8	15	12	3.5	2.3	1.0	.91
5	e1.5	8.6	3.4	e1.5	e2.0	e1.8	24	8.7	3.7	1.7	1.5	.83
6	e1.4	14	e3.3	e1.4	e1.5	e1.8	47	40	4.0	e2.3	2.5	.81
7	e1.3	7.4	e3.1	e1.4	e1.3	e1.7	24	19	4.0	2.6	2.4	.80
8	e1.9	5.5	2.9	e1.4	e1.2	e1.6	14	11	13	e3.8	1.8	.68
9	e2.0	4.5	e2.8	e1.4	e1.1	e1.5	10	8.6	6.9	2.3	1.3	.71
10	e2.0	5.1	e2.7	e1.3	e1.0	e1.4	8.3	6.8	60	2.6	1.1	.66
11	e1.7	4.4	e2.6	e1.2	e.95	e1.5	6.9	35	15	2.6	4.0	.69
12	e1.5	3.9	e2.5	e1.2	e.86	1.6	6.4	34	8.9	2.1	13	.61
13	e1.6	7.5	e2.6	e1.2	.80	2.1	6.0	15	6.6	2.0	12	.55
14	e1.4	9.3	e2.5	e1.5	3.6	2.2	5.5	10	7.2	1.9	6.5	.69
15	e1.4	5.6	e2.6	e1.8	6.4	6.1	5.4	8.6	9.0	1.9	4.1	4.2
16	e2.0	5.7	e2.3	e1.8	4.0	3.0	26	7.2	33	1.7	2.8	2.0
17	e3.0	5.9	e2.0	e1.7	2.0	3.4	18	6.2	18	3.1	2.1	2.8
18	e4.5	5.0	e1.9	e1.6	1.3	3.0	11	5.6	9.5	2.7	1.6	2.4
19	e5.0	7.0	e1.9	e1.7	1.4	2.3	8.7	4.9	7.5	2.1	1.4	2.2
20	e4.9	11	e1.9	e1.6	1.3	2.5	8.0	4.6	6.4	1.9	1.8	3.5
21	e4.8	12	e2.0	e1.5	26	2.7	6.5	3.5	6.0	2.7	2.8	3.3
22	e4.8	9.9	e2.0	e1.5	14	2.4	5.0	4.1	5.0	2.6	1.9	2.5
23	e5.8	7.8	e2.0	e1.4	5.1	2.7	4.8	4.0	4.4	3.4	1.4	2.2
24	e4.5	6.0	e2.5	e1.2	e4.5	2.6	4.7	7.7	3.7	2.2	1.2	2.1
25	e3.5	5.2	e3.5	e2.0	e3.5	4.5	4.9	7.8	4.4	1.7	1.1	1.8
26	2.3	5.0	e2.5	2.0	e3.0	8.3	4.2	5.0	3.7	1.4	.89	6.9
27	2.0	6.2	e3.0	1.5	e2.5	12	4.0	2.9	3.4	1.4	.84	5.9
28	2.2	11	e3.7	1.2	e2.2	13	3.9	3.2	2.0	3.9	.78	3.7
29	1.9	7.5	e3.2	1.3	---	8.1	3.6	2.8	2.7	2.3	.81	2.8
30	2.0	6.8	e2.7	2.0	---	5.1	5.6	2.3	2.8	1.7	1.4	2.6
31	1.8	---	e3.3	1.7	---	6.6	---	2.5	---	1.4	1.1	---
TOTAL	77.1	286.0	90.9	48.1	99.01	113.3	314.6	364.8	263.0	71.8	78.83	61.90
MEAN	2.49	9.53	2.93	1.55	3.54	3.65	10.5	11.8	8.77	2.32	2.54	2.06
MAX	5.8	71	5.6	2.0	26	13	47	55	60	3.9	13	6.9
MIN	1.0	3.9	1.9	1.2	.80	1.4	3.6	2.3	2.0	1.4	.78	.55
CFSM	.69	2.65	.81	.43	.98	1.02	2.91	3.27	2.44	.64	.71	.57
IN.	.80	2.96	.94	.50	1.02	1.17	3.25	3.77	2.72	.74	.81	.64

CAL YR 1988 TOTAL 1701.18 MEAN 4.65 MAX 86 MIN .33 CFSM 1.29 IN. 17.58
WTR YR 1989 TOTAL 1869.34 MEAN 5.12 MAX 71 MIN .55 CFSM 1.42 IN. 19.32

e Estimated

MERRIMACK RIVER BASIN

010965852 BEAVER BROOK AT NORTH PELHAM, N.H.

LOCATION.--Lat 42°46'59", Long 07°12'14", Rockingham county, Hydrologic Unit 01070002, on right bank 10 ft downstream from highway bridge at the Wilton-Pelham town line.

DRAINAGE AREA.--47.8 mi².

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

GAGE.--Water-stage recorder. Elevation of gage is 170 ft above National Geodetic Vertical datum of 1929, from topographic map.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,850 ft³/s, Apr. 6, 1987; gage height, 12.88 ft; minimum, 1.2 ft³/s, Aug. 27, 28, 1987.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 2	2345	*477	*8.67	No other peak greater than base discharge			
Minimum discharge, 4.1 ft ³ /s, Sept. 7.							

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	32	123	e40	30	e38	138	74	50	32	26	14
2	e14	312	106	e38	36	e32	124	172	49	29	23	12
3	e15	432	94	e33	33	34	111	318	55	25	22	11
4	e15	315	82	35	42	34	114	258	45	23	21	11
5	e17	208	73	37	33	33	114	195	40	22	20	10
6	e23	168	76	26	28	32	150	218	41	43	22	7.7
7	e20	127	63	25	26	e30	227	253	52	39	40	5.6
8	e19	115	62	25	23	30	232	197	58	73	34	12
9	e28	117	58	25	21	28	236	156	64	51	27	13
10	e29	90	64	26	19	25	187	130	124	44	22	7.1
11	e26	80	51	24	18	26	151	160	163	50	20	7.7
12	e23	71	67	22	17	28	126	254	122	43	44	6.3
13	e20	67	39	23	17	31	109	298	98	35	102	5.6
14	e23	95	42	22	19	29	99	244	93	32	172	6.3
15	e20	91	49	29	35	39	91	185	93	30	127	50
16	e19	87	43	34	60	57	182	150	176	29	98	34
17	e33	81	39	31	39	53	265	123	181	46	73	35
18	e54	81	34	28	32	53	239	104	152	64	58	32
19	e69	74	31	27	27	53	201	91	120	44	46	27
20	e70	89	31	30	24	50	165	82	90	34	e38	35
21	e68	181	e33	29	95	47	135	72	72	36	e33	39
22	e82	192	e36	28	257	53	116	71	62	32	e30	31
23	e78	159	33	25	193	49	101	62	56	42	27	29
24	e52	133	34	23	126	46	91	78	97	39	25	30
25	e50	108	64	23	82	82	81	116	72	31	21	24
26	43	93	e48	21	e60	139	73	93	57	26	19	46
27	40	100	e40	25	e45	123	69	82	48	23	16	75
28	35	119	e45	21	e40	113	66	76	43	57	17	51
29	33	154	70	26	---	108	60	64	46	52	14	41
30	29	141	e50	26	---	112	71	59	37	37	16	35
31	27	---	e45	26	---	145	---	56	---	32	16	---
TOTAL	1086	4112	1725	853	1477	1752	4124	4491	2456	1195	1269	743.3
MEAN	35.0	137	55.6	27.5	52.7	56.5	137	145	81.9	38.5	40.9	24.8
MAX	82	432	123	40	257	145	265	318	181	73	172	75
MIN	12	32	31	21	17	25	60	56	37	22	14	5.6
CFSM	.73	2.87	1.16	.58	1.10	1.18	2.88	3.03	1.71	.81	.86	.52
IN.	.85	3.20	1.34	.66	1.15	1.36	3.21	3.50	1.91	.93	.99	.58

CAL YR 1988 TOTAL 27276.1 MEAN 74.5 MAX 432 MIN 9.0 CFSM 1.56 IN. 21.23
WTR YR 1989 TOTAL 25283.3 MEAN 69.3 MAX 432 MIN 5.6 CFSM 1.45 IN. 19.68

e Estimated

MERRIMACK RIVER BASIN

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RESERVOIRS IN MERRIMACK RIVER BASIN

- 01077500 NEWFOUND LAKE on Newfound River, 1.7 mi north of Bristol, N. H., used for recreation and for storage of water for power, has usable capacity of 1,690,000,000 ft³. Records provided by New Hampshire Water Resources Board.
- 01078500 FRANKLIN FALLS RESERVOIR on Pemigewasset River, 2 mi north of Franklin, N. H., completed in 1942, used for flood control, has usable capacity of 6,700,000,000 ft³. Records provided by U.S. Army Corps of Engineers.
- 01080000 LAKE WINNIPESAUKEE on Winnepesaukee River (see station 01080000).
- 01082500 EDWARD MACDOWELL RESERVOIR on Nubanusit Brook, at West Peterborough, N. H., 2 mi northwest of Peterborough, completed in 1950, used for flood control, has usable capacity of 558,000,000 ft³. Records provided by U.S. Army Corps of Engineers.
- 01086500 BLACKWATER RESERVOIR on Blackwater River, at Swett's Mills, 1 mi south of Webster, N. H., completed in 1941, used for flood control, has usable capacity of 2,004,000,000 ft³. Records provided by U.S. Army Corps of Engineers.
- 01090700 EVERETT LAKE on Piscataquog River, 1.3 mi southeast of East Weare, N. H., completed in 1962, used for flood control and recreation, has usable capacity of 3,768,000,000 ft³. Records provided by U.S. Army Corps of Engineers.
- Hopkinton and Everett Lakes, connected by a canal, are operated as a unit above elevation 400.00 ft. Diversion from Hopkinton Lake to Everett Lake in March 1968, April 1969, March 1977, March 1979, May and June 1984, and April 1987.

MONTHEND USABLE CONTENTS, IN MILLIONS OF CUBIC FEET, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

	Newfound Lake	Franklin Falls Reservoir	Edward MacDowell Reservoir
Sept. 30, 1988.....	1186	89.3	8.6
Oct. 31.....	982	115.0	7.3
Nov. 30.....	1171	131.0	17.5
Dec. 31.....	965	122.0	23.2
Jan. 31, 1989.....	945	115.0	13.7
Feb. 29.....	978	118.0	15.9
Mar. 31.....	1306	337.0	44.5
Apr. 30.....	1447	129.0	11.5
May 31.....	1441	126.0	10.8
June 30.....	1434	122.0	11.5
July 31.....	1323	107.0	8.6
Aug. 31.....	1285	80.2	7.9
Sept. 30.....	1263	122.0	11.5

	Blackwater Reservoir	Everett Lake
Sept. 30, 1988.....	0.2	46.4
Oct. 31.....	.3	48.7
Nov. 30.....	37.0	52.1
Dec. 31.....	1.0	48.7
Jan. 31, 1989.....	1.0	47.5
Feb. 29.....	1.0	58.8
Mar. 31.....	85.0	73.2
Apr. 30.....	1.4	49.8
May 31.....	1.0	49.8
June 30.....	1.0	48.1
July 31.....	.3	47.0
Aug. 31.....	.3	45.8
Sept. 30.....	.3	47.0

CONNECTICUT RIVER BASIN

01128500 CONNECTICUT RIVER AT FIRST CONNECTICUT LAKE, NEAR PITTSBURG, N. H.

LOCATION.--Lat 45°05'14", long 71°17'34", Coos County, Hydrologic Unit 01080101, on right bank of the intersection of Highway 26 and Bungy Road 5 mi east of Colebrook.

DRAINAGE AREA.--83.0 mi².

PERIOD OF RECORD.--April 1917 to current year.

REVISED RECORDS.--WSP 756: Drainage area. WSP 1001: 1931-39. WSP 1231: 1921-23(M), 1925-26.

GAGE.--Water-stage recorder. Elevation of gage is 1,560 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Jan. 1, 1918, discharge computed from flow through gates at dam 0.2 mi upstream. Jan. 1 to July 28, 1918, nonrecording gage at present site and datum.

REMARKS.--No estimated daily discharges. Records good. Flow completely regulated by First Connecticut and Second Connecticut Lakes (Reservoirs in Connecticut River basin). Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--72 years, 198 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,200 ft³/s, June 16, 1943, gage height, 6.25 ft, from rating curve extended above 1,900 ft³/s on basis of computation of flow over dam at gage height 6.12 ft; maximum gage height, 6.35 ft May 5, 1925, backwater from logging operations; minimum daily discharge, 1.7 ft³/s, Apr. 22, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 747 ft³/s, May 10; gage height, 3.42 ft; minimum daily, 6.7 ft³/s, Mar. 25, 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	410	146	323	362	332	146	7.2	8.5	191	253	100	92
2	406	147	323	360	331	146	7.0	9.3	278	253	100	93
3	406	147	322	359	329	146	7.1	9.0	354	252	100	93
4	405	147	323	329	328	145	7.2	9.4	353	251	100	93
5	403	147	350	304	327	145	7.6	28	352	251	100	93
6	297	147	372	303	325	147	8.7	49	258	251	100	93
7	204	147	371	302	322	147	8.3	60	198	250	100	94
8	203	147	370	301	321	146	7.7	122	197	250	100	95
9	202	148	369	300	320	144	7.7	312	197	249	100	95
10	202	148	367	299	289	144	7.7	602	197	222	100	95
11	202	149	366	297	230	144	7.7	724	198	205	100	127
12	202	150	365	297	230	144	7.7	724	198	205	102	147
13	202	150	363	296	209	144	7.7	726	198	205	102	147
14	202	176	360	295	195	114	7.7	723	197	180	73	193
15	201	194	360	294	195	50	7.7	722	197	147	55	212
16	201	195	360	292	195	50	7.7	487	197	147	55	211
17	200	195	360	291	195	50	7.9	254	197	147	76	211
18	165	195	360	289	195	50	8.2	67	197	147	89	211
19	147	195	358	289	195	50	8.2	174	220	147	88	247
20	147	195	355	288	194	50	8.2	413	251	147	89	266
21	147	197	352	288	193	50	8.2	418	250	116	90	267
22	147	197	352	286	192	50	8.2	464	253	100	91	267
23	147	197	351	285	192	50	8.2	518	253	100	90	268
24	147	197	349	284	193	26	8.2	516	253	100	90	268
25	147	197	348	283	192	6.7	8.2	354	252	100	90	267
26	147	197	347	281	192	6.7	8.2	157	253	100	90	266
27	147	197	358	280	166	6.8	8.2	157	253	100	90	266
28	147	196	365	278	147	7.3	8.2	161	254	101	90	265
29	147	271	364	277	---	8.1	8.2	166	254	100	90	265
30	147	323	364	301	---	7.2	8.2	179	253	100	91	264
31	147	---	362	334	---	7.2	---	192	---	100	91	---
TOTAL	6624	5434	11009	9324	6724	2528.0	236.9	9505.2	7153	5276	2822	5571
MEAN	214	181	355	301	240	81.5	7.90	307	238	170	91.0	186
MAX	410	323	372	362	332	147	8.7	726	354	253	102	268
MIN	147	146	322	277	147	6.7	7.0	8.5	191	100	55	92

CAL YR 1988 TOTAL 71369.3 MEAN 195 MAX 565 MIN 6.0
WTR YR 1989 TOTAL 72207.1 MEAN 198 MAX 726 MIN 6.7

01129200 CONNECTICUT RIVER BELOW INDIAN STREAM, NEAR PITTSBURG, N. H.

LOCATION.--Lat 45°02'25", long 71°26'37", Coos County, Hydrologic Unit 01080101, on right bank 1,200 ft downstream from Indian Stream, 2.5 mi west of Pittsburg, and at mile 376.5.

DRAINAGE AREA.--254 mi².

PERIOD OF RECORD.--Discharge: October 1956 to current year.

REVISED RECORDS.--WDR MA-NH-RI-VT-73-1: 1958, 1960(M), 1969(M).

GAGE.--Water-stage recorder. Elevation of gage is 1,150 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Record good. Flow regulated by First Connecticut and Second Connecticut Lakes and Lake Francis 3.7 mi upstream (Reservoirs in Connecticut River basin). Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--33 years, 560 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,080 ft³/s, Nov. 29, 1959, gage height, 7.07 ft, from rating curve extended above 2,600 ft³/s; minimum daily, 30 ft³/s, Aug. 6, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,880 ft³/s, Mar. 29, gage height, 5.96 ft; minimum daily, 86 ft³/s, Mar. 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	506	404	859	840	554	292	490	649	681	559	235	246
2	503	560	814	835	553	287	376	1450	736	565	229	508
3	523	692	789	830	553	283	336	1550	883	555	227	395
4	528	554	769	803	553	281	390	888	850	547	240	309
5	516	592	770	768	553	279	832	701	828	550	360	218
6	433	742	818	763	549	282	1550	972	662	549	373	256
7	377	662	836	760	547	375	1820	957	520	543	299	298
8	406	689	820	762	547	375	890	688	493	539	308	292
9	406	652	794	761	544	274	509	733	478	533	292	286
10	410	654	782	762	506	270	416	964	517	480	264	282
11	506	605	763	762	420	269	333	1180	658	432	250	282
12	670	547	776	756	415	269	282	1350	657	428	270	286
13	548	513	853	753	395	286	262	1430	555	422	477	273
14	460	589	854	748	375	221	260	1410	518	403	460	288
15	432	671	858	748	373	97	263	1380	498	372	247	504
16	442	625	854	743	373	136	356	1120	552	372	209	439
17	402	754	844	739	372	180	467	794	556	372	259	483
18	390	932	835	734	373	174	976	500	557	370	278	453
19	496	720	829	734	372	174	837	429	643	367	260	416
20	434	657	824	730	367	177	696	531	653	367	257	595
21	393	1100	826	723	368	133	527	522	614	285	340	542
22	380	888	829	721	375	143	556	440	594	227	390	377
23	389	730	822	719	376	146	388	375	580	227	345	354
24	386	667	815	715	382	124	317	368	572	227	329	459
25	380	607	815	712	397	86	269	425	557	226	295	363
26	363	587	815	709	400	101	264	512	557	223	274	315
27	351	599	823	706	371	126	315	532	558	226	262	329
28	371	829	858	702	322	287	302	519	650	245	247	361
29	435	1100	853	701	---	2000	270	506	601	275	242	365
30	428	933	847	619	---	1460	424	581	572	253	241	362
31	412	---	843	553	---	728	---	682	---	243	247	---
TOTAL	13676	20854	25487	22911	12285	10315	15973	25138	18350	11982	9006	10936
MEAN	441	695	822	739	439	333	532	811	612	387	291	365
MAX	670	1100	859	840	554	2000	1820	1550	883	565	477	595
MIN	351	404	763	553	322	86	260	368	478	223	209	218

CAL YR 1988 TOTAL 201443 MEAN 550 MAX 2490 MIN 59
WTR YR 1989 TOTAL 196913 MEAN 539 MAX 2000 MIN 86

CONNECTICUT RIVER BASIN

01129300 HALLS STREAM NEAR EAST HEREFORD, QUEBEC

(International gaging station)

LOCATION.--Lat 45°02'41", long 71°29'54", Compton County, on right bank opposite Alain's farm, 2.5 mi downstream from East Hereford, and 3.7 mi upstream from mouth.

DRAINAGE AREA.--85 mi².

PERIOD OF RECORD.--Discharge: October 1962 to current year in reports of Geological Survey. October 1948 to September 1962 available from Water Survey of Canada, Department of the Environment.

GAGE.--Water-stage recorder. Elevation of gage is 1,090 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Dec. 13, 1962, nonrecording gage at same site and datum.

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

COOPERATION.--This station is maintained by Canada under agreement with the United States.

AVERAGE DISCHARGE.--41 years, 168 ft³/s, 26.84 in./yr. Records were provided by Water Survey of Canada.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,500 ft³/s, June 30, 1973; gage height, 13.07 ft; minimum daily, 4 ft³/s, Sept. 10, 1960.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1943 reached a discharge of 21,000 ft³/s by slope-area measurement at site 0.5 mi downstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,710 ft³/s, Mar. 29, gage height, unknown; minimum daily, 9.0 ft³/s, July 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	53	73	221	e32	e32	e49	392	448	59	42	24	27
2	53	351	178	e29	e34	e47	329	1170	71	44	18	182
3	69	248	159	e27	e35	e45	302	854	203	40	16	85
4	74	156	144	e29	e35	e44	526	576	113	33	25	50
5	62	255	111	e32	e35	e44	1190	402	95	35	181	41
6	73	245	99	e39	e35	e45	1730	629	85	28	141	33
7	75	309	104	e38	e34	e46	1170	484	95	24	91	28
8	71	310	96	e36	e33	e46	738	311	72	21	77	25
9	68	312	83	e33	e32	e42	466	231	60	18	58	22
10	87	250	75	e32	e31	e40	378	183	103	21	42	19
11	185	211	76	e31	e31	e38	279	282	217	26	33	20
12	223	158	70	e32	e30	e36	231	337	169	23	51	18
13	163	131	55	e32	e29	e35	213	257	99	23	302	19
14	128	230	51	e33	e28	e36	226	197	76	20	232	31
15	144	257	50	e32	e28	e39	295	184	62	19	101	330
16	132	220	52	e31	e28	317	470	149	114	17	88	145
17	108	257	76	e30	e29	314	607	123	113	18	90	205
18	110	385	64	e29	e30	178	975	103	108	22	58	146
19	183	386	49	e29	e35	163	689	93	164	21	46	91
20	127	1460	46	e28	e42	138	547	81	97	16	47	413
21	105	883	44	e30	e47	93	448	70	73	14	97	296
22	100	338	54	e39	e49	e78	434	69	59	13	94	171
23	104	260	47	e46	e50	e67	271	74	49	12	78	182
24	104	208	37	e45	e51	e64	221	65	40	12	65	241
25	101	153	37	e44	e52	e65	182	61	35	10	50	151
26	89	139	e36	e41	e52	79	191	58	34	9.0	39	119
27	82	171	e40	e38	e52	126	227	91	39	10	33	120
28	76	579	e36	e36	e52	709	214	72	144	36	27	101
29	90	530	e35	e34	---	2620	184	58	83	55	25	87
30	91	273	e35	e33	---	1010	293	52	53	31	24	82
31	78	---	e34	e32	---	537	---	57	---	34	29	---
TOTAL	3208	9738	2294	1052	1051	7190	14418	7821	2784	747.0	2282	3480
MEAN	103	325	74.0	33.9	37.5	232	481	252	92.8	24.1	73.6	116
MAX	223	1460	221	46	52	2620	1730	1170	217	55	302	413
MIN	53	73	34	27	28	35	182	52	34	9.0	16	18
CFSM	1.22	3.82	.87	.40	.44	2.73	5.65	2.97	1.09	.28	.87	1.36
IN.	1.40	4.26	1.00	.46	.46	3.15	6.31	3.42	1.22	.33	1.00	1.52

CAL YR 1988 TOTAL 57831.2 MEAN 158 MAX 1530 MIN 9.3 CFSM 1.86 IN. 25.31
WTR YR 1989 TOTAL 56065.0 MEAN 154 MAX 2620 MIN 9.0 CFSM 1.81 IN. 24.54

e Estimated

CONNECTICUT RIVER BASIN

55

01129440 MOHAWK RIVER NEAR COLEBROOK, N.H.

LOCATION.--Lat 44° 52' 28", Long 71° 24' 38", Coos County, Hydrologic Unit 01080101, on right bank of the intersection of Highway 26 and Bungy Road, 5 mi east of Colebrook.

DRAINAGE AREA.--36.7 mi².

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

GAGE.--Water-stage recorder. Elevation of gage is 1,220 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,630 ft³/s, Apr. 1, 1987; gage height 8.93 ft, from rating curve extended above 200 ft³/s. Minimum discharge, 8.9 ft³/s, Sept. 5-8, 1987.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 2	0950	a789	6.37	May 2	1330	a1,940	7.23
Mar. 29	0415	a*3,940	*8.04	May 6	1030	a1,190	6.74
Apr. 6	2215	a1,380	6.88	May 12	1030	a1,320	6.84

a From rating curve extended above 200 ft³/s

Minimum discharge, 9.6 ft³/s, July 26, 27.

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	27	43	e80	e28	e20	e20	80	163	57	22	11	18
2	25	397	e68	e27	e42	e20	72	879	104	28	11	62
3	40	128	e60	e26	e31	20	78	308	100	25	11	24
4	32	87	e55	e25	e33	20	146	206	65	22	34	17
5	33	95	e50	e25	e26	e22	500	151	54	22	138	15
6	43	162	e46	e25	e20	e31	999	595	92	19	46	14
7	35	124	e42	e24	e19	e22	483	240	74	20	41	14
8	32	123	e40	e32	e19	e24	172	152	57	20	44	13
9	35	102	e38	e60	19	e25	131	115	53	19	25	13
10	50	93	e37	e33	19	e26	109	98	83	21	20	12
11	115	85	e36	e28	e20	e25	89	190	124	24	18	12
12	73	71	e36	e25	e20	e24	81	734	81	21	53	12
13	52	90	e39	e27	19	e24	82	221	59	19	64	12
14	46	138	e41	e26	e19	e25	81	145	51	20	42	30
15	45	e100	e39	e26	e19	e100	89	155	45	18	25	143
16	41	e95	e36	e26	19	e80	103	110	109	17	26	40
17	38	e110	e34	e25	19	e50	165	94	78	15	24	90
18	70	e135	e32	e24	19	e40	233	83	64	15	20	46
19	93	e115	e32	e24	20	e32	159	74	69	14	18	30
20	56	e100	e31	e23	21	e30	122	67	47	13	16	113
21	48	e120	e32	e29	e23	e29	113	65	41	12	17	74
22	55	e110	e33	e33	e70	e25	102	69	36	12	20	47
23	73	e95	e34	e25	e40	e24	78	59	32	11	19	58
24	66	e80	e34	e22	e30	e22	72	55	32	11	18	61
25	60	e65	e35	e20	e25	e35	70	59	29	10	15	43
26	51	e70	e35	e21	e22	41	79	75	27	10	13	37
27	47	e80	e35	e22	e22	73	83	99	27	10	13	40
28	47	e95	e33	e22	e22	285	75	66	38	26	12	34
29	51	e110	e32	e23	---	1610	75	54	30	18	12	31
30	45	e90	e31	e23	---	167	121	54	25	13	25	29
31	42	---	e29	e22	---	97	---	64	---	12	23	---
TOTAL	1566	3308	1235	821	697	3068	4842	5499	1783	539	874	1184
MEAN	50.5	110	39.8	26.5	24.9	99.0	161	177	59.4	17.4	28.2	39.5
MAX	115	397	80	60	70	1610	999	879	124	28	138	143
MIN	25	43	29	20	19	20	70	54	25	10	11	12
CFSM	1.38	3.00	1.09	.72	.68	2.70	4.40	4.83	1.62	.47	.77	1.08
IN.	1.59	3.35	1.25	.83	.71	3.11	4.91	5.57	1.81	.55	.89	1.20

CAL YR 1988 TOTAL 23725 MEAN 64.8 MAX 999 MIN 16 CFSM 1.77 IN. 24.05
WTR YR 1989 TOTAL 25416 MEAN 69.6 MAX 1610 MIN 10 CFSM 1.90 IN. 25.76

e Estimated

CONNECTICUT RIVER BASIN

01129500 CONNECTICUT RIVER AT NORTH STRATFORD, N. H.

LOCATION.--Lat 44°44'56", long 71°37'50", Coos County, Hydrologic Unit 01080101, on left bank at North Stratford, 400 ft downstream from Nulhegan River, and at mile 344.5.

DRAINAGE AREA.--799 mi².

PERIOD OF RECORD.--Discharge: August 1930 to current year.

Water-quality records: Water year 1957.

REVISED RECORDS.--WSP 781: 1934(M). WSP 891: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 880.17 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by powerplants and by First Connecticut and Second Connecticut Lakes and Lake Francis (Reservoirs in Connecticut River basin) 36 mi upstream.

AVERAGE DISCHARGE.--59 years, 1,575 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,700 ft³/s, June 16, 1943, gage height, 14.67 ft from rating curve extended above 15,000 ft³/s; maximum gage height, 20.60 ft Mar. 6, 1979, from floodmark in gage well (ice jam); minimum daily discharge, 108 ft³/s, Sept. 29, 1960.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 12,600 ft³/s, Apr. 6, gage height, 9.70 ft; maximum gage height, 11.94 ft, Mar. 29 (backwater from ice); minimum daily, 379 ft³/s, July 26.

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	930	971	2380	e1220	e880	e660	3390	3090	1440	951	455	555
2	910	2130	2070	e1160	e900	e580	2450	7570	1680	983	425	1720
3	1060	2680	1910	e1150	e920	e595	2330	9050	2530	968	416	1390
4	1090	1880	1790	e1220	e920	e585	2870	5850	2000	911	615	903
5	1010	1810	1530	e1090	e855	e550	6120	4170	1750	907	1890	716
6	1070	2450	e1210	e1030	e815	e575	10600	6520	1810	875	1970	544
7	924	2480	e1300	e1030	e832	e710	11900	6540	1810	862	1570	595
8	910	2520	e1590	e1060	e865	e615	7910	4080	1420	862	1320	580
9	912	2240	1490	e1110	e820	e510	4200	2930	1260	831	1030	552
10	996	2090	e1270	e1220	e800	e550	3280	2600	1450	837	779	528
11	1330	1860	e1210	e1170	e680	e520	2490	3340	2200	858	637	512
12	1890	1620	e1060	e1100	e750	e525	2040	5130	2150	791	777	502
13	1520	1520	e1170	e1090	e660	e545	1870	4340	1540	744	1700	495
14	1280	2030	e1170	e1090	e645	e450	1900	3500	1330	717	1940	617
15	1180	2190	e1390	e1090	e645	e450	1990	3310	1200	655	1200	2290
16	1190	1910	e1460	e1060	e645	e980	2770	2830	1660	614	869	1940
17	1090	2650	e1330	e1080	e660	e1080	3200	2220	1800	596	812	2040
18	1050	3640	e1180	e1110	e630	e1040	5670	1790	1520	608	749	1850
19	1520	2460	e1130	e1110	e590	e890	5340	1420	1590	603	653	1320
20	1330	2040	e1180	e1090	e570	e790	4300	1420	1450	579	605	2910
21	1130	5350	e1250	e1130	e590	e660	3320	1360	1280	558	796	3300
22	1080	4170	e1360	e1100	e730	e620	3210	1380	1170	445	928	1950
23	1190	2700	e1240	e1000	e860	e585	2410	1220	1090	407	911	1590
24	1180	2200	e1100	e1040	e925	e525	1960	1140	1060	394	794	1880
25	1190	1800	e1300	e1080	e925	e495	1690	1140	999	385	703	1550
26	1090	1670	e1210	e1070	e840	e620	1700	1250	953	379	602	1260
27	1000	1720	e1230	e985	e780	e880	1900	1960	963	386	540	1180
28	956	2980	e1150	e990	e700	e1490	1870	1510	1160	563	507	1120
29	1100	4090	e1230	e1050	---	e5600	1630	1300	1170	590	484	1060
30	1090	2870	e1300	e925	---	e5830	2100	1190	1030	559	501	1000
31	1020	---	e1220	e895	---	5440	---	1410	---	486	621	---
TOTAL	35218	72721	42410	33545	21432	35945	108410	96560	44465	20904	27799	38449
MEAN	1136	2424	1368	1082	765	1160	3614	3115	1482	674	897	1282
MAX	1890	5350	2380	1220	925	5830	11900	9050	2530	983	1970	3300
MIN	910	971	1060	895	570	450	1630	1140	953	379	416	495

CAL YR 1988 TOTAL 564912 MEAN 1543 MAX 10100 MIN 354
WTR YR 1989 TOTAL 577858 MEAN 1583 MAX 11900 MIN 379

e Estimated

CONNECTICUT RIVER BASIN

57

01130000 UPPER AMMONOOSUC RIVER NEAR GROVETON, N. H.

LOCATION.--Lat 44°37'30", long 71°28'10", Coos County, Hydrologic Unit 01080101, on left bank 75 ft upstream from highway bridge, 0.2 mi downstream from Nash Stream, and 2.8 mi northeast of Groveton.

DRAINAGE AREA.--232 mi².

PERIOD OF RECORD.--Discharge: August 1940 to November 1980, October 1982 to September 1987.
Water-quality records: Water year 1955.

GAGE.--Water-stage recorder. Elevation of gage is 920 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Prior to May 21, 1969, some regulation by pond 9 mi upstream on Nash Stream. Small diversion upstream for municipal supply of Berlin. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--47 years, 471 ft³/s, 27.57 in./yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,100 ft³/s, May 20, 1969, gage height, 12.01 ft in gage well, 12.85 ft, from floodmarks, from rating curve extended above 5,600 ft³/s on basis of contracted-opening measurement of peak flow, caused by failure of dam on Nash Stream; minimum, 32 ft³/s, Sept. 14, 1948.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1936 reached a stage of about 10.6 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,900 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 30	0100	4,510	6.49	May 7	0900	3,600	5.92
Apr. 7	0130	5,010	6.79	May 13	0700	4,240	6.32
May 3	0900	*5,690	*7.19				

Minimum discharge, not determined, occurred during period of ice effect; minimum daily, 60 ft³/s, July 26.

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	90	201	564	e170	e180	e110	1190	1180	539	228	76	98
2	84	1170	469	e160	e210	e105	864	3220	717	249	66	569
3	90	1640	424	e155	e180	e100	782	5090	1270	237	67	438
4	104	858	375	e150	e170	e98	912	3410	910	211	189	252
5	107	650	270	e150	e150	e95	1650	2300	762	194	1010	167
6	137	1100	e300	e150	e140	e93	3820	2980	779	180	1340	137
7	148	1340	e350	e145	e125	e90	4720	3370	1090	171	863	120
8	129	1160	e320	e140	e115	e90	3080	2250	831	180	557	105
9	132	911	e260	e140	e105	e90	1680	1490	753	154	404	92
10	147	768	e250	e140	e100	e90	1250	1130	1070	154	303	82
11	227	675	e240	e140	e98	e92	976	1280	1760	205	231	76
12	341	574	e250	e145	e96	e94	798	2940	1600	171	386	72
13	247	528	e270	e150	e94	e98	712	3750	1010	136	672	69
14	212	639	e280	e150	e94	e150	696	2190	823	128	583	129
15	204	683	e290	e160	e94	e260	687	1530	712	167	423	517
16	187	601	e270	e160	e95	e450	886	1190	1010	139	367	492
17	177	819	e250	e160	e96	e250	1100	1010	1090	111	305	419
18	201	1070	e240	e155	e98	e190	1750	887	830	101	233	430
19	538	725	e230	e150	e100	e175	1710	802	710	97	188	312
20	361	611	e230	e145	e105	e155	1430	740	619	98	171	621
21	260	1220	e220	e140	e200	e150	1130	680	540	95	182	992
22	257	949	e220	e140	e540	e140	1080	660	474	84	179	616
23	365	668	e220	e135	e400	e135	836	621	427	77	163	474
24	357	537	e220	e135	e200	e130	709	587	442	71	158	449
25	312	397	e220	e130	e170	e225	640	626	396	65	139	390
26	276	428	e200	e125	e130	e400	670	606	349	60	115	397
27	242	442	e190	e125	e120	1030	726	999	323	73	99	516
28	232	798	e180	e125	e115	1410	693	787	323	164	90	423
29	263	1030	e180	e125	---	3050	620	640	315	192	85	360
30	247	693	e180	e125	---	3830	798	551	266	129	85	312
31	220	---	e175	e130	---	1960	---	532	---	94	99	---
TOTAL	6894	23885	8337	4450	4320	15335	38595	50028	22740	4415	9828	10126
MEAN	222	796	269	144	154	495	1286	1614	758	142	317	338
MAX	538	1640	564	170	540	3830	4720	5090	1760	249	1340	992
MIN	84	201	175	125	94	90	620	532	266	60	66	69
CFSM	.96	3.43	1.16	.62	.67	2.13	5.55	6.96	3.27	.61	1.37	1.45
IN.	1.11	3.83	1.34	.71	.69	2.46	6.19	8.02	3.65	.71	1.58	1.62
(†)	2.54	2.25	2.35	3.59	3.33	3.09	3.36	3.20	2.43	2.66	2.60	2.91

CAL YR 1988 TOTAL 153481 MEAN 419 MAX 3640 MIN 67 CFSM 1.81 IN. 24.61
WTR YR 1989 TOTAL 198953 MEAN 545 MAX 5090 MIN 60 CFSM 2.35 IN. 31.90

e Estimated

† Diversion, in cubic feet per second, for municipal supply of Berlin; records furnished by city of Berlin.

CONNECTICUT RIVER BASIN

01131500 CONNECTICUT RIVER NEAR DALTON, N. H.

LOCATION.--Lat 44°24'36", long 71°43'16", Coos County, Hydrologic Unit 01080101, on left bank 250 ft upstream from highway bridge, 1,200 ft downstream from dam of Gilman Paper Co., 1.2 mi downstream from Dalton, and at mile 300.1.

DRAINAGE AREA.--1,514 mi².

PERIOD OF RECORD.--Discharge: March 1927 to current year. Published as "at Waterford, Vt." 1927-35. Records published for both sites January to September 1935. Water-quality records: Water years 1953, 1971.

REVISED RECORDS.--WSP 891: Drainage area. WSP 1231: 1935. WSP 1301: 1928-35(M).

GAGE.--Water-stage recorder. Datum of gage is 799.89 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 30, 1935, nonrecording gage at bridge 10.5 mi downstream at mean sea level. Jan. 1, 1935, to June 29, 1937, nonrecording gage at bridge 250 ft downstream at present datum. Since June 2, 1961, auxiliary water-stage recorder 10.8 mi downstream from base gage. July 11, 1956, to June 1, 1961, auxiliary nonrecording gage read hourly at same site.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by powerplants and by First Connecticut and Second Connecticut Lakes, Lake Francis (Reservoirs in Connecticut River basin), and other reservoirs. These reservoirs have a combined usable capacity of about 8,300,000,000 ft³.

AVERAGE DISCHARGE.--62 years, 2,888 ft³/s, adjusted to drainage area at present site.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 48,300 ft³/s, Mar. 20, 1936, gage height, 25.6 ft; minimum daily, 115 ft³/s, Oct. 3, 1937.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 27,900 ft³/s, Apr. 7, gage height, 20.16 ft; minimum daily, 518 ft³/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	e1600	e1600	e4230	e1600	e1250	e950	10500	4670	e2630	e1670	652	1000
2	e1650	e3000	e3550	e1550	e1270	e900	6710	8460	e3180	e1340	652	1590
3	e1700	e4500	e3240	e1500	e1300	e850	5400	15100	e5640	e1290	649	2760
4	e1800	e3500	e2960	e1450	e1250	e825	5410	e16300	e5100	e1280	634	2120
5	e1700	e3200	e2710	e1450	e1200	e800	7990	e12700	e4340	e1360	3280	1170
6	e1800	e4100	1690	e1350	e1150	e825	14300	10400	e4040	e1400	e6850	1200
7	e1650	e4200	1890	e1300	e1170	e900	22600	e13300	e5240	e1290	e4400	846
8	e1600	e4300	2610	e1400	e1170	e875	21800	e12500	e4270	e1300	e2840	1110
9	e1650	e4000	2480	e1500	e1150	e825	16000	8510	e3660	e1280	e2050	898
10	e1750	e3600	1930	e1600	e1100	e800	9320	6270	e3470	e984	e1770	802
11	e2100	e3300	1820	e1550	e1050	e800	6500	5840	e5210	1350	e1530	773
12	e3100	e2800	1430	1550	e1100	e825	5190	8910	e5770	1380	e1410	609
13	2590	e2650	1510	1540	e1000	e825	4170	11100	e4470	1250	e2530	e743
14	2110	e3200	1590	1540	e975	e800	3980	9330	e3360	1080	e3400	e734
15	1850	e3700	2090	1530	e950	e950	4130	7210	e2870	1070	e2810	e988
16	e1900	e3300	2270	1490	e925	e1200	5000	6320	e3200	957	e1890	3330
17	e1800	e4500	1980	1530	e925	e1400	5710	5480	e4340	930	e1690	2470
18	e1750	e5360	1640	1610	e875	e1350	7720	e4680	e3570	787	e1340	2990
19	e2500	e4800	1540	1600	e850	e1200	9750	e3940	e3010	868	e1120	2470
20	e2100	e3620	1650	1560	e825	e1050	9080	e3300	e2680	770	e1030	2290
21	e2000	e5410	1800	1660	e850	e975	7430	e3060	e2400	759	e1090	5780
22	e1900	e7560	2060	1600	e1000	e950	6090	e3020	e2240	759	e1190	4330
23	e2000	e5660	1790	1380	e1150	e925	5600	e2340	e2040	759	1390	2930
24	e1950	4170	1490	1470	e1300	e1000	4330	e2370	e1950	734	1190	2570
25	e2000	3450	1930	1570	e1270	1070	3480	e2600	e1800	647	1170	2740
26	e1900	2920	1730	1540	e1200	1290	3470	e2550	e1580	586	964	2220
27	e1800	2930	e1600	1350	e1100	1850	3540	e3540	e1580	518	912	2280
28	e1700	3290	e1470	1370	e1000	2910	3800	e3610	e1570	536	794	2110
29	e1900	6140	e1600	e1350	---	8620	3430	e2960	1740	798	729	1790
30	e1800	e5390	e1700	e1350	---	12100	3420	e2550	e1840	873	745	1550
31	e1700	---	e1650	e1300	---	13100	---	e2390	---	779	709	---
TOTAL	59350	120150	63630	46140	30355	63740	225850	205310	98790	31384	53410	59193
MEAN	1915	4005	2053	1488	1084	2056	7528	6623	3293	1012	1723	1973
MAX	3100	7560	4230	1660	1300	13100	22600	16300	5770	1670	6850	5780
MIN	1600	1600	1430	1300	825	800	3420	2340	1570	518	634	609

CAL YR 1988 TOTAL 954184 MEAN 2607 MAX 16500 MIN 558
WTR YR 1989 TOTAL 1057302 MEAN 2897 MAX 22600 MIN 518

e Estimated

CONNECTICUT RIVER BASIN

59

01134500 MOOSE RIVER AT VICTORY, VT.

LOCATION.--Lat 44°30'42", long 71°50'13", Essex County, Hydrologic Unit 01080102, on right bank at Victory, 2.7 mi upstream from highway bridge.

DRAINAGE AREA.--75.2 mi².

PERIOD OF RECORD.--January 1947 to current year. Water-quality records: Water year 1957.

REVISED RECORDS.--WSP 1381: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,103.99 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

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

AVERAGE DISCHARGE.--42 years, 144 ft³/s, 26.00 in./yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,340 ft³/s, July 1, 1973, gage height, 12.04 ft; minimum, 2.6 ft³/s, Aug. 21, 22, 1975.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 29	2400	1,850	8.81	May 3	0030	2,170	9.24
Apr. 6	1930	*2,200	*9.28	May 6	2230	2,040	9.06
Apr. 19	0500	1,110	7.62	Aug. 6	0600	1,360	8.09

Minimum discharge, 6.7 ft³/s, July 26, 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	33	65	e170	e36	e27	e31	427	376	82	30	17	25
2	33	250	e140	e36	e28	e27	318	901	184	34	12	216
3	43	335	e120	e35	e31	e25	280	1600	363	33	11	123
4	46	185	e100	e34	e29	e23	299	867	199	28	46	63
5	39	179	e90	e33	e28	e22	629	596	161	25	391	45
6	61	241	e75	e32	e27	e22	1930	988	199	24	1080	36
7	56	257	e70	e31	e25	e23	1920	1380	278	27	682	31
8	46	264	e80	e30	e24	e25	1020	687	166	42	384	28
9	45	215	e75	e32	e23	e24	598	392	131	26	171	25
10	53	184	e70	e40	e22	e23	440	283	224	31	103	25
11	78	156	e64	e39	e21	e22	319	329	390	67	72	29
12	112	130	e60	e38	e21	e21	248	479	259	47	130	26
13	77	124	e60	e37	e20	e21	226	413	148	31	414	22
14	63	246	e64	e35	e20	e20	241	287	119	24	532	35
15	63	219	e67	e35	e20	e21	261	235	101	20	272	232
16	58	169	e70	e35	e21	167	407	202	232	17	167	177
17	52	e170	e55	e35	e22	191	471	177	213	15	139	212
18	54	e210	e50	e35	e21	133	790	153	164	14	93	188
19	166	e250	e47	e34	e20	132	1010	136	121	13	70	106
20	103	e260	e44	e33	e20	117	721	121	91	12	60	283
21	75	e160	e42	e32	e19	100	504	108	76	12	77	610
22	72	e540	e40	e30	e35	89	436	108	62	10	74	291
23	109	e260	e40	e30	e60	77	319	102	53	9.1	61	191
24	110	e150	e40	e29	e100	69	250	89	91	8.0	58	230
25	134	e120	e41	e28	e66	66	217	92	66	7.3	48	160
26	101	e110	e40	e27	e54	86	237	90	48	6.8	37	131
27	81	e100	e39	e26	e42	106	273	177	42	7.6	32	138
28	72	e120	e38	e26	e35	186	266	126	44	31	29	111
29	97	e220	e38	e26	---	759	217	94	48	45	27	94
30	86	e190	e37	e26	---	1240	267	76	36	25	27	85
31	72	---	e37	e26	---	618	---	75	---	21	25	---
TOTAL	2290	6079	2003	1001	881	4486	15541	11739	4391	742.8	5341	3968
MEAN	73.9	203	64.6	32.3	31.5	145	518	379	146	24.0	172	132
MAX	166	540	170	40	100	1240	1930	1600	390	67	1080	610
MIN	33	65	37	26	19	20	217	75	36	6.8	11	22
CFSM	.98	2.69	.86	.43	.42	1.92	6.89	5.04	1.95	.32	2.29	1.76
IN.	1.13	3.01	.99	.50	.44	2.22	7.69	5.81	2.17	.37	2.64	1.96

CAL YR 1988 TOTAL 44945.8 MEAN 123 MAX 1430 MIN 6.1 CFSM 1.63 IN. 22.23
WTR YR 1989 TOTAL 58462.8 MEAN 160 MAX 1930 MIN 6.8 CFSM 2.13 IN. 28.92

e Estimated

CONNECTICUT RIVER BASIN

01135500 PASSUMPSIC RIVER AT PASSUMPSIC, VT.

LOCATION.--Lat 44°21'56", long 72°02'23", Caledonia County, Hydrologic Unit 01080102, on right bank 0.7 mi upstream from Water Andric, 1 mi downstream from dam and village of Passumpsic, and 4 mi upstream from mouth.

