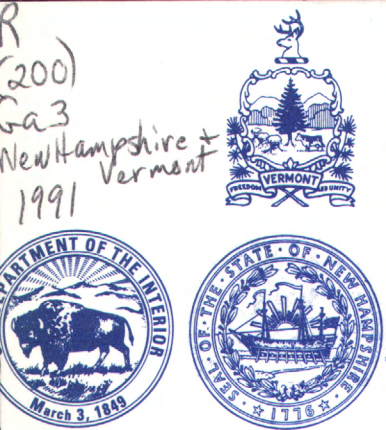


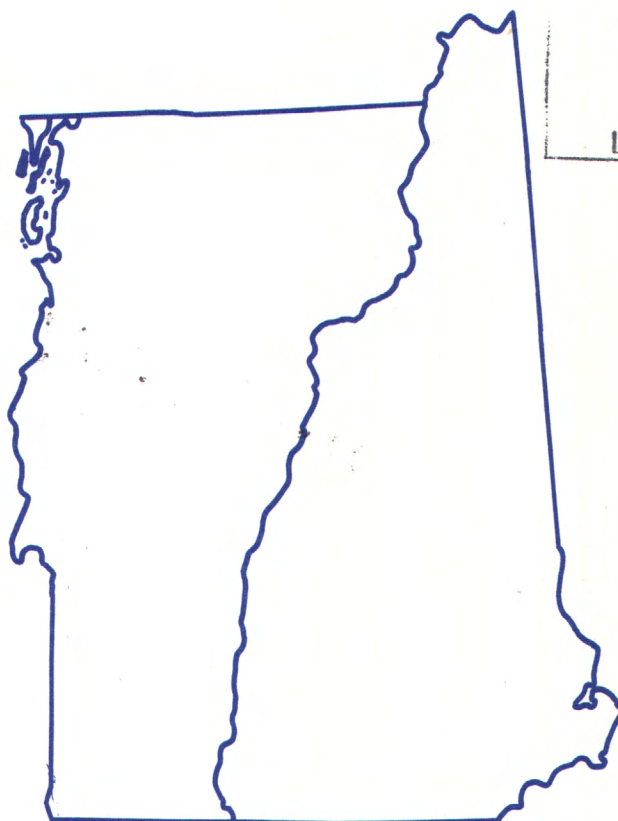


Water Resources Data New Hampshire and Vermont Water Year 1991

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Prepared in cooperation with the States of New Hampshire and
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CALENDAR FOR WATER YEAR 1991

1990

OCTOBER

S	M	T	W	T	F	S
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Water Resources Data New Hampshire and Vermont Water Year 1991

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



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT NH-VT-91-1
Prepared in cooperation with the States of New Hampshire and
Vermont and with other agencies

U.S. DEPARTMENT OF THE INTERIOR

MANUEL LUJAN, JR., *Secretary*

U.S. GEOLOGICAL SURVEY

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For additional information, write to:

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

1992

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.

Debra H. Foster and Mary Grace 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 Brian Mrazik, Chief, New Hampshire-Vermont District.

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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 1991 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 5 lakes, monthend contents for 23 lakes and reservoirs, water-quality data for 3 gaging stations, and water levels for 28 observation wells. Also included are data for 18 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 observations wells are shown in figure 1. A few pertinent stations 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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FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME

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(c), chemical; (b), biological; (t), water temperature

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The following continuous-record streamflow stations in New Hampshire and Vermont have been discontinued or converted to partial-record stations. Daily streamflow or stage records were collected and published for the period of record, expressed in water years, shown for each station. Those stations with an asterisk (*) after the station number are currently operated as crest-stage partial-record stations. Discontinued project stations with less than 3 years of record have not been included. Information regarding these stations may be obtained from the District Office at the address given on the back side of the title page of this report.