DRAINAGE AREA.--436 mi².

PERIOD OF RECORD.--Discharge: October 1928 to current year. Monthly discharge only October 1928, published in WSP 1301.

Water-quality records: Water years 1953, 1967-74 (partial-record station).

REVISED RECORDS.--WSP 781: 1933(M). WSP 871: Drainage area. WSP 1231: 1929, 1930-31(M).

GAGE.--Water-stage recorder. Elevation of gage is 490 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except for those estimated daily discharges, which are fair. Low flow regulated by powerplants upstream. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--61 years, 741 ft³/s, 23.08 in./yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,200 ft³/s, July 1, 1973, gage height, 23.49 ft, from rating curve extended above 14,000 ft³/s on basis of computation of flow over dam at gage height 21.23 ft; minimum daily, 13 ft³/s, Sept. 12, 1948.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1780, about 31.5 ft in November 1927, from information by local residents (discharge not determined).

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 29	1900	*12,700	17.78	May 2	2330	5,640	9.95
Apr. 7	0130	7,520	12.05	May 6	2045	6,520	10.95

Minimum discharge, 14 ft³/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	166	253	807	e290	e250	e260	5550	1440	531	224	149	223
2	166	1130	715	e280	e250	e220	4140	3660	1300	293	131	1120
3	197	1380	642	e270	e240	e220	2290	4800	2160	264	143	727
4	215	809	601	e260	e250	e210	2110	2980	1200	262	181	431
5	179	663	e425	e250	e250	e210	3830	2170	979	212	e225	335
6	218	875	e400	e240	e250	e210	6120	4550	1110	204	2710	263
7	236	925	e350	e240	e240	e220	6600	4810	1470	206	2220	247
8	199	924	e330	e250	e270	e220	4020	2640	1020	227	1330	231
9	199	823	e300	e260	e270	e210	2510	1880	871	221	819	217
10	219	711	e270	e260	e270	e210	2090	1520	1180	257	547	207
11	233	590	e240	e260	e270	e190	1580	1730	1840	468	414	225
12	404	520	e220	e250	e250	e220	1340	2330	1330	437	699	202
13	331	473	e220	e250	e200	e350	1280	1880	890	289	2300	197
14	262	1040	e220	e260	e180	501	1340	1500	732	228	2000	230
15	241	935	e200	e240	e170	881	1440	1290	638	203	1140	1270
16	251	750	e180	e240	e170	1470	2240	1120	1140	190	806	1040
17	217	887	e180	e240	e170	1130	2260	1020	1210	160	687	1160
18	203	1330	e200	e250	e180	1010	3360	926	921	177	505	997
19	392	898	e220	e250	e170	901	3300	825	736	155	377	601
20	361	718	e270	e250	e200	696	2590	775	597	159	432	2180
21	274	2510	e290	e250	e250	621	2020	697	547	155	512	2340
22	275	1700	e270	e250	e320	509	1860	722	469	136	509	1300
23	367	1050	e250	e250	e400	461	1470	689	385	132	427	978
24	436	859	e250	e240	e350	464	1250	611	584	97	404	1050
25	523	673	e250	e240	e320	511	1150	632	458	127	352	854
26	415	733	e260	e240	e300	842	1170	598	409	132	297	735
27	328	676	e260	e240	e280	1330	1280	873	428	115	260	732
28	302	980	e260	e240	e260	2530	1260	787	374	165	238	620
29	307	1430	e280	e250	---	8200	1110	624	357	310	230	535
30	317	982	e310	e250	---	9070	1180	514	277	221	217	501
31	291	---	e300	e250	---	6540	---	497	---	191	215	---
TOTAL	8724	28227	9970	7790	6980	40617	73740	51090	26143	6617	21476	21748
MEAN	281	941	322	251	249	1310	2458	1648	871	213	693	725
MAX	523	2510	807	290	400	9070	6600	4810	2160	468	2710	2340
MIN	166	253	180	240	170	190	1110	497	277	97	131	197
CFSM	.65	2.16	.74	.58	.57	3.01	5.64	3.78	2.00	.49	1.59	1.66
IN.	.74	2.41	.85	.66	.60	3.47	6.29	4.36	2.23	.56	1.83	1.86

CAL YR 1988 TOTAL 219495 MEAN 600 MAX 4720 MIN 88 CFSM 1.38 IN. 18.73
WTR YR 1989 TOTAL 303122 MEAN 830 MAX 9070 MIN 97 CFSM 1.90 IN. 25.86

e Estimated

CONNECTICUT RIVER BASIN

61

01137500 AMMOOOSUC RIVER AT BETHLEHEM JUNCTION, N. H.

LOCATION.--Lat 44°16'08", long 71°37'52, Grafton County, Hydrologic Unit 01080101, on left bank 0.2 mi upstream from Pierce Bridge and Bethlehem Junction, 0.8 mi upstream from unnamed tributary entering from left, 3 mi east of Bethlehem, 3.4 mi downstream from Little River, and at mile 35.0.

DRAINAGE AREA.--87.6 mi².

PERIOD OF RECORD.--Discharge: August 1939 to current year.
Water-quality records: Water years 1967-74.

REVISED RECORDS.--WSP 1701: 1951(M), 1953-54(M).

GAGE.--Water-stage recorder. Datum of gage is 1,180.74 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

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

AVERAGE DISCHARGE.--50 years, 207 ft³/s, 32.09 in./yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,800 ft³/s, Oct. 24, 1959, gage height, 12.09 ft, from rating curve extended above 4,100 ft³/s on basis of slope-area measurement of peak flow; minimum, 16 ft³/s, Nov. 14, 1952, caused by anchor ice upstream.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 2	1500	3,440	7.20	May 12	0830	3,420	7.18
May 6	1330	3,860	7.54	Aug. 5	1600	*4,090	*7.71

Minimum discharge, 33 ft³/s, July 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	51	99	195	e68	e80	44	192	407	193	70	38	47
2	51	1160	171	e66	e90	42	148	2000	372	73	37	188
3	54	506	157	e64	73	41	146	938	544	68	40	96
4	54	293	137	e62	e70	40	273	556	330	65	50	70
5	52	320	107	e60	e60	40	871	477	282	62	1660	60
6	57	1320	111	58	54	e39	1690	e2100	464	61	2660	55
7	58	616	143	57	47	e38	1060	e650	459	60	1190	53
8	54	471	122	e57	44	e37	462	e450	408	56	188	52
9	58	369	100	e56	42	e36	304	e380	370	53	143	49
10	61	308	e98	e55	39	e35	261	e340	423	60	111	46
11	131	297	e96	e56	39	e36	208	668	465	73	93	46
12	138	244	e98	e57	e38	e37	179	2210	381	73	143	44
13	92	253	e100	e58	e37	e38	167	911	283	57	232	45
14	77	397	e110	60	e37	e40	165	595	244	54	240	44
15	72	292	e115	e62	e37	253	184	469	217	53	152	60
16	68	235	106	e63	e37	211	219	410	305	48	109	59
17	66	377	e100	64	e37	94	257	376	260	45	98	63
18	99	366	e95	61	e38	77	436	351	211	44	86	61
19	318	259	e92	60	e39	e70	364	325	181	43	78	53
20	162	229	e90	59	e40	e62	282	304	155	43	73	121
21	120	332	e90	55	e80	e58	216	325	139	44	79	172
22	123	249	e90	55	e220	e55	213	378	124	42	77	97
23	286	201	e90	53	e180	e53	163	291	115	37	71	105
24	201	183	e90	52	84	52	151	265	141	42	75	137
25	212	149	e90	51	60	56	141	261	112	34	66	101
26	160	155	e80	48	51	138	147	264	97	36	59	120
27	133	182	73	50	48	184	162	367	89	35	55	194
28	120	318	e72	49	45	515	151	316	87	46	53	129
29	139	340	e72	49	---	1620	135	251	84	58	51	106
30	118	226	e71	49	---	383	216	211	76	44	49	89
31	105	---	e70	50	---	211	---	197	---	46	46	---
TOTAL	3490	10746	3231	1764	1746	4635	9563	18043	7611	1625	8102	2562
MEAN	113	358	104	56.9	62.4	150	319	582	254	52.4	261	85.4
MAX	318	1320	195	68	220	1620	1690	2210	544	73	2660	194
MIN	51	99	70	48	37	35	135	197	76	34	37	44
CFSM	1.29	4.09	1.19	.65	.71	1.71	3.64	6.64	2.90	.60	2.98	.97
IN.	1.48	4.56	1.37	.75	.74	1.97	4.06	7.66	3.23	.69	3.44	1.09

CAL YR 1988 TOTAL 66728 MEAN 182 MAX 3730 MIN 41 CFSM 2.08 IN. 28.34
WTR YR 1989 TOTAL 73118 MEAN 200 MAX 2660 MIN 34 CFSM 2.29 IN. 31.05

e Estimated

CONNECTICUT RIVER BASIN

01138500 CONNECTICUT RIVER AT WELLS RIVER, VT.

LOCATION.--Lat 44°09'13", long 72°02'34", Orange County, Hydrologic Unit 01080101, on right bank at village of Wells River, 200 ft downstream from bridge on U.S. Highway 302, 400 ft upstream from Wells River, 1,200 ft downstream from Ammonoosuc River, and at mile 266.0.

DRAINAGE AREA.--2,644 mi².

PERIOD OF RECORD.--October 1949 to current year. October and November 1949 monthly discharge only, published in WSP 1301.

Water-quality records: 1952, 1957, 1979 to 1986.

GAGE.--Water-stage recorder. Datum of gage is 399.75 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by powerplants, by First Connecticut and Second Connecticut Lakes, Lake Francis, Moore and Comerford Reservoirs (Reservoirs in Connecticut River basin), and other reservoirs. These reservoirs have a combined capacity of about 14,800,000,000 ft³.

AVERAGE DISCHARGE.--40 years, 4,779 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 57,100 ft³/s, July 1, 1973, gage height, 17.35 ft, from peak-stage indicator; minimum daily, 152 ft³/s, Aug. 28, 1960.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 23,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 7	0430	*29,600	*9.82	May 6	1930	29,200	9.71

Minimum daily discharge, 414 ft³/s, July 30.

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	1630	2330	7030	2410	1940	2250	12400	7190	3860	959	928	1760
2	764	4440	6790	1880	1750	1850	9870	12400	4840	570	958	2190
3	2600	5940	6230	e2000	2080	1920	9620	17600	7580	2780	1270	1300
4	2300	3250	5080	e3000	2720	1800	9540	19300	9510	1770	1570	1680
5	2120	5100	4420	e4000	1140	862	16100	19000	8830	2260	10100	2490
6	2800	6260	5020	e4500	e2000	1580	26100	22800	7740	2140	12900	2760
7	2550	8460	3530	e3500	e2500	3850	27200	23300	8240	2440	10500	1620
8	1430	7840	2930	2280	3020	2890	23800	18800	8500	1510	5350	2410
9	568	6840	3540	e1500	2870	2720	21400	15700	7620	670	5010	841
10	1190	6140	2830	e2000	3150	1840	17000	12200	7740	3200	4760	1180
11	2090	5180	2420	2480	2570	1770	14800	11900	8370	2450	4630	2080
12	2970	5390	e2500	2890	1110	1310	10600	15800	10000	2390	5230	1750
13	3230	5170	e3500	2310	2770	1440	7180	16600	7900	2710	6990	1090
14	3160	5730	3120	1570	2460	1990	6530	14800	7010	2490	7690	1720
15	1720	5740	2390	1270	1890	e2500	6900	11500	5630	1820	6040	3460
16	870	5480	e1800	2000	2300	e1750	7620	8720	6040	1290	5380	2860
17	2920	5520	e1500	1960	2970	2970	8510	7540	6470	1840	4790	2160
18	2680	5630	1670	3380	2290	2690	13600	6350	5870	1050	2630	3370
19	2450	7360	e1500	2950	874	2390	15900	5960	5450	1130	2930	3840
20	3360	7850	e2000	2260	1110	2580	14500	5240	5240	2380	2030	4490
21	2930	8920	2670	1730	2320	3340	12400	4520	4210	1820	2530	8790
22	4100	11200	2530	e1300	2710	3210	10100	5090	4110	1060	3390	10600
23	4040	11100	2230	e1500	2330	2800	8970	4990	3880	445	3120	7610
24	3690	10000	1800	1970	3070	2780	7600	4280	2780	1240	2890	4800
25	4280	5760	1250	1700	2720	3100	7010	4680	1980	1290	3150	4770
26	4310	4010	1750	2110	1910	2010	7000	4480	2490	1560	1260	4900
27	3800	4560	2230	2210	2480	3910	7020	3570	4680	1700	706	4270
28	2960	5200	2090	1350	2630	8140	7010	4470	3990	1540	1410	4110
29	1520	6910	3110	1150	---	13300	6910	6840	2440	691	1970	3520
30	556	7170	3130	1960	---	14900	6840	4260	1660	414	2160	2560
31	2820	---	2380	2320	---	15800	---	4620	---	1220	2690	---
TOTAL	78408	190480	94970	69440	63684	116242	360030	324500	174660	50829	126962	100981
MEAN	2529	6349	3064	2240	2274	3750	12000	10470	5822	1640	4096	3366
MAX	4310	11200	7030	4500	3150	15800	27200	23300	10000	3200	12900	10600
MIN	556	2330	1250	1150	874	862	6530	3570	1660	414	706	841

CAL YR 1988 TOTAL 1513822 MEAN 4136 MAX 23500 MIN 536
WTR YR 1989 TOTAL 1751186 MEAN 4798 MAX 27200 MIN 414

e Estimated

CONNECTICUT RIVER BASIN

63

01139000 WELLS RIVER AT WELLS RIVER, VT.

LOCATION.--Lat 44°09'03", long 72°03'55", Orange County, Hydrologic Unit 01080103, on right bank, 0.8 mi west of village of Wells River, and 1.5 mi upstream from mouth.

DRAINAGE AREA.--98.4 mi².

PERIOD OF RECORD.--Discharge: August 1940 to current year.
Water-quality records: Water years 1957-58.

REVISED RECORDS.--WSP 1171: Drainage area. WSP 1201: 1942(P), 1944-45(M), 1946-47(P), 1948(M), 1950.

GAGE.--Water-stage recorder. Datum of gage is 505.53 ft above National Geodetic Vertical Datum of 1929 (levels by Connecticut River Power Co.).

REMARKS.--Records good except those for estimated daily discharges, which are fair. Some diurnal fluctuation at low flow prior to 1958 and since June 1984 caused by small powerplant upstream. Flow partly regulated by Groton and Ricker Ponds. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--49 years, 143 ft³/s, 19.74 in./yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,970 ft³/s, June 30, 1973, gage height, 9.82 ft, from rating curve extended above 1,400 ft³/s on basis of computation of peak flow over dam; minimum, 5.1 ft³/s, Oct. 6, 1948; minimum daily, 8.3 ft³/s, Sept. 5, 1953.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 980 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 6	2330	1,330	4.98	May 6	1900	1,350	5.01
May 2	2000	1,220	4.82	Aug. 5	1530	*2,640	*6.69

Minimum daily discharge, 11 ft³/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	20	38	122	e40	48	e35	245	138	127	61	32	e13
2	21	299	111	e45	e45	e30	236	697	130	59	28	e50
3	22	251	98	e35	e40	30	245	647	210	56	28	e40
4	23	144	89	29	e35	27	360	424	193	51	29	e32
5	23	109	e65	25	e30	30	757	322	168	50	1360	e27
6	23	138	e65	e25	e30	e25	1110	897	342	49	798	e23
7	24	132	e70	e25	e30	e20	1090	784	356	48	402	e20
8	24	120	e70	e30	e30	e20	675	474	251	45	250	e18
9	25	102	e65	e35	e27	e20	448	366	210	40	162	e16
10	25	89	e55	e30	e25	e22	368	302	420	212	120	e14
11	27	81	e45	e32	e25	e22	290	379	365	267	e100	e13
12	30	70	e40	e32	e25	e20	243	540	245	168	e300	e12
13	28	66	e40	32	25	e20	219	430	181	101	e700	e11
14	26	149	e40	e32	e27	e25	211	345	159	88	e400	e15
15	24	123	e45	e35	e30	e200	206	282	139	87	e250	e40
16	23	101	e40	e35	e25	e250	333	247	314	64	e180	e30
17	19	128	e35	e35	e22	141	342	216	265	55	e130	e45
18	22	166	e35	e40	e20	113	370	189	210	49	e100	e35
19	47	117	e35	e40	e20	114	332	167	166	45	e80	e30
20	40	102	e40	e40	e20	83	272	151	133	44	e66	400
21	34	366	e45	e35	e22	72	232	141	117	41	e54	341
22	35	245	e40	e30	e150	67	209	140	104	37	e46	196
23	69	159	e40	e30	e300	66	180	127	96	35	e40	167
24	70	131	e45	34	244	60	164	119	145	32	e34	144
25	84	102	e50	e30	e65	97	152	126	119	31	e29	108
26	65	93	e45	e30	e45	188	145	111	96	29	e25	112
27	54	92	e40	e30	e40	278	142	138	105	27	e22	130
28	47	140	e45	e30	e35	441	139	125	90	31	e20	100
29	48	196	e40	e33	---	741	129	108	80	39	e18	89
30	46	141	e40	39	---	398	130	96	67	31	e16	81
31	40	---	e40	42	---	270	---	100	---	35	e14	---
TOTAL	1108	4190	1675	1035	1480	3925	9974	9328	5603	2007	5833	2352
MEAN	35.7	140	54.0	33.4	52.9	127	332	301	187	64.7	188	78.4
MAX	84	366	122	45	300	741	1110	897	420	267	1360	400
MIN	19	38	35	25	20	20	129	96	67	27	14	11
CFSM	.36	1.42	.55	.34	.54	1.29	3.38	3.06	1.90	.66	1.91	.80
IN.	.42	1.58	.63	.39	.56	1.48	3.77	3.53	2.12	.76	2.21	.89

CAL YR 1988 TOTAL 39353 MEAN 108 MAX 904 MIN 17 CFSM 1.09 IN. 14.88
WTR YR 1989 TOTAL 48510 MEAN 133 MAX 1360 MIN 11 CFSM 1.35 IN. 18.34

e Estimated

CONNECTICUT RIVER BASIN

01139800 EAST ORANGE BRANCH AT EAST ORANGE, VT.

LOCATION.--Lat 44°05'34", long 72°20'10", Orange County, Hydrologic Unit 01080103, on left bank 0.3 mi east of East Orange, 1.6 mi upstream from mouth, and 5 mi southwest of Orange.

DRAINAGE AREA.--8.95 mi².

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

REVISED RECORDS.--WDR MA-NH-RI-VT-72-1: 1960-64(P), 1969-71(P).

GAGE.--Water-stage recorder. Elevation of gage is 1,180 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair. Occasional diurnal fluctuation at low flow caused by mill upstream. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--31 years, 15.8 ft³/s, 23.97 in./yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 672 ft³/s, June 30, 1973, gage height, 5.55 ft, from rating curve extended above 160 ft³/s on basis of slope-area measurement of peak flow; maximum gage height, 6.35 ft Jan. 22, 1959 (ice jam); minimum discharge, 0.1 ft³/s, Sept. 9, 19, 1963.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 140 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 22	1815	ice jam	*4.48	May 6	1115	*256	4.23
Mar. 28	1630	182	3.83	May 12	0630	158	3.69
Apr. 6	2030	144	3.61	Aug. 5	0730	227	4.08
May 2	1330	227	4.08				

Minimum discharge, 1.8 ft³/s, Mar. 12-13.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.1	4.7	e15	e5.4	e4.2	e2.4	17	29	24	7.6	2.3	7.0
2	2.1	51	e14	e5.0	e4.5	e2.4	21	126	20	7.0	2.2	16
3	2.2	11	e14	e4.8	e3.7	e2.3	19	74	14	6.4	4.7	4.9
4	2.1	7.4	e13	e4.6	e3.3	e2.3	45	54	22	7.5	3.0	3.8
5	2.1	8.3	e13	e4.1	e3.1	e2.3	80	48	12	9.9	68	3.4
6	2.2	27	e15	e3.8	e3.0	e2.2	115	171	55	9.5	12	3.1
7	2.3	12	e19	e3.7	e2.9	e2.0	87	93	21	8.2	8.9	2.9
8	2.3	9.3	e17	e4.4	e2.8	e1.9	65	70	21	7.3	5.6	2.8
9	2.7	8.5	e15	e4.7	e2.6	e1.9	59	63	15	6.3	4.3	2.6
10	3.1	7.4	e13	e4.2	e2.5	e1.9	53	58	42	33	3.6	2.6
11	3.4	7.2	e11	e3.8	e2.4	e1.9	58	111	20	14	3.6	2.5
12	3.0	6.4	e10	e3.7	e2.4	e1.8	49	136	12	9.0	36	2.5
13	2.6	10	e9.6	e3.7	e2.3	e1.8	42	91	13	6.5	39	2.4
14	2.6	17	e10	e3.7	e2.4	e2.0	43	68	10	5.7	11	2.7
15	2.6	10	e11	e3.7	e2.6	e1.5	46	56	16	4.6	6.8	12
16	2.5	8.9	e10	e3.6	e2.5	e1.8	74	50	36	3.8	5.5	5.5
17	2.3	16	e9.0	e3.5	e2.4	e4.0	69	44	23	3.6	4.9	17
18	3.2	12	e8.0	e3.5	e2.2	e4.4	71	40	18	3.3	4.2	5.8
19	4.4	9.4	e7.2	e3.4	e2.1	e4.0	55	37	16	3.0	3.9	4.7
20	2.6	14	e6.7	e3.4	e2.0	e3.5	47	34	12	3.1	4.5	51
21	2.3	44	e9.7	e3.3	e6.0	e3.1	46	34	11	3.0	4.5	11
22	6.2	15	e8.0	e3.3	e2.0	e3.0	43	34	9.5	2.7	4.8	7.0
23	10	23	e5.7	e3.2	e5.6	e3.0	38	29	13	2.5	5.3	10
24	7.5	13	e5.6	e3.1	e3.3	e3.0	37	28	22	2.3	4.9	7.0
25	6.0	17	e6.4	e3.0	e3.0	e4.3	35	28	12	2.3	3.8	5.6
26	4.1	27	e6.2	e2.9	e2.8	12	34	39	10	2.2	3.4	8.0
27	3.6	15	e5.8	e2.9	e2.6	30	33	32	9.2	2.2	3.1	6.7
28	3.6	30	e8.2	e2.8	e2.5	66	31	25	10	2.9	3.1	5.4
29	4.1	20	e7.0	e3.0	---	71	29	18	10	2.9	3.0	4.9
30	3.5	16	e6.4	e3.2	---	19	29	16	8.0	2.4	3.2	4.5
31	3.3	---	e5.8	e3.3	---	16	---	22	---	2.3	2.8	---
TOTAL	106.6	477.5	315.3	114.7	101.7	308.4	1470	1758	536.7	187.0	275.9	225.3
MEAN	3.44	15.9	10.2	3.70	3.63	9.95	49.0	56.7	17.9	6.03	8.90	7.51
MAX	10	51	19	5.4	20	71	115	171	55	33	68	51
MIN	2.1	4.7	5.6	2.8	2.0	1.8	17	16	8.0	2.2	2.2	2.4
CFSM	.38	1.78	1.14	.41	.41	1.11	5.47	6.34	2.00	.67	.99	.84
IN.	.44	1.98	1.31	.48	.42	1.28	6.11	7.31	2.23	.78	1.15	.94

CAL YR 1988 TOTAL 4285.1 MEAN 11.7 MAX 123 MIN 1.1 CFSM 1.31 IN. 17.81
WTR YR 1989 TOTAL 5877.1 MEAN 16.1 MAX 171 MIN 1.8 CFSM 1.80 IN. 24.43

e Estimated

CONNECTICUT RIVER BASIN

65

01141500 OMPOMPANOOSUC RIVER AT UNION VILLAGE, VT.

LOCATION.--Lat 43°47'23", long 72°15'19", Orange County, Hydrologic Unit 01080103, on right bank 100 ft upstream from covered bridge at Union Village, 0.2 mi downstream from Avery Brook, 0.3 mi downstream from Union Village Reservoir, and 3.8 mi upstream from mouth.

DRAINAGE AREA.--130 mi².

PERIOD OF RECORD.--Discharge: September 1940 to current year.
Water-quality records: Water years 1955, 1957-58.

GAGE.--Water-stage recorder. Elevation of gage is 435 ft, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by Union Village Reservoir (Reservoirs in Connecticut River basin) since October 1949. Some regulation by Lake Fairlee. Several observations of water temperatures and specific conductance were made during the year.

AVERAGE DISCHARGE.--49 years, 193 ft³/s, 20.16 in./yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,800 ft³/s, June 3, 1947, gage height, 9.65 ft, from rating curve extended above 2,400 ft³/s on basis of slope-area measurement of peak flow; minimum, 1.7 ft³/s, Oct. 14, 1949; minimum daily, 2.0 ft³/s, Oct. 20, 1949. Maximum discharge since construction of Union Village Reservoir in 1949, 2,350 ft³/s, Apr. 20, 1950, gage height, 7.62 ft; maximum gage height, 7.68 ft Apr. 7, 1976.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1869, about 14.5 ft in November 1927, from information by local resident (discharge not determined).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,820 ft³/s, May 6, gage height, 7.28 ft; minimum, 18 ft³/s, Oct. 31, Nov. 1; minimum daily, 19 ft³/s, Nov. 1.

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	27	19	194	e74	e36	e34	330	200	191	86	24	28
2	25	270	151	e68	e36	e32	345	763	165	80	23	47
3	24	287	133	e56	e34	e32	386	665	164	72	25	40
4	25	133	127	e54	e34	e30	566	474	174	65	26	32
5	24	76	98	e52	e34	e30	698	392	160	64	184	29
6	24	100	80	e50	e32	e28	804	1230	266	64	100	28
7	23	175	90	e52	e32	e28	1440	929	288	59	123	27
8	23	196	121	e54	e32	e30	1690	597	315	61	78	26
9	24	151	108	e54	e30	e30	1190	487	279	50	58	25
10	24	110	82	e52	e30	e32	495	417	488	161	46	24
11	27	78	e62	e50	e30	e32	393	625	429	216	42	23
12	28	78	e60	e48	e28	e30	347	881	303	138	202	23
13	25	80	e58	e46	e28	e28	323	660	256	98	291	22
14	25	254	e60	e46	e30	28	315	536	234	104	194	22
15	24	200	64	e42	e30	39	310	469	224	89	121	37
16	24	116	e64	e36	e28	119	563	397	413	73	94	40
17	24	117	e62	e36	e26	193	523	355	326	65	77	70
18	25	122	e60	e38	e26	130	523	321	283	61	66	56
19	32	122	e60	e36	e28	137	454	291	324	54	57	40
20	30	123	e58	e34	e28	224	380	261	242	51	56	217
21	27	371	e56	e34	e30	227	339	239	206	49	56	170
22	31	357	e56	e32	e34	85	316	243	177	42	47	90
23	49	201	e54	e34	e36	100	277	204	156	40	45	98
24	47	187	e54	e32	e40	49	260	197	196	36	51	95
25	51	149	e52	e32	e38	67	242	194	152	34	40	72
26	40	119	e52	e30	e36	82	230	218	124	31	35	94
27	31	112	e54	e30	e36	248	218	320	107	29	33	115
28	26	186	e58	e28	e34	697	208	224	153	30	32	81
29	25	254	e62	e30	---	1250	195	184	135	30	31	71
30	25	225	e74	e32	---	780	195	164	101	27	32	63
31	21	---	e78	e34	---	345	---	171	---	26	30	---
TOTAL	880	4968	2442	1326	896	5196	14555	13308	7031	2085	2319	1805
MEAN	28.4	166	78.8	42.8	32.0	168	485	429	234	67.3	74.8	60.2
MAX	51	371	194	74	40	1250	1690	1230	488	216	291	217
MIN	21	19	52	28	26	28	195	164	101	26	23	22
MEAN†	31.7	169	79.0	41.6	41.0	155	487	427	234	66.6	75.1	60.9
CFSM†	.24	1.30	.61	.32	.32	1.19	3.75	3.28	1.80	.51	.58	.47
IN.†	.28	1.45	.70	.37	.33	1.38	4.18	3.79	2.01	.59	.67	.52

CAL YR 1988 TOTAL 45031 MEAN 123 MAX 867 MIN 19 MEAN† 123 CFSM† .95 IN.† 12.89
WTR YR 1989 TOTAL 56811 MEAN 156 MAX 1690 MIN 19 MEAN† 155 CFSM† 1.19 IN.† 16.26

e Estimated

† Adjusted for change in Union Village Reservoir.

CONNECTICUT RIVER BASIN

01141800 MINK BROOK NEAR ETNA, N. H.

LOCATION.--Lat 43°42'08", long 72°11'15", Grafton County, Hydrologic Unit 01080104, on left bank 2 mi northeast of Etna and 5 mi east of Hanover.

DRAINAGE AREA.--4.60 mi².

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

GAGE.--Water-stage recorder. Elevation of gage is 1,000 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges and those below 0.5 ft³/s, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--27 years, 7.45 ft³/s, 21.99 in./yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 629 ft³/s, Aug. 1, 1986, gage height, 3.93 ft, from rating curve extended above 130 ft³/s on basis of slope-area measurement at gage heights 3.50 ft and 3.75 ft; maximum gage height, 4.28 ft Jan. 9, 1978 (ice jam); minimum discharge, 0.01 ft³/s, Aug. 11, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 75 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 6	2030	134	2.67	May 6	1045	86	2.45
May 2	1115	*230	*3.01				

a From rating curve extended above 130 ft³/s as explained above.

Minimum discharge, 0.09 ft³/s, Aug. 2, 4.

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	.47	e.70	3.5	e1.3	e.60	e.90	9.0	6.8	3.2	2.2	.10	.38
2	.50	18	3.2	e1.1	e.74	e.85	15	82	2.9	2.0	.09	.62
3	.44	5.7	e3.0	e1.0	e.82	e.80	17	28	3.0	1.8	.12	.41
4	.38	3.4	e2.6	e.90	e.88	e.76	37	18	2.9	1.7	.12	.34
5	.41	3.0	e2.4	e.84	e.76	e.74	49	15	2.5	1.9	8.4	.31
6	.47	7.4	e2.3	e.78	e.70	e.76	79	47	7.1	1.9	3.1	.25
7	.49	5.2	e2.0	e.75	e.64	e.72	39	24	5.1	1.7	2.8	.24
8	.58	4.2	e1.8	e.75	e.58	e.68	21	18	11	1.5	2.1	.23
9	.84	4.2	e1.7	e.75	e.59	e.64	16	14	6.1	1.1	1.3	.21
10	.71	3.4	e1.6	e.78	e.52	e.62	12	13	19	8.3	.82	.19
11	1.1	3.1	e1.5	e.80	e.50	e.60	14	21	10	4.1	3.0	.17
12	1.2	2.8	e1.3	e.68	e.47	e.60	11	25	6.4	2.2	13	.17
13	1.0	4.3	e1.2	e.66	e.45	e.70	8.2	16	5.7	1.6	9.8	.15
14	.72	5.6	e1.3	e.66	e.44	e.85	8.1	14	4.8	1.4	6.3	.29
15	.68	3.5	e1.4	e.70	e.50	e1.4	9.0	12	7.3	1.3	2.9	1.3
16	.78	3.2	e1.3	e.74	e.60	e1.7	31	10	17	.92	2.4	.72
17	.77	3.9	e1.2	e.78	e.80	e1.6	20	9.2	12	.78	1.9	2.5
18	.80	3.4	e1.0	e.82	e.70	e1.6	19	7.9	8.5	.64	1.5	1.3
19	1.1	3.0	e.94	e.82	e.62	e1.6	15	6.8	7.6	.50	1.1	.99
20	1.0	5.0	e.94	e.90	e.54	e1.5	12	5.9	5.5	.49	1.3	10
21	.88	12	e.90	e.88	e1.3	e1.4	11	5.1	4.2	.44	1.1	4.0
22	1.8	5.9	e.88	e.85	e3.0	e1.6	9.4	4.5	3.5	.37	.78	2.3
23	2.3	4.3	e.90	e.78	e2.5	e1.5	7.6	4.0	3.1	.32	1.1	2.7
24	e1.5	3.5	e1.0	e.70	e2.1	e1.4	7.1	5.8	3.6	.25	1.1	2.6
25	e1.2	3.2	e1.3	e.68	e1.8	e2.5	6.7	5.0	2.9	.21	.73	1.8
26	e1.0	3.5	e1.4	e.64	e1.4	e7.0	6.6	7.4	2.5	.19	.55	5.5
27	e.85	3.1	e1.5	e.64	e1.2	e11	6.5	6.8	2.3	.16	.46	3.4
28	e.78	6.1	e1.4	e.64	e1.0	e10	6.2	4.1	6.5	.29	.43	2.3
29	e.72	5.1	e1.5	e.62	---	e9.0	5.9	3.3	3.4	.21	.43	1.9
30	e.64	3.9	e1.5	e.60	---	e8.8	6.3	3.0	2.5	.14	.62	1.6
31	e.62	---	e1.6	e.58	---	8.5	---	3.1	---	.14	.39	---
TOTAL	26.73	143.60	50.06	24.12	26.75	82.32	514.6	445.7	182.1	40.75	69.84	48.87
MEAN	.86	4.79	1.61	.78	.96	2.66	17.2	14.4	6.07	1.31	2.25	1.63
MAX	2.3	18	3.5	1.3	3.0	11	79	82	19	8.3	13	10
MIN	.38	.70	.88	.58	.44	.60	5.9	3.0	2.3	.14	.09	.15
CFSM	.19	1.04	.35	.17	.21	.58	3.73	3.13	1.32	.29	.49	.35
IN.	.22	1.16	.40	.20	.22	.67	4.16	3.60	1.47	.33	.56	.40

CAL YR 1988 TOTAL 1611.06 MEAN 4.40 MAX 48 MIN .11 CFSM .96 IN. 13.03
WTR YR 1989 TOTAL 1655.44 MEAN 4.54 MAX 82 MIN .09 CFSM .99 IN. 13.39

e Estimated

CONNECTICUT RIVER BASIN

67

01142500 AYERS BROOK AT RANDOLPH, VT.

LOCATION.--Lat 43°56'04", long 72°39'30", Orange County, Hydrologic Unit 01080105, on right bank 135 ft upstream from bridge on State Highway 12, just north of village limits of Randolph, 0.4 mi upstream from Adams Brook, and 1.2 mi upstream from mouth.

DRAINAGE AREA.--30.5 mi².

PERIOD OF RECORD.--July 1939 to September 1975, June 1976 to current year.

REVISED RECORDS.--WDR MA-NH-RI-VT-72-1: 1949(M), 1952(M), 1953(P), 1958(P), 1960(M), 1967(M).

GAGE.--Water-stage recorder. Datum of gage is 630.50 ft Vermont State Department of Highways datum. Prior to Oct. 1, 1964, at site 140 ft downstream at datum 2.25 ft higher and Oct. 1, 1964, to Sept. 30, 1975, at site 140 ft downstream at datum 1.25 ft higher.

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

AVERAGE DISCHARGE.--49 years (water years 1940-75, 1977-89), 47.2 ft³/s, 21.02 in./yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,600 ft³/s, June 30, 1973, gage height, 10.37 ft, present datum, from rating curve extended above 500 ft³/s on basis of contracted-opening measurement of peak flow; minimum, 0.6 ft³/s, July 27, 1965.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1830, about 18 ft, present datum, in November 1927.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 29	--	unknown	unknown	Jun 10	0830	359	4.88
Apr. 6	--	unknown	unknown	Aug. 5	1130	*882	*7.22
May 6	1415	827	6.99	Aug. 13	1315	455	5.34

Minimum discharge, 4.2 ft³/s, Oct. 18.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.6	6.6	44	e17	e28	e14	e76	e38	47	29	11	24
2	5.3	65	41	e17	e25	e13	e74	e230	43	28	13	59
3	5.2	38	39	e16	e15	e12	e80	e200	52	25	19	e27
4	5.1	23	36	e12	e11	e12	e90	e140	44	24	20	e23
5	4.9	20	31	e14	e13	e12	e140	107	39	23	356	e22
6	4.8	62	29	e15	e12	e12	e340	474	97	23	90	e20
7	4.7	38	33	e16	e11	e9.6	e300	268	75	24	85	e17
8	4.7	29	31	e20	e10	e10	e222	178	67	30	50	e18
9	4.7	26	25	e30	e10	e9.8	e191	145	60	22	38	e16
10	5.0	23	23	e19	e9.5	e10	e127	126	212	67	32	e15
11	5.5	22	18	e14	e11	e11	e110	200	123	55	30	e14
12	5.6	19	16	e12	e10	e10	e86	250	91	37	113	e15
13	5.1	26	19	e13	e9.2	e9.0	e72	175	83	27	262	e14
14	5.2	54	22	e12	e9.6	19	e64	144	77	24	144	e15
15	4.6	41	25	e12	e10	e35	e62	125	72	21	106	e43
16	4.5	32	21	e14	e10	e60	e75	111	145	19	83	e24
17	4.3	40	19	e13	e8.2	e90	e90	100	104	18	67	e47
18	4.5	39	e16	e13	e9.2	e45	e100	89	90	17	56	e35
19	6.3	31	e16	e13	e9.5	e50	e95	79	90	15	49	e25
20	5.7	36	e17	e12	e9.7	e35	e78	72	73	15	51	e180
21	4.9	169	e30	e11	30	e27	e65	69	67	14	49	e110
22	6.1	82	e20	e12	153	e23	e60	67	60	14	43	e70
23	11	61	e17	e12	55	e20	e55	58	52	13	42	e56
24	11	52	e19	e11	23	e23	e50	57	61	12	32	e47
25	13	46	e20	e11	e20	e35	e45	59	49	11	23	e42
26	8.8	42	e16	e10	e17	e80	e43	56	42	11	20	e35
27	7.6	41	e14	e11	e16	e150	e42	60	40	10	18	e37
28	6.9	55	e20	e11	e14	e300	e41	49	38	12	17	e34
29	7.8	54	e35	e11	---	e410	e40	43	40	12	19	e31
30	7.4	46	e21	e10	---	e160	e39	38	33	11	23	e32
31	6.7	---	e18	e11	---	e100	---	42	---	12	22	---
TOTAL	192.5	1318.6	751	425	568.9	1806.4	2952	3849	2166	675	1983	1147
MEAN	6.21	44.0	24.2	13.7	20.3	58.3	98.4	124	72.2	21.8	64.0	38.2
MAX	13	169	44	30	153	410	340	474	212	67	356	180
MIN	4.3	6.6	14	10	8.2	9.0	39	38	33	10	11	14
CFSM	.20	1.44	.79	.45	.67	1.91	3.23	4.07	2.37	.71	2.10	1.25
IN.	.23	1.61	.92	.52	.69	2.20	3.60	4.69	2.64	.82	2.42	1.46

CAL YR 1988 TOTAL 12962.3 MEAN 35.4 MAX 370 MIN 4.0 CFSM 1.16 IN. 15.81
WTR YR 1989 TOTAL 17834.4 MEAN 48.9 MAX 474 MIN 4.3 CFSM 1.60 IN. 21.75

e Estimated

CONNECTICUT RIVER BASIN

01144000 WHITE RIVER AT WEST HARTFORD, VT.

LOCATION.--Lat 43°42'51", long 72°25'07", Windsor County, Hydrologic Unit 01080105, on left bank 700 ft upstream from highway bridge at West Hartford and 7.4 mi upstream from mouth.

DRAINAGE AREA.--690 mi².

PERIOD OF RECORD.--Discharge: June 1915 to current year. October 1927 to September 1928 monthly discharge only, published in WSP 1301.
Water-quality records: Water years 1953, 1967-74.

REVISED RECORDS.--WSP 756: Drainage area. WSP 781: 1928(M). WSP 1031: 1916(m), 1923. WSP 1301: 1916-26(M), 1929(M).

GAGE.--Water-stage recorder. Datum of gage is 374.53 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 30, 1927, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Some diurnal fluctuation at low flow during period 1934-50 caused by powerplant upstream. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--74 years, 1,189 ft³/s, 23.40 in./yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 120,000 ft³/s, Nov. 4, 1927, gage height, 29.3 ft, from floodmarks, from rating curve extended above 29,000 ft³/s on basis of slope-area measurement of peak flow; minimum observed, about 35 ft³/s, Aug. 4, 1918; minimum daily, 54 ft³/s, Sept. 27, 28, 1963. Stage and discharge of the flood of Nov. 4, 1927, are the greatest since at least 1761.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 11,600 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 6	1715	*20,300	*13.68	No other peak greater than base discharge.			
Minimum daily discharge, 177 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	204	381	1290	e650	544	e800	1950	1160	968	691	242	344
2	200	1420	1170	e550	e1250	e700	1730	5390	951	646	229	484
3	e195	1420	1080	e450	e700	e650	2130	4990	933	585	221	617
4	e189	909	1020	e350	e500	e600	2830	3590	863	531	237	454
5	e185	829	800	e325	e375	e550	6180	2710	942	520	2960	393
6	e182	4640	687	e350	e400	e450	8980	11600	1290	539	1960	350
7	e180	2790	896	e425	e425	e325	7750	7540	1900	499	1530	325
8	e179	1860	875	535	e375	e300	4260	4190	1510	554	1000	304
9	e178	1440	697	e800	e350	e325	2980	3220	1400	505	705	290
10	e177	1210	e550	e700	e325	e375	2510	2710	3640	923	567	275
11	e195	1130	e400	e550	e350	e400	2040	4030	3090	1770	484	260
12	e237	969	e325	e450	e375	e400	1830	5610	2030	905	760	247
13	e225	921	e350	e400	e325	e350	1690	4210	1560	670	3080	238
14	e215	2280	e500	e400	360	e350	1600	3230	1470	666	2700	230
15	e205	1640	720	451	e425	e1500	1640	2730	1290	587	1560	325
16	e197	1280	e550	628	e475	e5000	2180	2390	2790	494	1190	490
17	e193	1250	e400	504	e375	2420	2570	2110	2530	441	954	556
18	e190	1540	e350	469	e300	1360	2690	1880	2070	414	784	793
19	e300	1190	e400	459	e325	2230	2700	1660	2360	392	674	537
20	e260	1110	476	453	370	e1000	2180	1490	1820	372	611	2480
21	e250	6090	609	e400	e425	e700	1890	1340	1490	366	621	2890
22	e250	3150	e750	e300	e4500	e500	1760	1400	1300	347	597	1490
23	439	2130	e550	e350	3900	e500	1520	1220	1140	325	554	1090
24	525	1730	578	e400	e2250	e600	1400	1140	1270	306	546	1020
25	787	1450	698	e325	e1500	698	1300	1190	1120	288	533	834
26	645	1250	e700	e325	e1200	e1250	1240	1110	931	274	475	747
27	511	1210	510	e350	e1000	1910	1220	1370	831	255	432	768
28	436	1450	596	e375	e900	4090	1190	1160	952	252	401	662
29	460	1810	e1250	385	---	7060	1130	1050	1010	269	374	607
30	462	1430	e950	398	---	3140	1110	933	805	265	359	538
31	409	---	e750	432	---	1920	---	920	---	256	359	---
TOTAL	9260	51909	21477	13939	24599	42453	76180	89273	46256	15907	27699	20638
MEAN	299	1730	693	450	879	1369	2539	2880	1542	513	894	688
MAX	787	6090	1290	800	4500	7060	8980	11600	3640	1770	3080	2890
MIN	177	381	325	300	300	300	1110	920	805	252	221	230
CFSM	.43	2.51	1.00	.65	1.27	1.98	3.68	4.17	2.23	.74	1.29	1.00
IN.	.50	2.80	1.16	.75	1.33	2.29	4.11	4.81	2.49	.86	1.49	1.11

CAL YR 1988 TOTAL 349793 MEAN 956 MAX 13400 MIN 116 CFSM 1.39 IN. 18.86
WTR YR 1989 TOTAL 439590 MEAN 1204 MAX 11600 MIN 177 CFSM 1.75 IN. 23.70

e Estimated

CONNECTICUT RIVER BASIN

69

01144500 CONNECTICUT RIVER AT WEST LEBANON, N. H.

LOCATION.--Lat 43°38'46", long 72°18'46", Grafton County, Hydrologic Unit 01080104, on left bank 50 ft downstream from railroad bridge at West Lebanon, 500 ft downstream from White River, and at mile 215.0.

DRAINAGE AREA.--4,092 mi².

PERIOD OF RECORD.--Discharge: October 1911 to November 1976 (published as "at White River Junction, VT"), November 1978 to current year. Water-quality records: Water year 1954.

REVISED RECORDS.--WSP 741: 1932 (adjusted monthly and yearly figures only). WSP 781: 1928(M). WSP 891: Drainage area. WSP 1301: 1922-26(M).

GAGE.--Water-stage recorder. Datum of gage is 321.52 ft above National Geodetic Vertical Datum of 1929. Prior to June 16, 1918, nonrecording gage on downstream side of pier of railroad bridge 50 ft upstream at same datum. June 16, 1918, to Nov. 2, 1930, nonrecording gage at various locations on upstream and downstream sides of railroad bridge at same datum.

REMARKS.--Records good. Flow regulated by powerplants and by First Connecticut and Second Connecticut Lakes, Lake Francis, Moore and Comerford Reservoirs, Union Village Reservoir (Reservoirs in Connecticut River basin), and other reservoirs. These reservoirs have a combined usable capacity of about 17,200,000,000 ft³. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--75 years (water years 1912-76, 1980-89), 7,114 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 136,000 ft³/s, Nov. 4, 1927, gage height, 35.0 ft, present site, from rating curve extended above 70,000 ft³/s; minimum daily, 82 ft³/s, Aug. 8, 1965.

Stage and discharge of the flood of Nov. 4, 1927, are the greatest since at least 1760.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 34,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 7	0300	44,400	17.75	May 6	1915	*46,900	*18.34

Minimum daily discharge, 809 ft³/s, Oct. 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	2680	4350	8320	3180	2090	2600	16700	9860	6930	2360	1150	1860
2	990	7010	7660	2700	2790	2180	14400	17200	5990	1970	1270	1590
3	2990	7400	7700	3120	3090	2140	14100	27200	7600	3000	1330	2880
4	1590	4830	5750	5180	2340	1900	14100	26000	10200	2930	2240	2870
5	2090	6260	6320	7000	1710	1440	21900	24600	11200	3430	9020	2500
6	2300	10500	5430	5120	3390	2330	36200	35500	8680	3210	17100	2640
7	2470	10600	4040	1620	3180	4040	42100	38400	11400	3190	13300	1810
8	1500	10500	5120	1190	3300	3120	35800	30300	11300	1630	9900	2220
9	809	9290	4210	2850	4310	2200	31000	25000	11900	1560	5040	941
10	1790	7030	4120	3880	3750	2000	25400	17700	13400	3520	3950	2340
11	1720	7350	1970	2770	2590	1920	20100	18900	13600	6150	7140	2380
12	3460	6330	3860	3170	1400	1290	15300	23100	13300	4150	6720	1570
13	3680	5200	3950	2560	3310	1790	12500	25400	12300	3290	9500	1380
14	3390	9850	2970	1440	3140	1570	8970	21600	11200	3690	13200	1870
15	1150	7930	3100	1410	2930	3970	9850	16700	8180	2680	8710	3650
16	833	7070	3660	2200	2930	9620	11400	14700	10200	2270	7790	3470
17	2170	6290	2780	2190	3500	6380	13600	12000	10000	2370	5560	2650
18	2260	7160	2030	3820	1670	4520	15300	9840	10400	1590	4280	5040
19	4730	8900	4110	5280	1360	4420	19900	8910	8020	1770	4100	4030
20	3040	9880	2990	1990	2180	3690	19500	8370	7150	2460	1600	8840
21	4570	14600	3260	2020	5710	4000	16800	7370	6710	2400	3920	11900
22	4740	15000	3790	1790	7720	3410	14800	5740	5560	1550	2590	13000
23	4410	14500	3080	2290	4540	3310	12400	6330	5090	1220	2980	8500
24	4230	13000	1970	2130	4090	3880	9820	6660	4300	1550	4020	7100
25	4140	7600	2530	2340	3060	4080	9630	6170	3150	1730	2900	5750
26	4720	4920	2250	3380	2230	4530	8160	6560	5970	1600	1370	5540
27	3840	6670	2920	2210	2600	8280	9090	6190	4570	2260	1010	4520
28	2980	7850	2580	2060	3340	12300	8710	5220	4470	1520	2370	5130
29	1820	8310	4130	1480	---	22500	8360	7650	4480	914	2500	4500
30	1490	9480	3130	2350	---	20400	7980	6570	2770	1120	3120	2990
31	2600	---	2910	2030	---	20400	---	5160	---	1300	2600	---
TOTAL	85182	255660	122640	86750	88250	170210	503870	480900	250020	74384	162280	125461
MEAN	2748	8522	3956	2798	3152	5491	16800	15510	8334	2399	5235	4182
MAX	4740	15000	8320	7000	7720	22500	42100	38400	13600	6150	17100	13000
MIN	809	4350	1970	1190	1360	1290	7980	5160	2770	914	1010	941

CAL YR 1988 TOTAL 2008770 MEAN 5488 MAX 36300 MIN 766
WTR YR 1989 TOTAL 2405607 MEAN 6591 MAX 42100 MIN 809

CONNECTICUT RIVER BASIN

01150500 MASCOMA RIVER AT MASCOMA, N. H.

LOCATION.--Lat 43°39'01", long 72°11'05", Grafton County, Hydrologic Unit 01080104, on left bank at Mascoma, 250 ft downstream from railroad bridge, 1,000 ft downstream from outlet of Mascoma Lake, and 9.9 mi upstream from mouth.

DRAINAGE AREA.--153 mi².

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

REVISED RECORDS.--WSP 726: Drainage area. WSP 801: 1925(M), WRD NH-VT-84-1: 1973(M).

GAGE.--Water-stage recorder. Elevation of gage is 740 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records excellent. Flow regulated by Mascoma and Crystal Lakes and Goose and Grafton Ponds (Reservoirs in Connecticut River basin). Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--66 years, 216 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,840 ft³/s, Mar. 19, 1936, gage height, 7.50 ft, from rating curve extended above 2,500 ft³/s on basis of computations of flow over dams at gage heights 6.85 ft and 7.50 ft; minimum daily, 2 ft³/s, Feb. 3, 1939, Sept. 1, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,890 ft³/s, Apr. 7, gage height, 4.29 ft; minimum daily, 20 ft³/s, Sept. 13.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39	155	230	e83	e40	e74	535	154	167	203	30	29
2	39	275	195	e80	e40	e74	464	566	161	198	28	28
3	37	426	152	e75	e40	e72	308	1200	158	169	42	26
4	37	441	152	e72	e38	e72	119	1250	143	134	35	25
5	35	395	152	e70	e38	e72	388	837	139	73	41	25
6	34	364	151	e68	e38	e50	1170	991	151	26	46	24
7	34	375	149	e62	e38	e34	1820	1290	204	25	47	33
8	33	365	e110	e62	e38	e34	1570	1360	263	28	47	48
9	33	232	e78	e62	e38	e34	1060	1080	507	29	46	52
10	33	156	e78	e58	e38	e33	596	900	718	46	46	50
11	34	307	e76	e56	e36	e33	369	791	727	121	46	49
12	37	284	e54	e55	e36	e33	313	727	489	212	57	30
13	36	270	e38	e52	e36	e30	278	729	255	189	139	20
14	67	264	e38	e48	e35	24	273	778	283	157	239	23
15	97	261	e40	e44	e35	25	269	781	300	134	193	27
16	100	257	e40	e44	e36	25	273	743	534	106	166	28
17	98	253	e42	e44	e36	26	436	503	654	94	113	28
18	97	241	e42	e42	e36	26	615	200	600	84	72	28
19	95	232	e42	e42	e36	27	625	85	402	80	71	29
20	115	233	e44	e42	e36	27	554	89	228	76	62	31
21	130	239	e46	e42	e35	27	384	97	230	73	55	91
22	132	249	e52	e40	e36	27	312	132	218	67	51	189
23	135	251	e52	e40	e40	28	286	164	202	60	48	237
24	143	248	e55	e40	e58	50	260	169	204	56	46	237
25	157	243	e58	e40	e75	73	236	174	213	53	43	213
26	165	238	e60	e40	e75	74	221	206	215	45	41	196
27	157	235	e65	e40	e75	114	207	255	209	39	40	188
28	150	233	e74	e40	e75	166	157	276	208	38	37	184
29	142	230	e85	e40	---	218	129	246	209	34	34	154
30	137	230	e85	e40	---	530	146	213	206	32	33	132
31	132	---	e84	e40	---	660	---	182	---	31	30	---
TOTAL	2710	8182	2619	1603	1213	2792	14373	17168	9197	2712	2024	2454
MEAN	87.4	273	84.5	51.7	43.3	90.1	479	554	307	87.5	65.3	81.8
MAX	165	441	230	83	75	660	1820	1360	727	212	239	237
MIN	33	155	38	40	35	24	119	85	139	25	28	20

CAL YR 1988 TOTAL 58899 MEAN 161 MAX 2340 MIN 20
WTR YR 1989 TOTAL 67047 MEAN 184 MAX 1820 MIN 20

e Estimated

CONNECTICUT RIVER BASIN

71

01150900 OTTAUQUECHEE RIVER NEAR WEST BRIDGEWATER, VT.

LOCATION.--Lat 43°37'20", long 72°45'34", Rutland County, Hydrologic Unit 02010001, on right bank 50 ft upstream from highway bridge on Mission Chapel Road, 1.6 mi northwest of West Bridgewater and 2.6 mi southeast of Sherburne Center.

DRAINAGE AREA.--23.4 mi².

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

REVISED RECORDS.--WRD NH-VT-87-1: 1985-86.

GAGE.--Water-stage recorder. Elevation of gage is 1,150 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair except those for periods of no gage-height record, Oct.1-21, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--5 years, 58.0 ft³/s, 33.66 in./yr.

EXTREME FOR PERIOD OF RECORD.--Maximum discharge, 1,270 ft³/s, Mar. 31, 1987, gage height, 7.78 ft; minimum, 4.2 ft³/s, July 14, 1988.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 6	1245	614	5.53	May 2	1645	539	5.25
Nov. 21	1215	581	5.41	May 6	1500	*791	*6.17

Minimum daily discharge 5.7 ft³/s, Sept. 14.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e11	26	58	34	36	21	89	63	38	25	8.1	8.6
2	e11	86	52	30	34	19	74	330	35	22	7.3	15
3	e10	72	48	26	e24	17	80	300	30	20	7.7	10
4	e10	55	43	e24	e20	16	130	195	41	18	13	8.4
5	e9.8	109	37	e21	e16	e17	254	137	43	21	50	7.7
6	e9.7	487	34	e22	e15	e19	391	503	65	22	47	7.1
7	e9.8	252	36	e23	e14	e17	325	397	70	32	69	6.9
8	e10	135	34	36	e13	e13	155	178	66	37	33	6.6
9	e11	100	e26	46	e13	e11	114	129	61	24	21	6.3
10	e13	79	e24	28	e12	e11	98	105	187	45	16	6.2
11	e15	80	e22	22	e12	e11	77	156	119	43	14	6.0
12	e17	64	e16	20	e12	e10	67	229	74	30	70	6.1
13	e16	73	e17	23	e12	e9.6	64	186	62	25	98	5.9
14	e14	193	e20	18	24	e12	63	133	57	29	73	5.7
15	e12	113	e20	60	37	80	68	109	63	29	44	19
16	e11	81	e20	35	e18	62	116	92	180	22	34	14
17	e12	99	e19	24	e16	38	128	80	136	18	31	45
18	e15	92	e19	21	e12	47	167	71	105	16	25	29
19	e16	68	e18	20	e11	38	141	64	97	14	20	20
20	e15	70	e19	19	e10	26	107	57	71	14	18	181
21	e15	446	34	e18	62	23	87	56	60	15	17	193
22	29	222	26	e17	176	19	77	55	53	13	15	63
23	53	114	e19	e15	64	18	64	46	45	12	14	48
24	54	86	e20	e14	51	18	58	47	55	11	13	40
25	63	71	e28	e13	40	29	54	47	42	9.9	11	33
26	47	63	e24	e13	31	62	54	49	35	9.2	10	33
27	38	61	e22	e13	25	78	53	53	30	8.9	9.8	32
28	36	81	69	e12	22	156	51	48	46	16	9.0	27
29	42	82	100	e12	---	282	49	39	39	14	8.8	25
30	33	65	53	e13	---	128	53	37	30	10	10	23
31	27	---	40	15	---	76	---	38	---	8.9	9.2	---
TOTAL	685.3	3625	1017	707	832	1383.6	3308	4029	2035	633.9	825.9	931.5
MEAN	22.1	121	32.8	22.8	29.7	44.6	110	130	67.8	20.4	26.6	31.0
MAX	63	487	100	60	176	282	391	503	187	45	98	193
MIN	9.7	26	16	12	10	9.6	49	37	30	8.9	7.3	5.7
CFSM	.94	5.16	1.40	.97	1.27	1.91	4.71	5.55	2.90	.87	1.14	1.33
IN.	1.09	5.76	1.62	1.12	1.32	2.20	5.26	6.41	3.24	1.01	1.31	1.48

CAL YR 1988 TOTAL 18038.6 MEAN 49.3 MAX 789 MIN 4.8 CFSM 2.11 IN. 28.68
WTR YR 1989 TOTAL 20013.2 MEAN 54.8 MAX 503 MIN 5.7 CFSM 2.34 IN. 31.82

e Estimated

CONNECTICUT RIVER BASIN

01151500 OTTAUQUECHEE RIVER AT NORTH HARTLAND, VT.

LOCATION.--Lat 43°36'09", long 72°21'17", Windsor County, Hydrologic Unit 01080106, on left bank 100 ft upstream from highway bridge at North Hartland, 0.3 mi downstream from North Hartland Dam, and 1.2 mi upstream from mouth.

DRAINAGE AREA.--221 mi².

PERIOD OF RECORD.--Discharge: October 1930 to current year.

Water-quality records: Water years 1954-55.

GAGE.--Water-stage recorder. Datum of gage is 336.77 ft above National Geodetic Vertical Datum of 1929 (levels by U. S. Army Corps of Engineers).

REMARKS.--Records good. Flow regulated by powerplants upstream and by North Hartland Reservoir (Reservoir in Connecticut River basin) since March 1961; greater regulation by powerplants at North Hartland Reservoir since July 1985. Small seasonal storage in reservoir at Plymouth. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--59 years, 400 ft³/s, 24.58 in./yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,400 ft³/s, Sept. 21, 1938, gage height, 17.68 ft, from rating curve extended above 6,200 ft³/s on basis of computations of flow over dams at gage heights 15.58 ft, 17.68 ft, and 21.5 ft; minimum, 0.2 ft³/s, July 6, 1984 during Hydroelectric construction; minimum daily, 3.8 ft³/s, July 3, 1933. Maximum discharge since construction of North Hartland Dam in March 1961, 6,170 ft³/s, Mar. 17, 1977, gage height, 8.67 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1760, 21.5 ft in November 1927, from floodmarks, discharge 30,400 ft³/s, by computation of peak flow over dam.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,170 ft³/s, Mar. 29, gage height, 6.69 ft; minimum, 5.7 ft³/s, Sept. 27; minimum daily, 19 ft³/s, Sept. 13.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	327	363	195	82	148	372	409	315	159	59	58
2	35	830	376	168	492	151	848	1760	273	176	56	67
3	40	625	319	202	127	70	599	2210	243	154	57	138
4	34	233	346	147	83	90	944	1150	218	187	62	43
5	21	260	214	95	144	126	1550	810	250	165	177	60
6	21	1270	190	84	154	140	1480	2420	330	202	221	52
7	40	1310	296	172	80	97	2650	2620	587	127	190	53
8	38	686	348	161	158	73	2810	1580	384	321	84	54
9	52	421	199	159	68	82	2220	1290	429	161	138	50
10	152	350	209	175	84	111	1170	830	1110	193	22	48
11	40	426	152	136	103	110	751	1670	1120	520	80	477
12	21	313	59	153	103	103	581	2590	290	159	532	318
13	149	279	113	80	92	80	587	1940	413	143	611	19
14	21	816	164	140	150	103	549	1150	421	108	393	20
15	21	653	218	107	161	599	512	984	350	219	224	20
16	95	391	186	227	56	893	898	477	1210	40	133	20
17	82	418	161	146	84	251	935	458	842	205	140	21
18	61	492	81	136	82	572	969	663	739	124	115	21
19	64	331	135	163	84	247	942	529	578	86	126	21
20	94	321	162	82	156	187	752	461	488	115	96	331
21	105	1470	188	143	60	248	588	455	399	108	125	826
22	122	1260	284	82	982	140	614	429	320	121	71	386
23	156	739	152	148	589	180	566	340	338	71	101	461
24	218	528	158	83	209	219	462	409	379	104	71	167
25	207	434	224	153	189	216	435	414	310	62	71	192
26	192	383	272	62	154	771	402	281	246	70	69	275
27	229	398	161	151	145	768	427	556	223	68	63	224
28	78	492	178	72	127	1330	339	317	273	89	62	87
29	115	576	555	153	---	2510	431	284	331	93	66	187
30	67	424	252	72	---	1240	350	308	214	65	55	137
31	21	---	189	160	---	788	---	280	---	63	65	---
TOTAL	2612	17456	6904	4207	4998	12643	26733	30074	13623	4478	4335	4833
MEAN	84.3	582	223	136	178	408	891	970	454	144	140	161
MAX	229	1470	555	227	982	2510	2810	2620	1210	520	611	826
MIN	21	233	59	62	56	70	339	280	214	40	22	19
MEAN†	97.2	576	222	136	181	398	901	970	451	143	138	159
CFSM†	.44	2.61	1.00	.62	.82	1.80	4.08	4.39	2.04	.65	.62	.72
IN.†	.51	2.91	1.16	.71	.85	2.08	4.55	5.06	2.28	.74	.72	.80

CAL YR 1988 TOTAL 122582 MEAN 335 MAX 3780 MIN 19 MEAN† 335 CFSM† 1.52 IN.† 20.62
WTR YR 1989 TOTAL 132896 MEAN 364 MAX 2810 MIN 19 MEAN† 364 CFSM† 1.65 IN.† 22.37

† Adjusted for change in contents in North Hartland Reservoir.

CONNECTICUT RIVER BASIN

73

01152500 SUGAR RIVER AT WEST CLAREMONT, N. H.

LOCATION.--Lat 43°23'15", long 72°21'45", Sullivan County, Hydrologic Unit 01080104, on right bank 0.2 mi downstream from Redwater Brook at West Claremont and 2.4 mi upstream from mouth.

DRAINAGE AREA.--269 mi².

PERIOD OF RECORD.--Discharge: May 1928 to current year. Published as "at Claremont" prior to October 1928. Water-quality records: Water year 1954.

REVISED RECORDS.--WSP 711: 1930(M). WSP 756: Drainage area. WSP 1901: 1960 (adjusted figures only).

GAGE.--Water-stage recorder. Datum of gage is 358.78 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Oct. 1, 1928, nonrecording gage at site 0.8 mi upstream at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Regulation by Sunapee Lake 25 mi upstream (Reservoirs in Connecticut River basin) and occasional diurnal fluctuation at low flow by mills upstream; greater regulation by mills prior to 1971. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--61 years, 406 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,000 ft³/s, Mar. 19, 1936, gage height, 10.92 ft, from rating curve extended above 6,700 ft³/s on basis of computations of flow over dam at gage heights 10.49 ft and 10.92 ft; maximum gage height, 11.80 ft Mar. 12, 1936 (ice jam); minimum daily discharge, 14 ft³/s, Aug. 26, 1965.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 7	0030	*3,930	*5.84	May 2	2000	3,370	5.40

Minimum daily discharge, 55 ft³/s, Sept. 9, 12, 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	62	166	500	e142	e91	e160	702	348	325	203	72	68
2	64	970	447	e138	e108	e140	678	2020	321	183	71	79
3	62	856	410	e132	e118	e122	815	2290	300	163	66	69
4	61	569	384	e122	e105	e110	1230	1440	304	131	63	66
5	60	451	334	e110	e98	e102	1810	1110	281	138	101	64
6	60	579	314	e100	e88	e95	3430	2070	395	180	110	64
7	61	588	315	e112	e82	e88	3120	2150	551	183	156	57
8	59	500	306	e105	e77	e76	1770	1540	714	290	127	63
9	63	438	288	e100	e73	e72	1230	1110	751	192	98	55
10	65	391	269	e96	e68	e70	1040	925	1550	289	97	56
11	63	367	203	e94	e65	e77	829	1310	1250	556	113	61
12	67	332	160	e91	e62	e80	707	1660	863	359	455	55
13	65	338	e145	e90	e61	e86	635	1550	681	267	545	55
14	67	488	e170	e91	e63	e100	597	1170	624	222	666	57
15	67	442	e168	e91	e67	383	560	936	600	219	424	67
16	65	388	e130	e93	e75	915	1140	804	985	193	341	67
17	89	377	e135	e98	e77	474	1360	699	906	177	232	84
18	92	372	e140	e102	e72	365	1250	638	742	160	186	82
19	111	341	e150	e106	e68	301	1100	544	622	147	153	75
20	116	362	e160	e110	e66	242	931	496	505	142	137	129
21	116	802	e175	e112	e150	201	794	479	444	144	136	211
22	173	683	e150	e102	e350	187	713	480	390	136	123	164
23	257	536	e140	e97	e700	175	618	425	366	133	101	140
24	226	463	e135	e95	e550	171	561	455	531	124	101	142
25	211	403	e145	e91	e400	198	471	497	478	112	93	124
26	199	359	e160	e89	e290	441	443	498	389	111	87	185
27	184	344	e192	e88	e240	771	368	722	208	105	78	271
28	176	544	e193	e87	e200	1350	355	617	209	114	74	196
29	170	719	e175	e82	---	2080	335	488	242	109	73	155
30	164	564	e160	e79	---	1280	338	337	216	105	78	134
31	157	---	e150	e78	---	789	---	302	---	98	76	---
TOTAL	3452	14732	6903	3123	4464	11701	29930	30110	16743	5685	5233	3095
MEAN	111	491	223	101	159	377	998	971	558	183	169	103
MAX	257	970	500	142	700	2080	3430	2290	1550	556	666	271
MIN	59	166	130	78	61	70	335	302	208	98	63	55

CAL YR 1988 TOTAL 122520 MEAN 335 MAX 3440 MIN 50
WTR YR 1989 TOTAL 135171 MEAN 370 MAX 3430 MIN 55

e Estimated

CONNECTICUT RIVER BASIN

01153000 BLACK RIVER AT NORTH SPRINGFIELD, VT.

LOCATION.--Lat 43°20'00", long 72°30'55", Windsor County, Hydrologic Unit 01080106, on right bank of North Springfield, 800 ft downstream from North Springfield Dam, 1,300 ft upstream from Great Brook, and 8.1 mi upstream from mouth.

DRAINAGE AREA.--158 mi².

PERIOD OF RECORD.--Discharge: October 1929 to current year. October 1929 monthly discharge only, published in WSP 1301.

Water-quality records: Water years 1954-55.

REVISED RECORDS.--WSP 756: Drainage area. WSP 781: 1931(M), 1934(M).

GAGE.--Water-stage recorder. Datum of gage is 445.79 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by powerplant and mills upstream and by North Springfield Reservoir (Reservoirs in Connecticut River basin) since November 1960. High flow slightly affected by retarding reservoirs since 1968. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--60 years, 294 ft³/s, 25.27 in./yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,500 ft³/s, Sept. 22, 1938, gage height, 17.68 ft, from rating curve extended above 3,200 ft³/s on basis of computations of flow over dams at gage heights 16.41 ft and 17.68 ft; minimum daily, 7.0 ft³/s, Nov. 13, 1973. Maximum discharge since construction of North Springfield Dam in 1960, 4,070 ft³/s, Apr. 10, 1987, gage height, 8.08 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,070 ft³/s, May 7, gage height, 7.07 ft; minimum daily, 29 ft³/s, Sept. 11, 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	46	105	285	123	e70	e98	576	228	229	121	49	41
2	47	842	281	114	e130	e90	572	1120	234	124	45	40
3	73	850	234	111	e110	e85	684	1920	214	107	48	48
4	73	443	239	e110	e98	e80	763	765	173	93	48	43
5	55	373	189	e100	e90	e78	956	552	176	105	76	42
6	69	1010	180	e95	e88	e75	840	917	253	158	122	38
7	58	1390	187	e84	e86	e72	2170	1890	434	140	79	38
8	56	609	199	e88	e88	e68	2710	2030	531	234	74	30
9	57	446	164	e95	e86	e64	2220	711	475	156	65	32
10	56	382	150	e90	e90	e66	1330	541	1290	250	59	41
11	71	364	109	e80	e80	e64	520	1020	1020	638	60	29
12	67	309	77	e75	e72	e62	467	1480	561	311	293	35
13	80	275	84	e72	e70	60	423	1090	404	184	541	29
14	69	567	102	e72	e68	76	392	587	375	163	498	32
15	76	414	128	e74	e68	161	385	512	365	156	274	40
16	69	375	113	e76	e70	472	641	586	938	136	186	41
17	61	383	88	e78	e72	268	780	455	821	115	136	77
18	60	363	89	e78	e68	287	742	382	598	96	100	99
19	63	300	87	e76	e66	289	685	337	473	92	94	87
20	51	295	91	e78	e66	204	587	294	359	81	82	179
21	46	976	107	e84	e70	202	501	270	291	82	80	307
22	85	711	132	e75	e150	157	460	241	263	79	69	232
23	283	563	109	e72	e250	152	401	231	232	89	66	169
24	218	430	112	e68	e180	161	348	251	276	87	61	121
25	242	366	187	e65	e150	185	353	265	235	79	56	85
26	203	284	190	e65	e130	445	302	269	187	68	50	92
27	162	281	135	e66	e120	556	289	438	166	59	49	99
28	141	335	139	e68	e110	750	254	319	172	67	43	92
29	132	419	179	e66	---	1430	231	274	207	79	51	86
30	123	329	158	e66	---	1460	228	224	176	71	57	64
31	109	---	130	e65	---	602	---	199	---	52	43	---
TOTAL	3001	14789	4654	2529	2796	8819	21810	20398	12128	4272	3554	2388
MEAN	96.8	493	150	81.6	99.9	284	727	658	404	138	115	79.6
MAX	283	1390	285	123	250	1460	2710	2030	1290	638	541	307
MIN	46	105	77	65	66	60	228	199	166	52	43	29
MEAN†	97.3	494	150	81.1	100	304	708	658	404	137	114	80.8
CFSM†	.62	3.13	.95	.51	.63	1.92	4.48	4.16	2.56	.87	.72	.51
IN.†	.71	3.49	1.09	.59	.66	2.22	5.00	4.80	2.85	1.00	.83	.57

CAL YR 1988 TOTAL 98278 MEAN 269 MAX 2870 MIN 28 MEAN† 269 CFSM† 1.70 IN.† 23.15
WTR YR 1989 TOTAL 101138 MEAN 277 MAX 2710 MIN 29 MEAN† 277 CFSM† 1.75 IN.† 23.81

e Estimated

† Adjusted for change in contents in North Springfield Reservoir.

CONNECTICUT RIVER BASIN

75

01153550 WILLIAMS RIVER NEAR ROCKINGHAM, VT.

LOCATION.--Lat 43°11'30", Long 72°29'08", Windham county, Hydrologic Unit 01080107 on left bank 50 ft downstream from highway bridge on Parker Hill Road, 0.2 mi downstream from Divoll Brook, 2.2 mi upstream from mouth and 4.5 mi northwest of Bellows Falls.

DRAINAGE AREA.--112 mi².

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

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

REMARKS.--Records good except those for estimated daily discharges, which are poor. Low flow regulated by powerplant upstream.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in September 1938 had greatest discharge since at least 1753.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 6	2300	a3,490	7.13	May 6	1110	*a4,270	*7.63
May 2	1240	a4,110	7.53	Jun 10	0320	a3,000	6.78

a from rating curve extended above 2,100 ft³/s.

Minimum daily discharge, 14 ft³/s, Sept. 10-14.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	43	159	e78	e66	e100	e310	146	e145	e92	e28	15
2	21	884	144	e72	e82	e82	e450	1960	e140	e75	e25	28
3	21	263	133	e66	e71	e70	e680	833	e130	e60	e23	23
4	21	142	122	e62	e63	e64	e1050	510	e125	e45	e20	17
5	20	117	99	e63	e58	e58	e1550	386	e120	e52	e30	15
6	21	823	123	e66	e52	e52	e2400	1950	e190	e64	e45	15
7	19	330	150	e60	e47	e49	e3500	881	e280	e86	e78	15
8	17	193	121	e57	e43	e47	e1100	556	e330	e140	e52	15
9	20	148	e110	e56	e40	e45	e660	421	e420	e70	e40	15
10	21	127	e100	e55	e38	e44	e450	346	e950	e110	e35	14
11	23	137	e88	e55	e37	e45	e350	1030	e370	e290	e50	14
12	29	115	e76	e54	e36	e47	e280	1210	e290	e180	e130	14
13	22	161	e82	e54	e38	e105	227	709	e270	e120	e230	14
14	20	337	e88	e56	e43	e270	203	612	e290	e96	e330	14
15	21	182	e76	e58	e47	e400	213	438	e230	e82	e230	22
16	18	142	e64	e60	e44	e540	719	352	e500	e76	e140	24
17	20	148	e68	e63	e39	e250	586	291	e350	e68	e90	48
18	21	139	e72	e65	e35	e190	494	241	e260	e62	e70	39
19	26	117	e76	e68	e32	e150	407	200	e220	e59	e58	29
20	24	169	e84	e70	e120	e130	332	170	e185	e57	e49	156
21	23	795	e90	e64	e375	e115	274	156	e165	e53	e43	107
22	94	347	e80	e61	e1100	e105	239	143	e150	e50	e39	56
23	171	235	e75	e58	e290	e110	206	124	e145	e48	e31	46
24	91	191	e80	e55	e300	e150	185	194	e260	e47	e28	40
25	87	157	e86	e52	e320	e230	170	185	e220	e45	e24	32
26	64	141	e110	e50	e230	e400	172	234	e150	e44	e21	42
27	48	138	e105	e48	e160	e640	160	406	e84	e40	e19	47
28	38	291	e98	e45	e130	e1500	149	e450	e82	e44	e16	35
29	47	261	e93	e44	---	e760	146	e220	e110	e43	15	31
30	40	182	e89	e49	---	e560	156	e140	e105	e37	15	29
31	37	---	e82	e56	---	e440	---	e135	---	e31	15	---
TOTAL	1166	7455	3023	1820	3936	7748	17818	15629	7266	2366	2019	1011
MEAN	37.6	248	97.5	58.7	141	250	594	504	242	76.3	65.1	33.7
MAX	171	884	159	78	1100	1500	3500	1960	950	290	330	156
MIN	17	43	64	44	32	44	146	124	82	31	15	14
CFSM	.34	2.22	.87	.52	1.26	2.23	5.30	4.50	2.16	.68	.58	.30
IN.	.39	2.48	1.00	.60	1.31	2.57	5.92	5.19	2.41	.79	.67	.34

CAL YR 1988 TOTAL 63523 MEAN 174 MAX 2390 MIN 14 CFSM 1.55 IN. 21.10
WTR YR 1989 TOTAL 71257 MEAN 195 MAX 3500 MIN 14 CFSM 1.74 IN. 23.67

e Estimated

CONNECTICUT RIVER BASIN

01154500 CONNECTICUT RIVER AT NORTH WALPOLE, N. H.

LOCATION.--Lat 43°07'34", long 72°26'14", Cheshire County, Hydrologic Unit 01080104, on left bank at North Walpole, 100 ft upstream from Saxtons River, 0.7 mi downstream from Vilas Bridge between Bellows Falls, Vt., and North Walpole, N. H., and at mile 172.5.

DRAINAGE AREA.--5,493 mi², includes that of Saxtons River.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Discharge: March 1942 to current year. Water-quality records: Water years 1954-55, 1971.

GAGE.--Water-stage recorder. Datum of gage is 218.63 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, and those below 1,000 ft³/s, which are fair. Flow regulated by powerplants and by First Connecticut and Second Connecticut Lakes, Lake Francis, Moore and Comerford Reservoirs (Reservoirs in Connecticut River basin), and other reservoirs, combined usable capacity, about 24,800,000,000 ft³.

AVERAGE DISCHARGE.--47 years, 9,440 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 97,000 ft³/s, Mar. 27, 1953, gage height, 30.37 ft; minimum daily, 115 ft³/s, Aug. 31, 1952, Sept. 2, 1957.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1750, 43.8 ft, Mar. 19, 1936, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 58,200 ft³/s, Apr. 7, gage height, 22.05 ft; minimum daily, 1,360 ft³/s, Aug. 3.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3300	6090	12900	3790	2840	3510	23500	11200	8880	3730	2000	2780
2	1830	10900	11300	4510	3830	3300	20600	25800	9410	2700	1670	1960
3	3060	13100	10400	4680	6040	3840	21300	41600	8220	5040	1360	2890
4	2660	10500	10400	6240	4060	3480	22400	34400	12400	4230	2650	4850
5	2740	7640	8550	6570	2960	3360	31300	32100	12800	4970	6110	3780
6	3160	13800	7970	5510	3480	3350	48500	43400	13200	5750	19900	3190
7	2830	17700	8070	2920	4100	3190	57300	54300	14400	5460	15100	2800
8	2260	16000	7100	2030	4110	3840	51200	43500	16000	3630	13300	2860
9	1780	13400	7260	4290	4320	3050	42600	34800	17000	2910	8830	1650
10	1860	11800	6190	4590	4660	2660	36000	27300	23800	4280	5210	2880
11	2230	9260	3080	e3700	3790	2510	27100	27800	21500	8630	8030	3260
12	4040	10100	5220	4240	1990	2170	22000	33500	19000	8640	10400	2600
13	4420	8610	4920	4020	3880	4680	17800	36800	16900	5750	13300	2780
14	4130	11800	3960	2930	4170	3850	14600	31300	17200	5230	18000	3090
15	2050	13100	4610	2860	4040	5760	13800	24800	13000	4190	13600	3450
16	1860	11600	5610	3060	3690	12900	18200	21000	15100	3470	11500	3740
17	3300	10800	4160	2820	3840	10200	22300	18700	17700	3980	8180	3850
18	3600	8870	3240	3860	2140	8520	22800	14500	16400	2760	6270	5970
19	4940	11500	3950	5250	2060	7780	26200	13500	15000	2760	5450	5840
20	4450	13200	3820	4200	2320	5940	25800	12400	11900	3620	3470	8150
21	5920	20800	5190	2990	6300	e600	23000	12000	9870	3790	4450	13600
22	7110	20700	5650	2810	8650	e5100	20300	9410	9400	3140	3990	16900
23	5580	19700	4260	3400	10000	e4800	17800	9480	8700	2280	4090	13300
24	5770	17900	3860	2640	7120	7040	15500	10500	6880	2290	4010	9890
25	5850	13500	4580	2700	4890	5320	13200	10500	6050	2670	5480	7730
26	6750	9560	4460	3810	3080	8870	12800	9710	7250	2490	1600	7930
27	5850	8450	3870	3530	3140	13300	12100	10100	7920	2450	1720	7150
28	5300	11500	4080	2800	4340	20100	12400	9610	7530	3320	3320	6450
29	2960	12800	4690	2210	---	32600	12000	9200	7040	2540	3700	5880
30	1980	12900	5920	3040	---	31800	11900	11200	6060	1810	4260	3600
31	3840	---	3900	2530	---	26000	---	9270	---	2450	3440	---
TOTAL	117410	377580	183170	114530	119840	253420	716300	693680	376510	120960	214390	164800
MEAN	3787	12590	5909	3695	4280	8175	23880	22380	12550	3902	6916	5493
MAX	7110	20800	12900	6570	10000	32600	57300	54300	23800	8640	19900	16900
MIN	1780	6090	3080	2030	1990	600	11900	9200	6050	1810	1360	1650

CAL YR 1988 TOTAL 2997350 MEAN 8189 MAX 53800 MIN 1650
WTR YR 1989 TOTAL 3452590 MEAN 9459 MAX 57300 MIN 600

e Estimated

01154500 CONNECTICUT RIVER AT NORTH WALPOLE, N.H.--Continued

(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to September 1980 (published as "at Walpole"), October 1980 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1980 to September 1981.

WATER TEMPERATURES: October 1980 to September 1981.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE AIR (DEG C)	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 30...	1115	13000	84	7.40	4.5	3.0	2.2	756	12.3	92	140
APR 05...	1000	31300	105	7.30	20.0	2.0	8.9	754	13.1	96	97
JUN 28...	1015	7640	115	7.30	24.0	23.0	1.2	750	8.6	102	240
SEP 26...	0845	10800	110	7.60	14.0	16.5	1.6	753	8.6	89	140

DATE	STREP TOCOCCHI FECAL KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CaCO ₃)	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 WH WAT TOT INC (MG/L AS CaCO ₃)	SULFATE DIS- SOLVED (MG/L AS SO ₄)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO ₂)
NOV 30...	K17	34	11	1.5	4.1	1.0	25	12	5.9	0.10	5.7
APR 05...	260	34	11	1.5	5.5	1.5	21	11	8.8	0.10	5.1
JUN 28...	K6	44	15	1.5	5.2	1.1	34	8.0	8.3	0.10	4.7
SEP 26...	33	46	16	1.4	4.9	1.4	36	8.0	6.1	0.10	5.6

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO ₃ +NO ₂ , DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH ₄)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)
NOV 30...	65	58	0.240	<0.010	--	0.30	0.010	<0.010	<0.010	30	<1
APR 05...	61	61	0.380	0.080	0.10	0.50	0.090	<0.010	<0.010	50	<1
JUN 28...	81	66	0.220	0.020	0.03	0.40	0.020	0.010	<0.010	40	<1
SEP 26...	72	68	0.170	0.030	0.04	0.20	0.010	<0.010	<0.010	30	<1

CONNECTICUT RIVER BASIN

01154500 CONNECTICUT RIVER AT NORTH WALPOLE, N.H.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	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)	LITHIUM, DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY, DIS- SOLVED (UG/L AS HG)
NOV 30...	13	<0.5	<1	<1	<3	3	68	<5	<4	18	0.1
APR 05...	15	<0.5	<1	<1	<3	5	88	<5	<4	90	<0.1
JUN 28...	14	<0.5	1	<1	<3	3	53	<1	<4	11	<0.1
SEP 26...	16	<0.5	<1	<1	<3	4	69	1	<4	22	<0.1

DATE	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)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 30...	<10	16	<1	1.0	52	<6	8	6	211	54
APR 05...	<10	<1	<1	1.0	53	<6	29	55	4650	93
JUN 28...	<10	9	<1	<1.0	72	<6	4	4	83	62
SEP 26...	<10	1	<1	<1.0	77	<6	12	4	117	87

CONNECTICUT RIVER BASIN

79

01155500 WEST RIVER AT JAMAICA, VT.

LOCATION.--Lat 43°06'32", long 72°46'33", Windham County, Hydrologic Unit 01080107, on left bank 0.2 mi upstream from highway bridge at Jamaica, 0.4 mi upstream from Ball Mountain Brook, and 2.8 mi downstream from Ball Mountain Dam, and at mile 26.2.

DRAINAGE AREA.--179 mi².

PERIOD OF RECORD.--Discharge: October 1946 to current year.

Water-quality records: Water year 1954.

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

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by Ball Mountain Reservoir since 1961 (Reservoirs in Connecticut River basin). Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--43 years, 373 ft³/s, 28.30 in./yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,500 ft³/s, Dec. 31, 1948, gage height, 14.87 ft, from rating curve extended above 9,800 ft³/s, verified by slope-area measurement of peak flow; minimum, 0.94 ft³/s, Sept. 23-25, 1968; minimum daily, 0.94 ft³/s, Sept. 23, 24, 1968. Maximum discharge since construction of Ball Mountain Dam in 1961, 5,800 ft³/s, Apr. 8, 1987, gage height, 9.60 ft; maximum gage height, 11.72 ft, Feb. 7, 1982 (ice jam).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,060 ft³/s, Apr. 7, gage height, 8.74 ft; minimum discharge, 22 ft³/s, Oct. 2; minimum daily, 29 ft³/s, Oct. 3-5.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	513	238	426	e150	e160	e250	1250	99	273	145	88	50
2	491	956	379	e150	e250	e150	1020	1460	307	142	87	51
3	29	1340	317	e150	e300	e120	1140	2400	307	120	76	50
4	29	1250	e280	e100	e250	e120	1330	1710	303	112	65	50
5	29	819	220	e90	e170	e120	1640	2380	296	122	68	50
6	30	1090	e200	e60	e150	e100	1590	2010	310	322	93	49
7	30	1220	e190	e60	e150	e100	3100	2070	406	561	103	49
8	31	1170	211	e60	e130	e100	3660	2860	1180	723	134	49
9	31	1070	241	e70	e100	e100	1720	1040	1160	406	141	49
10	31	702	164	e115	e100	e100	835	399	1620	322	139	49
11	52	467	e140	e115	e100	e100	597	429	2230	746	143	49
12	118	465	e70	e115	e100	e100	460	2320	1060	505	588	e54
13	138	468	e40	e115	e85	e100	334	2620	542	170	1180	56
14	125	704	e60	e115	e72	e100	304	1490	541	127	1340	54
15	96	884	e80	e115	e90	185	314	399	492	157	564	57
16	69	816	e90	e160	e180	770	580	155	1200	161	171	58
17	58	547	e90	e240	e150	984	892	159	1520	128	186	61
18	59	478	e90	e250	e140	864	1210	160	914	70	218	62
19	61	424	e90	e190	e100	765	1500	211	396	41	154	85
20	59	390	e90	e110	e80	459	1590	301	344	50	99	223
21	62	1030	e130	e120	e72	254	964	355	315	128	86	712
22	80	1460	e130	e120	e72	264	489	516	375	154	86	528
23	662	1380	e130	e100	e80	229	167	270	401	99	85	84
24	872	913	e130	e90	e250	194	51	145	413	88	62	86
25	584	646	e200	e75	e400	198	51	142	406	65	51	86
26	413	470	e300	e72	e420	230	52	353	395	55	50	88
27	282	397	e330	e70	e420	352	53	806	236	56	50	88
28	232	540	e260	e130	e420	1560	471	855	109	59	49	88
29	237	702	e300	e160	---	2710	859	451	138	58	49	88
30	239	577	e360	e160	---	2650	891	220	145	90	50	724
31	234	---	e250	e160	---	1430	---	193	---	89	49	---
TOTAL	5976	23613	5988	3787	4991	15758	29114	28978	18334	6071	6304	3827
MEAN	193	787	193	122	178	508	970	935	611	196	203	128
MAX	872	1460	426	250	420	2710	3660	2860	2230	746	1340	724
MIN	29	238	40	60	72	100	51	99	109	41	49	49
MEAN†	167	790	191	122	199	548	970	906	614	196	196	121
CFSM†	.94	4.41	1.07	.68	1.11	3.06	5.41	5.06	3.43	1.09	1.09	.68
IN.†	1.08	4.92	1.23	.78	1.16	3.53	6.04	5.84	3.83	1.26	1.31	.76

CAL YR 1988 TOTAL 126409 MEAN 345 MAX 2930 MIN 29 MEAN† 346 CFSM† 1.93 IN.† 26.30
WTR YR 1989 TOTAL 152741 MEAN 418 MAX 3660 MIN 29 MEAN† 418 CFSM† 2.34 IN.† 31.69

e Estimated

† Adjusted for change in contents in Ball Mountain Lake.

CONNECTICUT RIVER BASIN

01156000 WEST RIVER AT NEWFANE, VT.

LOCATION.--Lat 42°59'43", long 72°38'13", Windham County, Hydrologic Unit 01080107, on left bank 400 ft downstream from highway bridge, 1 mi northeast of Newfane, and at mile 12.7.

DRAINAGE AREA.--308 mi².

PERIOD OF RECORD.--Discharge: September 1919 to September 1923, October 1928 to current year.
Water-quality records: Water year 1954.

Water temperatures: October 1954 to September 1965.

REVISED RECORDS.--WSP 756: Drainage area. WSP 1231: 1922-23, 1929-31(M).

GAGE.--Water-stage recorder. Datum of gage is 384.21 ft above National Geodetic Vertical Datum of 1929. Prior to June 27, 1931, nonrecording gage at site 600 ft upstream and June 27, 1931, to Aug. 21, 1972, water-stage recorder on right bank 600 ft downstream from highway bridge at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated since 1961 by Ball Mountain Reservoir and Townshend Reservoir 6.8 mi upstream (Reservoirs in Connecticut River basin). Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--65 years, 632 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 52,300 ft³/s, Sept. 21, 1938, gage height, 22.81 ft, from floodmarks, from rating curve extended above 20,000 ft³/s on basis of contracted-opening measurement at gage height 19.3 ft and slope-area measurements at gage heights 19.46 ft and 22.81 ft; minimum, 7.6 ft³/s, Aug. 24, 25, 26, 1962; minimum daily, 8.2 ft³/s, Aug. 25, 1962. Maximum discharge since construction of Ball Mountain and Townshend Reservoirs in 1961, 10,300 ft³/s, May 25, 1979, gage height, 10.07 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1869, that of Sept. 21, 1938. Flood of Nov. 3, 1927, reached a discharge of 45,000 ft³/s, gage height, 23.0 ft, from floodmarks, at nonrecording-gage site, from rating curve extended above 20,000 ft³/s on basis of computation of peak flow over dam at West Dummerston, about 5 mi downstream, adjusted for flow from intervening area.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,970 ft³/s, Mar. 30, gage height, 8.91 ft.; minimum, 51 ft³/s, Oct. 6-9; minimum daily, 51 ft³/s, Oct. 7-8.