Discontinued surface-water discharge stations

Station name	Station number	Drainage area (mi ²)	Period of record
SACO RIVER BASIN			
Cold Brook at South Tamworth, N.H.	01064800	5.41	1963-73
Ossipee River at Effingham Falls, N.H.	01065000	330	1942-90
PISCATAQUA RIVER BASIN			
Mohawk Brook near Center Strafford, N.H.	01072850	8.87	1964-77
Dudley Brook near Exeter, N.H.	01073600	4.97	1962-86
MERRIMACK RIVER BASIN			
Pemigewasset River at North Woodstock, N.H.	01074000*	28.6	1911-12
East Branch Pemigewasset River near Lincoln, N.H.	01074500	109	1928-53
Pemigewasset River at Woodstock, N.H.	01075000	193	1939-77
Baker River at Wentworth, N.H.	01075500	58.8	1940-52
Baker River near Rumney, N.H.	01076000*	143	1929-77
Merrimack River at Franklin Falls Junction, N.H.	01081500*	1,507	1903-78
Contoocook River at Peterborough, N.H.	01082000*	68.1	1945-77
Nubanusit River near Peterborough, N.H.	01083000*	46.9	1920-31, 1945-90
Contoocook River near Elmwood, N.H.	01083500	168	1917-24
North Branch Contoocook River near Antrim, N.H.	01084000	54.8	1924-70
Beards Brook near Hillsboro, N.H.	01084500	55.4	1945-70
Contoocook River near Henniker, N.H.	01085000*	368	1939-77
Contoocook River below Hopkinton Dam at West Hopkinton, N.H.	01085500*	427	1903-07, 1963-89
Warner River at Davisville, N.H.	01086000	146	1939-78
Blackwater River near Webster, N.H.	01087000*	129	1918-20, 1927-90
Contoocook River at Penacook, N.H.	01088000	766	1928-77
Merrimack River at Garvins Falls, N.H.	01088500	2,427	1904-15
MERRIMACK RIVER BASIN			
Soucook River near Concord, N.H.	01089000	76.8	1951-87
Suncook River at North Chichester, N.H.	01089500	157	1918-27, 1928-70
Suncook River at East Pembroke, N.H.	01090000	270	1904-5
Merrimack River at Manchester, N.H.	01090500	2,854	1924-50
Piscataquog River below Everett Dam near East Weare, N.H.	01090800*	63.1	1963-89
South Branch Piscataquog River near Goffstown, N.H.	01091000	104	1940-78
Piscataquog River near Goffstown, N.H.	01091500*	202	1939-78
Sucker Brook at Auburn, N.H.	01093000	27.8	1938-70
Souhegan River at Merrimack, N.H.	01094000*	171	1909-76

Discontinued surface-water discharge stations--Continued

Station name	Station number	Drainage area (mi ²)	Period of record
CONNECTICUT RIVER BASIN			
Big Brook near Pittsburg, N.H.	01127880	6.36	1963-85
Connecticut River at First Connecticut Lake near Pittsburg, N.H.	01128500	83	1917-90
Kirby Brook at Concord, Vt.	01134800	8.05	1963-74
Moose River at St. Johnsbury, Vt.	01135000	128	1928-83
Stevens River at West Barnet, Vt.	01136000	22.2	1939-45
Ammonoosuc River at Bretton Woods, N.H.	01137500	a34	1903-07
Ammonoosuc River near Bath, N.H.	01138500	395	1935-80
Connecticut River at South Newbury, Vt.	01139500	2,825	1918-50
South Branch Waits River near Bradford, Vt.	01140000	42.7	1939-51
Connecticut River at Orford, N.H.	01140500	3,100	1900-21
Ompompanoosuc River at Union Village, Vt.	01141500*	130	1940-89
White River near Bethel, Vt.	01142000	241	1931-55
Connecticut River at White River Junction, Vt.	01144500	4,092	1911-77
Mascoma River at West Canaan, N.H.	01145000*	80.5	1939-78
Kent Brook near Shelburne, Vt.	01150800	3.31	1963-74
Ottawaquechee River at Woodstock, Vt.	01151000	126	1928-30
Black River at North Springfield, Vt.	01153000*	158	1929-89
Williams River at Brockways Mills, Vt.	01153500	103	1940-84
Saxtons River at Saxtons River, Vt.	01154000	72.2	1940-82
Cold River at Drewsville, N.H.	01155000	82.7	1940-78
Sacketts Brook near Putney, Vt.	01155200	10.0	1963-74
Flood Brook near Londonderry, Vt.	01155300	9.25	1963-74
West River at Jamaica, Vt.	01155500*	179	1946-89
West River at Newfane, Vt.	01156000*	308	1919-23, 1928-89
Connecticut River at Vernon, Vt.	01156500	6,266	1936,1938 1944-73
Ashuelot River near Gilsom, N.H.	01157000	71.1	1922-80
Ashuelot River below Surry Mountain Dam near Keene, N.H.	01158000*	101	1945-89
Otter Brook near Keene, N.H.	01158500	42.3	1923-58
Otter Brook below Otter Brook Dam near Keene, N.H.	01158600*	47.2	1958-89
Pratt Brook at Chesham, N.H.	01159000	11.2	1919-21
Minnewawa Brook at Marlborough, N.H.	01159500	31.7	1919-22
South Branch Ashuelot River at Webb near Marlborough, N.H.	01160000	36.0	1920-78
Beaver Brook at Wilmington, Vt.	01167800	6.38	1963-77
St. LAWRENCE RIVER BASIN			
East Creek near Rutland, Vt.	04281000	a47	1911-13
East Creek at Rutland, Vt.	04281500	51.1	1940-77
Lewis Creek Tributary at Starksboro, Vt.	04282700	5.31	1963-74
Mollys Brook near Marshfield, Vt.	04283000	a24	1920-23
Dog River at Northfield, Vt.	04286500	a52	1909-20, 1928-34
Sonny Brook near Montpelier, Vt.	04287300	2.31	1963-74
Winooski River at Richmond, Vt.	04289500	985	1903-07,1910