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	370	318	694	544	353	e375	3000	465	351	194	138	117
2	446	1420	621	412	585	e310	2880	2850	412	188	140	120
3	134	2170	481	404	608	e270	2790	4700	407	170	395	110
4	66	1940	480	319	490	e250	2370	2010	379	152	751	88
5	58	1190	414	234	345	e240	3080	3240	367	243	751	90
6	54	1920	363	e150	292	e225	3220	4190	464	409	759	95
7	51	2010	377	e120	287	e175	4370	3870	607	610	759	77
8	51	1510	379	e140	276	e150	5260	3530	1310	919	759	87
9	52	1310	404	e175	224	e140	4650	1800	1590	605	759	81
10	54	1020	342	e250	e160	e130	2090	853	3400	602	759	71
11	59	670	250	e210	e120	e125	1010	968	3010	1150	759	78
12	106	660	e160	e175	e190	e125	921	2530	1650	759	903	70
13	154	652	e120	e150	e210	e120	736	4260	862	340	1830	72
14	151	1240	e140	e125	e120	e130	666	3530	925	269	1830	64
15	136	1210	e190	e200	e180	415	684	1070	919	263	904	68
16	113	1090	e240	e375	e250	827	1610	261	1920	269	381	73
17	88	847	e240	464	e300	858	1820	217	2260	254	293	119
18	89	706	e245	482	e260	972	2040	202	1420	220	313	134
19	106	637	e250	450	e190	985	2400	591	775	131	272	107
20	113	645	e255	369	e150	660	2470	1010	507	124	196	309
21	101	2020	e270	e275	e130	375	1520	706	504	217	169	668
22	248	2350	e300	e250	e120	334	997	728	730	256	149	653
23	751	2070	e340	e240	e190	315	759	480	573	224	141	231
24	1070	1380	e375	e180	e400	298	468	408	833	170	129	161
25	803	934	e680	e140	e680	350	711	431	631	154	100	192
26	527	704	e650	e120	e600	654	402	296	549	118	91	140
27	428	647	e620	e175	e500	887	296	819	450	116	87	171
28	322	891	e600	e230	e425	2270	644	916	234	141	87	214
29	349	1130	e680	e260	---	4460	1120	651	215	155	108	127
30	338	945	725	e275	---	4850	1100	351	211	142	121	628
31	320	---	652	e300	---	2040	---	297	---	149	113	---
TOTAL	7708	36236	12537	8193	8635	24315	56084	48230	28465	9713	14946	5215
MEAN	249	1208	404	264	308	784	1869	1556	949	313	482	174
MAX	1070	2350	725	544	680	4850	5260	4700	3400	1150	1830	668
MIN	51	318	120	120	120	120	296	202	211	116	87	64

CAL YR 1988 TOTAL 206525 MEAN 564 MAX 5070 MIN 51
WTR YR 1989 TOTAL 260277 MEAN 713 MAX 5260 MIN 51

e Estimated

CONNECTICUT RIVER BASIN

81

01158000 ASHUELOT RIVER BELOW SURRY MOUNTAIN DAM, NEAR KEENE, N. H.

LOCATION.--Lat 42°59'40", long 72°18'40", Cheshire County, Hydrologic Unit 01080201, on right bank 600 ft downstream from Surry Mountain Dam, 2.5 mi upstream from Sturtevant Brook, 4.5 mi north of Keene, and at mile 34.0.

DRAINAGE AREA.--101 mi².

PERIOD OF RECORD.--Discharge: September 1945 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 480.00 ft above U.S. Army Corps of Engineers datum.

REMARKS.--No estimated discharges. Records good. Flow regulated by Surry Mountain Lake (Reservoirs in Connecticut River basin). Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--44 years, 176 ft³/s, 23.66 in./yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,260 ft³/s, Apr. 7, 1987, gage height, 11.41 ft in gage well, 11.78 ft, from floodmarks; minimum daily, 0.4 ft³/s, Sept. 17, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 929 ft³/s, Apr. 10, gage height, 8.21 ft; minimum daily, 11 ft³/s, Sept. 13, 14.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71	63	69	94	36	73	421	137	116	53	32	24
2	68	159	132	94	36	73	718	290	120	47	27	23
3	65	313	404	78	36	53	753	596	118	42	24	21
4	60	313	449	73	36	45	729	673	107	37	21	19
5	57	244	288	47	36	45	557	619	95	40	22	18
6	53	224	229	36	36	45	428	668	95	59	24	16
7	50	233	117	36	36	27	454	723	138	69	25	15
8	47	223	72	36	36	20	629	842	207	90	24	14
9	44	202	99	36	36	20	658	825	288	87	23	14
10	42	181	110	36	36	20	816	763	450	79	22	13
11	41	171	110	36	36	20	898	750	564	95	27	39
12	40	162	110	36	35	20	851	737	607	108	122	12
13	39	157	109	36	35	20	800	725	529	100	274	11
14	39	207	109	36	35	20	743	709	368	88	354	11
15	39	233	110	36	35	21	676	554	295	79	343	13
16	40	217	110	36	35	21	569	551	322	70	286	13
17	40	206	109	36	35	21	546	390	350	61	224	15
18	83	212	108	36	27	38	525	297	329	53	161	16
19	42	204	82	36	23	63	486	245	285	47	115	16
20	39	199	70	36	23	117	431	213	239	43	105	22
21	36	348	70	36	24	136	367	182	199	53	141	37
22	42	424	71	36	25	134	313	166	159	58	116	44
23	77	348	71	36	25	132	263	152	131	68	90	48
24	98	233	71	36	148	131	226	166	125	67	71	57
25	93	233	96	36	374	129	200	209	119	55	57	62
26	86	232	110	36	348	130	101	204	106	45	47	74
27	79	228	127	36	140	184	113	186	93	38	40	112
28	74	229	133	36	73	395	132	167	82	47	35	117
29	70	256	133	36	---	673	133	145	72	49	31	109
30	67	194	131	36	---	555	135	125	61	42	30	93
31	63	---	107	36	---	247	---	112	---	37	27	---
TOTAL	1784	6848	4116	1322	1836	3628	14671	13121	6769	1906	2940	1098
MEAN	57.5	228	133	42.6	65.6	117	489	423	226	61.5	94.8	36.6
MAX	98	424	449	94	374	673	898	842	607	108	354	117
MIN	36	63	69	36	23	20	101	112	61	37	21	11
MEAN†	57.1	245	123	44.1	61.8	173	428	422	224	60.1	94.8	39.3
CFSM†	.56	2.43	1.22	.44	.61	1.71	4.24	4.18	2.22	.59	.94	.39
IN.†	.65	2.71	1.41	.50	.64	1.98	4.73	4.82	2.47	.69	1.08	.43

CAL YR 1988 TOTAL 51887.9 MEAN 142 MAX 1020 MIN 3.8 MEAN† 142 CFSM† 1.41 IN.† 19.11
WTR YR 1989 TOTAL 60039 MEAN 164 MAX 898 MIN 11 MEAN† 165 CFSM† 1.63 IN.† 22.12

e Estimated

† Adjusted for change in contents in Surry Mountain Lake.

CONNECTICUT RIVER BASIN

01158600 OTTER BROOK BELOW OTTER BROOK DAM, NEAR KEENE, N. H.

LOCATION.--Lat 42°56'45", long 72°14'14", Cheshire County, Hydrologic Unit 01080201, on right bank 450 ft downstream from Otter Brook Dam, 2 mi northeast of Keene, 2.4 mi upstream from Minnewawa Brook, and 4.9 mi upstream from mouth.

DRAINAGE AREA.--47.2 mi².

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

GAGE.--Water-stage recorder and concrete control. Datum of gage is 658.65 ft above U.S. Army Corps of Engineers datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Otter Brook Lake (Reservoirs in Connecticut River basin). Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--31 years, 79.9 ft³/s, 22.99 in./yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 752 ft³/s (includes bypass flow around gage), Apr. 9, 1987, gage height, 8.62 ft; minimum 0.1 ft³/s, Nov. 28, 1959; minimum daily, 0.3 ft³/s, Sept. 27 to Oct. 2, Oct. 9, 10, 12-20, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 478 ft³/s, Apr. 12, gage height, 8.10 ft; minimum daily, 5.9 ft³/s, Sept. 10, 11.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	38	37	35	16	26	238	47	44	30	39	12
2	14	101	79	30	22	26	301	91	44	30	17	11
3	13	190	157	27	24	25	285	340	62	18	11	11
4	13	229	160	27	24	25	299	417	60	15	11	9.7
5	13	227	117	27	24	25	271	359	46	14	11	8.5
6	13	193	93	26	24	25	224	300	42	14	11	7.9
7	13	176	71	18	24	25	252	266	70	15	11	7.4
8	13	169	63	14	20	17	349	362	118	15	11	6.9
9	13	159	63	15	17	14	354	407	176	26	11	6.6
10	14	115	57	15	18	14	415	280	241	29	11	5.9
11	12	98	54	15	17	14	436	204	325	30	7.3	5.9
12	13	68	34	15	17	14	455	301	247	42	48	6.6
13	12	55	25	15	17	15	309	315	140	46	164	6.4
14	12	88	26	15	16	15	234	256	125	32	159	6.0
15	13	120	27	15	20	23	137	149	81	28	110	11
16	13	59	27	20	24	74	146	143	128	28	66	16
17	13	50	27	22	25	93	237	126	187	27	40	17
18	13	52	27	25	19	93	257	93	188	18	35	19
19	13	54	27	22	17	93	241	78	138	15	28	16
20	13	55	27	22	17	56	153	66	79	14	39	24
21	13	114	27	22	17	41	126	56	49	14	82	47
22	12	238	32	22	20	41	108	53	32	14	54	36
23	12	271	34	22	21	41	93	54	28	14	40	58
24	29	214	33	22	111	34	89	54	41	14	32	49
25	41	144	34	22	226	44	61	108	45	15	25	37
26	43	104	49	18	171	64	52	125	45	25	20	57
27	42	76	55	16	94	115	53	80	34	28	17	90
28	41	69	54	16	43	196	47	65	29	48	15	62
29	41	158	54	16	---	336	45	66	29	56	15	48
30	41	114	52	16	---	276	46	51	30	47	15	39
31	40	---	40	16	---	159	---	43	---	57	14	---
TOTAL	615	3798	1662	628	1105	2059	6313	5355	2903	818	1169.3	737.8
MEAN	19.8	127	53.6	20.3	39.5	66.4	210	173	96.8	26.4	37.7	24.6
MAX	43	271	160	35	226	336	455	417	325	57	164	90
MIN	12	38	25	14	16	14	45	43	28	14	7.3	5.9
MEAN†	23.6	134	47.2	20.8	39.5	85.2	187	176	97.4	25.1	38.6	24.9
CFSM†	.50	2.84	1.00	.44	.84	1.81	3.96	3.76	2.06	.53	.82	.53
IN.†	.58	3.17	1.15	.51	.87	2.08	4.43	4.29	2.30	.61	.94	.59

CAL YR 1988 TOTAL 25616.6 MEAN 70.0 MAX 583 MIN 4.8 MEAN† 70.1 CFSM† 1.49 IN.† 20.22
WTR YR 1989 TOTAL 27163.1 MEAN 74.4 MAX 455 MIN 5.9 MEAN† 74.8 CFSM† 1.58 IN.† 21.53

† Adjusted for change in contents in Otter Brook Reservoir.

CONNECTICUT RIVER BASIN

83

01161000 ASHUELOT RIVER AT HINSDALE, N. H.

LOCATION.--Lat 42°47'07", long 72°29'12", Cheshire County, Hydrologic Unit 01080201, on left bank 40 ft upstream from highway bridge at Hinsdale, 0.2 mi downstream from dam, and 1.2 mi upstream from mouth.

DRAINAGE AREA.--420 mi².

PERIOD OF RECORD.--Discharge: March 1907 to December 1911, July 1914 to current year.

Water-quality records: Water years 1953, 1958, 1968.

REVISED RECORDS.--WSP 661: Drainage area. WSP 781: 1907-10, 1914-34. WSP 1301: 1915(M), 1917-19(M), 1921-33(M). WSP 1701: 1920.

GAGE.--Water-stage recorder. Datum of gage is 201.32 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Sept. 29, 1933, nonrecording gage on highway bridge at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by Surry Mountain Lake 33 mi upstream since 1942 and by Otter Brook Lake 29 mi upstream on Otter Brook since 1958 (Reservoirs in Connecticut River basin). Diurnal fluctuation by mills upstream. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--79 years, 675 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,600 ft³/s, Mar. 19, 1936, by computation of peak flow over dam; maximum gage height, 20.2 ft Mar. 19, 1936, from floodmarks (backwater from the Connecticut River); minimum discharge, 10 ft³/s, Sept. 9, 1953; minimum daily, 12 ft³/s, Sept. 15, 1929. Maximum discharge since at least 1859, that of Mar. 19, 1936.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,020 ft³/s, Apr. 7, gage height, 7.06 ft; minimum daily, 99 ft³/s, Sept. 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	166	234	904	e380	211	e315	1440	663	579	302	281	185
2	155	722	719	e340	280	e275	1800	1440	664	274	221	172
3	163	1160	812	e300	269	e190	2030	2960	953	251	189	164
4	161	1130	1100	e280	242	227	2390	2880	845	224	151	152
5	151	973	1050	e260	238	216	2590	2380	637	215	151	143
6	153	960	763	e230	222	230	3300	2900	604	267	159	134
7	139	939	e640	e210	191	273	3810	3510	868	291	169	126
8	137	870	e560	e205	e180	291	3370	3170	1130	367	178	122
9	137	798	e490	e200	e170	228	2740	2680	1360	374	186	120
10	156	723	e450	e210	e160	164	2260	2350	2650	373	156	116
11	146	633	e430	e200	e155	164	2200	2640	2790	607	197	120
12	155	594	e390	e180	e145	167	2150	3200	2270	514	925	113
13	158	549	e350	e185	e145	195	2020	3070	1800	423	1630	116
14	154	753	e380	e180	e160	163	1770	2710	1570	356	1670	99
15	183	880	e400	e230	232	235	1600	2370	1340	313	1270	177
16	190	778	e370	329	319	422	1850	1790	1700	271	928	299
17	201	705	e320	291	367	415	2190	1580	1860	263	685	271
18	188	739	e290	254	340	441	2020	1250	1590	268	529	273
19	188	696	e260	e240	193	481	1810	1020	1280	244	425	240
20	183	743	e250	e235	160	414	1590	879	1030	227	357	240
21	173	1800	e270	e230	345	392	1320	792	809	244	1040	333
22	205	1910	e280	e225	1660	376	1140	811	674	249	836	384
23	269	1690	e275	e205	1300	351	998	736	590	233	581	290
24	304	1350	e280	e195	658	366	871	1070	607	218	442	368
25	314	1070	e400	e190	e620	428	792	1610	633	208	353	346
26	286	917	e480	e185	e520	772	682	1360	549	194	287	352
27	271	828	e500	e180	e450	1090	587	1050	476	182	246	688
28	254	985	e400	e175	e390	1470	582	855	417	295	219	613
29	243	1270	569	181	---	2000	579	729	390	414	202	457
30	236	1270	540	191	---	2230	601	649	347	331	204	396
31	229	---	471	198	---	1560	---	566	---	304	204	---
TOTAL	6048	28669	15393	7094	10322	16541	53082	55670	33012	9296	15071	7609
MEAN	195	956	497	229	369	534	1769	1796	1100	300	486	254
MAX	314	1910	1100	380	1660	2230	3810	3510	2790	607	1670	688
MIN	137	234	250	175	145	163	579	566	347	182	151	99

CAL YR 1988 TOTAL 220304 MEAN 602 MAX 3780 MIN 81
WTR YR 1989 TOTAL 257807 MEAN 706 MAX 3810 MIN 99

e Estimated

CONNECTICUT RIVER BASIN

RESERVOIRS IN CONNECTICUT RIVER BASIN

- 01127850; 01128000. FIRST CONNECTICUT AND SECOND CONNECTICUT LAKES on Connecticut River are operated as a unit for storage of water for power and are used for recreation. The downstream order and usable capacity of each are as follows: Second Lake, 12 mi northeast of Pittsburg, NH, 506,000,000 ft³; First Lake, 5.6 mi northeast of Pittsburg, NH, 3,330,000,000 ft³. Records provided by New England Power Co.
01129000. LAKE FRANCIS on Connecticut River at Pittsburg, NH, completed in March 1940, used for storage of water for power and for recreation, has usable capacity of 4,326,000,000 ft³. Records provided by New Hampshire Water Resources Board.
- 01132000; 01132500. MOORE AND COMERFORD RESERVOIRS on Connecticut River are operated as a unit for storage of water for hydroelectric power development and are used for recreation. The downstream order and usable capacity of each are as follows: Moore Reservoir, 4.5 mi northwest of Littleton, NH, filled in April 1956, 4,970,000,000 ft³; Comerford Reservoir, 5 mi northeast of Monroe, NH, completed in 1930, 1,279,000,000 ft³. Records provided by New England Power Co.
01141000. UNION VILLAGE RESERVOIR on Ompompanoosuc River, 0.3 mi north of Union Village, VT, completed in 1949 for flood control, has usable capacity of 1,660,000,000 ft³. records provided by U.S. Army Corps of Engineers.
- 01148000; 01150000. LAKES AND PONDS IN MASCOMA RIVER BASIN are operated as a unit for storage of water for power and are used for recreation. The reservoirs and usable capacity of each are as follows: 01148000 Goose Pond, 5.2 mi northeast of Mascoma, NH, 509,000,000 ft³; Grafton Pond, 8.5 mi southeast of Mascoma, 144,000,000 ft³; Crystal Lake, 5.8 mi southeast of Mascoma, 75,000,000 ft³; 01150000 Mascoma Lake at Mascoma, 337,000,000 ft³; total usable capacity of the four reservoirs, 1,060,000,000 ft³. Records provided by New Hampshire Water Resources Board.
01151400. NORTH HARTLAND RESERVOIR on Ottauquechee River at North Hartland, VT, completed in 1961, used for flood control and recreation, has usable capacity of 3,110,000,000 ft³. Records provided by U.S. Army Corps of Engineers.
01152000. SUNAPEE LAKE on Sugar River at Sunapee, NH, used for recreation and storage of water for power, has usable capacity of 862,000,000 ft³. Records provided by New Hampshire Water Resources Board.
01152900. NORTH SPRINGFIELD RESERVOIR on Black River at North Springfield, VT, completed in 1960, used for flood control and recreation, has usable capacity of 2,230,000,000 ft³. Records provided by U.S. Army Corps of Engineers.
01155400. BALL MOUNTAIN RESERVOIR on West River, 2 mi north of Jamaica, VT, completed in 1961, used for food control and recreation, has usable capacity of 2,380,000,000 ft³. Records provided by U.S. Army Corps of Engineers.
01155900. TOWNSHEND RESERVOIR on West River, 1.8 mi northwest of Townshend, VT, completed in 1961, used for flood control and recreation, has usable capacity of 1,460,000,000 ft³. Records provided by U.S. Army Corps of Engineers.
01157500. SURRY MOUNTAIN LAKE on Ashuelot River, 4.5 mi north of Keene, NH, completed in 1942, used for flood control and recreation, has usable capacity of 1,420,000,000 ft³. Records provided by U.S. Army Corps of Engineers.
01158550. OTTER BROOK LAKE on Otter Brook, 2.5 mi northeast of Keene, NH completed in 1958, used for flood control and recreation, has usable capacity of 798,000,000 ft³. Records provided by U.S. Army Corps of Engineers

MONTHEND USABLE CONTENTS, IN MILLIONS OF CUBIC FEET, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

Date	First and Second Connecticut Lakes	Lake Francis	Moore and Comerford Reservoirs	Union Village Reservoirs	Lakes and Ponds in Mascoma River basin	North Hartland Reservoir
Sept. 30, 1988.....	2867.6	3374.5	5745.8	1.5	1012.2	98.3
Oct. 31.....	2682.3	3536.9	5327.2	10.4	870.2	133.0
Nov. 30.....	3086.4	3886.2	6228.3	18.4	734.3	118.0
Dec. 31.....	2332.7	3120.2	5355.4	19.0	691.1	116.0
Jan. 31, 1989.....	1621.8	2128.3	4931.4	15.8	647.2	116.0
Feb. 29.....	1123.1	1814.7	3440.2	37.6	605.3	121.0
Mar. 31.....	1365.5	2121.4	3508.3	4.7	820.7	93.8
Apr. 30.....	2490.1	3423.1	4654.9	8.8	1059.9	122.0
May 31.....	3441.3	4255.8	6134.3	3.9	1129.4	124.0
June 30.....	3259.3	3954.1	5984.8	3.6	1093.8	119.0
July 31.....	2857.6	3504.1	5355.4	2.0	1060.5	121.0
Aug. 31.....	2968.5	3423.1	5401.4	2.8	1055.6	122.0
Sept. 30.....	2976.4	3701.9	5634.2	4.7	982.4	121.0
	Sunapee Lake	North Springfield Lake	Ball Mountain Reservoir	Townshend Reservoir	Surry Mountain Lake	Otter Brook Lake
Sept. 30, 1988.....	488	23.3	95.7	34.8	64.5	24.7
Oct. 31.....	357	24.7	29.0	38.6	63.4	34.8
Nov. 30.....	349	26.2	32.9	38.3	106.7	54.3
Dec. 31.....	253	25.4	26.2	39.2	80.7	37.2
Jan. 31, 1989.....	243	24.0	25.2	36.9	84.7	38.6
Feb. 29.....	260	24.7	74.8	39.0	75.6	38.6
Mar. 31.....	403	76.4	182.2	43.3	226.2	89.0
Apr. 30.....	585	27.6	179.7	39.4	69.3	29.0
May 31.....	629	27.6	103.2	38.6	66.9	36.5
June 30.....	619	26.2	109.4	38.0	62.2	38.2
July 31.....	570	23.3	109.4	36.6	58.6	34.8
Aug. 31.....	547	20.8	91.0	35.8	58.6	37.2
Sept. 30.....	498	24.0	74.8	37.2	65.7	37.9

HUDSON RIVER BASIN

85

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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 26	1215	*2,715	*6.58	No other peak greater than base discharge			
Minimum discharge, 43 ft ³ /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	53
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

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 (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /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	91	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 CFMS 1.04 IN. 14.12
WTR YR 1989 TOTAL 81285.8 MEAN 223 MAX 1780 MIN 8.8 CFMS 1.19 IN. 16.17

e Estimated

ST. LAWRENCE RIVER BASIN

87

04280350 METTAWEE RIVER NEAR PAWLET, VT.

LOCATION.--Lat 43°22'18", long 73°12'59", Rutland County, Hydrologic Unit 02010001, on left bank 10 ft downstream from highway bridge 1.0 mi southwest of Butternut Bend and 2.5 mi northwest of Pawlet.

DRAINAGE AREA.--70.2 mi².

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

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. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--5 years, 115 ft³/s, 22.25 in./yr.

EXTREME FOR PERIOD OF RECORD.--Maximum discharge, 3,310 ft³/s, Nov. 27, 1986, gage height 5.22 ft, from rating curve extended above 925 ft³/s; minimum, 7.8 ft³/s, July 30, 1985.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 750 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	0630	843	3.66	May 6	1100	a*1,750	*4.57
Apr. 6	2315	a1,010	3.83				

a From rating curve extended above 925 ft³/s.

Minimum discharge, 16 ft³/s, Sept. 13, 14.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	71	182	e60	e43	e50	374	128	132	63	27	31
2	34	293	174	e56	e51	e45	236	421	114	59	26	42
3	36	194	167	e54	e60	e40	254	360	101	44	26	34
4	34	157	145	e52	e47	e38	297	313	103	41	25	29
5	32	205	134	e50	e44	e38	360	268	91	56	106	26
6	30	278	135	e48	e40	e40	612	840	131	59	55	25
7	29	220	133	e46	e37	e54	740	553	133	70	38	24
8	28	195	123	e45	e35	e60	480	406	140	86	35	23
9	30	172	110	e48	e33	e51	376	337	129	57	32	23
10	31	162	100	e60	e32	e34	341	284	180	99	29	22
11	35	156	91	e54	e32	e32	276	492	138	104	30	19
12	35	136	e90	e46	e31	e32	244	414	122	73	100	19
13	31	235	e76	e47	e34	e32	229	366	107	61	164	20
14	32	296	e56	e45	e35	e34	234	328	108	55	101	19
15	30	222	e50	e40	e66	240	221	283	105	51	76	32
16	28	201	e52	e52	e70	112	326	250	140	45	63	28
17	28	262	e54	e45	e54	86	316	235	140	43	54	59
18	31	230	e64	e43	e44	103	339	206	121	41	48	36
19	38	194	e58	e40	e35	90	310	173	109	38	45	31
20	33	246	e49	e40	e30	77	273	156	93	46	44	101
21	35	596	e56	e40	e60	77	241	159	91	49	49	96
22	72	366	e66	e38	e220	68	221	146	100	44	49	66
23	89	300	e58	e38	e210	65	201	128	89	48	45	76
24	79	261	e58	e36	e99	65	188	126	93	40	42	96
25	77	226	e78	e35	e63	121	171	120	78	38	38	70
26	70	201	e90	e36	e60	137	159	139	66	36	37	71
27	63	203	e68	e42	e58	129	147	151	68	35	35	64
28	65	269	e66	e45	e56	180	143	127	99	43	34	55
29	69	231	e110	e39	---	296	136	114	78	37	33	54
30	62	207	e100	e40	---	268	133	106	70	32	36	46
31	59	---	e76	e43	---	298	---	112	---	29	32	---
TOTAL	1381	6985	2869	1403	1679	2992	8578	8241	3269	1622	1554	1337
MEAN	44.5	233	92.5	45.3	60.0	96.5	286	266	109	52.3	50.1	44.6
MAX	89	596	182	60	220	298	740	840	180	104	164	101
MIN	28	71	49	35	30	32	133	106	66	29	25	19
CFSM	.63	3.32	1.32	.64	.85	1.37	4.07	3.79	1.55	.75	.71	.63
IN.	.73	3.70	1.52	.74	.89	1.59	4.55	4.37	1.73	.86	.82	.71

CAL YR 1988 TOTAL 43843.7 MEAN 120 MAX 966 MIN 9.9 CFSM 1.71 IN. 23.23
WTR YR 1989 TOTAL 41910 MEAN 115 MAX 840 MIN 19 CFSM 1.64 IN. 22.21

e Estimated

ST. LAWRENCE RIVER BASIN

04282000 OTTER CREEK AT CENTER RUTLAND, VT.

LOCATION.--Lat 43°36'13", long 73°00'49", Rutland County, Hydrologic Unit 02010002, on right bank 200 ft downstream from dam, 500 ft upstream from bridge on U.S. Highway 4 at Center Rutland, 1.2 mi downstream from East Creek, and 1.5 mi west of Rutland.

DRAINAGE AREA.--307 mi².

PERIOD OF RECORD.--Discharge: May 1928 to current year. Water-quality records: Water years 1955, 1971.

REVISED RECORDS.--WSP 1084: 1929.

GAGE.--Water-stage recorder. Datum of gage is 474.80 ft above National Geodetic Vertical Datum of 1929; prior to Oct. 1, 1964, datum was 1.00 ft higher. Prior to July 22, 1929, nonrecording gage at same site.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by powerplants and Chittenden Reservoir 14 mi upstream on East Creek. These reservoirs have a combined usable capacity of about 819,800,000 ft³. Prior to June 3, 1947, regulation by East Pittsford Reservoir, usable capacity, 150,000,000 ft³. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--61 years, 552 ft³/s, 24.42 in./yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,700 ft³/s, Sept. 22, 1938, gage height, 13.45 ft, present datum, from rating curve extended above 7,400 ft³/s on basis of computation of peak flow over dam; minimum daily, 45 ft³/s Sept. 21, 1947, Aug. 7, 1965.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,400 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 7	0545	*3,790	*8.06	May 7	0615	3,660	7.90

Minimum daily discharge, 103 ft³/s, Sept. 10.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	142	263	652	231	306	263	1200	579	503	242	200	147
2	139	1450	591	e225	441	230	828	1580	516	220	194	153
3	171	1380	546	e220	286	219	939	2090	428	216	169	151
4	164	834	533	e220	230	e185	1150	1600	440	189	189	138
5	156	822	446	e215	e190	e210	1830	1020	468	220	531	158
6	162	1580	436	e210	e200	e250	2660	2390	583	302	408	147
7	165	1430	475	e230	e205	e195	3570	3420	829	287	377	135
8	144	937	473	312	e200	e190	2420	2190	684	531	250	122
9	127	721	406	372	e190	184	1490	1440	638	312	215	104
10	161	619	367	331	e180	188	1130	1120	989	551	192	103
11	193	606	e240	278	e170	193	913	1690	1000	962	190	137
12	213	532	e220	242	e165	191	867	1860	645	474	604	119
13	195	570	e235	e225	e160	169	808	1670	531	321	1350	115
14	178	1290	e250	e220	e180	216	787	1600	529	289	891	122
15	157	962	299	315	e240	638	784	1330	513	261	565	232
16	147	718	270	355	e260	928	1170	1080	903	216	446	187
17	157	782	221	274	e200	494	1360	941	837	199	381	405
18	184	824	e190	260	e180	440	1520	826	738	179	328	354
19	200	621	e205	234	e175	501	1460	748	663	172	294	240
20	192	592	e215	235	e170	364	1160	657	537	196	275	891
21	186	2030	319	223	555	327	965	629	476	221	275	932
22	290	1710	362	179	1620	263	890	668	444	228	247	549
23	681	1160	239	180	1260	257	779	573	390	410	238	441
24	556	912	242	202	553	263	711	562	434	283	217	507
25	577	779	444	221	375	283	672	604	374	229	164	408
26	427	677	384	199	327	606	634	582	312	192	143	388
27	336	663	309	221	314	788	599	780	284	191	137	410
28	339	793	402	219	270	1220	586	621	439	276	163	358
29	327	895	540	182	---	1910	562	495	444	501	149	310
30	290	720	399	184	---	1700	554	436	299	292	164	210
31	251	---	297	247	---	1020	---	449	---	248	167	---
TOTAL	7607	27872	11207	7461	9602	14885	34998	36230	16870	9410	10113	8673
MEAN	245	929	362	241	343	480	1167	1169	562	304	326	289
MAX	681	2030	652	372	1620	1910	3570	3420	1000	962	1350	932
MIN	127	263	190	179	160	169	554	436	284	172	137	103
CFSM	.80	3.03	1.18	.78	1.12	1.56	3.80	3.81	1.83	.99	1.06	.94
IN.	.92	3.38	1.36	.90	1.16	1.80	4.24	4.39	2.04	1.14	1.23	1.05

CAL YR 1988 TOTAL 179315 MEAN 490 MAX 4330 MIN 74 CFSM 1.60 IN. 21.73
WTR YR 1989 TOTAL 194928 MEAN 534 MAX 3570 MIN 103 CFSM 1.74 IN. 23.62

e Estimated

ST. LAWRENCE RIVER BASIN

89

04282500 OTTER CREEK AT MIDDLEBURY, VT.

LOCATION.--Lat 44°00'47", long 73°10'06", Addison County, Hydrologic Unit 02010002, on right bank 150 ft upstream from highway bridge in Middlebury and 3.5 mi downstream from Middlebury River.

DRAINAGE AREA.--628 mi².

PERIOD OF RECORD.--Discharge: April 1903 to April 1907, October 1910 to January 1920, October 1928 to current year.
Water-quality records: Water years 1954, 1967-74.

REVISED RECORDS.--WSP 434: 1903-4. WSP 684: 1913(M), drainage area. WSP 1114: 1913. WSP 1207: 1929, 1931.

GAGE.--Water-stage recorder. Datum of gage is 335.75 ft above National Geodetic Vertical Datum of 1929. Apr. 1, 1903, to Apr. 30, 1907, and Oct. 5, 1910, to Jan. 31, 1920, nonrecording gage at site 1,800 ft upstream at datum 10 ft lower, and Oct. 1, 1928, to Oct. 17, 1933, at present datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Some regulation by Chittenden Reservoir, usable capacity, 819,800,000 ft³ on East Creek. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--73 years (water years 1904-06, 1911-19, 1929-89), 994 ft³/s, 21.49 in./yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,000 ft³/s, Mar. 20, 21, 1936, gage height, 10.3 ft; minimum daily, 92 ft³/s, Aug. 9, 1965.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1830, 13,600 ft³/s, Nov. 4, 1927, gage height, 13.3 ft, present datum, at site 1,800 ft upstream, from rating curve extended above 9,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,940 ft³/s, May 13; gage height, 4.94 ft; minimum discharge, 220 ft³/s, Sept. 13.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	306	494	1600	594	419	527	2170	924	817	640	326	320
2	281	878	1440	478	541	503	2160	1300	827	524	345	508
3	293	1470	1270	498	e550	465	2160	1750	827	467	303	424
4	291	1590	1070	e475	e500	430	2180	1940	754	442	291	336
5	281	1630	960	e425	e400	418	2400	2020	721	443	1880	306
6	270	1770	867	e400	e375	e400	2440	2430	882	446	1960	304
7	289	1740	837	e425	e375	e350	2600	2530	1170	537	1800	307
8	302	1830	892	476	e350	e350	2590	2500	1250	597	1430	286
9	283	1820	830	621	e350	372	2640	2530	1170	739	1020	261
10	290	1730	757	732	e325	357	2760	2600	1280	694	639	247
11	315	1550	586	657	e325	356	2830	2760	1420	1060	459	235
12	322	1360	512	586	331	349	2870	2900	1430	1200	476	233
13	360	1150	569	522	326	e340	2820	2940	1270	973	1230	234
14	375	1290	505	459	347	348	2710	2910	1010	686	1720	248
15	329	1470	513	442	441	650	2560	2870	890	561	1750	318
16	300	1500	e510	544	497	1170	2450	2820	1070	513	1620	404
17	293	1440	e475	632	e450	1240	2320	2750	1330	446	1260	471
18	293	1440	e425	581	e350	1200	2290	2650	1340	417	940	696
19	337	1400	e400	488	e325	1040	2620	2500	1400	392	697	613
20	376	1270	e425	472	325	892	2220	2310	1250	367	579	1020
21	359	1940	479	e425	511	724	2180	2070	1040	367	563	1640
22	337	1950	563	e375	1480	622	2120	1850	881	377	545	1650
23	567	2000	647	349	1470	547	2010	1640	785	406	498	1400
24	850	2050	533	361	1520	522	1870	1380	742	515	484	1240
25	940	2050	536	376	1500	532	1690	1160	700	470	430	1080
26	868	2000	685	374	1330	779	1490	1060	689	370	351	864
27	731	1880	655	358	979	1150	1270	1010	645	314	317	712
28	564	1820	565	e350	672	1530	1040	1070	581	279	304	733
29	621	1780	795	361	---	1830	1000	982	761	404	316	621
30	628	1700	849	375	---	1900	928	848	772	590	320	554
31	565	---	740	402	---	2040	---	832	---	466	335	---
TOTAL	13216	47992	22490	14613	17364	23933	65388	61836	29704	16702	25188	18265
MEAN	426	1600	725	471	620	772	2180	1995	990	539	813	609
MAX	940	2050	1600	732	1520	2040	2870	2940	1430	1200	1960	1650
MIN	270	494	400	349	325	340	928	832	581	279	291	233
CFSM	.68	2.55	1.16	.75	.99	1.23	3.47	3.18	1.58	.86	1.29	.97
IN.	.78	2.84	1.33	.87	1.03	1.42	3.87	3.66	1.76	.99	1.49	1.08

CAL YR 1988 TOTAL 321171 MEAN 878 MAX 2910 MIN 163 CFSM 1.40 IN. 19.02
WTR YR 1989 TOTAL 356691 MEAN 977 MAX 2940 MIN 233 CFSM 1.56 IN. 21.13

e Estimated

ST. LAWRENCE RIVER BASIN

04284000 JAIL BRANCH AT EAST BARRE, VT

LOCATION.--Lat 44°09'30", long 72°26'44", Washington County, Hydrologic Unit 02010003, on right bank 1,400 ft upstream from highway bridge, at East Barre, 1,400 ft downstream from East Barre Detention Reservoir, and 4.2 mi upstream from mouth.

DRAINAGE AREA.--38.9 mi².

PERIOD OF RECORD.--August 1920 to September 1923, October 1933 to current year. October 1933 monthly discharge only, published in WSP 1307. Prior to October 1922, published as Jail Brook at East Barre.

REVISED RECORDS.--WSP 564: 1922. WSP 1034: Drainage area. WSP 1307: 1921-23(M).

GAGE.--Water-stage recorder. Datum of gage is 1,107.25 ft above National Geodetic Vertical Datum of 1929. Aug. 14, 1920, to Sept. 30, 1923, nonrecording gage at site 0.1 mi downstream at different datum. Nov. 1, 1933, to Jan. 25, 1935, nonrecording gage and Jan. 26, 1935, to Aug. 7, 1972, water-stage recorder at site 1,500 ft downstream. Datum of gage was 1,071.59 ft above National Geodetic Vertical Datum of 1929, Nov. 1, 1933, to Sept. 30, 1964, and 1,069.59 ft above National Geodetic Vertical Datum of 1929, Oct. 1, 1964 to Aug. 7, 1972 (levels by U.S. Army Corps of Engineers).

REMARKS.--Records good except those for estimated daily discharges, Dec. 4-22, Jan. 24 to Mar. 26, which are fair, and period of no gage-height record Dec. 23 to Jan. 23, which are poor. Discharge affected by East Barre Detention Reservoir since 1935 (Reservoirs in Winooski River basin). Prior to 1964, occasional diurnal fluctuation at low flow caused by mill upstream. Diversion from reservoir on Orange Brook, a tributary upstream, for city of Barre. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--59 years, 54.8 ft³/s, 19.13 in./yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,820 ft³/s, Oct. 1, 1920, gage height, 9.50 ft, from graph based on gage readings, site and datum then in use, from rating curve extended above 900 ft³/s; minimum, 0.1 ft³/s, Aug. 18, 1950, Aug. 3, 4, 31, Sept. 1, 3, 1953. Maximum discharge since construction of East Barre Detention Reservoir in 1935, 634 ft³/s, Apr. 19, 1969, gage height, 3.31 ft, site and datum then in use; maximum gage height, 9.48 ft Jan. 7, 1973 (ice jam).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 559 ft³/s, Aug. 5, gage height, 4.94 ft; minimum discharge, 3.6 ft³/s, Oct. 1, 2.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.0	15	37	e14	e10	e7.8	74	50	44	16	4.5	10
2	4.1	230	35	e14	e19	e7.0	74	248	42	14	4.9	38
3	4.3	111	26	e13	e14	e6.8	95	276	45	12	14	18
4	5.4	57	e23	e13	e11	e6.8	174	104	41	11	9.3	13
5	5.9	45	e21	e13	e8.4	e7.0	347	72	38	11	430	9.8
6	5.4	119	e20	e12	e7.2	e7.4	408	322	154	11	485	8.7
7	5.9	80	e17	e12	e6.4	e6.9	417	388	108	9.9	414	8.2
8	5.9	62	e16	e14	e6.0	e6.4	330	192	59	9.0	157	7.7
9	6.7	49	e14	e16	e5.6	e6.2	129	92	49	8.2	26	6.7
10	7.9	37	e13	e13	e5.1	e6.3	102	73	174	41	19	6.5
11	7.7	34	e12	e11	e5.0	e6.4	74	175	101	43	16	5.1
12	9.5	28	e12	e10	e5.3	e6.0	65	220	57	41	137	7.4
13	8.8	57	e13	e9.8	e5.6	e7.0	65	133	47	25	348	6.2
14	7.3	133	e13	e9.4	e6.4	e8.8	65	88	44	19	318	4.7
15	6.0	59	e14	e9.0	e7.6	e42	72	68	38	15	69	38
16	5.7	44	e13	e8.8	e6.6	e58	147	61	125	14	44	18
17	5.8	59	e13	e8.4	e6.2	e25	142	56	67	12	34	50
18	6.0	64	e12	e8.4	e5.9	e29	153	51	50	11	27	30
19	17	52	e12	e8.2	e5.8	e23	120	46	46	10	22	20
20	12	49	e14	e8.0	e5.5	e15	89	43	34	9.8	21	189
21	11	251	e19	e7.6	e10	e12	74	42	31	10	23	100
22	18	113	e18	e7.7	e60	e11	69	44	27	9.6	24	40
23	43	56	e15	e8.0	e23	e11	59	38	23	9.3	24	37
24	31	51	e16	e8.2	e17	e12	55	37	48	7.5	27	33
25	29	45	e16	e8.0	e13	e14	54	42	31	5.8	21	24
26	16	60	e14	e7.8	e11	e45	54	41	23	5.3	18	23
27	14	33	e12	e7.6	e9.6	106	53	48	20	4.7	15	27
28	13	79	e19	e7.4	e8.8	249	50	40	18	4.9	14	21
29	15	100	e23	e7.8	---	378	45	34	21	5.9	13	18
30	14	48	e17	e8.0	---	190	46	29	17	5.2	13	17
31	14	---	e15	e8.8	---	65	---	35	---	5.3	11	---
TOTAL	359.3	2220	534	311.9	305.0	1381.8	3701	3188	1622	416.4	2802.7	835.0
MEAN	11.6	74.0	17.2	10.1	10.9	44.6	123	103	54.1	13.4	90.4	27.8
MAX	43	251	37	16	60	378	417	388	174	43	485	189
MIN	4.0	15	12	7.4	5.0	6.0	45	29	17	4.7	4.5	4.7
MEAN†	11.5	76.3	16.0	9.87	10.7	48.0	120	103	53.6	13.4	90.3	28.0
CFSM†	.30	1.96	.41	.25	.28	1.23	3.08	2.65	1.38	.34	2.32	.72
IN.†	.34	2.19	.47	.29	.29	1.42	3.45	3.04	1.54	.40	2.68	.80

CAL YR 1988 TOTAL 14195.3 MEAN 38.8 MAX 418 MIN 2.5 MEAN† 38.8 CFSM† 1.00 IN.† 13.57
WTR YR 1989 TOTAL 17677.1 MEAN 48.4 MAX 485 MIN 4.0 MEAN† 48.5 CFSM† 1.25 IN.† 16.91

e Estimated

† Adjusted for change in contents in East Barre Detention Reservoir.

ST. LAWRENCE RIVER BASIN

91

04285500 NORTH BRANCH WINOOSKI RIVER AT WRIGHTSVILLE, VT.

LOCATION.--Lat 44°17'58", long 72°34'45", Washington County, Hydrologic Unit 02010003, on right bank at Wrightsville, 0.8 mi downstream from Wrightsville Detention Reservoir, and 3.5 mi upstream from mouth.

DRAINAGE.--69.2 mi².

PERIOD OF RECORD.--Discharge: October 1933 to current year.
Water-quality records: Water year 1957.

REVISED RECORDS.--WSP 1237: 1937: 1934-39.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 550.53 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Nov. 21, 1934, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Discharge affected since 1935 by Wrightsville Detention Reservoir (Reservoirs in Winooski River basin). Flow regulated by powerplant at Wrightsville Detention Reservoir since September 1985. Occasional diurnal fluctuation at low flow caused by small mill upstream; more frequent diurnal fluctuation prior to 1968. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--56 years, 134 ft³/s, 26.30 in./yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,170 ft³/s, Apr. 12, 1934, gage height, 6.53 ft, from rating curve extended above 920 ft³/s; minimum daily, 0.2 ft³/s, Aug. 13, 1941. Maximum discharge since construction of Wrightsville Detention Reservoir in 1935, 1,040 ft³/s, Mar. 21, 1936, gage height, 4.32 ft; maximum gage height, 5.43 ft Mar. 12, 1936 (ice jam).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1830, 17,200 ft³/s, Nov. 3, 1927, by computation of peak flow over dam 0.8 mi upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,030 ft³/s, Mar. 29, gage height, 3.86 ft; minimum daily, 3.8 ft³/s, July 27.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	35	187	e61	29	27	886	151	42	22	9.7	10
2	13	229	128	26	35	e30	747	635	284	24	9.9	141
3	12	307	104	37	49	e28	297	903	561	24	10	159
4	10	189	105	e48	e31	e24	347	883	242	24	22	62
5	9.3	132	78	e24	e28	24	823	785	176	23	337	35
6	9.0	410	64	e24	e24	e32	928	884	175	24	223	25
7	8.0	334	76	e28	e24	e30	973	947	197	12	163	25
8	8.0	205	e52	e37	e24	e24	950	926	191	11	28	25
9	8.0	155	56	51	e24	e24	905	861	107	11	23	25
10	8.0	123	49	e30	e24	e24	850	558	350	94	24	25
11	8.2	98	36	33	e24	e24	482	282	685	57	16	25
12	12	72	e32	e36	26	e24	215	402	391	42	52	25
13	19	69	26	e24	e24	e31	194	357	225	38	153	24
14	19	104	37	e34	25	24	193	266	183	24	85	17
15	24	148	44	e27	18	e58	178	212	103	24	63	114
16	33	133	e36	26	14	109	275	194	200	23	36	177
17	29	153	e32	e29	48	109	400	115	242	24	50	106
18	27	214	e24	33	e24	95	644	105	204	23	41	81
19	32	189	27	33	e24	82	521	83	148	18	29	92
20	46	127	37	33	26	65	335	77	102	16	29	499
21	31	695	37	e39	31	57	247	65	74	12	39	466
22	31	587	62	e24	43	51	227	63	63	11	47	215
23	37	248	46	e34	e57	e48	199	54	53	9.4	47	186
24	94	190	26	e24	e29	46	167	70	51	8.3	48	174
25	112	132	46	e24	46	53	120	51	39	5.9	52	67
26	105	105	33	e24	e38	102	118	57	40	3.9	39	84
27	54	98	e35	35	e34	159	131	51	47	3.8	34	124
28	44	192	47	e24	e33	467	140	76	36	4.2	26	94
29	56	313	51	25	---	972	100	60	35	14	23	101
30	55	220	63	25	---	995	111	53	28	20	7.3	91
31	44	---	e24	30	---	945	---	53	---	14	7.9	---
TOTAL	1012.5	6206	1700	982	856	4783	12703	10279	5274	664.5	1773.8	3294
MEAN	32.7	207	54.8	31.7	30.6	154	423	332	176	21.4	57.2	110
MAX	112	695	187	61	57	995	973	947	685	94	337	499
MIN	8.0	35	24	24	14	24	100	51	28	3.8	7.3	10
MEAN†	33.5	210	52.6	31.2	30.6	195	382	332	174	20.0	56.2	110
CFSM†	.48	3.03	.76	.45	.44	2.82	5.52	4.80	2.51	.29	.81	1.59
IN.†	.56	3.39	.88	.52	.46	3.25	6.16	5.53	2.81	.33	.94	1.77

CAL YR 1988 TOTAL 32770.6 MEAN 89.5 MAX 787 MIN 3.8 MEAN† 89.8 CFSM† 1.30 IN.† 17.67
WTR YR 1989 TOTAL 49527.8 MEAN 136 MAX 995 MIN 3.8 MEAN† 136 CFSM† 1.97 IN.† 26.59

e Estimated

† Adjusted for change in contents in Wrightsville Detention Reservoir.

ST. LAWRENCE RIVER BASIN

RESERVOIRS IN WINOOSKI RIVER BASIN ABOVE MONTPELIER, VT.

04283500 EAST BARRE DETENTION RESERVOIR.--Lat 44°09'18", long 72°26'42", Washington County, Hydrologic Unit 0201003, at dam on Jail Branch at East Barre, 4.5 mi upstream from mouth. DRAINAGE AREA, 38.8 mi². PERIOD OF RECORD, February 1936 (in WSP 1307), March and April 1936 (in WSP 798), May 1936 to August 1938 (in WSP 1307), September 1938 (in WSP 867), October 1938 to current year. GAGE, water-stage recorder. Datum of gage is above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Aug. 30, 1960, nonrecording gage, and Aug. 30 to Sept. 30, 1960, water-stage recorder, at present site at datum 1,127.9 ft above National Geodetic Vertical Datum of 1929.

Reservoir is formed by earthfill dam completed by U.S. Army Corps of Engineers in 1935 for flood control. Usable capacity, 525,000,000 ft³ between elevation 1,124.9 ft (bottom of outlet opening) and 1,165.0 ft (crest of spillway). Dam has no gates; below elevation 1,165.0 ft, outflow from reservoir is dependent on capacity of outlet opening near base of dam. Outlet-opening enlargement and reservoir-construction modifications completed in November 1959. Size of opening since enlargement, height, 7 ft and average width, 3.7 ft. Figures given herein represent usable contents, determined from capacity tables furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 1,163.9 ft, present datum, Mar. 22, 1936; minimum not determined.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 1,146.94 ft Aug. 5; minimum, not determined.

04285000 WRIGHTSVILLE DETENTION RESERVOIR.--Lat 44°18'38", long 72°34'31", Washington County, Hydrologic Unit 02010003, at dam on North Branch Winoski River at Wrightsville, 0.3 mi downstream from Long Meadow Brook, and 4.2 mi upstream from mouth. DRAINAGE AREA, 66.5 mi². PERIOD OF RECORD, November 1935 to February 1936 (in WSP 1307), March to May 1936 (in WSP 798), June 1936 to August 1938 (in WSP 1307), September 1938 (in WSP 867), October 1938 to current year. GAGE, water-stage recorder. Datum of gage is above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to July 28, 1960, nonrecording gage, and July 28 to Sept. 30, 1960, water-stage recorder, at present site at datum 612.75 ft above National Geodetic Vertical Datum of 1929.

Reservoir is formed by earthfill dam completed by U.S. Army Corps of Engineers in 1935 for flood control; modification of intake-structure works to create a recreational pool completed in June 1965. Usable capacity for recreation, 22,000,000 ft³ between elevations 612.75 ft (bottom of outlet opening) and 620.00 ft; for flood control, 851,500,000 ft³ between elevations 620.00 ft and 685.00 ft (crest of spillway). Reservoir used for storage of water for power September 1985 to current year. Usable capacity for storage of water power 774,000,000 ft³ between elevation 631.00 ft, sill of gate and 685.00 ft, crest of spillway. Total usable capacity 873,500,000 ft³. Figures given herein represent usable contents, determined from capacity tables furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 676.4 ft, present datum, Mar. 22, 1936, from graph based on gage readings; minimum observed, 613.00 ft, Aug. 17, 1949, and Aug. 17-19, 1950.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 652.03 ft, Mar. 30; minimum, 632.70 ft, Aug. 29.

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

Date	Elevation (feet)	Contents (millions of cubic feet)	Change in contents	
			Millions of cubic feet	Equivalent, cubic feet per second
04283500 East Barre Detention Reservoir				
Sept. 30.	1128.32	3.6	--	--
Oct. 31.	1128.12	3.3	-0.3	-.11
Nov. 30.	1132.63	9.2	+5.9	+2.28
Dec. 31.	1130.18	5.8	-3.4	-1.27
CAL YR 1988	--	--	-.3	-.01
Jan. 31.	1129.80	5.3	-.5	-.19
Feb. 28.	1129.41	4.8	-.5	-.21
Mar. 31.	1135.40	14.1	+9.3	+3.47
Apr. 30.	1130.53	6.2	-7.9	-3.05
May 31.	1130.03	5.6	-.6	-.22
June 30.	1129.12	4.5	-1.1	-.42
July 31.	1128.95	4.3	-.2	-.07
Aug. 31.	1128.77	4.1	-.2	-.07
Sept. 30.	1129.00	4.4	+.3	+.12
WTR YR 1989	--	--	+.8	+.03
04285000 Wrightsville Detention Reservoir				
Sept. 30.	633.63	98.6	--	--
Oct. 31.	633.91	100.8	+2.2	+.82
Nov. 30.	635.05	109.9	+ 9.1	+3.51
Dec. 31.	634.31	104.0	-5.9	-2.20
CAL YR 1988	--	--	+9.3	+.29
Jan. 31.	634.15	102.7	-1.3	-.49
Feb. 29.	634.15	102.7	0.0	0.0
Mar. 31.	645.85	211.3	+108.6	+40.5
Apr. 30.	634.24	103.4	-107.9	-41.6
May 31.	634.23	103.4	0.0	0.0
June 30.	633.73	99.4	-4.0	-1.54
July 31.	633.23	95.6	-3.8	-1.42
Aug. 31.	632.88	92.9	-2.7	-1.01
Sept. 30.	632.94	93.3	+0.4	+.15
WTR YR 1989	--	--	-5.3	-.17

ST. LAWRENCE RIVER BASIN

93

04286000 WINOOSKI RIVER AT MONTPELIER, VT.

LOCATION.--Lat 44°15'23", long 72°35'36", Washington County, Hydrologic Unit 02010003, on right bank 0.4 mi upstream from Dog River and 1 mi downstream from depot at Montpelier.

DRAINAGE AREA.--397 mi².

PERIOD OF RECORD.--May 1909 to June 1914 (fragmentary), July 1914 to September 1923, August 1928 to current year.

REVISED RECORDS.--WSP 424: 1915. WSP 894: Drainage area. WSP 1437: 1912-14(M), 1915-18, 1919(M), 1920, 1921(M), 1922-23, 1929, 1933, 1934(M), 1936, 1937(M), 1938, 1946(M), WDR MA-NH-RI-VT-72-1: 1969(M), 1970(P), 1971(M).

GAGE.--Water-stage recorder. Datum of gage is 499.99 ft above National Geodetic Vertical Datum of 1929. Prior to June 16, 1914, nonrecording gage at site 0.9 mi upstream at different datum. June 16 to July 3, 1914, nonrecording gage at present site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by several small powerplants upstream, by Peacham Pond and, since 1926, by Mollys Falls Reservoir, combined usable capacity, 492,000,000 ft³, which regulated runoff from 24 mi², and by East Barre and Wrightsville Detention Reservoirs since 1935 (Reservoirs in Winoski River basin). See table below for monthend contents in Peacham Pond and Mollys Falls Reservoir. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--70 years (water years 1915-23, 1929-88), 590 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,200 ft³/s, Apr. 7, 1912, gage height, 17.31 ft, from floodmarks, present datum, from rating curve extended above 6,900 ft³/s; maximum gage height, 17.55 ft June 30, 1973; minimum daily discharge, 17 ft³/s, Sept. 3, 1933.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1830, 57,000 ft³/s, Nov. 3, 1927, gage height, 27.1 ft, from rating curve extended above 6,900 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,900 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 29	0845	4,880	9.18	May 6	1500	6,680	10.99
Apr. 6	2300	4,550	8.83	Aug. 5	1115	*10,100	*14.40

Minimum daily discharge, 62 ft³/s, Oct. 5, 7, 9, 10.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	88	117	570	e190	e260	e160	1700	551	387	179	94	164
2	67	1080	460	e180	e300	e140	1600	2400	831	179	94	622
3	65	1250	404	e160	e180	e145	1300	2550	1660	172	136	496
4	64	648	359	e160	e140	e120	1630	1910	885	159	216	296
5	62	456	278	e180	e110	e90	3060	1680	659	155	6300	231
6	81	832	e250	e160	e94	e92	3650	4240	1000	168	2530	213
7	62	925	e320	e180	e86	e100	3800	3390	1140	145	1520	221
8	72	608	334	e160	e82	e94	2800	2440	839	129	777	175
9	62	479	328	e180	e82	e90	2060	1890	709	117	409	165
10	62	446	279	e220	e86	e100	1800	1560	1570	606	323	158
11	67	382	e180	e200	e94	e105	1380	1520	1580	564	276	162
12	76	281	e170	e170	e84	e90	989	2010	1080	355	940	163
13	84	303	e180	e160	e88	e86	885	1590	764	249	2690	159
14	96	713	e170	e140	e100	e250	888	1240	707	222	1810	167
15	112	606	e180	e130	e110	e700	864	1070	568	178	926	524
16	101	479	e160	e130	e105	e1000	1320	975	1120	164	611	527
17	94	499	e160	e140	e90	e450	1440	813	969	144	576	587
18	94	707	e150	e140	e120	e600	1630	711	710	138	448	467
19	114	497	e150	e150	e100	e400	1460	676	615	149	361	408
20	123	395	e170	e150	e86	e300	1120	552	551	163	323	1820
21	97	2100	e250	e130	e300	e260	916	491	449	121	352	1730
22	111	1450	e270	e110	e800	e230	830	486	380	131	372	980
23	227	820	e210	e130	e500	e210	707	431	336	101	387	788
24	242	644	e200	e150	e320	e230	643	459	381	95	411	607
25	258	415	e200	e110	e220	e300	560	473	303	93	349	397
26	209	386	e190	e120	e150	643	544	433	269	79	303	352
27	170	364	e180	e100	e150	1020	529	474	270	79	221	405
28	137	688	e230	e100	e160	1980	523	433	246	91	257	378
29	146	1100	e290	e105	---	3640	485	368	246	113	200	311
30	139	705	e270	e110	---	2230	461	356	207	112	166	336
31	119	---	e230	e190	---	1640	---	381	---	130	149	---
TOTAL	3501	20375	7772	4635	4997	17495	41574	38553	21431	5480	24527	14009
MEAN	113	679	251	150	178	564	1386	1244	714	177	791	467
MAX	258	2100	570	220	800	3640	3800	4240	1660	606	6300	1820
MIN	62	117	150	100	82	86	461	356	207	79	94	158
(†)	407.3	323.0	284.8	217.7	156.0	171.9	378.9	436.9	433.3	433.3	409.2	405.8

CAL YR 1988 TOTAL 154883 MEAN 423 MAX 3530 MIN 51
WTR YR 1989 TOTAL 204349 MEAN 560 MAX 6300 MIN 62

e Estimated

† Monthend contents, in millions of cubic feet, in Peacham Pond and Molly Falls Reservoir; records furnished by Green Mountain Power Corporation.

ST. LAWRENCE RIVER BASIN

04287000 DOG RIVER AT NORTHFIELD FALLS, VT.

LOCATION.--Lat 44°10'58", long 72°38'27", Washington County, Hydrologic Unit 02010003, on right bank 1 mi downstream from Northfield Falls and 1.2 mi downstream from Cox Branch.

DRAINAGE AREA.--76.1 mi².

PERIOD OF RECORD.--Discharge: October 1934 to current year. October 1934 monthly discharge only, published in WSP 1307.

Water-quality records: Water year 1957.

REVISED RECORDS.--WSP 1237: 1935-37.

GAGE.--Water-stage recorder. Datum of gage is 603.00 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Records good except those for estimated daily discharges, which are fair. Infrequent diurnal fluctuation at low flow by powerplant upstream; regulation much greater prior to 1955. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--55 year, 123 ft³/s, 21.95 in./yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,600 ft³/s, June 30, 1973, gage height, 11.57 ft, from rating curve extended above 1,500 ft³/s on basis of computation of flow over dam at gage height 8.49 ft and slope-area measurements at gage heights 8.96 ft, 11.53 ft, and 11.57; minimum, 4.3 ft³/s, Aug. 31, Sept. 7, 1942.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,600 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	0445	1,650	4.66	May 6	1145	5,680	8.39
Mar. 29	0315	1,930	5.03	Aug. 5	0830	*8,220	*10.16

Minimum discharge, 9.2 ft³/s, Aug. 4.

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	12	29	142	62	70	39	202	101	76	44	17	42
2	12	127	127	e47	83	e34	205	655	74	39	19	94
3	12	116	116	e46	53	e31	225	452	87	37	26	55
4	12	77	109	e45	e42	e30	409	332	77	33	25	45
5	12	95	e92	e43	e37	e30	938	246	62	37	2210	43
6	12	508	e91	e38	e34	e29	973	2240	154	31	353	38
7	12	205	e90	e37	e32	e29	871	871	134	30	242	33
8	12	135	e84	44	e30	e28	474	473	111	30	150	34
9	13	117	e70	72	e29	28	321	345	103	25	113	30
10	14	101	e62	50	e27	28	256	277	335	140	89	29
11	16	91	e50	43	e27	29	210	433	223	105	81	28
12	17	77	e46	e38	e26	28	185	675	151	68	210	28
13	16	91	e54	e38	e25	25	172	425	126	47	615	26
14	15	161	e56	e38	e26	34	173	319	116	42	372	27
15	14	157	e57	e38	e28	211	169	260	106	36	225	81
16	15	128	e54	e37	e27	250	261	223	208	35	188	45
17	14	169	e51	e35	e26	118	269	194	178	28	155	90
18	15	160	e48	e35	e25	138	290	170	149	25	121	66
19	22	123	e47	e35	e24	122	238	149	136	26	109	46
20	20	137	e45	e34	e23	76	195	132	113	29	97	345
21	17	878	87	e34	75	66	170	122	112	26	95	212
22	21	317	68	e33	264	55	155	115	98	24	81	124
23	40	216	49	e32	115	53	136	104	83	23	77	105
24	48	177	52	e31	71	61	127	101	89	21	76	90
25	72	150	56	e30	63	89	119	104	75	20	63	77
26	46	132	51	e29	53	189	113	91	65	19	56	66
27	36	134	55	e30	46	350	108	93	55	18	51	71
28	32	236	63	e30	42	807	104	82	53	18	49	63
29	37	209	89	32	---	1150	99	69	59	18	46	59
30	34	159	60	33	---	342	100	64	51	17	46	60
31	30	---	64	35	---	217	---	72	---	16	42	---
TOTAL	700	5412	2185	1204	1423	4716	8267	9989	3459	1107	6099	2152
MEAN	22.6	180	70.5	38.8	50.8	152	276	322	115	35.7	197	71.7
MAX	72	878	142	72	264	1150	973	2240	335	140	2210	345
MIN	12	29	45	29	23	25	99	64	51	16	17	26
CFSM	.30	2.37	.93	.51	.67	2.00	3.62	4.23	1.52	.47	2.59	.94
IN.	.34	2.65	1.07	.59	.70	2.31	4.04	4.88	1.69	.54	2.98	1.05

CAL YR 1988 TOTAL 33953 MEAN 92.8 MAX 1220 MIN 11 CFSM 1.22 IN. 16.60
WTR YR 1989 TOTAL 46713 MEAN 128 MAX 2240 MIN 12 CFSM 1.68 IN. 22.83

e Estimated

ST. LAWRENCE RIVER BASIN

95

04288000 MAD RIVER NEAR MORETOWN, VT.

LOCATION.--Lat 44°16'42", long 72°44'37", Washington County, Hydrologic Unit 02010003, on left bank at downstream side of highway bridge, 2.4 mi downstream from Moretown, and 3.8 mi upstream from mouth.

DRAINAGE AREA.--139 mi².

PERIOD OF RECORD.--Discharge: July to November 1910, October 1928 to current year. October 1928 monthly discharge only, published in WSP 1307.

Water-quality records: Water years 1954-55, 1957, 1967-74.

REVISED RECORDS.--WSP 744: Drainage area. WSP 854: 1934(M). WSP 1114: 1929, 1930(M), 1936-37.

GAGE.--Water-stage recorder. Concrete control since Oct. 13, 1933. Datum of gage is 543.93 ft above National Geodetic Vertical Datum of 1929 (levels by Vermont Department of Highway). July 6 to Nov. 4, 1910, nonrecording gage at same site at different datum. Nov. 20, 1928, to Sept. 27, 1930, nonrecording gage at same site at present datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Occasional diurnal fluctuation at low flow; much greater regulation prior to 1958. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--61 years (water years 1928-89), 258 ft³/s, 25.21 in./yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,400 ft³/s, Sept. 22, 1938, gage height, 16.34 ft, from floodmarks, from rating curve extended above 2,700 ft³/s on basis of computations of flow over dam at gage heights 9.98 ft, 11.51 ft, 16.34 ft, and 19.4 ft; minimum, 1.4 ft³/s, Oct. 1, 1930.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1830, 23,000 ft³/s, Nov. 3, 1927, gage height, 19.4 ft, from floodmarks, by computation of peak flow over dam.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 6	0900	3,600	7.18	May 2	1315	4,340	7.79
Nov. 21	0500	4,340	7.79	May 6	1300	6,950	9.64
Mar. 29	0315	3,720	7.28	Aug. 5	1130	*8,050	*10.23

Minimum discharge, 29 ft³/s, July 27, 28, 30, 31.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	96	321	e120	e170	e72	318	294	157	82	32	80
2	32	329	271	e115	e120	e64	298	2130	266	77	33	421
3	35	259	243	e110	e100	e62	378	1320	333	68	56	163
4	38	177	216	e105	e86	e62	744	1080	243	62	60	111
5	35	426	e200	e105	e76	e64	1910	653	208	61	3920	90
6	38	2320	e190	e100	e64	e68	1660	3980	417	61	643	78
7	38	743	e180	e100	e58	e62	1410	1800	368	56	446	72
8	36	436	e160	e120	e54	e58	706	950	271	56	252	65
9	38	361	e130	e150	e50	e56	468	622	237	49	180	59
10	45	290	e110	e120	e46	e56	393	486	1180	371	142	56
11	62	267	e100	e100	e47	e58	337	852	950	227	119	56
12	82	211	e105	e94	e48	e54	298	1350	451	137	174	53
13	66	301	e110	e90	e50	e56	285	806	337	88	444	49
14	58	528	e115	e86	e58	e80	301	549	285	73	316	53
15	67	349	e120	e82	e70	e420	306	447	240	62	203	322
16	76	262	e110	e80	e60	e520	493	388	507	54	229	148
17	68	385	e105	e76	e56	e230	473	340	392	49	181	303
18	63	360	e100	e76	e54	e260	857	292	314	47	133	195
19	78	263	e100	e74	e52	e210	581	250	352	45	110	140
20	66	327	e120	e72	e50	e140	435	213	266	68	122	1350
21	59	2180	e160	e70	e96	e110	370	187	269	52	130	625
22	72	669	e150	e70	e560	e100	343	184	233	45	112	328
23	142	436	e130	e74	e210	e100	277	194	174	42	111	287
24	184	352	e135	e74	e150	e105	258	190	172	38	133	286
25	287	296	e140	e72	e120	e120	239	222	143	35	97	215
26	168	283	e120	e70	e100	e180	231	171	118	32	83	187
27	129	361	e105	e68	e86	e320	236	175	106	29	73	198
28	113	812	e160	e68	e80	e1400	227	172	101	36	68	164
29	144	544	e200	e70	---	2170	208	139	134	35	65	142
30	121	375	e140	e72	---	621	220	119	96	30	65	126
31	103	---	e130	e80	---	378	---	129	---	41	68	---
TOTAL	2575	14998	4676	2763	2771	8256	15260	20684	9320	2208	8800	6423
MEAN	83.1	500	151	89.1	99.0	266	509	667	311	71.2	284	214
MAX	287	2320	321	150	560	2170	1910	3980	1180	371	3920	1350
MIN	32	96	100	68	46	54	208	119	96	29	32	49
CFSM	.60	3.60	1.09	.64	.71	1.92	3.66	4.80	2.24	.51	2.04	1.54
IN.	.69	4.01	1.25	.74	.74	2.21	4.08	5.54	2.49	.59	2.36	1.72

CAL YR 1988 TOTAL 77878 MEAN 213 MAX 3480 MIN 14 CFSM 1.53 IN. 20.84
WTR YR 1989 TOTAL 98734 MEAN 271 MAX 3980 MIN 29 CFSM 1.95 IN. 26.42

e Estimated

ST. LAWRENCE RIVER BASIN

04288500 WATERBURY RESERVOIR NEAR WATERBURY, VT

LOCATION.--Lat 44°22'54", long 72°46'13", Washington County, Hydrologic Unit 02010003, at dam on Little River 2.7 mi upstream from mouth and 3.5 mi north of Waterbury.

DRAINAGE AREA.--109 mi².

PERIOD OF RECORD.--Elevation: September 1937 to current year. September 1937 to September 1938 monthend contents only, published in WSP 1307.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Corps of Engineers). Prior to Dec. 10, 1938, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earthfill dam completed by U.S. Army Corps of Engineers during summer of 1937 for flood control and storage of water for power. Usable capacity for storage of water for power, 1,582,700,000 ft³ between elevations 500.0 ft and 592.0 ft, sill of taintor gate; for flood control, 1,229,000,000 ft³, between elevations 592.0 ft and 617.5 ft, crest of spillway; total usable capacity, 2,812,300,000 ft³.

Capacity table (elevation, in feet,
and contents, in millions of cubic feet)

500.0	0	560.0	658.8
510.0	34.8	570.0	891.9
520.0	92.6	580.0	1,168.5
530.0	180.8	590.0	1,505.0
540.0	302.7	600.0	1,913.4
550.0	461.7		

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 613.45 ft, May 4, 1940; minimum observed, 501.30 ft, Oct. 16, 1938, July 3, 12, 13, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 598.53 ft, Nov.21; minimum elevation, 541.02 ft, Mar. 14.

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
INSTANTANEOUS OBSERVATION AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	589.80	587.54	594.09	585.99	570.09	552.26	576.15	589.76	589.48	590.24	590.94	588.95
2	589.90	588.32	593.47	584.69	570.28	550.87	577.05	593.32	590.77	590.35	590.93	590.01
3	589.65	588.85	593.18	585.04	570.39	549.43	577.27	594.35	590.74	590.44	590.73	590.30
4	589.36	587.32	592.68	584.40	570.56	549.69	578.23	593.81	590.33	590.52	590.52	590.45
5	589.11	587.55	592.22	583.58	570.76	550.03	581.13	593.12	590.21	590.60	592.29	590.15
6	588.90	590.45	591.78	582.73	570.77	548.67	583.71	597.41	590.31	590.47	591.57	589.93
7	588.70	590.63	591.42	582.52	570.79	547.24	585.48	597.61	590.04	590.15	591.26	589.84
8	588.77	590.52	591.03	582.76	570.67	545.67	585.79	595.70	589.65	590.20	590.52	589.93
9	588.85	589.81	590.58	582.03	570.06	544.15	585.44	594.85	589.08	590.05	590.48	590.02
10	588.66	589.74	590.57	581.40	569.19	542.65	584.92	592.77	590.14	590.47	590.41	590.12
11	588.64	590.18	590.17	580.74	568.85	542.98	584.20	592.67	593.18	590.81	589.75	590.21
12	588.83	590.57	589.51	580.03	568.48	543.31	583.39	592.94	592.65	590.97	589.90	590.30
13	588.32	591.15	589.23	579.36	567.16	541.88	583.23	592.57	592.00	590.87	590.19	590.38
14	587.98	591.90	588.95	579.33	565.87	541.13	582.96	592.15	591.31	590.18	590.50	590.60
15	588.23	592.46	588.72	579.55	564.48	543.45	583.75	591.68	590.51	590.27	590.68	592.38
16	588.56	592.89	588.29	578.88	563.12	545.56	584.82	591.13	590.28	590.34	590.02	592.83
17	588.13	593.88	588.47	578.20	561.74	546.52	586.10	590.60	589.76	590.37	589.47	593.30
18	587.67	594.77	588.40	577.51	561.20	547.30	588.46	589.88	589.91	590.30	588.78	593.08
19	587.12	595.22	588.02	576.83	560.69	547.89	589.24	589.17	589.51	590.25	588.85	592.56
20	586.55	596.06	587.73	576.11	560.23	548.42	589.37	589.59	589.07	589.96	589.03	594.89
21	586.11	598.53	587.68	575.62	560.02	548.07	589.35	589.94	589.03	589.71	589.18	594.68
22	586.36	598.23	587.42	574.82	560.40	548.29	589.88	590.10	588.22	589.78	589.40	593.60
23	586.80	597.65	587.11	574.07	559.56	548.28	590.01	590.60	589.46	589.80	589.66	592.76
24	587.02	596.92	587.17	573.93	558.21	548.42	589.67	590.43	589.67	589.42	589.88	592.10
25	587.59	596.14	587.43	573.18	557.08	549.09	589.23	590.03	589.86	589.57	589.99	591.45
26	587.77	595.28	587.06	572.52	556.23	550.78	588.88	589.54	589.83	589.65	590.07	591.05
27	587.51	594.74	586.98	571.88	554.68	553.17	588.60	590.15	589.98	589.83	590.13	590.53
28	587.23	595.17	586.78	571.77	553.16	560.10	588.26	590.64	589.90	590.38	590.03	589.95
29	587.49	594.90	586.38	571.66	---	571.54	588.74	590.70	590.03	590.59	589.93	589.55
30	587.68	594.53	585.85	570.90	---	573.81	589.38	590.27	590.15	590.72	589.53	589.75
31	587.55	---	585.94	570.11	---	575.09	---	589.84	---	590.86	589.13	---
MEAN	588.09	592.73	589.17	578.13	564.45	550.19	585.42	591.85	590.17	590.26	590.12	591.19
MAX	589.90	598.53	594.09	585.99	570.79	575.09	590.01	597.61	593.18	590.97	592.29	594.89
MIN	586.11	587.32	585.85	570.11	553.16	541.13	576.15	589.17	588.22	589.42	588.78	588.95
(†)	1418.2	1681.4	1361.3	894.8	521.0	1026.2	1482.9	1499.2	1510.8	1538.3	1474.2	1496.0
(‡)	-26.8	+101.5	-119.5	-174.2	-154.5	+188.6	+176.2	+6.09	+4.48	+10.3	-23.9	+8.41

CAL YR 1988 MEAN 583.27 MAX 598.53 MIN 549.30 (‡) -2.26
WTR YR 1989 MEAN 583.57 MAX 598.53 MIN 541.13 (‡) +1.19

† Contents, in millions of cubic feet, at end of month.

‡ Change in contents, equivalent in cubic feet per second.

ST. LAWRENCE RIVER BASIN

97

04289000 LITTLE RIVER NEAR WATERBURY, VT.

LOCATION.--Lat 44°22'12", long 72°46'11", Washington County, Hydrologic Unit 02010003, on right bank 1 mi downstream from Waterbury Reservoir, 1.7 mi upstream from mouth, and 2.5 mi north of Waterbury.

DRAINAGE AREA.--111 mi².

PERIOD OF RECORD.--July to October 1910 (gage heights only), October 1935 to current year. October, November 1935 monthly discharge only, published in WSP 1307. Prior to October 1962, published as Waterbury River near Waterbury.

REVISED RECORDS.--WSP 824: 1936.

GAGE.--Water-stage recorder. Concrete control since Dec. 8, 1937. Datum of gage is 428.00 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). July 7 to Oct. 31, 1910, nonrecording gage at site 2 mi upstream at different datum.

REMARKS.--Records good. Flow completely regulated by Waterbury Reservoir (station 04288500). Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--54 years, 240 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,520 ft³/s, Mar. 18, 1936, gage height, 19.38 ft; minimum daily, 0.6 ft³/s several times during summers of 1938-39, 1941, and 1944. Maximum discharge since construction of Waterbury Reservoir in 1937, 4,080 ft³/s, Dec. 9, 1937, gage height, 14.88 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,070 ft³/s, May 6, gage height, 10.35 ft³/s; minimum daily, 2.0 ft³/s, July 26.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	124	568	70	143	243	19	374	302	15	14	193
2	21	293	367	279	75	296	19	534	437	15	63	15
3	157	518	335	218	60	328	310	1090	566	14	132	14
4	160	401	395	347	22	12	304	1310	447	14	279	14
5	155	379	337	364	13	11	397	948	258	14	514	186
6	133	570	336	359	58	311	569	990	276	102	557	142
7	132	484	311	139	57	332	566	1440	370	194	251	93
8	20	347	312	15	94	454	571	1660	364	15	387	4 3
9	20	566	308	350	215	453	513	1350	406	102	82	2.4
10	129	272	101	300	288	403	566	913	481	138	80	2.3
11	134	6.1	243	301	143	13	565	674	747	17	334	2.3
12	19	5.2	341	301	149	11	561	746	791	47	15	2.2
13	291	6.1	193	300	372	259	343	723	600	110	16	2.1
14	209	8.3	220	80	390	176	378	599	562	343	15	2.9
15	20	6.9	208	14	387	97	20	567	566	15	15	7.7
16	20	6.2	258	301	383	15	20	566	569	15	373	3.2
17	287	9.3	15	297	384	14	20	560	566	22	292	4.2
18	291	8.2	105	295	190	15	22	557	216	69	334	239
19	313	7.3	211	298	161	13	289	444	374	55	15	345
20	299	15	194	318	154	14	384	17	342	151	15	413
21	244	208	219	208	129	169	384	17	149	130	69	552
22	20	589	230	314	83	55	111	132	103	15	14	730
23	20	590	217	297	303	96	202	17	15	15	14	693
24	154	585	83	110	358	69	386	267	15	188	14	588
25	65	581	18	286	309	14	385	379	15	9.3	14	482
26	87	580	225	253	258	17	378	403	87	2.0	14	339
27	222	580	128	254	345	22	379	17	15	7.2	14	354
28	220	581	216	100	359	38	378	16	111	14	85	370
29	21	580	309	100	---	48	16	129	15	13	80	272
30	20	465	307	283	---	23	16	317	15	13	225	15
31	132	---	68	286	---	20	---	311	---	13	196	---
TOTAL	4036	9371.6	7378	7437	5882	4041	9071	18067	9780	1886.5	4522	6082.6
MEAN	130	312	238	240	210	130	302	583	326	60.9	146	203
MAX	313	590	568	364	390	454	571	1660	791	343	557	730
MIN	19	5.2	15	14	13	11	16	16	15	2.0	14	2.1

CAL YR 1988 TOTAL 73619.5 MEAN 201 MAX 637 MIN 2.7
WTR YR 1989 TOTAL 87554.7 MEAN 240 MAX 1660 MIN 2.0

ST. LAWRENCE RIVER BASIN

04290500 WINOOSKI RIVER NEAR ESSEX JUNCTION, VT.

LOCATION.--Lat 44°28'44", long 73°08'21", Chittenden County, Hydrologic Unit 02010003, on right bank 0.5 mi downstream from Muddy Brook and 2 mi southwest of Essex Junction.

DRAINAGE AREA.--1,044 mi².

PERIOD OF RECORD.--Discharge: October 1928 to current year. Water-quality records: Water years 1953, 1976-79.

REVISED RECORDS.--WSP 714: 1930(M). WSP 894: Drainage area. WSP 1307: 1929(M).

GAGE.--Water-stage recorder. Elevation of gage is 185 ft above National Geodetic Vertical Datum of 1929, from topographic map; prior to Oct. 1, 1964, datum was 1.00 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by powerplants upstream, by Peacham Pond and Mollys Falls Reservoir, combined usable capacity, 492,000,000 ft³ by Waterbury Reservoir (station 04288500) since 1937, and by East Barre and Wrightsville Detention Reservoirs (Reservoirs in Winoski River basin) since 1935. See table with station 04286000 for monthend contents in Peacham Pond and Mollys Falls Reservoir. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--61 years, 1,707 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,300 ft³/s, Mar. 19, 1936, gage height, 24.54 ft, present datum, from rating curve extended above 27,000 ft³/s, on basis of computations of flow over dam at gage heights 19.72, 24.54, and 51.4 ft and slope-area measurement at gage height 51.4 ft, all at present datum; minimum daily, 24 ft/s Sept. 7, 1968.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1830, 113,000 ft³/s, Nov. 4, 1927, gage height, 51.4 ft, present datum, from floodmarks, from rating curve extended above 27,000 ft³/s by method explained above.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 12,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 29	1415	14,600	10.45	Aug. 6	0115	19,400	12.96
May 7	0130	*20,300	*13.43				

Minimum daily discharge, 243 ft³/s, Oct. 2.

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	271	658	2160	660	821	763	3190	1560	1110	498	439	600
2	243	1390	1820	716	1230	742	2660	6060	1810	492	284	1410
3	288	3020	1580	852	691	717	3300	8620	3680	456	397	1070
4	420	2090	1500	e700	e500	582	3660	6830	2580	445	366	656
5	363	1760	1320	e750	379	524	8340	4930	1840	420	9120	564
6	374	5800	1060	e800	e450	e500	9660	11300	1650	474	10600	912
7	392	4240	1030	e800	e450	645	10800	14300	2660	462	3660	398
8	299	2470	1180	709	415	e700	7520	7960	2070	476	2230	519
9	259	2210	1000	950	e425	e700	5030	5750	1850	368	1580	445
10	339	1980	e800	1140	e550	666	4080	4560	3500	873	660	267
11	366	1270	e600	929	667	610	3360	4100	6500	1890	859	323
12	462	1040	e600	e900	575	360	2760	6170	4100	948	1030	417
13	477	901	690	855	719	392	2370	5510	2670	867	2540	271
14	587	1620	876	e700	645	639	2250	3870	2260	575	4300	369
15	439	1830	e800	511	873	1280	2140	3110	1990	619	2270	1260
16	423	1410	e700	660	890	3230	2340	2800	2190	516	1640	1460
17	482	1350	e550	693	e750	1980	3090	2500	2930	399	1610	1000
18	599	1900	e500	834	853	1200	3840	2240	2300	428	1170	1260
19	613	1590	e500	864	646	1770	3900	2080	1750	374	770	1170
20	669	1230	e600	673	508	1150	3030	1520	1790	308	694	3720
21	528	6730	1010	e650	e500	991	2580	1170	1500	425	927	5910
22	534	5150	e900	665	e1000	899	2190	1270	1160	401	605	3050
23	607	3170	e800	990	1440	754	1900	1160	952	402	1110	2570
24	830	2460	688	658	1270	914	1810	1210	823	298	1120	2530
25	1120	2100	681	e600	949	1010	1790	1340	886	391	526	1920
26	845	1790	652	636	950	1780	1650	1390	763	264	428	1230
27	747	1770	e650	669	702	2670	1670	1350	798	261	560	1390
28	658	2590	643	622	e750	5790	1610	998	627	338	528	1050
29	751	3580	1130	490	---	12000	1460	960	558	309	570	1020
30	485	2560	1170	553	---	6140	1110	966	625	264	614	894
31	462	---	861	724	---	3520	---	1090	---	267	632	---
TOTAL	15932	71659	29051	22953	20598	55618	105090	118674	59922	15508	53839	39655
MEAN	514	2389	937	740	736	1794	3503	3828	1997	500	1737	1322
MAX	1120	6730	2160	1140	1440	12000	10800	14300	6500	1890	10600	5910
MIN	243	658	500	490	379	360	1110	960	558	261	284	267

CAL YR 1988 TOTAL 477146 MEAN 1304 MAX 14600 MIN 193
WTR YR 1989 TOTAL 608499 MEAN 1667 MAX 14300 MIN 243

e Estimated

ST. LAWRENCE RIVER BASIN

99

04292000 LAMOILLE RIVER AT JOHNSON, VT.

LOCATION.--Lat 44°37'22", long 72°40'50", Lamoille County, Hydrologic Unit 02010003, on right bank above falls, 0.7 mi upstream from bridge in Johnson and 0.8 mi upstream from Gihon River.

DRAINAGE AREA.--310 mi².

PERIOD OF RECORD.--Discharge: July to December 1910, June 1911 to December 1913 (monthly discharge only, January to March 1912, February 1913), September 1928 to current year.

Water-quality records: Water year 1953.

REVISED RECORDS.--WSP 894: Drainage area. WSP 1114: 1933, 1934(M). WSP 1237: 1912(M), 1930, 1932(M).

GAGE.--Water-stage recorder. Elevation of gage is 495 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Dec. 31, 1913, nonrecording gage at bridge 0.7 mi downstream at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Some regulation by powerplant upstream. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--63 years (water years 1912-13, 1929-89), 532 ft³/s, 23.30 in./yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,400 ft³/s, July 1, 1973, gage height, 17.33 ft, from rating curve extended above 8,500 ft³/s on basis of computation of flow over dam at gage height 16.48 ft; minimum, 11 ft³/s, Sept. 2, 1935; minimum daily, 16 ft³/s, Oct. 26, 1947.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 29	0900	*8,590	*13.44	May 6	2000	7,600	12.63

Minimum discharge, 83 ft³/s, July 25, 26, 27; 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	88	166	644	e164	e260	e115	1250	603	302	118	138	103
2	87	1210	471	e157	e250	e110	983	2620	623	169	112	401
3	106	1340	280	e140	e208	e110	1140	3150	1180	108	110	229
4	118	666	e305	e128	e175	e118	1450	2230	731	112	116	204
5	113	585	e275	e127	e165	e129	3090	1440	509	169	783	143
6	107	1260	e220	e127	e164	e98	4510	4650	537	152	952	114
7	116	832	e230	e135	e161	e94	4650	3970	713	126	565	127
8	89	566	e210	e162	e155	e99	2820	1880	590	122	339	118
9	89	580	e195	e150	e137	e109	1830	1330	452	120	184	107
10	89	530	e175	e145	e129	e118	1400	1080	722	184	201	111
11	121	460	e165	e147	e129	e113	991	1190	2130	396	125	186
12	199	413	e150	e147	e129	e111	910	1600	1210	277	102	120
13	159	331	e150	e149	e148	e140	891	1210	818	158	183	84
14	148	466	e162	e160	e162	e250	961	888	598	151	387	110
15	146	620	e182	e162	e145	e350	1030	736	461	149	351	1080
16	149	517	e160	e163	e108	e720	1440	638	634	147	299	588
17	114	600	e148	e175	e102	e595	1560	504	728	197	185	458
18	117	848	e145	e182	e103	e450	2100	318	611	103	195	305
19	144	615	e150	e175	e109	e370	1750	456	531	88	181	309
20	122	629	e160	e155	e120	e265	1330	446	434	87	142	1580
21	117	2360	e220	e132	e148	e248	1170	395	316	85	157	1320
22	128	1410	e218	e118	e135	e260	1050	393	312	85	168	715
23	247	810	e190	e119	e114	e250	845	422	268	85	147	560
24	333	679	e210	e133	e112	e235	675	363	286	85	138	571
25	360	450	e210	e133	e109	e230	622	417	248	85	129	465
26	309	398	e187	e133	e108	e430	589	405	184	84	116	356
27	346	459	e208	e135	e110	e800	587	512	257	89	113	258
28	247	783	e190	e140	e127	2140	564	531	250	187	93	336
29	113	1080	e182	e170	---	6810	509	398	177	199	97	275
30	127	770	e182	e205	---	3310	539	376	157	195	103	228
31	110	---	e176	e230	---	1610	---	321	---	158	94	---
TOTAL	4858	22433	6750	4698	4022	20787	43236	35472	16969	4470	7005	11561
MEAN	157	748	218	152	144	671	1441	1144	566	144	226	385
MAX	360	2360	644	230	260	6810	4650	4650	2130	396	952	1580
MIN	87	166	145	118	102	94	509	318	157	84	93	84
CFSM	.51	2.41	.70	.49	.46	2.16	4.65	3.69	1.82	.47	.73	1.24
IN.	.58	2.69	.81	.56	.48	2.49	5.19	4.26	2.04	.54	.84	1.39

CAL YR 1988 TOTAL 136485 MEAN 373 MAX 3540 MIN 43 CFSM 1.20 IN. 16.38
WTR YR 1989 TOTAL 182261 MEAN 499 MAX 6810 MIN 84 CFSM 1.61 IN. 21.87

e Estimated

ST. LAWRENCE RIVER BASIN

04292500 LAMOILLE RIVER AT EAST GEORGIA, VT.

LOCATION.--Lat 44°40'45", long 73°04'23", Franklin County, Hydrologic Unit 02010005, on right bank at East Georgia, 0.5 mi upstream from railroad bridge, and 1 mi downstream from Beaver Meadow Brook.

DRAINAGE AREA.--686 mi².

PERIOD OF RECORD.--Discharge: August 1929 to current year. Prior to October 1937, published as "near Milton".
Water-quality records: Water years 1955, 1967-74.

REVISED RECORDS.--WSP 894: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 285 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Dec. 1, 1937, at site 3.5 mi downstream at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Low flow regulated by powerplants upstream. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--60 years, 1,235 ft³/s, 24.45 in./yr, adjusted to present drainage area.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,700 ft³/s, Apr. 18, 1982, gage height, 12.38 ft, from rating curve extended above 21,700 ft³/s on basis of computation of flow over dam at gage height 11.76 ft; maximum gage height, 21.64 ft Mar. 6, 1979 (ice jam); minimum daily discharge, 74 ft³/s, Sept. 26, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 10,400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 29	0845	(ice jam)	*a15.86	May 7	1230	10,500	9.09
Mar. 29	2200	*16,400	10.66				

a from peak-stage indicator

Minimum daily discharge, 151 ft³/s, July 27.

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	215	445	1570	e450	e700	e350	3480	1500	742	307	279	229
2	227	2070	1320	e450	e700	e300	2440	3250	1540	279	255	855
3	237	3920	1000	e400	e600	e300	2720	6750	3820	302	242	921
4	312	2040	897	e350	e500	e300	3270	6000	2090	253	266	521
5	288	1890	e750	e350	e450	e350	5160	3730	1420	242	1070	404
6	248	4410	e600	e350	e450	e300	7770	4780	1130	276	1940	310
7	319	3670	e650	e350	e450	e250	9470	9420	1330	262	1150	269
8	264	2170	e600	e400	e450	e250	6970	5190	1180	235	759	264
9	237	1720	e550	e450	e400	e275	4080	3060	952	227	496	246
10	292	1540	e500	e400	e350	e300	3140	2340	1240	255	363	229
11	279	1270	e450	e400	e350	e325	2310	2200	5090	624	333	224
12	486	1070	e400	e400	e350	e300	1940	2980	4050	739	276	278
13	525	912	e400	e400	e350	e300	1810	2900	2020	492	297	227
14	382	1200	e450	e400	e400	e400	1850	2140	1480	323	719	229
15	450	1300	e500	e450	e450	e600	2060	1720	1110	280	687	2190
16	517	1210	e450	e450	e400	e1250	2530	1460	1100	265	544	2110
17	483	1270	e400	e450	e325	e2000	2930	1260	1480	250	437	1050
18	400	1930	e400	e500	e275	e2000	4300	1030	1430	290	338	887
19	333	1440	e400	e500	e275	e1500	4160	850	1170	216	321	630
20	384	1260	e500	e450	e300	e1000	3070	894	975	190	315	2890
21	349	5180	e600	e375	e350	e800	2620	811	819	180	641	4440
22	383	4130	e600	e300	e400	e700	2330	779	652	181	727	2000
23	602	2240	e500	e300	e350	e700	1940	996	614	174	551	1330
24	831	1660	e550	e350	e300	e800	1590	888	524	174	468	1460
25	1030	1300	e600	e350	e300	e1000	1400	1020	500	163	383	1160
26	855	1020	e550	e350	e300	e1500	1330	924	435	167	321	915
27	687	1080	e500	e350	e300	e3000	1320	1180	376	151	278	741
28	664	2030	e550	e350	e300	e7500	1350	1310	480	301	257	723
29	598	2980	e500	e400	---	e13500	1220	1040	411	816	228	671
30	436	2030	e500	e500	---	11600	1200	816	345	436	222	612
31	372	---	e500	e600	---	4400	---	763	---	295	227	---
TOTAL	13685	60387	18737	12575	11125	58150	91760	73981	40505	9345	15390	29015
MEAN	441	2013	604	406	397	1876	3059	2386	1350	301	496	967
MAX	1030	5180	1570	600	700	13500	9470	9420	5090	816	1940	4440
MIN	215	445	400	300	275	250	1200	763	345	151	222	224
CFSM	.64	2.93	.88	.59	.58	2.73	4.46	3.48	1.97	.44	.72	1.41
IN.	.74	3.27	1.02	.68	.60	3.15	4.98	4.01	2.20	.51	.83	1.57

CAL YR 1988 TOTAL 339722 MEAN 928 MAX 8000 MIN 156 CFSM 1.35 IN. 18.42
WTR YR 1989 TOTAL 434655 MEAN 1191 MAX 13500 MIN 151 CFSM 1.74 IN. 23.57

e Estimated

ST. LAWRENCE RIVER BASIN

101

04293000 MISSISQUOI RIVER NEAR NORTH TROY, VT.

LOCATION.--Lat 44°58'22", long 72°23'15", Orleans County, Hydrologic Unit 02010007, on right bank 200 ft upstream from Big Falls, 1.5 mi downstream from Jay Branch, and 2.2 mi upstream from North Troy.