Discontinued surface-water discharge stations--Continued

Station name	Station number	Drainage area (mi ²)	Period of record
St. LAWRENCE RIVER BASIN			
Green River at Garfield, Vt.	04291000	a18	1915-21, 1922-32
Lamoille River at Cadys Falls, Vt.	04291500	268	1913-23
Stony Brook near Eden, Vt.	04292100	4.21	1963-74
Stone Bridge Brook near Georgia Plains, Vt.	04292700	8.45	1963-74
Brownington Branch near Evansville, Vt.	04296200	2.15	1963-74

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Water Resources Data for New Hampshire and Vermont, 1991

By K.W. Toppin, 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 5 lakes; monthend contents for 23 lakes and reservoirs; water quality at 3 gaging stations and water levels at 28 observation wells. Also included are data for 18 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, and are published as miscellaneous measurements. 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.

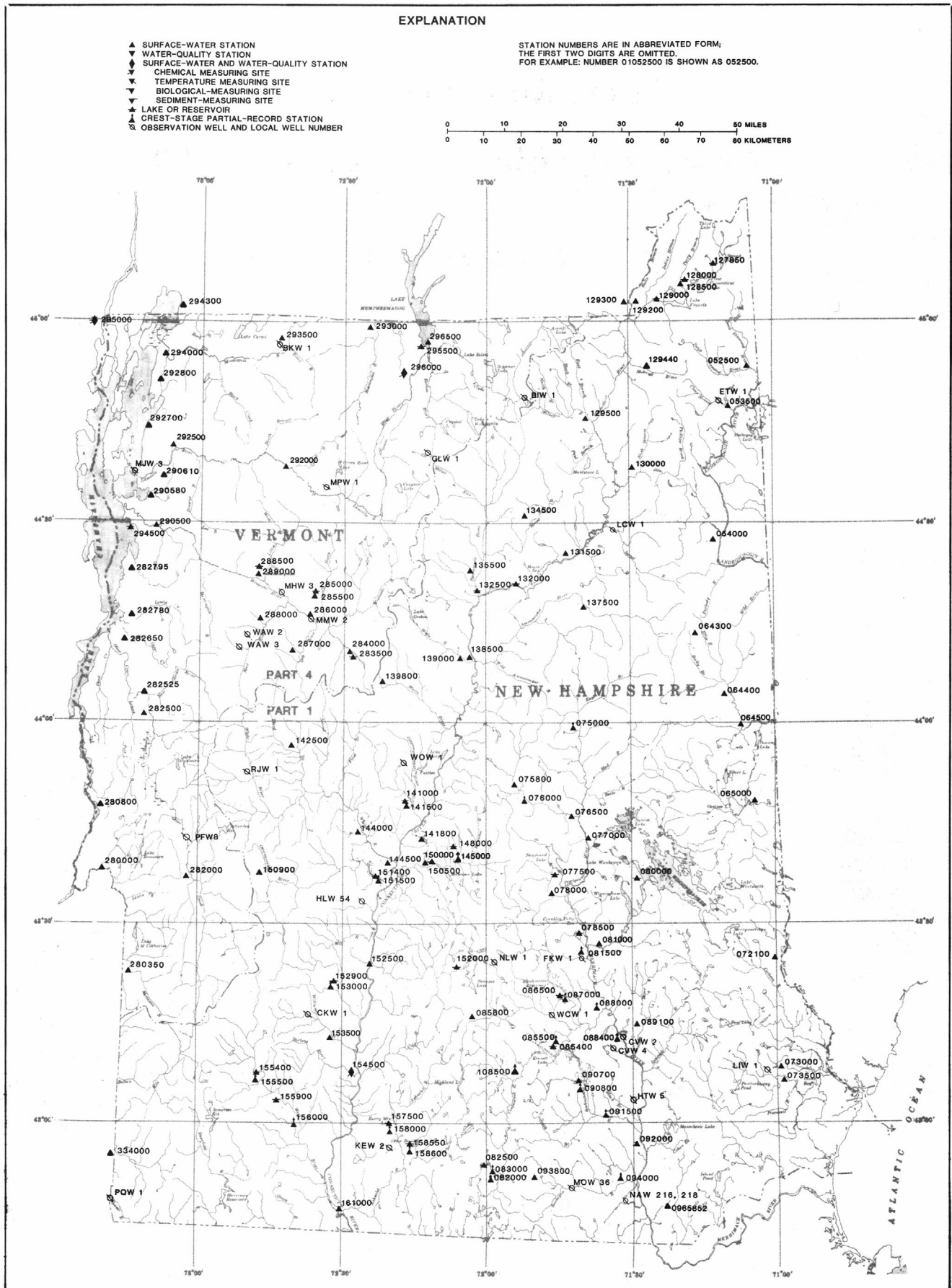


Figure 1.—Location of data-collection sites

Publications similar to this report are published annually by the U.S. 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-91-1." 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 (603) 225-4681.

COOPERATION

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

Vermont: Department of Environmental Conservation, E. McLain, commissioner.

Assistance in the form of funds or services was given by the Corps of Engineers, U.S. Army, in collecting records for 19 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

Runoff

Runoff for much of the 1991 water year throughout New Hampshire and Vermont ranged from normal (between the 25th and 75th quartiles) to above normal (above the 75th quartile) based on the 30-year reference period October 1950 through

September 1980 at two index stations--Pemigewasset River at Plymouth, New Hampshire and Dog River at Northfield Falls, Vermont. Mean discharges for the 1991 water year were in the normal range at the Pemigewasset River station and in the above-normal range at 120 percent of median at the Dog River station as shown in figure 2. Monthly runoff conditions for New Hampshire and Vermont are summarized below:

October	above normal; normal in the extreme southern Merrimack Valley in New Hampshire
November	normal in New Hampshire and eastern Vermont; above normal in western Vermont
December	above normal
January	normal; above normal in west-central Vermont
February	normal
March	normal
April	below normal; normal in the Androscoggin Valley in New Hampshire
May	below normal
June	below normal
July	below normal
August	above normal in New Hampshire and southern Vermont; normal in central and upper Connecticut Valley in New Hampshire and central and northern Vermont
September	above normal

During the period from October 1990 through January 1991, the Dog River station recorded above normal monthly mean discharges and, by the end of January, monthly mean discharges were in the above-normal range for the seventh consecutive month. Monthly mean discharges were the third, second, and third highest for the period of record at the Dog River station during October, November, and December, respectively. Recorded monthly mean discharges at the Pemigewasset River station from October to January varied from above normal to normal and the October monthly mean discharge was the third highest for the period of record.