DRAINAGE AREA.--131 mi².

PERIOD OF RECORD.--August 1931 to current year.

REVISED RECORDS.--WSP 924: 1940. WSP 1114: 1933(M), 1936-39.

GAGE.--Water-stage recorder. Elevation of gage is 580 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Occasional regulation at low flow caused by small powerplant upstream; greater regulation prior to 1967. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--58 years, 269 ft³/s, 27.88 in./yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,290 ft³/s, Apr. 18, 1982, gage height, 13.21 ft, from rating curve extended above 5,500 ft³/s on basis of computation of flow over dam at gage height 11.70 ft; minimum, 9.4 ft³/s, Aug. 28, 1949; minimum daily, 11 ft³/s, Aug. 28, 1949, Aug. 30, 1953.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,300 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 29	1230	*6,650	*11.73	No other peak greater than base discharge			
Minimum discharge, 25 ft ³ /s, July 26, from peak-stage indicator; minimum daily, 27 ft ³ /s, July 25-26.							

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	60	105	293	e90	225	74	664	557	e250	53	e45	87
2	56	1150	246	e86	305	e67	526	1570	e400	63	44	469
3	63	761	e210	e82	203	e63	562	1990	e430	e57	73	196
4	79	361	e170	e72	128	e62	812	1620	e250	e49	234	93
5	57	582	e155	e68	92	e66	1790	746	e200	e44	211	83
6	72	1550	e150	e66	e84	e73	2250	2160	e190	e46	160	62
7	84	720	e180	e65	e78	e70	2200	1620	e170	e52	99	55
8	79	473	e130	e80	e71	e64	1060	707	e140	e49	91	51
9	75	435	e105	e110	e66	e62	667	e500	e150	e60	59	39
10	75	351	e96	e98	e68	e60	559	e410	e350	e74	55	39
11	102	292	e84	e80	e70	e58	407	e720	e960	e92	38	38
12	243	231	e78	e70	e60	e57	332	e640	e580	e78	60	43
13	186	212	e89	e82	e63	e56	321	e600	e300	e62	69	38
14	141	423	e94	e74	e67	68	367	e500	e220	e50	72	53
15	169	477	e105	e78	e74	460	443	e430	e190	e44	67	882
16	198	307	e100	e82	e68	676	708	e340	e230	e40	61	323
17	167	476	e105	e81	e62	404	746	e260	e260	e37	53	200
18	119	506	e98	e82	e59	238	1410	e210	e300	e34	45	161
19	147	298	e96	e83	e58	190	903	e185	e330	e31	38	119
20	132	287	e105	e78	e63	159	688	e170	e200	e30	45	822
21	104	1620	e140	e82	e70	133	564	e200	e150	e29	99	614
22	97	598	e200	e80	306	115	543	e280	e130	e28	103	234
23	338	364	e145	e72	370	107	377	e320	e110	e28	88	186
24	370	289	e130	e75	225	109	314	e260	e98	e28	63	217
25	324	214	e120	e69	149	120	294	e230	e88	e27	64	157
26	227	207	e110	e66	105	247	329	e250	e82	e27	48	128
27	173	271	e100	e67	86	553	374	e350	71	e30	39	126
28	141	659	e105	e69	79	2010	356	e250	65	e72	38	119
29	154	626	e150	e74	---	5280	289	e180	67	e98	39	102
30	150	354	e130	e79	---	1770	373	e190	55	e64	51	85
31	127	---	e105	e100	---	743	---	e200	---	e50	75	---
TOTAL	4509	15199	4124	2440	3354	14214	21228	18645	7016	1526	2326	5821
MEAN	145	507	133	78.7	120	459	708	601	234	49.2	75.0	194
MAX	370	1620	293	110	370	5280	2250	2160	960	98	234	882
MIN	56	105	78	65	58	56	289	170	55	27	38	38
CFSM	1.11	3.87	1.02	.60	.91	3.50	5.40	4.59	1.79	.38	.57	1.48
IN.	1.28	4.32	1.17	.69	.95	4.04	6.03	5.29	1.99	.43	.66	1.65

CAL YR 1988 TOTAL 78300 MEAN 214 MAX 2400 MIN 28 CFSM 1.63 IN. 22.23
WTR YR 1989 TOTAL 100402 MEAN 275 MAX 5280 MIN 27 CFSM 2.10 IN. 28.51

e Estimated

ST. LAWRENCE RIVER BASIN

04293500 MISSISQUOI RIVER NEAR EAST BERKSHIRE, VT.

LOCATION.--Lat 44°57'30", long 72°41'55", Franklin County, Hydrologic Unit 02010007, on left bank 1.7 mi north of intersection of State Highways 105 and 118 in East Berkshire, 1.7 mi upstream from Trout River, 3 mi south of Richford, and 3.8 mi downstream from North Branch.

DRAINAGE AREA.--479 mi².

PERIOD OF RECORD.--Discharge: July 1911 to September 1923, October 1928 to current year. Monthly discharge only for some periods, published in WSP 1307. Prior to October 1977, published as "near Richford."
Water-quality records: Water years 1954, 1967-74.

REVISED RECORDS.--WSP 784: Drainage area. WSP 1237: 1913-14(M), 1922(M), 1923, 1929-30. WSP 1307: 1916(M). WSP 1437: 1912.

GAGE.--Water-stage recorder. Elevation of gage is 410 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Aug. 1, 1915, nonrecording gage at site 0.2 mi downstream at datum 4.35 ft lower. Aug. 1, 1915, to Sept. 30, 1923, water-stage recorder at present site and datum. Oct. 1, 1928, to Sept. 30, 1929, nonrecording gage at former site at datum 4.6 ft lower.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Diurnal fluctuation at low flow prior to 1934. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--73 years, 923 ft³/s, 26.17 in./yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,200 ft³/s, Apr. 18, 1982, gage height, 17.45 ft, from rating curve extended above 9,300 ft³/s on basis of computation of peak flow over dam at gage height 14.70 ft, slope-area measurement at gage height 12.90 ft, and study of discharge per foot of width at measuring section; maximum gage height, 18.92 ft Mar. 15, 1946 (ice jam); minimum discharge observed, 8 ft³/s, July 14, 1911.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1830, 45,000 ft³/s during flood of November 1927, gage height, 23.1 ft, from floodmarks, from rating curve extended above 9,300 ft³/s as explained above.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 7,600 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 30	0130	*13,000	*13.41	Apr. 7	0030	8,010	10.35

Minimum discharge, 57 ft³/s, July 25-28.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	222	431	1250	e380	e350	e280	4160	1290	610	161	125	186
2	205	3740	1080	e340	e430	e260	3120	2510	785	177	117	957
3	240	4300	960	e310	e640	e245	2900	4750	1420	176	179	703
4	255	2720	e780	e290	e520	e235	3360	4630	993	155	574	363
5	252	2530	e680	e270	e400	e230	5360	3070	704	142	789	238
6	256	3920	e567	e260	e340	e235	6690	3390	585	134	500	198
7	283	3300	e540	e240	e310	e260	7810	4860	610	145	431	165
8	264	2250	e660	e220	e280	e240	6380	3540	520	162	264	141
9	278	2030	e450	e280	e260	e230	3940	2040	419	144	206	133
10	299	1740	e380	e350	e240	e220	2760	1480	633	176	153	113
11	346	1390	e330	e360	e250	e215	2010	1410	2690	242	134	103
12	605	1140	e300	e310	e230	e210	1560	1960	2610	270	134	97
13	655	987	e280	e250	e225	e205	1390	1770	1210	208	186	92
14	516	1160	e330	e280	e230	e200	1460	1750	823	152	187	112
15	534	1250	e370	e270	e235	e300	1640	1390	614	124	168	688
16	552	1150	e420	e290	e260	e4100	2140	1100	640	115	159	1210
17	496	1340	e400	e300	e240	e3500	2450	892	762	101	141	525
18	428	1660	e380	e310	e220	e2500	3610	726	776	93	122	426
19	419	1190	e370	e305	e210	e2000	3420	612	891	88	108	336
20	401	1070	e345	e300	e195	e1900	2550	533	675	81	142	1010
21	360	3860	e380	e300	e210	e1750	2010	502	504	73	295	1850
22	500	3480	e460	e295	e250	e1600	1800	680	417	68	304	879
23	1080	1840	e720	e280	e300	e1500	1440	940	346	65	256	560
24	1280	1330	e560	e275	e660	e1450	1190	701	300	63	214	547
25	1140	1080	e490	e270	e560	e1500	1060	759	253	59	167	462
26	908	957	e450	e250	e440	e2250	1020	665	221	57	149	370
27	675	1010	e420	e245	e350	e3100	1050	946	207	57	130	373
28	580	1710	e360	e250	e300	e6200	1040	1000	193	127	109	353
29	612	2210	e370	e255	---	12000	941	732	213	304	100	309
30	562	1560	e450	e270	---	11500	990	561	181	234	114	266
31	491	---	e500	e290	---	5940	---	612	---	153	122	---
TOTAL	15694	58335	16032	8895	9135	66355	81251	51801	21805	4306	6779	13770
MEAN	506	1944	517	287	326	2140	2708	1671	727	139	219	459
MAX	1280	4300	1250	380	660	12000	7810	4860	2690	304	789	1850
MIN	205	431	280	220	195	200	941	502	181	57	100	92
CFSM	1.06	4.06	1.08	.60	.68	4.47	5.65	3.49	1.52	.29	.46	.96
IN.	1.22	4.53	1.25	.69	.71	5.15	6.31	4.02	1.69	.33	.53	1.07

CAL YR 1988 TOTAL 288843 MEAN 789 MAX 7800 MIN 70 CFSM 1.65 IN. 22.43
WTR YR 1989 TOTAL 354158 MEAN 970 MAX 12000 MIN 57 CFSM 2.03 IN. 27.50

e Estimated

ST. LAWRENCE RIVER BASIN

103

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 mi².

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 mi². Total volume below 92.5 ft elevation, reported by Lake Champlain Studies Center, 902.2 bil ft³. 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 Department of Environmental Conservation.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	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, (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI 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	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- LITY LAB (MG/L AS CACO3)	ALKA- LITY 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										
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, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITU- ENTS, 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- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)
OCT										
19...	--	96	91	91	--	0.00	--	0.19	0.020	--
20...	--	--	--	--	<0.100	<0.010	0.030	0.40	0.020	0.010
NOV										
16...	--	152	113	88	--	0.040	--	0.46	0.070	--
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...	ND	70	<10	--	--	--	1	<1	--	--
20...	<0.010	--	--	--	--	--	--	--	--	--
NOV										
16...	ND	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

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LOCATION.--Lat 44°56'15", long 72°12'21", Orleans County, Hydrologic Unit 01110000, on west side of bridge on U.S. Highway 5 at Newport.

GAGE.--Water-stage recorder. Datum of gage is 673.00 ft above National Geodetic Vertical Datum of 1929. Prior to July 21, 1934, nonrecording gage on highway bridge 0.1 mi southeast at same datum. July 21, 1934, to Aug. 22, 1961, nonrecording gage on east side, and Aug. 23, 1961, to Oct. 18, 1966, on west side of bridge at present site and datum.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 12.92 ft Apr. 20, 1933; minimum recorded, 6.48 ft, Nov. 2, 1968, affected by seiche; but may have been lower during period of use of nonrecording gage.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 10.89 ft, Apr. 9, affected by seiche; minimum gage height, 7.69 ft, Mar. 13, 14, affected by seiche.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.56	8.23	9.66	8.47	8.03	7.84	9.92	10.08	9.84	9.51	8.78	8.52
2	8.58	8.45	9.63	8.44	8.02	7.83	9.92	10.19	9.85	9.50	8.75	8.63
3	8.61	8.62	9.59	8.42	8.03	7.82	9.90	10.27	9.89	9.47	8.75	8.61
4	8.57	8.71	9.59	8.37	8.01	7.81	9.90	10.28	9.97	9.42	8.77	8.57
5	8.53	8.79	9.48	8.32	8.01	7.83	10.01	10.20	10.00	9.40	8.84	8.54
6	8.49	8.89	9.41	8.28	8.00	7.83	10.26	10.30	9.99	9.38	8.84	8.50
7	8.42	9.00	9.40	8.24	8.00	7.81	10.60	10.48	9.96	9.35	8.87	8.50
8	8.41	9.08	9.40	8.22	7.99	7.79	10.85	10.54	9.95	9.34	8.85	8.48
9	8.40	9.16	9.35	8.20	7.97	7.78	10.88	10.52	9.92	9.32	8.81	8.46
10	8.36	9.16	9.30	8.18	7.96	7.76	10.82	10.47	9.92	9.31	8.79	8.45
11	8.38	9.27	9.22	8.16	7.95	7.75	10.71	10.41	10.05	9.33	8.77	8.46
12	8.38	9.29	9.14	8.15	7.93	7.73	10.57	10.35	10.08	9.28	8.80	8.42
13	8.40	9.27	9.08	8.14	7.92	7.72	10.41	10.27	10.05	9.24	8.83	8.39
14	8.35	9.36	9.04	8.12	7.91	7.72	10.35	10.16	10.02	9.23	8.84	8.41
15	8.36	9.40	9.01	8.12	7.91	7.85	10.31	10.07	9.96	9.16	8.83	8.53
16	8.33	9.35	8.96	8.11	7.90	7.83	10.32	10.10	9.96	9.16	8.83	8.55
17	8.30	9.41	8.92	8.11	7.88	7.89	10.33	10.12	9.94	9.13	8.83	8.62
18	8.30	9.47	8.89	8.10	7.87	8.00	10.33	10.11	9.95	9.09	8.81	8.62
19	8.34	9.48	8.87	8.10	7.87	8.04	10.31	10.10	9.95	9.07	8.78	8.62
20	8.31	9.48	8.82	8.10	7.85	8.05	10.27	10.08	9.91	9.06	8.77	8.70
21	8.25	9.76	8.79	8.10	7.87	8.06	10.23	10.06	9.87	9.01	8.78	8.80
22	8.30	9.81	8.77	8.09	7.90	8.03	10.25	10.04	9.83	8.97	8.80	8.83
23	8.29	9.83	8.75	8.08	7.90	8.00	10.22	10.04	9.78	8.95	8.78	8.88
24	8.30	9.84	8.72	8.07	7.90	8.00	10.18	10.01	9.77	8.90	8.78	8.92
25	8.30	9.77	8.68	8.06	7.90	8.04	10.13	10.00	9.76	8.87	8.74	8.87
26	8.30	9.68	8.65	8.06	7.89	8.09	10.08	9.96	9.73	8.84	8.70	8.91
27	8.29	9.63	8.62	8.06	7.87	8.16	10.08	9.96	9.69	8.83	8.64	8.91
28	8.24	9.65	8.60	8.05	7.85	8.38	10.07	9.98	9.67	8.91	8.62	8.81
29	8.26	9.70	8.58	8.03	---	9.03	10.04	9.89	9.64	8.88	8.58	8.80
30	8.28	9.67	8.55	8.02	---	9.64	10.06	9.88	9.57	8.84	8.59	8.79
31	8.25	---	8.51	8.02	---	9.84	---	9.87	---	8.82	8.58	---
MEAN	8.37	9.31	9.03	8.16	7.93	8.06	10.28	10.15	9.88	9.15	8.77	8.64
MAX	8.61	9.84	9.66	8.47	8.03	9.84	10.88	10.54	10.08	9.51	8.87	8.92
MIN	8.24	8.23	8.51	8.02	7.85	7.72</						

ST. LAWRENCE RIVER BASIN

04296000 BLACK RIVER AT COVENTRY, VT.

LOCATION.--Lat 44°52'08", long 72°16'14", Orleans County, Hydrologic Unit 01110000, on right bank 15 ft downstream from highway bridge, 800 ft upstream from Stony Brook, and 0.4 mi northwest of Coventry.

DRAINAGE AREA.--122 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Elevation of gage is 725 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 by mill upstream; greater regulation prior to 1960.

AVERAGE DISCHARGE.--38 years, 197 ft³/s, 21.93 in./yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,740 ft³/s, Apr. 2, 1976, gage height, 7.91 ft; minimum, 11 ft³/s, Aug. 29 to Sept. 1, 1953; minimum daily, 11 ft³/s, Aug. 29 to Sept. 1, 1953.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 29	0700	*2,510	*a7.18	Apr. 7	0830	1,750	6.22

a ice jam

Minimum discharge, 23 ft³/s, July 27.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	64	221	e65	e60	e50	808	205	110	55	30	28
2	33	434	192	e65	e60	e45	651	566	235	55	28	104
3	42	545	172	e60	e55	e45	590	737	502	53	28	119
4	49	381	e155	e55	e50	e45	696	676	381	57	40	67
5	48	245	e140	e50	e50	e45	1030	595	262	53	73	45
6	45	245	e125	e50	e50	e45	1370	1010	192	49	147	37
7	46	242	e115	e50	e50	e40	1680	988	241	48	129	32
8	44	215	e110	e55	e50	e40	1300	839	198	48	73	30
9	43	206	e100	e60	e50	e40	951	681	152	43	53	28
10	47	181	e80	e60	e50	e40	767	454	240	44	44	27
11	62	155	e65	e55	e45	e40	588	400	467	66	38	26
12	106	128	e50	e55	e45	e40	440	464	404	82	40	26
13	98	117	e50	e60	e45	e40	372	417	247	69	49	26
14	79	199	e50	e60	e45	e45	364	375	174	54	71	36
15	72	269	e55	e60	e45	e100	381	340	144	47	66	360
16	67	198	e50	e60	e40	e250	502	261	180	43	50	318
17	60	230	e45	e60	e40	e200	540	220	250	39	45	197
18	57	292	e45	e60	e40	e150	638	186	204	36	43	114
19	65	214	e45	e60	e40	e125	616	162	160	34	37	84
20	64	193	e60	e60	e45	e100	552	142	126	33	35	393
21	56	941	e100	e55	e50	e90	467	127	107	31	44	507
22	57	606	e110	e55	e60	e75	387	124	94	31	70	322
23	120	426	e90	e55	e80	e65	310	131	84	29	63	193
24	146	273	e75	e55	e70	e65	258	121	76	27	49	167
25	124	196	e65	e50	e60	e80	227	132	69	26	41	138
26	107	175	e65	e50	e50	e100	221	138	63	25	36	101
27	87	175	e60	e50	e45	e200	219	238	60	28	33	83
28	74	270	e60	e50	e45	e600	212	219	58	37	31	76
29	74	388	e65	e55	---	e2000	191	149	71	43	29	69
30	74	291	e70	e55	---	1510	185	117	64	48	31	64
31	68	---	e70	e55	---	1050	---	108	---	37	28	---
TOTAL	2147	8494	2755	1745	1415	7360	17513	11322	5615	1370	1574	3817
MEAN	69.3	283	88.9	56.3	50.5	237	584	365	187	44.2	50.8	127
MAX	146	941	221	65	80	2000	1680	1010	502	82	147	507
MIN	33	64	45	50	40	40	185	108	58	25	28	26
CFSM	.57	2.32	.73	.46	.41	1.95	4.78	2.99	1.53	.36	.42	1.04
IN.	.65	2.59	.84	.53	.43	2.24	5.34	3.45	1.71	.42	.48	1.16

CAL YR 1988 TOTAL 51152 MEAN 140 MAX 1170 MIN 23 CFSM 1.15 IN. 15.60
WTR YR 1989 TOTAL 65127 MEAN 178 MAX 2000 MIN 25 CFSM 1.46 IN. 19.86

e Estimated

ST. LAWRENCE RIVER BASIN

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04296000 BLACK RIVER AT COVENTRY, VT.--Continued
(National stream quality accounting network station)

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1977 to September 1981.

WATER TEMPERATURES: November 1977 to September 1981.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE AIR (DEG C)	TEMPER- ATURE WATER (DEG C)	TUR- BID- ITY (NTU)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM FECAL 0.7 UM-MF (COLS./ 100 ML)
NOV 29...	1330	405	112	7.70	0.0	1.0	4.1	742	12.6	240
JAN 31...	1045	59	211	7.70	0.0	0.0	1.6	732	12.3	20
APR 04...	1145	615	123	7.90	10.5	1.0	6.6	742	13.4	48
MAY 23...	0655	134	218	8.50	20.5	16.0	0.90	743	10.6	60
JUL 25...	0815	29	261	8.20	30.5	23.5	1.0	749	8.3	56
SEP 27...	0845	86	169	7.90	4.5	9.0	1.5	754	11.0	60

DATE	STREP TOCOCCI FECAL KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CaCO ₃)	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 WH WAT TOT INC (MG/L AS CaCO ₃)	SULFATE DIS- SOLVED (MG/L AS SO ₄)	CHLO- RIDE, DIS- SOLVED (MG/L AS Cl)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO ₂)
NOV 29...	K3600	60	19	2.9	2.8	1.1	36	13	4.4	0.10	5.2
JAN 31...	K0	88	28	4.3	4.0	0.90	85	15	7.4	0.10	5.9
APR 04...	1700	53	17	2.6	3.6	1.9	38	11	6.3	0.10	4.6
MAY 23...	210	97	32	4.1	3.9	1.0	79	11	5.4	0.10	3.7
JUL 25...	46	120	36	6.2	4.7	1.0	97	14	7.5	0.10	4.3
SEP 27...	41	83	27	3.7	3.7	1.1	70	10	4.7	<0.10	5.9

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO ₂ +NO ₃ - DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH ₄)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM DIS- SOLVED (UG/L AS Al)	ARSENIC DIS- SOLVED (UG/L AS As)
NOV 29...	86	79	0.370	0.040	0.05	0.40	0.030	0.010	0.010	30	<1
JAN 31...	123	120	0.520	0.090	0.12	0.50	0.020	0.020	<0.010	--	--
APR 04...	75	77	0.510	0.210	0.27	0.70	0.050	0.030	0.020	40	<1
MAY 23...	121	111	0.240	0.020	0.03	0.30	0.020	0.010	0.020	20	1
JUL 25...	151	136	<0.100	0.010	0.01	0.30	0.020	<0.010	<0.010	--	--
SEP 27...	103	102	0.130	0.020	0.03	0.20	<0.010	<0.010	<0.010	20	<1

ST. LAWRENCE RIVER BASIN

04296000 BLACK RIVER AT COVENTRY, VT.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	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)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)
NOV 29...	11	<0.5	<1	<1	<3	1	90	<5	<4	22	<0.1
JAN 31...	--	--	--	--	--	--	--	--	--	--	--
APR 04...	12	<0.5	<1	<1	<3	3	120	<5	<4	47	<0.1
MAY 23...	13	<0.5	<1	<1	<3	5	140	1	<4	36	<0.1
JUL 25...	--	--	--	--	--	--	--	--	--	--	--
SEP 27...	11	<0.5	<1	<1	<3	3	250	1	<4	34	<0.1

DATE	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)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. %FINER THAN .062 MM
NOV 29...	10	6	<1	1.0	90	<6	6	20	22	63
JAN 31...	--	--	--	--	--	--	--	8	1.3	64
APR 04...	<10	<1	<1	2.0	88	<6	18	34	56	88
MAY 23...	<10	7	<1	<1.0	160	<6	15	6	2.2	87
JUL 25...	--	--	--	--	--	--	--	6	0.47	82
SEP 27...	<10	2	<1	<1.0	130	<6	10	4	0.93	71

E Estimated discharge.

K Results based on colony count outside the acceptable range (non-ideal colony count).

L Lab alkalinity value reported.

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LOCATION.--Lat 44°56'22", long 72°11'23", Orleans County, Hydrologic Unit 01110000, on right bank in Newport, just downstream from small right-bank tributary, and 1 mi upstream from mouth.

PERIOD OF RECORD.--Discharge: May 1909 to September 1919; May 1920 to August 1922, October 1922 to September 1924, November 1928 to May 1936, September 1938 to current year. Prior to November 1928, published as "at West Derby."
Water-quality records: Water years 1975-77.

GAGE.--Water-stage recorder and since Mar. 6, 1957, records of power generation. Datum of gage is 682.36 ft above National Geodetic Vertical Datum of 1929. May 25, 1909, to Sept. 20, 1915, nonrecording gage, and Sept. 21, 1915, to Sept. 30, 1924, Nov. 16, 1928, to May 4, 1936, water-stage recorder, at site 0.65 mi upstream at different datum.

AVERAGE DISCHARGE.--70 years (water years 1910-19, 1921, 1923-24, 1929-35, 1939-89), 257 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 1.250 ft³/s. Apr. 8; minimum daily, 34 ft³/s. Aug. 2.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	99	155	414	92	80	102	674	428	239	51	51	112
2	101	263	413	86	83	118	639	459	251	67	34	111
3	81	262	377	92	112	170	606	587	210	68	36	81
4	91	216	369	157	75	80	634	714	255	104	38	114
5	70	282	324	152	58	47	714	789	270	97	42	123
6	86	295	254	142	99	103	897	872	280	92	77	105
7	77	356	273	50	85	152	1160	928	291	82	183	106
8	65	353	240	92	80	93	1250	982	277	46	119	101
9	96	353	244	110	114	82	1200	914	295	52	193	109
10	67	339	239	89	118	65	1030	796	251	102	141	107
11	69	210	94	63	57	49	882	718	289	81	133	108
12	108	342	206	70	57	50	767	669	299	65	125	66
13	197	253	155	82	99	148	685	625	282	50	154	67
14	210	256	178	44	85	47	623	595	316	61	216	110
15	91	248	211	43	89	125	579	581	295	38	62	168
16	92	258	182	96	70	155	578	539	282	36	132	152
17	137	270	158	91	112	254	593	493	288	67	240	178
18	162	325	133	86	56	135	642	453	283	75	181	210
19	131	282	142	87	53	108	684	427	250	53	186	169
20	132	313	148	99	63	198	747	423	224	37	116	274
21	138	350	200	86	82	121	765	369	229	50	188	283
22	72	379	248	48	115	162	742	361	172	37	94	396
23	154	397	177	106	123	185	695	308	245	38	76	307
24	127	448	107	112	106	141	642	294	125	85	79	242
25	128	441	138	94	97	176	585	362	148	63	65	264
26	131	407	154	109	100	254	538	211	225	36	121	264
27	143	393	125	110	136	184	500	141	140	38	62	345
28	154	410	119	49	136	261	471	264	127	39	77	215
29	125	415	180	52	---	410	450	271	96	39	92	342
30	124	414	138	112	---	428	432	268	66	39	79	65
31	142	---	103	105	---	475	---	241	---	40	98	---
TOTAL	3600	9685	6443	2806	2540	5078	21404	16082	7000	1828	3490	5294
MEAN	116	323	208	90.5	90.7	164	713	519	233	59.0	113	176
MAX	210	448	414	157	136	475	1250	982	316	104	240	396
MIN	65	155	94	43	53	47	432	141	66	36	34	65
CFSM	.82	2.27	1.46	.64	.64	1.15	5.02	3.65	1.64	.42	.79	1.24
IN.	.94	2.54	1.69	.74	.67	1.33	5.61	4.21	1.83	.48	.91	1.39
CAL YR 1988	TOTAL 72706	MEAN 199	MAX 1040	MIN 24	CFSM 1.40	IN. 19.05						
WTR YR 1989	TOTAL 85250	MEAN 234	MAX 1250	MIN 34	CFSM 1.64	IN. 22.33						

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

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, and discharge measurements may have been made for purposes of establishing the stage-discharge relation, but these are not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

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	Date	Annual maximum	
						Gage height (feet)	Dis- charge (ft ³ /s)
Merrimack River basin							
†01075000	Pemigewasset River at Woodstock, N.H.	Lat 43°58'34", long 71°40'48", Grafton County, Hydrologic Unit 01070001, 0.2 mi east of Woodstock and 0.7 mi upstream from Eastman Brook.	193	1940-77, ‡ 1978-80, 1985-89	5-06-89	10.65	15,900
†01076000	Baker River near Rumney N.H.	Lat 43°47'46", long 71°50'42", Grafton County, Hydrologic Unit 01070001, 0.3 mi upstream from Halls Brook, and 1.8 mi southwest of Rumney	143	1929-77‡ 1978-81, 1985-89	4-06-89	6.07	3,300
†01081500	Merrimack River at Franklin Junction, N.H.	Lat 43°25'26", long 71°50'12", Merrimack County at Franklin Junction, N.H., Hydrologic Unit 01070002, 1 mi downstream from confluence of Pemigewasset and Winnepesaukee Rivers.	1,507	1903-78‡ 1983-89	4-06-89	13.07	16,200
†01082000	Contoocook River at Peterborough, N.H.	Lat 42°51'45", long 71°57'55", Hills- borough County, Hydrologic Unit 01070003, 1 mi south of Peter- borough, and 1.5 mi upstream from Nubanusit Brook.	68.1	1964-77‡ 1978-89	4-06-89	3.93	857
†01085000	Contoocook River near Henniker, N.H.	Lat 43°09'10", long 71°51'24", Merri- mack County, Hydrologic Unit 01070003, 0.6 mi downstream from Sand Brook and 2.5 mi southwest of Henniker.	368	1939-77‡ 1989	4-06-89	9.90	3,590
†01091500	Piscataquog River near Goffstown, N.H.	Lat. 43°00'58", long 71°33'03", Hills- borough county, Hydrologic Unit 01070002, 0.2 mi upstream from Harry Brook, 0.9 mi downstream from Glen Lake, and 2.5 mi east of Goffstown, N.H.	202	1939-78‡ 1983-89	4-06-89	7.08	2,070
†01094000	Souhegan River at Merrimack, N.H.	Lat 42°51'27", long 71°30'24", Hills- borough County, Hydrologic Unit 01070002, at head of Wildcat Falls, 1.5 mi upstream from mouth.	171	1909-76‡ 1979-89	4-06-89	5.83	1,740
Connecticut River basin							
†01145000	Mascoma River at West Canaan, N.H.	Lat 43°39'00", long 72°04'50", Grafton County, Hydrologic Unit 01070004, on right bank 45 ft downstream from Boston and Maine Railroad bridge, 0.9 mi east of West Canaan, 1.2 mi down- stream from Indian River, 3.5 mi west of Canaan and at mile 19.3	80.5	1939-78‡ 1985-89	4-06-89	5.41	1,290

† Also a miscellaneous site.

‡ Operated as a continuous-record gaging station.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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Special study and miscellaneous sites

Discharge measurements in the following table were made at special study and miscellaneous sites throughout New Hampshire.

Discharge measurements made at special study and miscellaneous sites during water year 1989

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Dis-charge (ft ³ /s)
Merrimack River Basin						
††01075000 Pemigewasset River	Merrimack River	Lat 43°58'29", long 71°40'51", Grafton County, Hydrologic Unit 01070001, 0.6 mi upstream from Eastman Brook, 0.34 mi southeast of Woodstock, N.H.	193	1940-77‡ 1978-88	7-08-89 7-31-89 7-31-89	121 79.8 88.9
††01082000 Contoocook River	do	Lat 42°51'45", long 71°57'55", Hillsborough County, Hydrologic Unit 01070003, 1 mi south of Peterborough, and 1.5 mi upstream from Nubanusit Brook.	68.1	1964-77‡ 1978-88	10-24-88 11-29-88 1-20-89 3-10-89 4-10-89 4-13-89 6-05-89 6-29-89 8-18-89 9-29-89	140 263 48.1 40.1 401 195 137 68.4 103 58.7
Soucook River	do	Lat 43°21'29", long 71°26'48", Merrimack County, Hydrologic Unit 01070002, downstream of bridge on Corner Road, 8,100 ft northeast of Pearl's Corner.	22.9	--	9-12-89	.85
Soucook River	do	Lat 43°21'10", long 71°27'02", Merrimack County, Hydrologic Unit 01070002, 75 ft upstream of old foot bridge at end of Wood Road, 500 ft east of Corner Road, 6,000 ft northeast of Pearl's Corner.	23.5	--	9-12-89	.87
Soucook River	do	Lat 43°20'56", long 71°27'25", Merrimack County, Hydrologic Unit 01070002, 200 ft downstream of bridge on Corner Road, 4,000 ft northeast of Pearl's Corner.	28.9	--	9-12-89	1.35
Gues Meadow Brook	Soucook River	Lat 43°21'51", long 71°27'53", Merrimack County, Hydrologic Unit 01070002, 100 ft upstream of bridge on Route 106, west side of highway near Loudon Speedway.	2.8	--	9-12-89	.21
Soucook River	Merrimack River	Lat 43°20'32", long 71°27'54", Merrimack County, Hydrologic Unit 01070002, 75 ft downstream of bridge on Clough Hill Road, 800 ft east of intersection with Route 106.	33.9	--	9-12-89	3.2
Soucook River	do	Lat 43°20'32", long 71°27'54", Merrimack County, Hydrologic Unit 01070002, downstream of bridge on Currier Road, 2,500 ft northeast of intersection with Currier Road.	54.1	--	9-12-89	6.9
Soucook River	do	Lat 43°16'36", long 71°28'07", Merrimack County, Hydrologic Unit 01070002, at northern end of sand and gravel pit off Indian Point Road.	57.2	--	9-12-89	8.6
Pine Island Brook	Soucook River	Lat 43°17'00", long 71°28'46", Merrimack County, Hydrologic Unit 01070002, downstream of culvert on Oak Hill Road, 1,700 ft south of intersection with School Street.	3.9	--	9-12-89	.44

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at special study and miscellaneous sites during water year 1989--continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Dis- charge (ft ³ /s)
Merrimack River Basin						
Pine Island Brook	Soucook River	Lat 43°16'32", long 71°28'26", Merri- mack County, Hydrologic Unit 01070002, 40 ft downstream of bridge on Loudon village Road, known as N.H. Snowmobile Trail No. 15, 200 ft northwest of confluence with Soucook River.	4.3	--	9-12-89	.50
Bee Hole Brook	do	Lat 43°15'55", long 71°26'25", Merri- mack County, Hydrologic Unit 01070002, under bridge on Rider Road, 1,500 ft northwest of inter- section with Chichester Road.	7.6	--	9-12-89	.50
Soucook River	Merrimack River	Lat 43°15'21", long 71°27'17", Merri- mack County, Hydrologic Unit 01070002, 50 ft upstream of bridge on Depot Road, 800 ft from inter- section with Route 106, 3,200 ft west of intersection with Chichester Road.	76	--	9-12-89	10.1
Soucook River	do	Lat 43°13'52", long 71°28'04", Merri- mack County, Hydrologic Unit 01070002, 100 ft upstream of northerly end of Concord Sand and Gravel Pit, east side of river, 1,800 ft from intersection with Route 106 and Routes 9, 4, 202.	79.3	--	9-12-89	13.2
Soucook River	do	Lat 43°12'48", long 71°28'50", Merri- mack County, Hydrologic Unit 01070002, 25 ft upstream from bridge on Pembroke Road, 800 ft east of intersection with Route 106, 6,000 ft west of intersection with Borough Road.	84.9	--	9-12-89	15.4
Soucook River	do	Lat 43°11'08", long 71°29'30", Merri- mack County, Hydrologic Unit 01070002, 1,200 ft upstream of bridge on Route 3.	91.1	--	9-12-89	17.1
Soucook River	do	Lat 43°10'41", long 71°30'04", Merri- mack County, Hydrologic Unit 01070002, 1,200 ft from most southerly powerline crossing at northwest corner of hay field.	92.2	--	9-12-89	16.8
Soucook River	do	Lat 43°09'06", long 71°29'38", Merri- mack County, Hydrologic Unit 01070002, 150 ft upstream side of old railroad bridge, 400 ft upstream of confluence with Merri- mack River.	94.4	--	9-12-89	18.1
Suncook River	do	Lat 43°20'25", long 71°15'46", Merri- mack County, Hydrologic Unit 01070002, 50 ft upstream from bridge.	71.0	--	9-13-89	4.4
Big River	Suncook River	Lat 43°19'52", long 71°13'16", Merri- mack County, Hydrologic Unit 01070002, at culvert on New Rochester Road, 150 ft southeast of intersection of New Road, Vail Road, and New Rochester Road.	17.8	--	9-13-89	0

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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Discharge measurements made at special study and miscellaneous sites during water year 1989--continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Dis- charge (ft ³ /s)
Merrimack River Basin						
Unnamed Brook	Big River	Lat 43°19'57", long 71°13'35", Merri- mack County, Hydrologic Unit 01070002, at culvert on New Road, 1,900 ft west of intersection of New Road and Vail Road and New Rochester Road.	1.1	--	9-13-89	0
Little River	do	Lat 43°18'22", long 71°11'53", Merri- mack County, Hydrologic Unit 01070002, at bridge on Route 126, 2,350 ft southwest of Leighton Corners.	4.0	--	9-13-89	.08
Little River	do	Lat 43°18'53", long 71°12'37", Merri- mack County, Hydrologic Unit 01070002, 50 ft upstream of bridge on Welch Road, 2,000 ft southwest of New Rochester Road.	5.6	--	9-13-89	.16
Little River	do	Lat 43°98'29", long 71°13'19", Merr- imack County, Hydrologic Unit 01070002, 250 ft upstream of bridge on Sam Clark Road, 1,500 ft southwest of New Rochester Road.	6.3	--	9-13-89	.33
Big River	do	Lat 43°19'53", long 71°14'22", Merri- mack County, Hydrologic Unit 01070002, 200 ft downstream of bridge on Colbath Road, 3,000 ft northeast of intersection of Route 126 and Colbath Road.	68.4	--	9-13-89	2.8
Suncook River	Merrimack River	Lat 43°16'43", long 71°20'43", Merri- mack County, Hydrologic Unit 01070002, 150 ft upstream of bridge on Webster's Mill Road, 4,800 ft southeast of intersection of Route 28 and Webster's Mill Road.	140	--	9-13-89	12.7
Sanborn Brook	Perry Brook	Lat 43°17'03", long 71°21'32", Merri- mack County, Hydrologic Unit 01070002, 20 ft downstream of bridge on Webster's Mill Road, 1,150 ft southeast of inter- section of Route 28 and Webster's Mill Road.	6.5	--	9-13-89	1.1
Sanborn Brook	do	Lat 43°16'38", long 71°21'57", Merri- mack County, Hydrologic Unit 01070002, 30 ft east of Route 28, 100 ft upstream of confluence with Perry Brook, 3,500 ft south of intersection of Route 28 and Webster's Mill Road.	6.8	--	9-13-89	.58
Perry Brook	Suncook River	Lat 43°16'34", long 71°21'56", Merri- mack County, Hydrologic Unit 01070002, 150 ft downstream of Route 28 bridge, 3,500 ft south of intersection of Route 28 adn Webster's Mill Road.	10.0	--	9-13-89	.69
Suncook River	Merrimack River	Lat 43°15'25", long 71°22'12", Merri- mack County, Hydrologic Unit 01070002, 500 ft downstream of bridge on Depot Road, 750 ft east of intersection of Route 28 and Depot Road.	154	--	9-13-89	15

Discharge measurements made at special study and miscellaneous sites during water year 1989--continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Dis-charge (ft ³ /s)
Merrimack River Basin						
Lockes Brook	Little Suncook River	Lat 43°13'25", long 71°20'25", Merrimack County, Hydrologic Unit 01070002, 50 ft downstream of Route 4 bridge, 2,150 ft west of Epsom.	3.6	--	9-13-89	.30
Little Suncook River	Suncook River	Lat 43°13'17", long 71°19'47", Merrimack County, Hydrologic Unit 01070002, at bridge on Center Hill Road, 800 ft southeast of Epsom, 150 ft south of Route 4.	35	--	9-13-89	2.49
Little Suncook River	do	Lat 43°13'23", long 71°20'27", Merrimack County, Hydrologic Unit 01070002, upstream of confluence with Lockes Brook, 2,200 ft from Epsom, 200 ft south of Route 4.	35	--	9-13-89	2.42
Little Suncook River	do	Lat 43°13'26", long 71°20'48", Merrimack County, Hydrologic Unit 01070002, upstream of bridge on Black Hall Road, adjacent to Epsom School, 300 ft south of Route 4.	39	--	9-13-89	2.86
Suncook River	do	Lat 43°12'09", long 71°22'59", Merrimack County, Hydrologic Unit 01070002, 300 ft upstream of bridge on New Rye Road, 1,400 ft east of Route 28.	208	--	9-13-89	22
Brickyard Brook	Merrimack River	Lat 43°05'23", long 71°28'06", Hillsborough County, Hydrologic Unit 01070002, 50 ft downstream of bridge at State Highway 3A, 0.38 mi northeast of Hooksett Tollgate on Interstate Highway 93, 0.5 mi southwest of Hooksett, N.H.	--	--	10-06-88 9-07-89	.15 .38
Merrimack River Tributary	do	Lat 43°03'27", long 71°28'05", Hillsborough County, Hydrologic Unit 01070002, upstream of culvert at State Highway 3A, 0.23 mi south of intersection with Cross Road, 1.4 mi southwest of Hooksett Tollgate on Interstate Highway 93, 2.1 mi south of Hooksett, N.H.	--	--	10-06-88 9-07-89	.01 .05
Peters Brook	do	Lat 43°03'54", long 71°26'47", Hillsborough County, Hydrologic Unit 01070002, downstream of culvert at U.S. Highway 3, 1.0 mi above mouth, 0.9 mi northwest of intersection with U.S. Highway 3, 2.3 mi southeast of Hooksett, N.H.	--	--	10-06-88 9-07-89	.84 .86
Peters Brook	do	Lat 43°03'52", long 71°27'38", Hillsborough County, Hydrologic Unit 01070002, at old bridge site 200 ft upstream from concrete plant, 700 ft above mouth, 0.9 mi downstream of intersection with U.S. Highway Route 3, 2.0 mi south of Hooksett, N.H.	--	--	10-06-88 9-07-89	2.15 1.33
Dalton Brook	do	Lat 43°03'03", long 71°26'48", Hillsborough County, Hydrologic Unit 01070002, at powerline crossing 0.5 mi above mouth, 0.28 mi north of Martin Cemetery, 0.42 mi west of U.S. Highway 3, 3.3 mi southeast of Hooksett, N.H.	--	--	10-06-88 9-07-89	.04 .44

Discharge measurements made at special study and miscellaneous sites during water year 1989--continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Dis-charge (ft ³ /s)
Merrimack River Basin						
Messer Brook	Merrimack River	Lat 43°02'41", long 71°27'02", Hillsborough County, Hydrologic Unit 01070002, 100 ft downstream from bridge at Martins Ferry Road, 100 ft east of intersection with River Road, 0.7 mi west of State Highway 3/28, 3.6 mi southeast of Hooksett, N.H.	--	--	10-06-88	65
Black Brook	do	Lat 43°00'37", long 71°28'44", Hillsborough County, Hydrologic Unit 01070002, 40 ft downstream of bridge at Front Street, 250 ft south of intersection with Dumbarton Road, 700 ft above mouth, 1 mi northwest of Manchester, N.H.	--	--	10-06-88	1.87
Piscataquog River	do	Lat 43°06'43", long 71°43'25", Hillsborough County, Hydrologic Unit 01070002, 200 ft downstream from bridge at Barnard Hill Road, 0.5 mi southwest of intersection of State Highway 77, 1.3 mi east of Chase Village, 1.2 mi northeast of Weare, N.H.	--	--	9-07-89	5.43
Piscataquog River	do	10 ft downstream from bridge at State Highway 114, 1.2 mi east of Weare Reservoir, 0.9 mi northwest of intersection of State Highway 77, 1.4 mi northwest of Weare, N.H.	--	--	9-07-89	3.08
Piscataquog River	do	Lat 43°04'58", long 71°38'56", Hillsborough County, Hydrologic Unit 01070002, 500 ft downstream from bridge at River Road, 0.7 mi below Everett Lake, 3.8 mi southeast of Weare, N.H.	--	--	9-06-89	7.38
Piscataquog River	do	Lat 43°03'37", long 71°39'07", Hillsborough County, Hydrologic Unit 01070002, 0.3 mi upstream of bridge at River Road, 2.3 mi below Everett Lake, 4.6 mi southeast of Weare, N.H.	--	--	9-06-89	7.71
Piscataquog River	do	Lat 43°01'58", long 71°38'48", Hillsborough County, Hydrologic Unit 01070002, upstream of bridge at old State Highway 114, 100 ft downstream of dam at Riverdale, 250 ft west of intersection with River Road, 6.1 mi southeast of Weare, N.H.	--	--	3-24-89 9-06-89	52.8 8.51
Piscataquog River	do	Lat 43°01'26", long 71°37'43", Hillsborough County, Hydrologic Unit 01070002, 0.25 mi downstream of bridge at Puker Road, 250 ft downstream of confluence with Gorham Brook, 1.5 mi west of Goffstown, N.H.	--	--	3-24-89 10-06-88	62.2 8.93
Gorham Brook	Piscataquog River	Lat 43°00'28", long 71°37'47", Hillsborough County, Hydrologic Unit 01070002, 10 ft below culvert at State Highway 114 just above confluence with Piscataquog River, 500 ft east of intersection with Parker Rd, 1.5 mi west of Goffstown, N.H.	--	--	3-24-89 9-06-89	5.69 .44