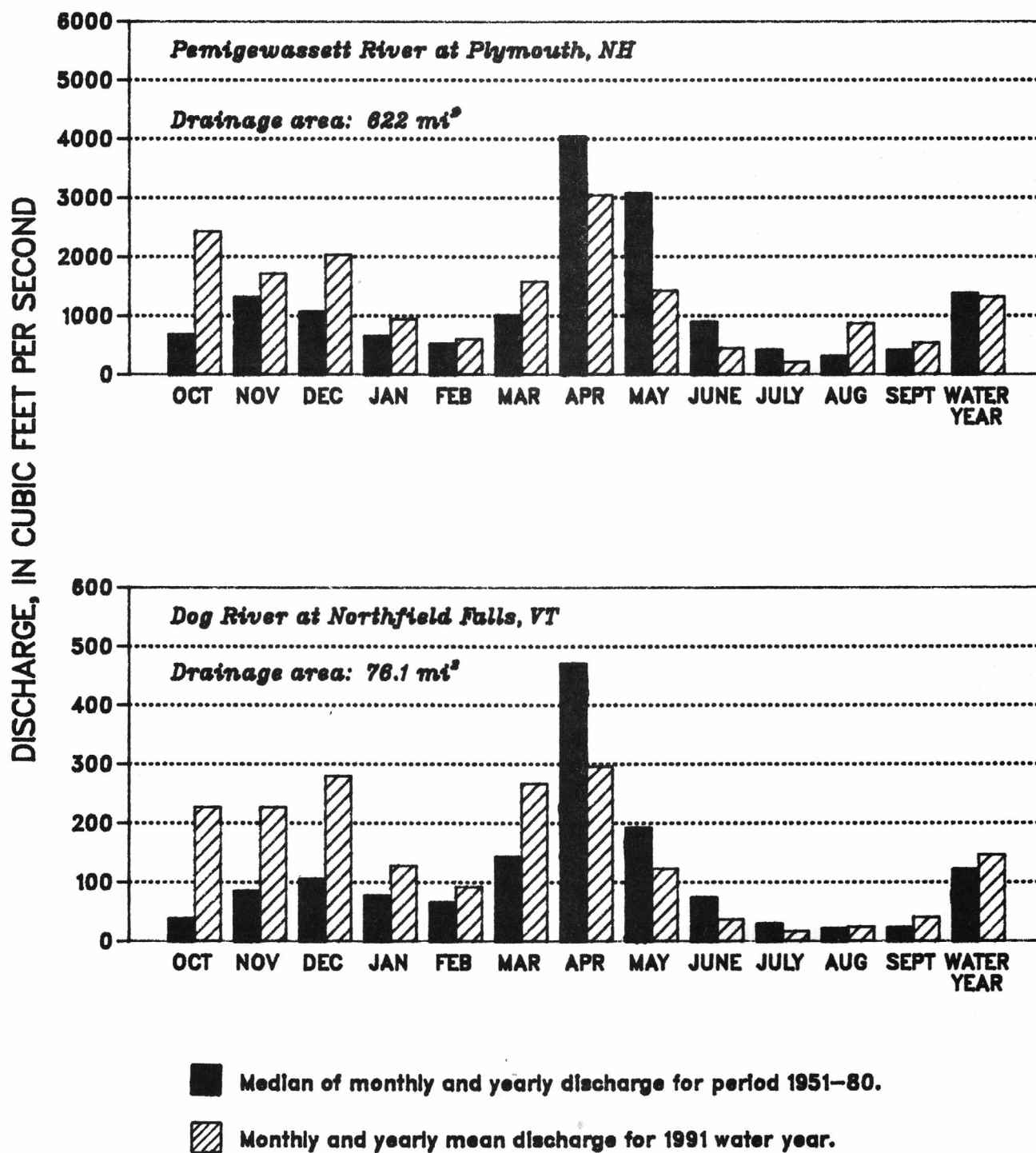


Figure 2.—Comparison of discharge at two long-term index gaging stations during 1991 water year with median discharge for period 1951-80.

During February and March, recorded monthly mean discharges were in the normal range at both stations. By the end of March, monthly mean discharges at the Pemigewasset River station were in the normal range for the third consecutive month.

Monthly mean discharges recorded at the two stations were in the below normal range from April through July. The monthly mean discharge for July at the Dog River station was the third lowest for the period of record. Drought alerts were issued by New Hampshire State officials in early August, after four consecutive months of below normal monthly mean discharge.

During August and September, monthly mean discharges recorded at the Pemigewasset River station were above normal. Recorded monthly mean discharges at the Dog River station were in the normal range for August and above normal for September.

Water Quality

Selected water-quality characteristics--temperature, specific conductance, pH, dissolved oxygen, alkalinity, bacteria (fecal coliform and fecal streptococci) counts, and concentrations of major inorganics, trace elements, major nutrients, and suspended sediment--were measured at two National Stream Quality Accounting Network (NASQAN) stations. The data collected are in the normal range, and no values exceeded the extremes for the period of record.