Discharge measurements made at special study and miscellaneous sites during water year 1989--continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Dis-charge (ft ³ /s)
Merrimack River Basin						
Piscataquog River	Merrimack River	Lat 43°01'21", long 71°37'13", Hillsborough County, Hydrologic Unit 01070002, 700 ft west of the Goffstown Well Field off State Highway 114, 500 ft downstream from the confluence of the South Branch Piscataquog River, 1 mi west of Goffstown, N.H.	--	--	10-07-88 3-24-89 9-06-89	21.7 137 24.2
01091000 South Branch Piscataquog River	Piscataquog River	Lat 43°00'49", long 71°38'31", Hillsborough County, Hydrologic Unit 01070002, on right bank 20 ft upstream from Highway bridge, 1.4 mi upstream from mouth, and 2.2 mi west of Goffstown, N.H.	104	1940-1978†	10-06-88 3-24-89 4-26-89 9-06-89 9-14-89	12.8 66 166 9.9 9.9
South Branch Piscataquog River Tributary No. 2	South Branch Piscataquog River	Lat 43°56'51", long 71°44'18", Hillsborough County, Hydrologic Unit 01070002, downstream side of culvert at Butterfield Mill Road, 0.9 mi west of intersection with Lyndeboro Road, 0.34 mi east of Lyndeboro town line, 3.0 mi southwest of New Boston, N.H.	--	--	10-07-88	.015
South Branch Piscataquog River Tributary No. 3	do	Lat 42°56'51", long 71°44'08", Hillsborough County, Hydrologic Unit 01070002, upstream of culvert at Butterfield Mill road, 0.2 mi above mouth, 0.8 mi west of intersection with Lyndeboro Road, 0.5 mi east of Lyndeboro town line, 2.9 mi southwest of New Boston, N.H.	--	--	10-07-88	.22
Middle Branch Piscataquog River	Piscataquog River	Lat 43°01'11", long 71°41'25", Hillsborough County, Hydrologic Unit 01070002, 50 ft downstream from bridge at State Highway 77, 400 ft northwest of Middle Branch Road, 0.38 mi from the New Boston-Weare town line, 3.0 mi north of New Boston, N.H.	--	--	9-07-89	1.62
Middle Branch Piscataquog River	do	Lat 43°00'21", long 71°39'52", Hillsborough County, Hydrologic Unit 01070002, 40 ft upstream from bridge at Riverdale road, 100 ft east of Gregg Mill Road, 0.35 mi upstream from confluence with South Branch Piscataquog River, 2.5 mi northeast of New Boston, N.H.	--	--	10-06-88	3.56
Cold Brook	South Branch Piscataquog River	Lat 43°56'07", long 71°44'29", Hillsborough County, Hydrologic Unit 01070002, 0.2 mi upstream from bridge at Mountain Road, 200 ft northwest of Wilton Road, 0.3 mi southeast of intersection with Franconia Turnpike, 3.7 mi southwest of New Boston, N.H.	--	--	10-07-88	.79

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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Discharge measurements made at special study and miscellaneous sites during water year 1989--continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Dis- charge (ft ³ /s)
Merrimack River Basin						
Meadow Brook	South Branch Piscataquog River	Lat 42°57'27", long 71°42'29", Hillsborough County, Hydrologic Unit 01070002, 50 ft above mouth off Lyndeboro Road, 0.6 mi south- west of intersection with State Highway 13, 1.5 mi southwest of New Boston, N.H.	--	--	10-07-88	.10
South Branch Piscataquog River	Piscataquog River	Lat 43°00'04", long 71°39'47", Hillsborough County, Hydrologic Unit 01070002, 400 ft upstream from bridge at Gregg Mill Road off State Highway 13, 700 ft upstream from confluence of Middle Branch Piscataquog River, 2.3 mi northeast of New Boston, N.H.	--	--	9-07-89	9.67
South Branch Piscataquog River	do	Lat 43°00'00", long 71°40'13", Hillsborough County, Hydrologic Unit 01070002, 0.4 mi upstream of bridge at Gregg Mill Road off State Highway 13, 2.0 mi northeast of New Boston, N.H.	--	--	10-06-88	8.80
South Branch Piscataquog River	do	Lat 42°58'28", long 71°47'22", Hillsborough County, Hydrologic Unit 01070002, 25 ft below bridge at Journey's End Road, 0.15 mi northeast of intersection with Francestown Turnpike, 1.4 mi southeast of Francestown, N.H.	--	--	10-07-88 9-06-89	1.74 1.36
South Branch Piscataquog River	do	Lat 42°57'29", long 71°42'33", Hillsborough County, Hydrologic Unit 01070002, downstream of bridge at Lyndeboro Road, 0.66 mi west of the intersection with State Highway 13, 1.5 mi south- west of New Boston, N.H.	--	--	10-06-88 9-09-89	8.60 6.13
South Branch Piscataquog River	do	Lat 42°58'10", long 71°41'52", Hillsborough County, Hydrologic Unit 01070002, 100 ft downstream of bridge at State Highway 13, 0.6 mi north of intersection with Lyndeboro Road, 0.5 mi south of New Boston, N.H.	--	--	9-09-89	8.30
South Branch Piscataquog River Tributary	South Branch Piscataquog River	Lat 43°00'55", long 71°38'03", Hillsborough County, Hydrologic Unit 01070002, upstream side cul- vert at State Highway 13, 0.22 mi west of Goffstown-New Boston town line, 0.4 mi east of gaging station on South Branch Piscataquog River, 4.0 mi northeast of New Boston, N.H.	--	--	3-24-89	.19
Piscataquog River	Merrimack River	Lat 43°01'16", long 71°36'56", Hillsborough County, Hydrologic Unit 01070002, 250 ft downstream of Goffstown Well field off State Highway 114, 0.3 mi downstream from confluence of the South Branch Piscataquog River, 0.8 mi west of Goffstown, N.H.	--	--	4-28-89	281
01091500 Piscataquog River near Goffstown, N.H.	Merrimack River	Lat 43°00'58", long 71°33'03", Hillsborough County, Hydrologic Unit 01070002, 0.2 mi upstream from Harry Brook, 0.9 mi down- stream from Glen Lake, and 2.5 mi east of Goffstown, N.H.	202	1939-78† 1983-89	9-06-89	26.1

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at special study and miscellaneous sites during water year 1989--continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Dis- charge (ft ³ /s)
Merrimack River Basin						
Piscataquog River Tributary	Piscataquog River	Lat 43°01'16", long 71°36'08", Hillsborough County, Hydrologic Unit 01070002, upstream side cul- vert at State Highway 114, 100 ft west of First Avenue, 550 ft west of State Highway 13, at Goffstown, N.H.	--	--	3-24-89	.20
Bog Brook	do	Lat 43°01'04", long 71°36'27", Hillsborough County, Hydrologic Unit 01070002, immediately up- stream from mouth, 0.36 mi west of State Highway 13 bridge over Piscataquog River, at Goffstown, N.H.	--	--	3-24-89	5.4
Bog Brook	do	Lat 43°00'55", long 71°36'40", Hillsborough County, Hydrologic Unit 01070002, upstream from bridge at State Highway 13, 0.6 mi west of intersection with State Highway 114, 0.25 mi above mouth, 0.6 mi west of Goffstown, N.H.	--	--	9-24-89 9-06-89	5.3 .23
Whittle Brook	do	Lat 43°01'02", long 71°36'11", Hillsborough County, Hydrologic Unit 01070002, immediately up- stream of mouth 1,000 ft west of State Highway 13 bridge, over Piscataquog River, at Goffstown, N.H.	--	--	3-24-89	1.2
Whittle Brook	do	Lat 43°00'57", long 71°36'01", Hillsborough County, Hydrologic Unit 01070002, upstream from bridge at State Highway 13, 500 ft west of intersection of State Highway 114, 0.28 mi east of intersection of Bog Road, 1,000 ft above mouth, at Goffstown, N.H.	--	--	3-24-89 9-06-89	1.1 .24
Piscataquog River	Merrimack River	Lat 43°59'26", long 71°29'41", Hillsborough County, Hydrologic Unit 01070002, 700 ft downstream of Nazaire Biron Bridge, at Kelly Street 0.28 mi northeast of inter- section with State Highway 114A, 1.5 mi above mouth, 1.6 mi west of Manchester, N.H.	--	--	10-07-88 9-07-89	33.96 14.76
Bowman Brook	do	Lat 43°57'18", long 71°29'07", Hillsborough County, Hydrologic Unit 01070002, downstream side of culvert at State Route 101, 0.47 mi northwest of intersection with U.S. Highway 3, 1.3 mi east of Bedford, N.H.	--	--	10-07-88	.02
Bowman Brook	do	Lat 43°57'17", long 71°28'25", Hillsborough County, Hydrologic Unit 01070002, downstream of cul- vert at Interstate Highway 293, immediately above mouth, 0.5 mi north of intersection with State Highway 101, 1.8 mi east of Bedford, N.H.	--	--	9-07-89	2.59

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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Discharge measurements made at special study and miscellaneous sites during water year 1989--continued

Stream	Tributary to	Location	Drainage area (mi²)	Measured previously (water years)	Measurements	
					Date	Dis- charge (ft³/s)
Merrimack River Basin						
Maple Falls Brook	Clark Pond	Lat 43°01'46", long 71°21'34", Hillsborough County, Hydrologic Unit 01070002, 300 ft upstream of State Highway 101 off Tower Hill Road, 0.5 mi below outlet of Tower Hill Pond, 1.9 mi north- west of Auburn, N.H.	--	--	9-06-89	.27
Clark Pond Brook	Sucker Brook	Lat 43°01'10", long 71°21'09", Hillsborough County, Hydrologic Unit 01070002, 300 ft downstream from Clark Pond Outlet, upstream of Depot Road, 0.21 mi east of inter- section with Hooksett Road, 1.1 mi north of Auburn, N.H.	--	--	9-06-89	.30
Cohas Brook	Merrimack River	Lat 42°57'36", long 71°25'06", Hillsborough County, Hydrologic Unit 01070002, 20 ft downstream of bridge at State Highway 28A, 350 ft south of intersection with State Route 101, 2.8 mi southeast of Manchester, N.H.	--	--	9-06-89	5.67
Cohas Brook	do	Lat 42°55'53", long 71°27'08", Hillsborough County, Hydrologic Unit 01070002, 250 ft downstream of dam at outlet of Pine Island Pond, upstream from bridge at Brown Avenue (Route 3A), 3.5 mi south of Manchester, N.H.	--	--	9-06-89	5.75
Sebbins Brook	Pointer Club Brook	Lat 42°54'43", long 71°27'35", Hillsborough County, Hydrologic Unit 01070002, 40 ft downstream of culvert at private road crossing 500 ft above mouth, 100 ft west of intersection with U.S. Highway 3, 0.15 mi north of Merrimack, N.H. town line, 4.5 mi southeast of Bedford, N.H.	--	--	10-07-89	.92
Pointer Club Brook	Merrimack River	Lat 42°54'36", long 71°27'31", Hillsborough County, Hydrologic Unit 01070002, upstream side of culvert at U.S. Highway 3, at Merrimack-Bedford town line, 0.28 mi above mouth, 4.5 mi southeast of Bedford, N.H.	--	--	10-07-88 9-06-89	1.97 2.03
01094000 Souhegan River at Merrimack River	do	Lat 42°51'27", long 71°30'24", Hillsborough County, Hydrologic Unit 01070002, at head of Wildcat Falls, 1.5 mi upstream from mouth.	171	1909-76‡ 1979-89	7-19-89	141
Furnace Brook	Souhegan River	Lat 42°46'21", long 71°52'33", Hillsborough County, Hydrologic Unit 01070002, 200 ft downstream from culvert at Appleton Road, 1.3 mi northwest of intersection with State Highway 123/124, 1.6 mi northwest of New Ipswich, N.H.	--	--	10-06-88	.18
Furnace Brook	do	Lat 42°46'12", long 71°52'08", Hillsborough County, Hydrologic Unit 01070002, 20 ft upstream of culvert at Appleton Road, 0.85 mi northwest of intersection with State Highway 123/124, 1.2 mi north- west of New Ipswich, N.H.	--	--	10-06-88 9-06-89	.45 .38

Discharge measurements made at special study and miscellaneous sites during water year 1989--continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Dis- charge (ft ³ /s)
Merrimack River Basin						
Furnace Brook	do	Lat 42°45'32", long 71°50'47", Hillsborough County, Hydrologic Unit 01070002, 20 ft downstream of culvert at Wilton Road, 500 ft north of intersection with State Highway 123/124, at New Ipswich, N.H.	--	--	10-06-88	.85
Furnace Brook	do	Lat 42°45'52", long 71°51'28", Hillsborough County, Hydrologic Unit 01070002, 20 ft upstream of bridge at Wyman Road, 600 ft down- stream of N.H. WRD Reservoir, 0.4 mi north of intersection with State Highway 123/124, 0.5 mi northwest of New Ipswich, N.H.	--	--	10-06-88 9-06-89	.54 .81
West Branch	do	Lat 42°44'13", long 71°50'04", Hillsborough County, Hydrologic Unit 01070002, upstream from dam and roadway at Smithville, 1.2 mi northwest of Ashby Road-River Road intersection, 0.5 mi downstream of Smithville Flood Control Reservoir, 1.5 mi southwest of New Ipswich, N.H.	--	--	10-06-88 9-06-89	4.74 1.33
West Branch River	do	Lat 42°43'53", long 71°50'53", Hillsborough County, Hydrologic Unit 01070002, 100 ft downstream of culvert at River Road, 0.25 mi northeast of intersection with Ashby Road, 400 ft above confluence with Souhegan River, 2.0 mi southeast of New Ipswich, N.H.	--	--	10-06-88 9-06-89	7.96 1.82
Souhegan River	Merrimack River	Lat 42°43'40", long 71°50'53", Hillsborough County, Hydrologic Unit 01070002, 100 ft downstream of culvert at Ashby Road, 0.1 mi southeast of intersection with River Road, 1.2 mi north of the Massachusetts-New Hampshire State- line, and 2.2 mi southeast of New Ipswich, N.H.	--	--	10-06-88 9-06-89	2.02 3.11
Souhegan River	do	Lat 42°45'00", long 71°52'18", Hillsborough County, Hydrologic Unit 01070002, immediately down- stream of Water Loom Pond outlet, 0.5 mi southwest of High Bridge, 1.0 mi southeast of New Ipswich, N.H.	--	--	10-06-88	29.3
Black Brook	Mitchell River	Lat 42°46'13", long 71°44'57", Hillsborough County, Hydrologic Unit 01070002, 20 ft below dam outlet off of Russell Road, 0.4 mi west of intersection with Starch Mill Road, 1.8 mi northeast of Mason, N.H.	--	--	10-06-88	.52
Spaulding Brook	Black Brook	Lat 42°46'09", long 71°44'09", Hillsborough County, Hydrologic Unit 01070002, 0.2 mi downstream from confluence of Black Brook, 0.3 mi north- east of the Starch Mill Road-Black Brook Road intersection, 2.5 mi northeast of Mason, N.H.	--	--	10-06-88	.03

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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Discharge measurements made at special study and miscellaneous sites during water year 1989--continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Dis- charge (ft ³ /s)
Merrimack River Basin						
Gould Mill Brook	Lancy Brook	Lat 42°46'09", long 71°44'09", Hillsborough County, Hydrologic Unit 01070002, 60 ft downstream from culvert at Campbell Mill Road, 0.3 mi west of Mason-Brookline town- line, 0.25 mi southwest of intersection with Mason-Brookline Road, 2.8 mi southeast of Mason, N.H.	--	--	10-06-88 9-07-89	.10 .09
Gould Mill Brook	do	Lat 42°44'28", long 71°42'08", Hillsborough County, Hydrologic Unit 01070002, 15 ft downstream from culvert at Mason-Brookline Road, 0.4 mi east of the Mason- Brookline town line, 0.28 mi up- stream from Lancy Brook, and 2.0 mi west of Brookline, N.H.	--	--	10-06-88 9-07-89	.89 .71
Gould Mill Brook	do	Lat 42°44'22", long 71°42'57", Hillsborough County, Hydrologic Unit 01070004, 30 ft upstream from culvert at Withee Brook Road, 0.5 mi west of Mason Brookline town line, 300 ft south of the intersection with Mason-Brookline Road, 2.8 mi east of Mason, N.H.	--	--	10-06-88 9-07-89	.08 .02
Rocky Brook	Mason Brook	Lat 42°43'39", long 71°45'44", Hillsborough County, Hydrologic Unit 01070004, immediately up- stream from culvert at State High- way 123, 0.5 mi south of intersection with Depot Road, 1.2 mi southeast of Mason, N.H.	--	--	10-06-88	.09
01145000 Mascoma River at West Canann, N.H.	Connecticut River	Lat 43°39'00", long 72°04'50", Grafton County, Hydrologic Unit 01080103, on right bank 45 ft downstream from Boston and Maine Railroad bridge, 0.9 mi east of West Canaan, 1.2 mi downstream from Indian River, 3.5 mi west of Canann and at mile 19.3.	80.5	1939-78; 1985-89	9-01-89	4.9

SUPPLEMENTAL WATER-QUALITY DATA FOR GAGING STATIONS

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)
ANDROSCOGGIN RIVER BASIN									
01052500 DIAMOND RIVER NEAR WENTWORTH, NH (LAT 44 52 40 LONG 71 03 25)									
JAN 1989					JUL 1989				
20...	1100	93	0.0	43	20...	1145	33	21.5	40
MAY					SEP				
03...	1100	4140	3.5	22	14...	1015	40	15.5	41
01053500 ANDROSCOGGIN RIVER AT ERROL, NH (LAT 44 46 57 LONG 71 07 46)									
JUL 1989									
25...	0920	1570	21.0	28					
01054000 ANDROSCOGGIN RIVER NEAR GORHAM, NH (LAT 44 26 10 LONG 071 11 27)									
NOV 1988					JUL 1989				
14...	1455	2630	5.5	52	20...	1545	1680	23.0	--
MAY 1989									
03...	1535	7580	5.5	151					
SACO RIVER BASIN									
01064300 ELLIS RIVER NEAR JACKSON, NH (LAT 44 13 12 LONG 071 15 00)									
NOV 1988					MAY 1989				
14...	1415	41	4.5	61	01...	1300	64	9.0	45
DEC					JUN				
28...	0815	12	0.0	26	03...	0640	52	7.5	42
FEB 1989					JUL				
06...	1500	8.5	0.0	56	26...	1430	10	22.0	49
MAR									
21...	0800	8.1	0.0	52					
01064400 LUCY BROOK NEAR NORTH CONWAY, NH (LAT 44 04 10 LONG 071 10 30)									
NOV 1988					MAY 1989				
14...	1130	16	5.0	21	01...	1020	11	7.0	18
DEC					JUN				
27...	1215	3.0	0.0	17	12...	1100	21	12.0	14
FEB 1989					JUL				
06...	1200	1.7	0.0	19	26...	1200	1.5	20.0	37
MAR									
20...	1215	2.4	0.0	24					
01064500 SACO RIVER NEAR CONWAY, NH (LAT 43 59 27 LONG 071 05 29)									
NOV 1988					MAY 1989				
21...	1100	2020	3.0	33	08...	1200	4120	7.0	34
JAN 1989					SEPT				
18...	1300	284	0.0	58	01...	1200	174	18.0	58
MAR									
09...	1130	225	0.0	68					
01065000 OSSIPEE RIVER AT EFFINGHAM FALLS, NH (LAT 43 47 44 LONG 071 03 36)									
NOV 1988					MAY 1989				
18...	1130	796	7.0	32	05...	0930	2440	9.0	33
JAN 1989					JUN				
03...	1130	276	1.5	40	16...	1010	1490	17.0	31
FEB					AUG				
13...	1130	227	1.5	47	02...	0930	155	21.0	40
MAR					02...	1220	174	26.0	50
24...	1200	232	2.5	42					

SUPPLEMENTAL WATER-QUALITY DATA FOR GAGING STATIONS

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)
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PISCATAQUA RIVER BASIN

01072100 SALMON FALLS RIVER AT MILTON, NH (LAT 43 24 50 LONG 070 59 15)

NOV 1988					MAY 1989				
18...	0930	148	6.5	54	05...	0745	495	11.0	63
18...	1000	147	6.5	54					
JAN 1989					JUN				
03...	0930	119	2.5	71	16...	0900	259	19.0	62
FEB					AUG				
13...	1000	77	2.0	84	02...	0845	37	25.0	73
MAR									
24...	0930	79	4.0	85					

01073000 OYSTER RIVER NEAR DURHAM, NH (LAT 43 08 55 LONG 070 57 56)

OCT 1988					MAY 1989				
24...	0915	17	9.0	140	22...	1050	24	12.0	100
DEC					JUL				
05...	1050	20	2.0	150	03...	1249	7.8	23.0	134
JAN 1989					AUG				
17...	0955	6.1	0.0	300	21...	0830	7.1	21.0	175
FEB					SEP				
27...	0950	9.6	0.0	130	21...	1445	7.5	20.0	160
APR									
04...	1327	43	5.0	90					

01073500 LAMPREY RIVER NEAR NEWMARKET, NH (LAT 43 06 09 LONG 070 57 11)

OCT 1988					APR 1989				
24...	1145	366	9.0	92	10...	1330	632	5.0	70
DEC					MAY				
05...	1150	357	2.0	105	22...	1330	310	14.0	93
JAN 1989					JUL				
17...	1200	124	0.0	140	11...	0900	145	20.0	--
FEB					AUG				
27...	1315	167	0.0	150	21...	0945	107	23.0	122

MERRIMACK RIVER BASIN

01075000 PEMIGEWASSET RIVER AT WOODSTOCK, NH (LAT 43 58 34 LONG 071 40 48)

OCT 1988					MAY 1989				
14...	0830	120	5.0	--	04...	0945	2090	6.0	32
NOV					JUL				
16...	1345	496	5.0	38	07...	1000	150	21.0	38
DEC					31...	1030	80	24.0	88
30...	1205	406	0.0	33	SEP				
FEB 1989					14...	0930	80	17.5	60
09...	0830	111	0.0	34					

01075800 STEVENS BROOK NEAR WENTWORTH, NH (LAT 43 50 12 LONG 071 53 07)

NOV 1988					MAY 1989				
21...	1030	15	3.0	26	08...	1030	12	5.5	23
JAN 1989					JUN				
04...	1015	0.41	0.0	29	19...	0830	5.8	11.0	26
FEB					AUG				
09...	1015	0.48	0.0	34	01...	0945	0.12	15.0	48
APR					SEP				
07...	0850	26	1.0	22	19...	0900	0.12	14.5	65

01076000 BAKER RIVER NEAR RUMNEY, NH (LAT 43 47 46 LONG 071 50 42)

OCT 1988					FEB 1989				
14...	1015	30	6.5	--	09...	1045	38	0.0	49
NOV									
21...	1100	598	4.0	38					

SUPPLEMENTAL WATER-QUALITY DATA FOR GAGING STATIONS

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)
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MERRIMACK RIVER BASIN--continued

01076500 PEMIGEWASSET RIVER AT PLYMOUTH, NH (LAT 43 45 33 LONG 071 41 10)

DEC 1988					APR 1989				
02...	1015	956	1.0	45	06...	1200	12900	--	36
JAN 1989					JUN				
04...	1245	448	0.0	47	19...	1200	1980	14.0	53
FEB					AUG				
02...	1130	570	0.0	--	01...	1410	192	24.0	98

01077000 SQUAM RIVER AT ASHLAND, NH (LAT 43 42 19 LONG 071 37 49)

OCT 1988					MAY 1989				
14...	1245	64	10.0	42	04...	1030	118	9.0	44
NOV					JUL				
21...	1300	60	4.5	53	05...	0930	9.0	19.0	45
JAN 1989					SEP				
04...	1330	59	1.5	44	14...	1135	6.0	22.0	55
FEB									
09...	1200	61	1.5	42					

01078000 SMITH RIVER NEAR BRISTOL, NH (LAT 43 34 04 LONG 071 44 54)

OCT 1988					APR 1989				
31...	1245	32	3.0	65	19...	1100	417	5.0	47
JAN 1989					MAY				
27...	1315	18	0.0	68	25...	1605	142	13.0	51
MAR					JUL				
02...	1200	33	0.0	60	13...	1000	114	18.0	50

01081000 WINNIPESAUKEE RIVER AT TILTON, NH (LAT 43 26 31 LONG 071 35 20)

OCT 1988					APR 1989				
26...	1300	110	6.0	70	14...	1415	919	9.0	64
DEC					MAY				
15...	0910	606	1.0	68	25...	0940	1200	15.0	65
MAR 1989					AUG				
03...	1500	357	0.0	70	04...	1330	309	26.0	71

01082000 CONTOOCOOK RIVER AT PETERBOROUGH, NH (LAT 42 51 45 LONG 071 57 35)

OCT 1988					APR 1989				
24...	1000	140	7.0	70	10...	1040	390	4.5	75
NOV					JUN				
29...	1200	262	5.0	56	29...	1050	63	19.0	89
JAN 1989					AUG				
20...	1145	48	1.0	108	18...	0730	103	19.0	71
MAR					SEP				
02...	0815	--	0.0	93	29...	0940	59	7.0	80

01083000 NUBANUSIT BROOK NEAR PETERBOROUGH, NH (LAT 42 53 10 LONG 071 58 24)

OCT 1988					APR 1989				
24...	0830	47	7.0	35	10...	0950	9.8	4.0	42
NOV					JUN				
29...	0835	138	4.0	32	29...	0915	78	21.0	46
JAN 1989					AUG				
20...	1215	59	1.0	55	18...	1105	58	23.0	39
MAR					SEP				
02...	0930	--	0.0	55	29...	1000	88	8.0	45

01085000 CONTOOCOOK RIVER NEAR HENNIKER, NH (LAT 43 09 10 LONG 071 51 24)

APR 1989					AUG 1989				
12...	1500	--	5.0	60	18...	1250	--	22.0	55
JUL					SEP				
05...	1320	--	22.0	71	29...	1340	--	10.0	73

SUPPLEMENTAL WATER-QUALITY DATA FOR GAGING STATIONS

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)
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MERRIMACK RIVER BASIN--continued

01085500 CONTOOCOOK R BL HOPKINTON DAM AT W HOPKINTON, NH (LAT 43 11 31 LONG 071 44 51)

OCT 1988					APR 1989				
26...	1045	600	7.0	79	20...	0845	1510	6.0	61
DEC					MAY				
14...	1030	534	0.0	68	24...	0945	897	17.0	79
JAN 1989					JUL				
19...	1030	337	0.0	63	14...	0726	486	22.0	80
FEB					AUG				
28...	1400	426	0.0	75	24...	0800	354	22.0	--

01085800 WEST BRANCH WARNER RIVER NEAR BRADFORD, NH (LAT 43 15 33 LONG 072 01 35)

OCT 1988					APR 1989				
25...	0800	5.3	5.5	32	12...	1315	15	3.0	28
NOV					JUL				
28...	1310	35	6.0	18	05...	1200	2.6	16.0	33
JAN 1989					AUG				
24...	1100	--	0.5	37	14...	1215	16	18.0	22
MAR									
02...	1400	--	0.0	37					

01087000 BLACKWATER RIVER NEAR WEBSTER, NH (LAT 43 17 45 LONG 071 41 46)

NOV 1988					APR 1989				
02...	1015	167	2.0	56	19...	1445	501	7.0	39
DEC					MAY				
15...	1150	105	0.0	48	24...	1210	210	16.0	44
JAN 1989					JUL				
27...	1200	52	0.0	60	17...	0852	98	20.0	50
MAR					SEP				
02...	--	--	0.0	70	05...	1032	39	17.0	56

01089100 SOUCCOOK RIVER AT PEMBROKE ROAD NEAR CONCORD, NH (LAT 43 12 47 LONG 071 28 49)

OCT 1988					MAY 1989				
25...	1000	44	6.0	70	23...	0955	126	14.0	71
DEC					JUL				
05...	1430	92	1.0	60	03...	0810	39	20.0	96
JAN 1989					AUG				
17...	1445	37	0.0	113	21...	1323	42	22.0	72
FEB					SEP				
27...	1500	57	0.0	80	27...	0930	169	11.0	65
APR									
04...	0959	457	4.0	55					
06...	1000	963	7.0	48					

01090800 PISCATAQUOG RIVER BL EVERETT DAM, NR E WEARE, NH (LAT 43 05 29 LONG 071 39 36)

OCT 1988					APR 1989				
26...	1330	59	9.0	55	20...	1045	285	10.0	51
DEC					MAY				
06...	1330	77	1.0	68	24...	1130	95	17.0	53
MAR 1989					JUL				
04...	1300	35	0.0	70	14...	1100	40	20.0	--

01091500 PISCATAQUOG RIVER NEAR GOFFSTOWN, NH (LAT 43 00 58 LONG 071 33 03)

NOV 1988					MAY 1989				
02...	1330	1310	2.0	61	23...	1430	146	16.0	62
DEC					JUL				
06...	1215	299	1.0	58	12...	1115	212	24.0	90
FEB 1989					SEP				
28...	1245	255	0.0	60	06...	1130	25	8.0	--

SUPPLEMENTAL WATER-QUALITY DATA FOR GAGING STATIONS

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)
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MERRIMACK RIVER BASIN--continued

01092000 MERRIMACK R NR GOFFS FALLS, BELOW MANCHESTER, NH (LAT 42 56 54 LONG 071 27 52)

FEB 1989					JUL 1989				
28...	1500	15000	0.0	95	12...	0945	5190	24.0	100
MAY									
23...	1330	6670	16.0	74					

01093800 STONY BROOK TRIBUTARY NEAR TEMPLE, NH (LAT 42 51 36 LONG 071 50 00)

OCT 1988					MAR 1989				
25...	1130	2.8	6.5	29	02...	1045	--	0.0	25
NOV					APR				
28...	0915	14	8.5	--	10...	1400	13	4.5	25
DEC					JUL				
17...	1000	3.7	0.0	25	07...	1150	1.0	17.0	20
JAN 1989					AUG				
09...	1400	--	2.0	21	14...	0715	7.3	17.0	22

01094000 SOUHEGAN RIVER AT MERRIMACK, NH (LAT 42 51 27 LONG 071 30 24)

JUL 1989				
12...	0807	178	20.0	--

010965852 BEAVER BROOK AT N. PELHAM, NH (LAT 42 46 59 LONG 071 21 14)

OCT 1988					APR 1989				
25...	1345	52	7.0	240	11...	1109	150	5.0	200
DEC					MAY				
06...	1005	78	1.0	250	23...	1240	62	15.0	225
JAN 1989					JUL				
18...	1230	27	0.0	360	11...	1230	56	21.0	248
FEB					AUG				
28...	0900	E37	0.0	250	22...	1000	29	22.0	--

CONNECTICUT RIVER BASIN

01128500 CONNECTICUT R AT FIRST CONN LK NR PITTSBURG, NH (LAT 45 05 14 LONG 071 17 34)

NOV 1988					MAY 1989				
16...	0900	193	6.0	38	02...	1230	10	6.0	67
DEC					JUN				
29...	0900	363	2.0	23	14...	1300	180	13.0	29
FEB 1989					JUL				
08...	0830	321	1.5	32	18...	1230	147	16.0	41
MAR					SEP				
22...	0830	54	1.0	28	13...	0715	147	16.5	32

01129200 CONNECTICUT R BL INDIAN STREAM NR PITTSBURG, NH (LAT 45 02 25 LONG 071 26 37)

NOV 1988					JUN 1989				
16...	1000	628	6.5	38	14...	1330	523	13.0	30
DEC					JUL				
29...	1200	628	6.5	38	19...	1300	367	19.0	35
MAR 1989					SEP				
22...	0730	547	1.0	33	12...	1315	290	17.0	42
22...	1200	130	0.5	45					
MAY									
02...	1130	1340	5.0	25					

SUPPLEMENTAL WATER-QUALITY DATA FOR GAGING STATIONS

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)
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CONNECTICUT RIVER BASIN--Continued

01129440 MOHAWK RIVER NEAR COLEBROOK NH (LAT 44 52 28 LONG 071 24 38)

NOV 1988					MAY 1989				
15...	1450	97	4.0	72	03...	1430	320	4.0	36
DEC 28...	1445	35	0.0	55	JUN 14...	1430	52	11.0	46
FEB 1989					JUL 20...	1230	12	17.0	163
07...	1230	20	0.0	100	SEP 12...	1200	12	17.0	170
MAR 21...	1445	29	0.0	110					

01129500 CONNECTICUT RIVER AT NORTH STRATFORD, NH (LAT 44 44 56 LONG 071 37 50)

NOV 1988					MAY 1989				
15...	1200	2250	4.5	52	02...	0900	6180	7.0	34
DEC 16...	1500	1620	1.0	53	JUN 13...	1300	1520	12.5	60
28...	1200	2160	0.0	49	JUL 20...	1200	578	19.0	58
FEB 1989					SEP 13...	1100	475	19.0	66
07...	1030	1860	0.0	52					
MAR 21...	1250	1670	0.5	95					

01130000 UPPER AMMONOOSUC RIVER NEAR GROVETON, NH (LAT 44 37 30 LONG 071 28 10)

NOV 1988					JUN 1989				
15...	1100	731	4.0	43	13...	0915	997	13.0	27
DEC 28...	1100	1100	0.0	30	JUL 27...	1130	80	25.0	52
MAR 1989					SEP 12...	0750	74	19.0	46
23...	0930	129	0.0	40					
MAY 03...	0930	5720	7.5	23					

01131500 CONNECTICUT RIVER NEAR DALTON, NH (LAT 44 24 36 LONG 071 43 16)

OCT 1988					MAY 1989				
12...	1200	2030	7.5	68	04...	0615	16900	5.0	30
NOV 17...	1230	3340	5.0	50	JUN 15...	0830	3070	14.0	47
DEC 30...	0845	2120	0.0	41	JUL 28...	0745	554	25.0	88
FEB 1989					SEP 13...	1150	626	21.0	84
08...	1445	1410	0.0	38					

01134500 MOOSE RIVER AT VICTORY, VT (LAT 44 30 42 LONG 071 50 13)

NOV 1988					MAY 1989				
04...	0910	168	1.0	30	15...	1315	223	10.0	29
DEC 21...	0945	39	0.0	38	JUN 23...	0815	58	20.0	35
JAN 1989					AUG 03...	1250	13	23.0	50
17...	0950	34	0.0	48	SEP 18...	1140	187	14.0	35
FEB 28...	1100	67	0.0	52					
APR 10...	0820	427	0.0	28					

SUPPLEMENTAL WATER-QUALITY DATA FOR GAGING STATIONS

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)
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CONNECTICUT RIVER BASIN--Continued

01135500 PASSUMPSIC RIVER AT PASSUMPSIC, VT (LAT 44 21 56 LONG 072 02 23)

NOV 1988					MAY 1989				
04...	1300	807	2.5	114	08...	0945	2730	9.0	105
DEC 19...	1515	229	0.5	217	JUN 23...	1220	471	24.0	200
JAN 1989					AUG 03...	0750	33	22.0	250
17...	1250	243	0.0	210	SEP 18...	0755	1030	13.0	145
FEB 28...	0835	244	0.0	200					
APR 10...	1220	1780	2.0	130					

01137500 AMMONOOSUC RIVER AT BETHLEHEM JUNCTION, NH (LAT 44 16 08 LONG 071 37 52)

OCT 1988					JUN 1989				
11...	1000	137	8.0	42	15...	0900	214	11.0	29
11...	1300	137	8.0	42					
NOV 17...	1000	312	6.5	49	JUL 28...	0900	43	22.0	63
APR 1989					SEP 14...	0700	42	16.5	128
05...	1100	697	3.0	--					
MAY 04...	0800	566	4.0	24					

01138500 CONNECTICUT RIVER AT WELLS RIVER, VT (LAT 44 09 13 LONG 072 02 34)

OCT 1988					MAY 1989				
14...	0930	4000	10.5	92	15...	0745	12500	9.5	60
DEC 19...	1020	1500	0.0	94	JUN 22...	0715	2430	18.0	87
JAN 1989					AUG 04...	0920	701	21.0	105
12...	1245	4570	0.0	92	SEP 20...	1220	5160	15.0	125
FEB 21...	1035	993	0.0	100					
APR 07...	1120	27900	2.0	75					

01139000 WELLS RIVER AT WELLS RIVER, VT (LAT 44 09 03 LONG 072 03 55)

OCT 1988					MAY 1989				
13...	0935	28	6.5	146	08...	1415	441	9.0	86
DEC 19...	1305	55	0.0	137	JUN 22...	1140	101	20.0	134
JAN 1989					AUG 04...	0750	25	21.0	180
12...	0945	34	0.0	134	SEP 20...	0815	206	15.0	145
FEB 21...	1215	20	0.0	160					
APR 07...	0750	1120	1.0	75					

01139800 EAST ORANGE BRANCH AT EAST ORANGE, VT (LAT 44 05 34 LONG 072 20 10)

OCT 1988					JUN 1989				
11...	1445	3.6	8.0	220	06...	0700	88	13.0	188
DEC 09...	1345	19	0.0	200	JUL 14...	1330	5.7	18.0	200
JAN 1989					15...	1645	4.4	18.0	200
23...	1150	3.2	0.0	230					
FEB 22...	1200	30	0.0	175	AUG 21...	1130	4.8	17.0	215
APR 23...	1300	38	2.5	164					

SUPPLEMENTAL WATER-QUALITY DATA FOR GAGING STATIONS

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)
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CONNECTICUT RIVER BASIN--Continued

01141500 OMPOMPANOOSUC RIVER AT UNION VILLAGE, VT (LAT 43 47 23 LONG 072 15 19)

OCT 1988					MAY 1989				
21...	0815	24	2.0	205	05...	1245	388	8.5	137
DEC 15...	0900	62	0.0	219	JUN 15...	0830	202	14.5	172
JAN 1989					JUL 25...	1300	35	--	240
26...	1045	30	0.0	154	SEP 05...	1100	28	14.0	230
MAR 10...	0815	34	0.0	200					

01141800 MINK BROOK NEAR ETNA, NH (LAT 43 42 08 LONG 072 11 15)

NOV 1988					JUL 1989				
01...	1000	0.64	2.0	97	06...	0935	2.1	16.0	--
JAN 1989					AUG 01...	1025	0.10	21.0	75
24...	--	0.70	1.0	64					
MAY 26...	1105	4.1	11.0	74					

01142500 AYERS BROOK AT RANDOLPH, VT (LAT 43 56 04 LONG 072 39 30)

OCT 1988					MAY 1989				
17...	1000	4.4	10.0	220	05...	0830	94	6.0	180
DEC 14...	1330	23	0.0	232	JUN 07...	0930	75	13.5	194
JAN 1989					JUL 20...	1215	15	18.5	230
26...	1300	11	0.0	230	AUG 31...	0845	24	15.0	210
MAR 09...	1000	11	0.0	205					

01144000 WHITE RIVER AT WEST HARTFORD, VT (LAT 43 42 51 LONG 072 25 07)

OCT 1988					JUN 1989				
18...	0930	194	12.0	176	14...	1245	1460	15.0	145
DEC 13...	0930	333	0.0	202	JUL 20...	0845	373	23.0	200
JAN 1989					SEP 05...	1300	389	18.5	175
25...	1015	338	0.0	172					
MAY 05...	1100	2700	8.5	98					

01144500 CONNECTICUT RIVER AT WEST LEBANON, NH (LAT 43 38 47 LONG 072 18 46)

OCT 1988					MAY 1989				
19...	0900	6700	9.5	92	04...	0845	26500	6.5	75
DEC 13...	1330	1900	0.5	83	JUN 14...	0900	13000	16.0	85
JAN 1989					JUL 25...	1015	1340	22.5	124
25...	1630	1860	0.0	124	SEP 07...	0945	2970	19.5	138
MAR 13...	1030	4280	0.0	108					

01145000 MASCOMA RIVER AT WEST CANAAN, NH (LAT 43 39 00 LONG 072 04 50)

DEC 1988					JUL 1989				
13...	1355	101	0.0	60	10...	1205	21	18.0	70
MAR 1989					SEP 01...	--	4.9	16.0	--
01...	1200	--	0.0	75					
APR 12...	1430	139	4.0	50					

SUPPLEMENTAL WATER-QUALITY DATA FOR GAGING STATIONS

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)
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CONNECTICUT RIVER BASIN--Continued

01150500 MASCOMA RIVER AT MASCOMA, NH (LAT 43 39 01 LONG 072 11 05)

NOV 1988					MAY 1989				
01...	1200	125	2.0	61	26...	1300	187	14.0	54
DEC					AUG				
13...	1030	39	1.0	55	01...	1245	30	25.0	60
JAN 1989					31...	1347	30	21.0	62
24...	1420	41	1.0	62					
MAR	SEP								
01...	1330	73	1.0	60	26...	1200	195	17.0	63
APR									
12...	1720	280	4.0	50					

01150900 OTTAUQUECHEE RIVER NEAR WEST BRIDGEWATER, VT (LAT 43 37 20 LONG 072 45 34)

OCT 1988					APR 1989				
21...	1330	15	5.0	158	19...	1255	138	5.5	130
DEC					JUN				
08...	1145	34	1.0	145	01...	1000	36	14.0	145
JAN 1989					JUL				
20...	1245	19	0.0	200	14...	0745	24	17.0	170
FEB					AUG				
24...	1445	47	0.0	180	17...	1345	30	17.5	147
MAR									
03...	1015	18	0.0	--					

01151500 OTTAUQUECHEE RIVER AT NORTH HARTLAND, VT (LAT 43 36 09 LONG 072 21 17)

OCT 1988					MAY 1989				
19...	1300	61	11.0	160	04...	1230	1070	8.5	116
DEC					JUN				
14...	1030	34	0.5	150	13...	0930	599	16.0	132
JAN 1989					JUL				
25...	1315	37	0.5	185	24...	1200	37	24.5	205
MAR					SEP				
09...	1530	37	0.0	172	07...	1115	18	21.0	225

01152500 SUGAR RIVER AT WEST CLAREMONT, NH (LAT 43 23 15 LONG 072 21 45)

OCT 1988					APR 1989				
31...	1600	163	5.5	90	07...	1750	2730	3.5	55
NOV					JUL				
02...	1600	--	6.0	65	05...	0815	92	17.0	148
DEC					AUG				
05...	1015	311	0.0	83	24...	1245	99	18.0	129
JAN 1989					SEP				
17...	1545	103	0.0	177	25...	1330	126	9.0	127
FEB									
24...	1120	--	0.0	64					

01153000 BLACK RIVER AT NORTH SPRINGFIELD, VT (LAT 43 20 00 LONG 072 30 55)

NOV 1988					APR 1989				
03...	1215	924	5.0	74	07...	0813	889	4.0	60
DEC					JUN				
02...	0945	267	3.0	29	27...	0830	146	22.0	120
JAN 1989					AUG				
12...	1330	65	0.0	115	22...	1015	76	21.0	131
FEB					SEP				
24...	0900	--	0.0	88	27...	0910	100	8.0	128

SUPPLEMENTAL WATER-QUALITY DATA FOR GAGING STATIONS

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)
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CONNECTICUT RIVER BASIN--Continued

01153550 WILLIAMS RIVER NEAR ROCKINGHAM VT (LAT 43 11 30 LONG 072 29 08)

NOV 1988					APR 1989				
03...	0900	272	4.5	56	05...	1800	--	4.0	60
DEC					JUN				
02...	1145	155	3.0	50	27...	1130	109	21.0	127
JAN 1989					AUG				
17...	1225	62	0.0	124	22...	1020	40	22.0	145
FEB					SEP				
24...	1020	--	0.0	190	27...	1025	52	6.0	135

01154500 CONNECTICUT RIVER AT NORTH WALPOLE, NH (LAT 43 07 34 LONG 072 26 14)

NOV 1988					APR 1989				
07...	1030	13300	6.5	79	05...	1000	--	2.0	105
30...	1115	13000	3.0	84	12...	0825	--	2.5	95
DEC					AUG				
05...	1215	--	2.0	86	15...	1250	--	21.0	94
JAN 1989					SEP				
23...	1015	--	0.0	70	27...	--	--	10.0	103
FEB									
21...	1130	--	0.0	130					

01155500 WEST RIVER AT JAMAICA, VT (LAT 43 06 32 LONG 072 46 33)

OCT 1988					APR 1989				
20...	1700	62	9.0	--	04...	0840	118	4.0	60
DEC					JUN				
01...	1245	381	4.0	11	28...	1045	98	19.0	63
JAN 1989					AUG				
11...	1450	--	0.0	90	23...	1100	107	23.0	58
FEB									
27...	1545	--	0.0	72					

01156000 WEST RIVER AT NEWFANE, VT (LAT 42 59 43 LONG 072 38 13)

OCT 1988					APR 1989				
26...	1030	576	7.0	58	04...	1800	2340	3.5	60
DEC					JUN				
01...	1015	638	4.5	19	28...	1130	179	21.0	71
JAN 1989					AUG				
11...	1115	206	0.0	93	23...	1230	145	23.0	72
FEB									
27...	1715	--	0.0	73					

01158000 ASHUELOT RIVER BL SURRY MT DAM, NR KEENE, NH (LAT 42 59 40 LONG 072 18 40)

OCT 1988					APR 1989				
18...	1130	40	10.0	36	11...	1220	--	3.5	35
NOV					JUN				
02...	1200	--	5.5	37	30...	1115	62	22.0	43
DEC					AUG				
06...	1200	--	2.0	31	15...	1140	344	21.0	35
JAN 1989					SEP				
23...	1300	36	2.0	62	26...	1315	82	11.5	50
FEB									
21...	1030	--	2.5	68					

SUPPLEMENTAL WATER-QUALITY DATA FOR GAGING STATIONS

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)
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CONNECTICUT RIVER BASIN--Continued

01158600 OTTER BROOK BELOW OTTER BROOK DAM, NR KEENE, NH (LAT 42 56 45 LONG 072 14 14)

OCT 1988					APR 1989				
18...	1500	13	10.0	43	11...	0820	--	3.0	42
DEC					JUN				
05...	1400	--	2.5	33	30...	0900	29	21.0	44
JAN 1989					AUG				
18...	1100	22	2.0	45	15...	1030	123	20.0	42
FEB					SEP				
21...	0920	--	1.5	58	25...	1055	47	12.0	52

01161000 ASHUELOT RIVER AT HINSDALE, NH (LAT 42 47 07 LONG 072 29 12)

OCT 1988					JUL 1989				
26...	1315	325	7.5	85	07...	0755	289	19.0	105
31...	1000	--	4.5	79					
DEC					AUG				
06...	1000	--	0.5	47	23...	1330	570	21.0	61
JAN 1989					SEP				
19...	1300	239	1.0	210	26...	0845	330	11.0	80
APR									
11...	1050	2200	3.5	55					

HUDSON RIVER BASIN

01334000 WALLOOMSAC RIVER NEAR NORTH BENNINGTON, VT (LAT 42 54 47 LONG 073 15 25)

OCT 1988					APR 1989				
19...	1600	87	11.0	158	05...	1215	398	3.0	155
NOV					JUN				
30...	1515	304	5.0	84	26...	1300	202	17.0	157
JAN 1989					AUG				
10...	1500	86	1.0	156	21...	0900	2.7	18.0	198
FEB									
27...	1030	--	0.5	146					

ST. LAWRENCE RIVER BASIN

04280000 POULTNEY RIVER BELOW FAIR HAVEN, VT (LAT 43 37 40 LONG 073 18 50)

OCT 1988					APR 1989				
06...	1500	80	13.0	--	20...	0845	471	7.5	176
DEC					20...	1330	135	16.0	240
08...	0840	188	1.0	75	JUL				
JAN 1989					13...	1030	101	22.0	210
19...	1500	80	1.0	260	AUG				
FEB					22...	1215	130	21.0	210
23...	1530	304	0.0	42					

04280350 METTAWEE RIVER NEAR PAWLET, VT (LAT 43 22 18 LONG 073 12 59)

OCT 1988					APR 1989				
20...	1300	32	6.5	203	03...	1830	276	5.0	122
NOV					JUN				
20...	1220	135	5.5	141	26...	1300	83	19.0	180
JAN 1989					AUG				
10...	1300	61	0.0	108	21...	1200	50	21.0	163

SUPPLEMENTAL WATER-QUALITY DATA FOR GAGING STATIONS

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)
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ST. LAWRENCE RIVER BASIN--Continued

04282000 OTTER CREEK AT CENTER RUTLAND, VT (LAT 43 36 13 LONG 073 00 49)

OCT 1988					APR 1989				
07...	1300	139	9.5	240	20...	1000	1200	6.0	159
DEC					JUN				
08...	1030	456	0.5	173	01...	0730	436	15.0	195
JAN 1989					JUL				
20...	1030	286	0.0	240	13...	1415	315	20.0	190
FEB					AUG				
24...	1100	340	0.0	168	22...	1445	261	20.0	200
MAR									
03...	1230	178	0.0	--					

04282500 OTTER CREEK AT MIDDLEBURY, VT (LAT 44 00 47 LONG 073 10 06)

OCT 1988					JUN 1989				
24...	1200	805	7.0	188	05...	1115	800	18.5	200
DEC					JUL				
07...	1345	826	0.5	165	14...	1000	690	20.0	180
JAN 1989					26...	1100	358	24.0	240
19...	1130	485	0.0	175					
FEB					AUG				
23...	1130	1470	0.0	187	17...	1100	1290	20.5	195
APR									
19...	0915	2260	7.5	167					

04284000 JAIL BRANCH AT EAST BARRE, VT (LAT 44 09 30 LONG 072 26 44)

OCT 1988					JUN 1989				
04...	1410	5.8	10.5	230	02...	0845	40	16.0	195
DEC					JUL				
06...	1215	28	0.0	165	07...	1030	10	20.0	210
JAN 1989					AUG				
23...	1530	7.5	0.0	250	23...	0900	21	16.5	198
APR									
23...	1205	55	2.5	170					

04285500 NORTH BRANCH WINOOSKI RIVER AT WRIGHTSVILLE, VT (LAT 44 17 58 LONG 072 34 45)

OCT 1988					MAY 1989				
31...	1030	26	6.0	55	11...	1310	298	9.0	33
DEC					JUN				
13...	1100	22	0.0	48	21...	1130	25	18.0	44
JAN 1989					JUL				
09...	1430	24	0.0	40	27...	0820	3.6	23.0	68
FEB					SEP				
13...	0940	27	0.0	63	15...	0900	64	18.0	85
APR									
06...	1320	899	1.0	44					

04286000 WINOOSKI RIVER AT MONTPELIER, VT (LAT 44 15 23 LONG 072 35 36)

OCT 1988					MAY 1989				
11...	0945	67	10.0	310	03...	1230	2480	6.5	94
NOV					JUN				
15...	0930	658	6.0	134	09...	0745	567	16.0	175
DEC					JUL				
15...	0930	280	0.0	286	17...	0715	146	23.5	250
FEB 1989					AUG				
01...	1300	260	0.0	875	05...	1500	8160	20.5	76
MAR					30...	0900	172	17.0	290
07...	1415	260	0.0	210					

SUPPLEMENTAL WATER-QUALITY DATA FOR GAGING STATIONS

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)
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ST. LAWRENCE RIVER BASIN--Continued

04287000 DOG RIVER AT NORTHFIELD FALLS, VT (LAT 44 10 58 LONG 072 38 27)

OCT 1988					APR 1989				
26...	1330	45	5.0	125	27...	0945	110	4.0	125
NOV					MAY				
29...	0915	212	3.0	78	30...	0845	64	13.0	158
DEC					JUN				
29...	1030	83	0.0	153	27...	0930	59	18.0	155
JAN 1989					JUL				
30...	0945	36	0.5	168	26...	1900	17	24.0	155
FEB					AUG				
27...	1115	47	0.0	144	29...	0915	49	15.0	163
MAR					SEP				
30...	1130	332	1.0	82	28...	0845	64	8.0	160

04288000 MAD RIVER NEAR MORETOWN, VT (LAT 44 16 42 LONG 072 44 37)

OCT 1988					JUN 1989				
12...	1000	71	7.5	92	07...	1330	362	16.0	69
DEC					JUL				
15...	1245	118	0.0	80	17...	1100	49	23.0	118
JAN 1989					AUG				
27...	0845	69	0.0	110	05...	1300	6320	19.5	150
MAR					31...	1145	72	19.5	116
07...	0945	62	0.0	190	SEP				
MAY					08...	1415	63	23.0	105
02...	1415	4270	6.0	48					

04289000 LITTLE RIVER NEAR WATERBURY, VT (LAT 44 22 12 LONG 072 46 11)

NOV 1988					MAR 1989				
09...	0945	530	7.0	65	14...	1115	487	2.0	110
DEC					MAY				
19...	0845	574	2.0	59	01...	1030	544	5.0	64
JAN 1989					AUG				
19...	0730	14	14.0	64	30...	1130	73	16.0	66
24...	1500	16	1.5	50					

04290500 WINOOSKI RIVER NEAR ESSEX JUNCTION, VT (LAT 44 28 44 LONG 073 08 21)

NOV 1988					APR 1989				
08...	1145	2130	6.0	79	26...	0830	1720	5.0	135
DEC					JUN				
20...	1015	891	0.0	208	09...	1115	1720	16.5	134
JAN 1989					JUL				
23...	1030	1610	0.0	200	14...	0930	266	22.5	176
MAR					SEP				
07...	1100	1390	0.0	250	01...	1100	1300	19.0	205

04292000 LAMOILLE RIVER AT JOHNSON, VT (LAT 44 37 22 LONG 072 40 50)

NOV 1988					MAY 1989				
01...	0845	130	1.5	140	09...	1320	1290	7.0	92
DEC					JUN				
20...	0905	144	0.0	147	20...	0725	523	18.0	132
JAN 1989					JUL				
18...	0910	159	0.0	145	24...	1300	82	24.5	180
FEB					31...	0910	149	21.0	168
15...	1240	104	0.0	151	SEP				
MAR					15...	1300	1710	17.0	145
29...	1430	7490	1.0	60					

SUPPLEMENTAL WATER-QUALITY DATA FOR GAGING STATIONS

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)
ST. LAWRENCE RIVER BASIN--Continued									
04292500 LAMOILLE RIVER AT EAST GEORGIA, VT (LAT 44 40 45 LONG 073 04 23)									
DEC 1988					JUN 1989				
20...	1230	550	0.0	179	08...	0830	1190	18.5	119
JAN 1989					JUL				
24...	1030	379	0.0	150	21...	0830	178	22.0	186
MAR					SEP				
06...	1330	450	0.0	240	01...	0800	219	18.5	168
MAY									
02...	0830	2130	9.0	92					
04293000 MISSISQUOI RIVER NEAR NORTH TROY, VT (LAT 44 58 22 LONG 072 23 15)									
NOV 1988					MAY 1989				
02...	1250	1560	3.0	74	09...	1115	480	7.0	72
DEC					JUN				
15...	1145	106	1.0	100	26...	0915	84	21.0	116
JAN 1989					AUG				
10...	1455	99	0.0	104	01...	1140	46	21.0	116
FEB					SEP				
14...	1430	68	0.0	120	19...	1200	104	15.0	115
04293500 MISSISQUOI RIVER NEAR EAST BERKSHIRE, VT (LAT 44 57 30 LONG 072 41 55)									
NOV 1988					MAY 1989				
03...	1330	4060	3.5	68	10...	0815	1440	8.0	82
DEC					JUN				
15...	1025	332	0.0	110	20...	1055	642	18.5	94
15...	1350	790	0.0	80	JUL				
FEB 1989					31...	1245	149	24.0	132
15...	0845	251	0.0	124	SEP				
APR					19...	0840	316	15.0	115
03...	0830	2920	1.0	86					
04296000 BLACK RIVER AT COVENTRY, VT (LAT 44 52 08 LONG 072 16 14)									
NOV 1988					APR 1989				
02...	0900	402	3.0	142	04...	0710	619	1.0	--
29...	0730	405	1.0	--	04...	1145	--	1.0	123
29...	1330	405	1.0	112					
DEC					MAY				
13...	1545	50	0.0	120	09...	0645	730	7.0	114
JAN 1989					JUN				
11...	1240	55	0.0	200	19...	0655	171	16.0	169
31...	0805	55	0.0	--	JUL				
31...	1045	59	0.0	211	25...	0710	26	22.0	245
FEB					AUG				
13...	1405	45	0.0	202	01...	0715	31	19.0	240
MAR					SEP				
31...	0755	1060	0.0	90	21...	0655	550	14.0	110
04296500 CLYDE RIVER AT NEWPORT, VT (LAT 44 56 22 LONG 072 11 23)									
NOV 1988					MAY 1989				
30...	0920	13	3.5	143	12...	0850	271	10.0	98
DEC					JUN				
22...	0930	15	0.0	142	19...	1330	11	18.0	140
JAN 1989					AUG				
11...	0830	12	0.0	150	02...	0825	13	20.5	167
FEB					SEP				
14...	0825	12	0.0	173	21...	0850	13	16.0	180
MAR									
31...	1320	63	2.0	180					

GROUND-WATER LEVELS IN NEW HAMPSHIRE

CHESHIRE COUNTY

425543072175801. Local number, KEW 2.

LOCATION.--Lat 42°55'43", long 72°17'58", Hydrologic Unit 01080201, east side of State Highway 12, about 0.5 mi north of State Highway 9, and 1.1 mi southwest of the center of Keene.

Owner: New Hampshire Department of Transportation.

AQUIFER.--Sand of Pleistocene age.

WELL CHARACTERISTICS.--Bored, unused water-table well, diameter 2 in, depth 18 ft.

DATUM.--Altitude of land-surface datum is 470 ft. Measuring point: Top of casing, 4.5 ft above land-surface datum.

PERIOD OF RECORD.--August 1963 to current year. Prior to January 1973, published in New Hampshire Hydrologic-Data Report No. 3.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.17 ft below land-surface datum, May 31, 1984; lowest measured, 6.23 ft below land-surface datum, Sept. 27, 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 21	4.68	JAN 23	4.31	APR 21	2.35	JUL 21	4.50
NOV 21	1.87	FEB 20	4.41	MAY 23	3.43	AUG 21	2.19
DEC 20	3.97	MAR 23	3.73	JUN 21	3.21	SEP 21	4.18

COOS COUNTY

444733071094901. Local number, ETW 1.

LOCATION.--Lat 44°47'33", long 71°09'49", Hydrologic Unit 01040001, southwest side of State Highway 26, 1.8 mi northwest of the center of Errol.

Owner: U.S. Geological Survey.

AQUIFER.--Very fine sand and silt of Pleistocene age.

WELL CHARACTERISTICS.--Bored, unused water-table well, diameter 1.25 in, depth 30 ft.

DATUM.--Altitude of land-surface datum is 1,245 ft. Measuring point: Top of casing, 3.00 ft above land-surface datum.

PERIOD OF RECORD.--November 1966 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.4 ft below land-surface datum, May 22, 1969; lowest measured, 14.1 ft below land-surface datum, Feb. 22, 1975.

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 21	13.1	JAN 23	13.2	APR 24	11.4	JUL 24	12.4
NOV 23	12.8	FEB 23	13.1	MAY 30	11.5	AUG 22	12.8
DEC 20	12.7	MAR 27	13.2	JUN 30	11.9	SEP 22	12.8

442830071321001. Local number, LCW 1.

LOCATION.--Lat 44°28'30", long 71°32'10", Hydrologic Unit 01080101, in gravel pit about 1,100 ft southwest of Middle Street, 2.2 mi southeast of U.S. Highway 3, and 2.0 mi southeast of the center of Lancaster.

Owner: Town of Lancaster.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Driven, unused test well, diameter 2.5 in, depth 30 ft.

DATUM.--Altitude of land-surface datum is 940 ft. Measuring point: Top of casing, 1.0 ft above land-surface datum.

PERIOD OF RECORD.--November 1966 to May 1980, April 1981 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, flowing at 1.0 ft above land-surface datum, April 26, 1970, Apr. 28, 1972, Dec. 21, 1982, Feb. 21, 1986, Mar. 21, 1987; lowest measured, 2.67 ft below land-surface datum, Sept. 24, 1972.

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 24	1.85	JAN 25	2.02	APR 26	1.14	JUL 24	2.43
NOV 21	1.02	FEB 23	1.26	MAY 24	1.29	AUG 29	2.32
DEC 23	1.92	MAR 24	1.45	JUN 27	1.81	SEP 22	1.80

GROUND-WATER LEVELS IN NEW HAMPSHIRE

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HILLSBOROUGH COUNTY

425024071413001. Local number, MOW 36.

LOCATION.--Lat 42°50'24", long 71°41'30", Hydrologic Unit 01070002, 85 ft from north side of Old Wilton Road, about 550 ft west of the intersection of State Highway 101, and 2.2 mi west of the center of Milford.

Owner: Leonard Cushing.

AQUIFER.--Sand of Pleistocene age.

WELL CHARACTERISTICS.--Dug, unused water-table well, diameter 36 in, depth 14.6 ft, lined with concrete.

DATUM.--Altitude of land-surface datum is about 265 ft. Measuring point: Top of concrete casing on south side of well, 1.60 ft above land-surface datum.

PERIOD OF RECORD.--January 1962 to current year. Prior to May 1966, published in New Hampshire Basic-Data Report No. 2, Ground-Water Series.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.68 ft below land-surface datum, Mar. 29, 1963; lowest measured, 12.30 ft below land-surface datum, Nov. 18, 1978.

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 21	8.08	JAN 21	7.73	APR 22	6.95	JUL 22	7.66
NOV 21	6.40	FEB 24	7.00	MAY 26	6.92	SEP 07	8.04
DEC 22	7.57	MAR 20	7.92	JUN 22	6.95	21	7.78

424800071295001. Local number, NAW 216.

LOCATION.--Lat 42°48'00", long 71°29'50", Hydrologic Unit 01070002, 222 ft east of edge of pavement of northbound lane of Everett Turnpike, about 0.63 mi north of Tinker Road overpass, and 2.8 mi northwest of the center of Nashua.

Owner: Pennichuck Water Works.

AQUIFER.--Sand of Pleistocene age.

WELL CHARACTERISTICS.--Bored, unused water-table well, diameter 2 in, depth 37.0 ft.

DATUM.--Altitude of land-surface datum is 205 ft. Measuring point: Top of casing, 3.08 ft above land-surface datum.

PERIOD OF RECORD.--October 1964 to December 1968; February 1970 to July 1980; August 1987 to present. Prior to June 1966, published in New Hampshire Basin-Data Report No. 2, Ground-Water Series.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 28.73 ft below land-surface datum, July 17, 1978; lowest measured, 35.42 ft below land-surface datum, Nov. 18, 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
NOV 28	30.51	FEB 21	30.88	MAY 26	29.70	JUL 24	30.16
JAN 25	31.81	MAR 29	30.73	JUN 27	29.71	AUG 23	30.43
		APR 27	30.17			SEP 25	31.64

424800071295301. Local number, NAW 218.

LOCATION.--Lat 42°48'00", long 71°29'53", Hydrologic Unit 01070002, 57 ft east of edge of pavement of northbound lane of Everett Turnpike, about 0.63 mi north of Tinker Road overpass, and 2.8 mi northwest of the center of Nashua.

Owner: New Hampshire Department of Transportation.

AQUIFER.--Sand of Pleistocene age.

WELL CHARACTERISTICS.--Bored, unused water-table well, diameter 2 in, depth 42.5 ft.

DATUM.--Altitude of land-surface datum is 205 ft. Measuring point: Top of casing, 3.1 ft above land-surface datum.

PERIOD OF RECORD.--October 1964 to current year. Prior to June 1966, published in New Hampshire Basic-Data Report No. 2, Ground-Water Series.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 26.10 ft below land-surface datum, June 5, 1984; lowest measured, 33.10 ft below land-surface datum, Nov. 25, 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 25	29.17	JAN 25	28.65	APR 27	27.92	JUL 24	27.94
NOV 28	28.28	FEB 21	28.71	MAY 26	27.37	AUG 23	28.26
DEC 21	28.51	MAR 29	28.56	JUN 27	27.43	SEP 25	29.47

GROUND-WATER LEVELS IN NEW HAMPSHIRE

MERRIMACK COUNTY

431224071303601. Local number, CVW 2.

LOCATION.--Lat 43°12'24", long 71°30'36", Hydrologic Unit 01070002, about 100 ft north of the Federal Aeronautics Administration Building at Concord Municipal Airport.
Owner: U.S. Geological Survey.

AQUIFER.--Sand of Pleistocene age.

WELL CHARACTERISTICS.--Bored, unused water-table well, diameter 2 in, depth 60 ft.

DATUM.--Altitude of land-surface datum is 340 ft. Measuring point: Top of casing, 3.00 ft above land-surface datum.

PERIOD OF RECORD.--August 1963 to May 1965, August 1967 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 36.85 ft below land-surface datum, Aug. 27, 1973; lowest measured, 44.62 ft below land-surface datum, Aug. 1, 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	DATE	WATER LEVEL
OCT 25	42.24	JAN 25	42.65	APR 10	43.07	JUN 14	42.95	AUG 23	41.43
NOV 28	42.44	FEB 21	42.79	27	43.11	27	42.79	SEP 25	42.37
DEC 21	42.58	MAR 29	42.96	MAY 26	43.13	JUL 24	42.55		

431049071324301. Local number, CVW 4.

LOCATION.--Lat 43°10'49", long 71°32'43", Hydrologic Unit 01070002, north side of Iron Works Road, about 700 ft west of South Street, and 1.8 mi southwest of the State House in Concord.
Owner: U.S. Geological Survey.

AQUIFER.--Lacustrine silty fine sands and clays of Pleistocene age.

WELL CHARACTERISTICS.--Bored, unused water-table well, diameter 1.25 in, depth 40.71 ft.

DATUM.--Altitude of land-surface datum is 285 ft. Measuring point: Top of casing, 3.8 ft above land-surface datum.

PERIOD OF RECORD.--November 1966 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.94 ft below land-surface datum, June 5, 1984; lowest measured, 20.30 ft below land-surface datum, Jan. 26, 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	DATE	WATER LEVEL
OCT 25	18.36	JAN 25	18.74	APR 10	18.48	JUN 14	16.80	AUG 23	17.34
NOV 28	17.71	FEB 21	18.91	27	17.92	27	16.75	SEP 25	17.92
DEC 21	18.03	MAR 29	19.13	MAY 26	17.12	JUL 24	16.99		

432428071390701. Local number, FKW 1.

LOCATION.--Lat 43°24'31", long 71°39'12", Hydrologic Unit 01070002, about 700 ft northeast of U.S. Highway 3, and entrance to Holy Cross Convent, and 2.5 mi south of Franklin.
Owner: Holy Cross Convent.

AQUIFER.--Sand of Pleistocene age.

WELL CHARACTERISTICS.--Unused water-table well, diameter 2.5 in, depth 52.3 ft.

DATUM.--Altitude of land-surface datum is 290 ft. Measuring point: Top of casing, 1.80 ft above land-surface datum.

PERIOD OF RECORD.--October 1966 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.18 ft below land-surface datum, June 5, 1984; lowest measured, 16.27 ft below land-surface datum, Jan. 26, 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	DATE	WATER LEVEL
OCT 25	14.13	JAN 25	14.14	APR 27	13.98	JUN 27	11.51	SEP 25	13.34
NOV 28	13.93	FEB 21	15.18	MAY 26	12.20	JUL 24	11.95		
DEC 21	13.55	MAR 29	14.93	JUN 14	11.93	AUG 23	12.57		

GROUND-WATER LEVELS IN NEW HAMPSHIRE

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MERRIMACK COUNTY--Continued

430235071275501. Local number, HTW 5.

LOCATION.--Lat 43°02'35", long 71°27'55", Hydrologic Unit 01070002, within southeastern cloverleaf of intersection of U.S. Highway 3A and Interstate Highway 93, 3.7 mi south of the center of Hooksett.

Owner: New Hampshire Department of Transportation.

AQUIFER.--Crystalline rock of Devonian age.

WELL CHARACTERISTICS.--Drilled, unused bedrock well, diameter 6 in, depth 102.73 ft.

DATUM.--Land-surface datum is 258.93 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.00 ft above land-surface datum.

PERIOD OF RECORD.--April 1965 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 40.69 ft below land-surface datum, Apr. 28, 1967; lowest measured, 51.96 ft below land-surface datum, Feb. 10, 1966.

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 25	49.33	JAN 25	49.00	APR 27	47.94	JUL 24	47.89
NOV 28	49.06	FEB 21	49.66	MAY 26	46.64	AUG 23	48.22
DEC 21	48.32	MAR 29	49.79	JUN 27	46.90	SEP 25	49.03

432343071570901. Local number, NLW 1.

LOCATION.--Lat 43°23'43", long 71°57'09", Hydrologic Unit 01070003, at north side of Golf Course Road, about 500 ft east of intersection of State Highway 114 and Golf Course Road, and 2.1 mi southeast of New London.

Owner: Peter Danforth.

AQUIFER.--Sandy till of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 36 in, depth 21 ft, lined with stone to 21 ft, open end.

DATUM.--Altitude of land-surface datum is 1,020 ft. Measuring point: Edge of 0.75-in hole in wooden cover, 2.9 ft above land-surface datum.

PERIOD OF RECORD.--October 1947 to current year. Prior to January 1956, published in Water Levels and Artesian Pressures in Observation Wells in the United States: Part 1. Northeastern States; U.S. Geological Survey Water-Supply Paper Series. January 1956 to November 1972, published in Ground-Water Levels in the United States, Northeastern States; U.S. Geological Survey Water-Supply Paper Series.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.80 ft below land-surface datum, Apr. 2, 1963; lowest measured, 16.90 ft below land-surface datum, Dec. 28, 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	DATE	WATER LEVEL
OCT 25	12.71	JAN 25	10.94	APR 27	5.97	JUN 27	6.31	SEP 25	12.42
NOV 28	7.35	FEB 21	12.32	MAY 26	5.93	JUL 24	9.02		
DEC 21	8.77	MAR 29	12.66	JUN 14	5.41	AUG 23	10.38		

431540071452801. Local number, WCW 1.

LOCATION.--Lat 43°15'40", long 71°45'28", Hydrologic Unit 01070003, 44 ft northeast of edge of pavement of northbound lane of Interstate Highway 89, about 2 mi southeast of State Highway 103 overpass in Warner.

Owner: New Hampshire Department of Transportation.

AQUIFER.--Sand and fine gravel of Pleistocene age.

WELL CHARACTERISTICS.--Driven, unused water-table well, diameter 2 in, depth 42.8 ft.

DATUM.--Altitude of land-surface datum is 424 ft. Measuring point: Top of casing, 3.2 ft above land-surface datum.

PERIOD OF RECORD.--December 1965 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 24.94 ft below land-surface datum, May 5, 1969; lowest measured, 33.82 ft below land-surface datum, Dec. 17, 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	DATE	WATER LEVEL
OCT 25	31.39	JAN 25	31.31	APR 27	30.05	JUN 27	28.67	SEP 25	30.94
NOV 28	31.04	FEB 21	31.69	MAY 26	28.84	JUL 24	29.32		
DEC 21	30.96	MAR 29	31.40	JUN 14	28.78	AUG 23	30.02		

GROUND-WATER LEVELS IN NEW HAMPSHIRE

STRAFFORD COUNTY

430721071005001. Local number, LIW 1.

LOCATION.--Lat 43°07'21", long 71°00'50", Hydrologic Unit 01060003, southwest side of Bennett Road about 200 ft from the west corner of the Lee Town Green.

Owner: Brenda Nye.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 40 in, depth 32.8 ft, lined with stone to 32.8 ft.

DATUM.--Altitude of land-surface datum is 190 ft. Measuring point: Top edge of board across well opening, 2.00 ft above land-surface datum.

PERIOD OF RECORD.--November 1953 to current year. Prior to January 1958, published in New Hampshire Basic-Data Report No. 1, Ground-Water Series. Prior to January 1956, published in Water Levels and Artesian Pressures in Observation Wells in the United States: Part 1. Northeastern States; U.S. Geological Survey Water-Supply Paper Series. January 1956 to December 1972, published in Ground-Water Levels in the United States, Northeastern States; U.S. Geological Survey Water-Supply Paper Series.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 27.66 ft below land-surface datum, Mar. 22, 1983; lowest measured, 32.40 ft below land-surface datum, Dec. 18, 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 25	30.85	JAN 25	31.45	MAY 26	30.67	AUG 23	31.16
NOV 28	30.61	MAR 29	31.35	JUN 27	30.68	SEP 25	31.51
DEC 21	31.07	APR 27	30.78	JUL 24	31.03		

GROUND-WATER LEVELS IN VERMONT

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BENNINGTON COUNTY

424810073160401. Local number, PQW 1.

LOCATION.--Lat 42°48'10", long 73°16'04", Hydrologic Unit 02020003, in front of residence on west side of State Highway 346 and 0.15 mi south of post office at North Pownal.

Owner: James Burden

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 24 in, depth 18 ft, cased with stone to 18 ft, open end.

DATUM.--Altitude of land-surface datum is 515 ft. Measuring point: Top of 0.75-in diameter hole drilled in center of 0.38-in thick steel cover at land-surface datum.

PERIOD OF RECORD.--October 1964 to current year. Prior to October 1977, published as Pownal 1.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.98 ft below land-surface datum, June 1, 1984; lowest measured, 16.59 ft below land-surface datum, Oct. 19, 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 23	14.52	JAN 25	14.11	APR 25	12.26	JUL 25	13.66
NOV 24	13.69	FEB 26	14.04	MAY 26	12.95	AUG 24	13.62
DEC 28	13.80	MAR 25	13.59	JUN 22	12.74	SEP 22	13.69

CHITTENDEN COUNTY

443646073124901. Local number, MJW 3.

LOCATION.--Lat 44°36'46", long 73°12'49", Hydrologic Unit 02010005, about 600 ft south of manager's residence at Vermont Sandbar Waterfowl Development Area, about 400 ft west of former U.S. Highway 2, and 0.9 mi northwest of Lamoille River bridge at Milton.

Owner: U.S. Geological Survey.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Driven observation water-table well, diameter 1.25 in, depth 40 ft, screened 38 to 40 ft.

DATUM.--Altitude of land-surface datum is 160 ft. Measuring point: Top of casing, 4.00 ft above land-surface datum.

PERIOD OF RECORD.--November 1956 to current year. Prior to October 1977, published as Milton 3.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 21.97 ft below land-surface datum, May 29, 1974; lowest measured, 39.10 ft below land-surface datum, Mar. 23, 1989.

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 25	37.55	JAN 27	38.73	APR 27	35.32	JUL 20	35.65
NOV 22	38.05	FEB 23	38.94	MAY 25	35.36	AUG 29	36.64
DEC 21	38.41	MAR 23	39.10	JUN 26	35.20	SEP 20	37.09

ESSEX COUNTY

444731071514701. Local number, BIW 1.

LOCATION.--Lat 44°47'31", long 71°51'47", Hydrologic Unit 01110000, south of road and just west of parking lot for Brighton State Park Beach at Brighton.

Owner: U.S. Geological Survey.

AQUIFER.--Medium and coarse sand of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.25 in, depth 35 ft, screened 33 to 35 ft.

DATUM.--Altitude of land-surface datum is 1,180 ft. Measuring point: Top of casing, 4.00 ft above land-surface datum.

PERIOD OF RECORD.--November 1966 to current year. Prior to October 1977, published as Brighton 1.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.94 ft below land-surface datum, Apr. 25, 1974; lowest measured, 4.95 ft below land-surface datum, Aug. 21, 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 20	4.01	JAN 25	4.05	APR 21	2.40	JUL 25	4.49
NOV 21	3.12	FEB 21	4.14	MAY 22	3.36	AUG 28	4.12
DEC 21	3.75	MAR 22	4.06	JUN 23	3.73	SEP 25	3.50

GROUND-WATER LEVELS IN VERMONT

FRANKLIN COUNTY

445603072422901. Local number, BKW 1.

LOCATION.--Lat 44°56'03", long 72°42'29", Hydrologic Unit 02010007, at southeast end of State Highway 118 bridge on Missisquoi River at East Berkshire.

Owner: U.S. Geological Survey.

AQUIFER.--Fine sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.25 in, depth 51 ft, screened 49 to 51 ft.

DATUM.--Altitude of land-surface datum is 425 ft. Measuring point: Top of casing, 4.00 ft above land-surface datum.

PERIOD OF RECORD.--November 1966 to current year. Prior to October 1977, published as Berkshire 1.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.71 ft below land-surface datum, Feb. 24, 1981; lowest measured, 16.43 ft below land-surface datum, Aug. 26, 1975.

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 25	14.27	JAN 27	14.39	APR 27	13.03	JUL 20	15.56
NOV 22	12.39	FEB 23	14.12	MAY 25	13.73	AUG 29	15.66
DEC 21	13.91	MAR 23	13.53	JUN 26	14.60	SEP 20	15.03

LAMOILLE COUNTY

443405072323501. Local number, MPW 1.

LOCATION.--Lat 44°34'05", long 72°32'35", Hydrologic Unit 02010005, Vermont Highway Department right-of-way off State Highway 15 and 3 mi east of Morrisville.

Owner: U.S. Geological Survey.

AQUIFER.--Silty, fine to medium sand of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.25 in, depth 50 ft, screened 48 to 50 ft.

DATUM.--Altitude of land-surface datum is 660 ft. Measuring point: Top of casing, 4.00 ft above land-surface datum.

PERIOD OF RECORD.--October 1966 to current year. Prior to October 1977, published as Morristown 1.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 14.87 ft below land-surface datum, Jan. 27, 1978; lowest measured, 20.47 ft below land-surface datum, Sept. 20, 1988.

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 25	20.43	JAN 27	19.43	APR 27	18.20	JUL 20	19.60
NOV 22	19.27	FEB 23	19.24	MAY 25	18.26	AUG 29	19.80
DEC 21	18.33	MAR 23	19.06	JUN 26	18.80	SEP 20	19.56

ORANGE COUNTY

435343072151801. Local number, WOW 1.

LOCATION.--Lat 43°53'43", long 72°15'18", Hydrologic Unit 01080103, 60 ft west of salt shed and 1.3 mi south southeast of West Fairlee Village.

Owner: U.S. Geological Survey.

AQUIFER.--Sand of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.25 in, depth 54 ft, screened 52 to 54 ft.

DATUM.--Altitude of land-surface datum is 700 ft. Measuring point: Top of casing, 2.00 ft above land-surface datum.

PERIOD OF RECORD.--November 1966 to current year. Prior to October 1977, published as West Fairlee 1.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.71 ft below land-surface datum, Jan. 26, 1978; lowest measured, 5.51 ft below land-surface datum, Aug. 26, 1985.

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 24	4.97	JAN 25	4.91	APR 25	2.64	JUL 26	4.26
NOV 22	4.12	FEB 23	4.86	MAY 25	2.78	AUG 25	4.37
DEC 22	4.57	MAR 23	4.03	JUN 26	3.27	SEP 25	4.35

GROUND-WATER LEVELS IN VERMONT

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ORLEANS COUNTY

443952072114001. Local number, GLW 1.

LOCATION.--Lat 44°39'52", long 72°11'40", Hydrologic Unit 01110000, at Vermont Highway Department salt shed west of State Highway 16 and 3 mi south of Glover Village.

Owner: U.S. Geological Survey.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.25 in, depth 82 ft, screened 80 to 82 ft.

DATUM.--Altitude of land-surface datum is 1,200 ft. Measuring point: Top of casing, 4.00 ft above land-surface datum.

PERIOD OF RECORD.--November 1966 to current year. Prior to October 1977, published as Glover 1.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.11 ft below land-surface datum, May 23, 1969; lowest measured, 18.95 ft below land-surface datum, Mar. 28, 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 25	17.43	JAN 27	17.12	APR 27	15.09	JUL 20	15.16
NOV 22	17.46	FEB 25	17.27	MAY 25	14.57	AUG 29	15.47
DEC 22	17.13	MAR 23	17.42	JUN 26	14.70	SEP 20	15.64

RUTLAND COUNTY

434217073010601. Local number, PFW 8.

LOCATION.--Lat 43°42'17", long 73°01'06", Hydrologic Unit 02010002, 12 ft west of storage building at St. Alphonsus Cemetery at Pittsford.

Owner: U.S. Geological Survey.

AQUIFER.--Medium to fine sand of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.25 in, depth 42 ft, screened 40 to 42 ft.

DATUM.--Altitude of land-surface datum is 490 ft. Measuring point: Top of casing, 2.00 ft above land-surface datum.

REMARKS.--Well pulled Nov. 8, 1968, point replaced, depth changed from 43 ft to 42 ft, old 3-ft point was completely encrusted.

PERIOD OF RECORD.--October 1957 to current year. Prior to October 1977, published as Pittsford 8.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 34.17 ft below land-surface datum, May 26, 1976; lowest measured, 39.59 ft below land-surface datum, Oct. 18, 1957.

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 24	36.15	JAN 25	36.15	APR 25	36.14	JUL 26	36.09
NOV 22	36.08	FEB 23	36.12	MAY 25	36.10	AUG 25	35.89
DEC 22	36.14	MAR 23	36.26	JUN 26	36.03	SEP 25	35.77

WASHINGTON COUNTY

441829072413901. Local number, MHW 3.

LOCATION.--Lat 44°18'29", long 72°41'39", Hydrologic Unit 02010003, adjacent to salt shed at Vermont Highway Department garage off U.S. Highway 2 and 1.25 mi west of Middlesex Village.

Owner: U.S. Geological Survey.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.25 in, depth 50 ft, screened 48 to 50 ft.

DATUM.--Land-surface datum is 453.72 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.00 ft above land-surface datum.

PERIOD OF RECORD.--October 1966 to current year. Prior to October 1977, published as Middlesex 3.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.99 ft below land-surface datum, Feb. 24, 1976; lowest measured, 23.80 ft below land-surface datum, Sept. 11, 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 25	22.78	JAN 27	22.74	APR 27	21.47	JUL 21	23.21
NOV 22	19.76	FEB 23	21.29	MAY 25	21.72	AUG 29	22.82
DEC 21	22.20	MAR 23	21.04	JUN 26	22.35	SEP 20	22.29

GROUND-WATER LEVELS IN VERMONT
WASHINGTON COUNTY--continued

441552072341901. Local number, MMW 2.

LOCATION.--Lat 44°15'52", long 72°34'19", Hydrologic Unit 02010003, at southeast corner of garage at Nine Winter Street in Montpelier.

Owner: U.S. Geological Survey.

AQUIFER.--Medium to coarse sand of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.25 in, depth 26 ft, screened 24 to 26 ft.

DATUM.--Altitude of land-surface datum is 520 ft. Measuring point: Top of casing, 0.61 ft above land-surface datum.

PERIOD OF RECORD.--October 1966 to current year. Prior to October 1977, published as Montpelier 2.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 11.09 ft below land-surface datum, Apr. 24, 1969; lowest measured, 17.10 ft below land-surface datum, Aug. 27, 1985.

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 25	16.66	JAN 27	16.48	APR 27	14.24	JUL 21	15.93
NOV 22	15.39	FEB 23	16.57	MAY 25	14.15	AUG 29	15.25
DEC 21	15.86	MAR 23	16.31	JUN 26	14.99	SEP 20	15.73

441215072483101. Local number, WAW 2.

LOCATION.--Lat 44°12'15", long 72°48'31", Hydrologic Unit 02010003, at rest area on east side of State Highway 100 and 1.3 mi northeast of Waitsfield Village.

Owner: U.S. Geological Survey.

AQUIFER.--Silty gravel of Pleistocene age.

WELL CHARACTERISTICS.--Drive and wash observation water-level well, diameter 1.25 in, depth 45.5 ft, screened 43.5 to 45.5 ft.

DATUM.--Altitude of land-surface datum is 685 ft. Measuring point: Top of casing, 2.00 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.25 ft below land-surface datum, Dec. 14, 1983; lowest measured, 7.87 ft below land-surface datum, Nov. 26, 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 24	7.08	JAN 25	6.86	APR 25	6.41	JUL 26	7.32
NOV 22	5.67	FEB 23	6.61	MAY 25	6.29	AUG 25	6.77
DEC 22	6.71	MAR 23	7.03	JUN 26	6.54	SEP 25	6.77

441033072500201. Local number, WAW 3.

LOCATION.--Lat 44°10'33", long 72°50'02", Hydrologic Unit 02010003, town of Waitsfield, northwest of Vermont Highway Department salt shed on State Highway 100 and 0.5 mi southeast of Irasville Village.

Owner: U.S. Geological Survey.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Drive and wash observation water-level well, diameter 1.25 in, depth 53 ft, screened 51 to 53 ft.

DATUM.--Altitude of land-surface datum is 715 ft. Measuring point: Top of casing, 3.25 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.34 ft below land-surface datum, Feb. 24, 1976; lowest measured, 8.00 ft below land-surface datum, Sept. 25, 1978.

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 24	7.21	JAN 25	7.31	APR 25	6.24	JUL 26	7.32
NOV 22	5.60	FEB 23	6.85	MAY 25	6.19	AUG 25	6.66
DEC 22	7.06	MAR 23	7.33	JUN 26	6.57	SEP 25	6.01

GROUND-WATER LEVELS IN VERMONT

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WINDSOR COUNTY

431551072350601. Local number, CKW 1.

LOCATION.--Lat 43°15'51", long 72°35'06", Hydrologic Unit 01080107, at Vermont Highway Department salt shed on Elm Street in Chester.

Owner: U.S. Geological Survey.

AQUIFER.--Boulders, coarse gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.25 in, depth 22 ft, screened 20 to 22 ft.

DATUM.--Altitude of land-surface datum is 580 ft. Measuring point: Top of casing, 2.00 ft above land-surface datum.

PERIOD OF RECORD.--November 1966 to current year. Prior to October 1977, published as Chester 1.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.56 ft below land-surface datum, Mar. 20, 1986; lowest measured, 6.31 ft below land-surface datum, Sept. 28, 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 21	5.79	JAN 23	5.27	APR 20	3.79	JUL 20	5.44
NOV 23	4.24	FEB 23	4.87	MAY 23	4.40	AUG 23	5.48
DEC 22	5.22	MAR 23	4.98	JUN 21	4.28	SEP 21	5.11

433240072242901. Local number, HLW 54.

LOCATION.--Lat 43°32'40", long 72°24'29", Hydrologic Unit 01080104, at northeast corner of fire station in Hartland.

Owner: U.S. Geological Survey.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-level well, diameter 1.25 in, depth 51 ft, screened 49 to 51 ft.

DATUM.--Altitude of land-surface datum is 575 ft. Measuring point: Top of casing, 4.00 ft above land-surface datum.

PERIOD OF RECORD.--August 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.96 ft below land-surface datum, June 1, 1984; lowest measured, 9.94 ft below land-surface datum, Oct. 22, 1971.

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 24	9.40	JAN 25	9.48	APR 25	8.69	JUL 26	9.04
NOV 22	9.14	FEB 23	8.68	MAY 25	8.40	AUG 25	9.08
DEC 22	9.03	MAR 23	9.22	JUN 26	8.53	SEP 25	8.78

435129072483301. Local number, RJW 1.

LOCATION.--Lat 43°51'29", long 72°48'33", Hydrologic Unit 01080105, adjacent to salt shed at Vermont Highway Department garage 1.3 mi south of Rochester Village.

Owner: U.S. Geological Survey.

AQUIFER.--Sand of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.25 in, depth 73 ft, screened 71 to 73 ft.

DATUM.--Altitude of land-surface datum is 800 ft. Measuring point: Top of casing, 4.00 ft above land-surface datum.

PERIOD OF RECORD.--October 1966 to current year. Prior to 1977, published as Rochester 1.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.50 ft below land-surface datum, Mar. 26, 1968; lowest measured, 13.05 ft below land-surface datum, Aug. 25, 1975.

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 24	12.12	JAN 25	11.60	APR 25	10.09	JUL 26	11.74
NOV 22	9.45	FEB 23	10.80	MAY 25	9.68	AUG 25	10.65
DEC 22	11.18	MAR 23	11.55	JUN 26	9.80	SEP 25	10.52

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FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI).

Multiply inch-pound units	By	To obtain SI units
<i>Length</i>		
inches (in)	2.54×10^1	millimeters (mm)
	2.54×10^{-2}	meters (m)
feet (ft)	3.048×10^{-1}	meters (m)
miles (mi)	1.609×10^0	kilometers (km)
<i>Area</i>		
acres	4.047×10^3	square meters (m ²)
	4.047×10^{-1}	square hectometers (hm ²)
	4.047×10^{-3}	square kilometers (km ²)
square miles (mi ²)	2.590×10^0	square kilometers (km ²)
<i>Volume</i>		
gallons (gal)	3.785×10^0	liters (L)
	3.785×10^0	cubic decimeters (dm ³)
	3.785×10^{-3}	cubic meters (m ³)
million gallons	3.785×10^3	cubic meters (m ³)
	3.785×10^{-3}	cubic hectometers (hm ³)
cubic feet (ft ³)	2.832×10^1	cubic decimeters (dm ³)
	2.832×10^{-2}	cubic meters (m ³)
cfs-days	2.447×10^3	cubic meters (m ³)
	2.447×10^{-3}	cubic hectometers (hm ³)
acre-feet (acre-ft)	1.233×10^3	cubic meters (m ³)
	1.233×10^{-3}	cubic hectometers (hm ³)
	1.233×10^{-6}	cubic kilometers (km ³)
<i>Flow</i>		
cubic feet per second (ft ³ /s)	2.832×10^1	liters per second (L/s)
	2.832×10^1	cubic decimeters per second (dm ³ /s)
	2.832×10^{-2}	cubic meters per second (m ³ /s)
gallons per minute (gal/min)	6.309×10^{-2}	liters per second (L/s)
	6.309×10^{-2}	cubic decimeters per second (dm ³ /s)
	6.309×10^{-5}	cubic meters per second (m ³ /s)
million gallons per day	4.381×10^1	cubic decimeters per second (dm ³ /s)
	4.381×10^{-2}	cubic meters per second (m ³ /s)
<i>Mass</i>		
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons

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