Reservoir Storage

Combined usable storage of five major reservoirs in the two-State area is 22,436 million ft³. At the beginning of the water year, combined usable storage from these reservoirs was 18,585 million ft³ or 83 percent of normal capacity. Average reservoir storage remained at 83 percent of normal capacity through December, then began a steady seasonal decline to 46 percent of normal capacity by the end of February. Average reservoir storage then began a steady seasonal increase to 85 percent of normal by the end of May. A seasonal decline in average reservoir storage to 73 percent of normal capacity occurred through the end of July. As a result of above normal surface-water runoff during August and September, average reservoir storage increased to 80 percent of normal capacity for a combined

usable storage of 17,716 million ft³ by the end of the water year.

Ground-Water Levels

At the beginning of the water year, ground-water levels were normal in most of Vermont and above normal in most of New Hampshire. Water levels increased in response to recharge during October throughout most of New Hampshire and central and north-central Vermont. Water levels were above normal at the end of October in New Hampshire and most of northern Vermont, and normal elsewhere.

Water levels remained at, or increased to, above normal during November in most of both States, but in southeastern Vermont and southwestern and east-central New Hampshire, levels were normal. Water levels increased in most of New Hampshire during December. Water levels increased in northern and southern Vermont and declined in central Vermont. At the end of December, water levels were above normal in most of both States.

Water levels declined throughout most of both States during January and February. At the end of January, levels generally remained above normal in both States, except in central Vermont and west-central and northernmost New Hampshire, where levels declined to normal. By the end of February, water levels were still above normal in much of the southern halves of both States and in northwestern Vermont. Elsewhere, levels had declined to normal.

Ground-water levels generally increased in all but the northernmost parts of New Hampshire and Vermont during March. However, the amount of recharge was less than normal in most areas. By the end of the month, water levels were generally normal, but ranged from above normal to below normal. Recharge generally continued throughout both States during April and water levels were normal by the end of the month.

Water levels declined throughout most of both States during May and continued a seasonal decline everywhere during June and July. Water levels in the Lake Champlain drainage basin remained normal during this period. At the end of May, water levels were below normal in the Androscoggin (N.H.), Hoosic (Vt.), and Connecticut River basins. Levels remained normal in eastern New Hampshire. Water levels in southernmost New Hampshire and Vermont were normal at the end of June. However, by the end of July, water levels were below normal everywhere, except in the Lake Champlain basin.

During August, recharge to ground water throughout most of the two States either increased water levels or reduced the rate of seasonal decline so the levels were above normal in southeastern Vermont, and in southern and eastern New Hampshire. Levels were normal elsewhere, except in northwestern Vermont and northernmost New Hampshire where they were below normal. During September, water levels declined in the southern halves of both States and increased in the northern halves. At the end of the water year, levels were generally normal, except in southern and eastern New Hampshire where they remained above normal.

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 1991 water year that began October 1, 1990, and ended September 30, 1991. 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 indention in the "List of stations" in the front of this report. Each indention represents one rank. This downstream order and system of indention shows which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

The station-identification number is assigned 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.

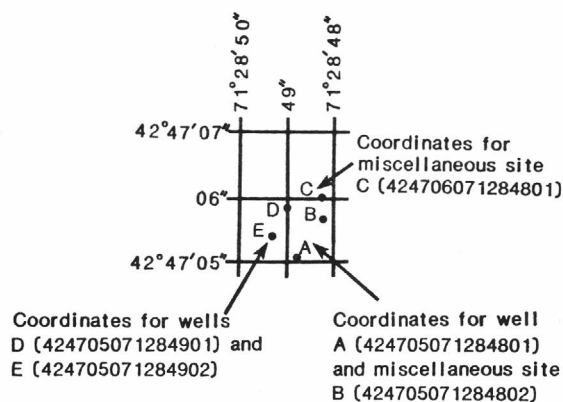


Figure 3.--System for numbering wells and miscellaneous sites (latitude and longitude).

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. 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

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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-Vermont District office. 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.

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 Hampshire-Vermont District 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. 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

Dissolved Trace-Element Concentrations

Note: Traditionally, dissolved trace-element concentrations have been reported at the microgram per liter ($\mu\text{g/L}$) level. Recent evidence, mostly from large rivers, indicates that actual dissolved-phase concentrations for a number of trace elements are

within the range of 10's and 100's of nanograms per liter (ngL). Present data above the $\mu\text{g/L}$ level should be viewed with caution. Such data may actually represent elevated environmental concentrations from natural or human causes; however, these data could reflect contamination introduced during sampling, processing, or analysis. To confidently produce dissolved trace-element data with insignificant contamination, the U.S. Geological Survey will begin using new trace-element protocols in the near future.

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 Water Supply Division (Vermont Department of Environmental Conservation) 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 Chief, New Hampshire-Vermont 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 one is given to a tenth of a foot.

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.

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.

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.

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.

Bottom material: See "Bed material."

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 (ft³/s) is the rate of discharge representing a volume of 1 ft³ passing a given point during 1 second and is equivalent to 7.48 gal/s or 448.8 gal/min or 0.02832 m³/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 ft³, approximately 1.9835 acre-ft, about 646,000 gal, or 2,445 m³.

Cubic feet per second per square mile [(ft³/s)/mi²] 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-μm membrane filter. This is a convenient operational definition used by Federal agencies that

collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate.

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

Drainage area of a stream at a 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.

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.

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.

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:

Classifi- cation	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.

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).

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.

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.

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 planimetered. All areas shown are those for the stage when the planimetered 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.

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, 1990, is called the "1990 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

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

format permits flexibility in revision and publication as the need arises.

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

- 1-D1 Water temperature-influential factors, field measurement, and data presentation, by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chap. D1. 1975. 65 pages.
- 1-D2 Guidelines for collection and field analysis of ground-water samples for selected unstable constituents, by W. W. Wood: USGS--TWRI Book 1, Chap. D2. 1976. 24 pages.
- 2-D1 Application of surface geophysics to ground-water investigations, by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chap. D1. 1974. 116 pages.
- 2-D2 Application of seismic-refraction techniques to hydrologic studies, by F. P. Haeni: USGS--TWRI Book 2, Chapter D2. 1988. 86 pages.
- 2-E1 Application of borehole geophysics to water-resources investigations, by W. S. Keys and L. M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.
- 2-E2 Borehole geophysics applied to ground-water investigations, by W. Scott Keys: USGS--TWRI Book 2, Chapter E2. 1990. 150 pages.
- 2-F1 Application of drilling, coring, and sampling techniques to test holes and wells, by Eugene Shute and Warren E. Teasdale: USGS--TWRI Book 2, Chapter F1. 1989. 97 pages.
- 3-A1 General field and office procedures for indirect discharge measurements, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chap. A1. 1967. 30 pages.
- 3-A2 Measurement of peak discharge by the slope-area method, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chap. A2. 1967. 12 pages.
- 3-A3 Measurement of peak discharge at culverts by indirect methods, by G. L. Bodhaine: USGS--TWRI Book 3, Chap. A3. 1968. 60 pages.
- 3-A4 Measurement of peak discharge at width contractions by indirect methods, by H. F. Matthai: USGS--TWRI Book 3, Chap. A4. 1967. 44 pages.
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- 3-A6 General procedure for gaging streams, by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chap. A6. 1968. 13 pages.
- 3-A7 Stage measurements at gaging stations, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chap. A7. 1968. 28 pages.

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- 3-A10 Discharge ratings at gaging stations, by E. J. Kennedy: USGS--TWRI Book 3, Chap. A10. 1985. 59 pages.
- 3-A11 Measurement of discharge by moving-boat method, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chap. A11. 1969. 22 pages.
- 3-A12 Fluorometric procedures for dye tracing, by J. F. Wilson, Jr., E. B. Cobb, and F. A. Kilpatrick: USGS--TWRI Book 3, Chap. A12. Rev. 1986. 34 pages.
- 3-A13 Computation of continuous records of streamflow, by E. J. Kennedy: USGS--TWRI Book 3, Chap. A13. 1983.
- 3-A14 The use of flumes in measuring discharge, by F. A. Kilpatrick and V. R. Schneider: USGS--TWRI Book 3, Chap. A14. 1983. 46 pages.
- 3-A15 Computation of water-surface profiles in open channels, by Jacob Davidian: USGS--TWRI Book 3, Chap. A15. 1984. 48 pages.
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- 3-A17 Acoustic velocity meter systems, by Antonius Laenen: USGS--TWRI Book 3, Chap. A17. 1985. 38 pages.
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- 3-B1 Aquifer-test design, observation, and data analysis, by R.W. Stallman: USGS--TWRI Book 3, Chap. B1. 1971. 26 pages.
- 3-B2 Introduction to ground-water hydraulics, a programed text for self-instruction, by G. D. Bennett: USGS--TWRI Book 3, Chap. B2. 1976. 172 pages.
- 3-B3 Type curves for selected problems of flow to wells in confined aquifers, by J. E. Reed: USGS--TWRI Book 3, Chap. B3. 1980. 106 pages.
- 3-B4 Regression modeling of ground-water flow, by Richard L. Cooley and Richard L. Naff: USGS--TWRI Book 3, Chapter B4. 1990. 232 pages.
- 3-B5 Definition of Boundary and Initial Conditions in the Analysis of Saturated Ground-Water Flow Systems-An Introduction, by O. L. Franke, T. E. Reilly, and G. D. Bennett: USGS--TWRI Book 3, Chap. B5. 1987. 15 pages.
- 3-B6 The Principle of Superposition and its Application in Ground-Water Hydraulics, by T. E. Reilly, O. L. Franke, and G. D. Bennett: USGS--TWRI Book 3, Chap. B6. 1987. 28 pages.
- 3-C1 Fluvial sediment concepts, by H. P. Guy: USGS--TWRI Book 3, Chap. C1. 1970. 55 pages.
- 3-C2 Field methods for measurement of fluvial sediment, by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chap. C2. 1970. 59 pages.
- 3-C3 Computation of fluvial-sediment discharge, by George Porterfield: USGS--TWRI Book 3, Chap. C3. 1972. 66 pages.
- 4-A1 Some statistical tools in hydrology, by H. C. Riggs: USGS--TWRI Book 4, Chap. A1. 1968. 39 pages.
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- 4-B1 Low-flow investigations, by H. C. Riggs: USGS--TWRI Book 4, Chap. B1. 1972. 18 pages.
- 4-B2 Storage analyses for water supply, by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chap. B2. 1973. 20 pages.
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- 4-D1 Computation of rate and volume of stream depletion by wells, by C. T. Jenkins: USGS--TWRI Book 4, Chap. D1. 1970. 17 pages.
- 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: USGS--TWRI Book 5, Chap. A1. 1979. 626 pages.
- 5-A2 Determination of minor elements in water by emission spectroscopy, by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chap. A2. 1971. 31 pages.
- 5-A3 Methods for analysis of organic substances in water, by D. F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chap. A3. 1972. 40 pages.
- 5-A4 Methods for collection and analysis of aquatic biological and microbiological samples, edited by P. E. Greeson, T. A. Ehlike, G. A. Irwin, B. W. Lium, and K. V. Slack: USGS--TWRI Book 5, Chap. A4. 1977. 332 pages.
- 5-A5 Methods for determination of radioactive substances in water and fluvial sediments, by L. L. Thatcher, V. J. Janzer, and K. W. Edwards: USGS--TWRI Book 5, Chap. A5. 1977. 95 pages.
- 5-A6 Quality assurance practices for the chemical and biological analyses of water and fluvial sediments, by L. C. Friedman and D. E. Erdmann: USGS--TWRI Book 5, Chap. A6. 1982. 181 pages.
- 5-C1 Laboratory theory and methods for sediment analysis, by H. P. Guy: USGS--TWRI Book 5, Chap. C1. 1969. 58 pages.
- 6-A1 A modular three-dimensional finite-difference ground-water flow model, by M. G. McDonald and A. W. Harbaugh: USGS--TWRI Book 6, Chapter A1. 1988. 586 pages.
- 7-C1 Finite difference model for aquifer simulation in two dimensions with results of numerical experiments, by P. C. Trescott, G. F. Pinder, and S. P. Larson: USGS--TWRI Book 7, Chap. C1. 1976. 116 pages.
- 7-C2 Computer model of two-dimensional solute transport and dispersion in ground water by L. F. Konikow and J. D. Bredehoeft: USGS--TWRI Book 7, Chap. C2. 1978. 90 pages.
- 7-C3 A model for simulation of flow in singular and interconnected channels by R. W. Schaffranek, R. A. Baltzer, and D. E. Goldberg: USGS--TWRI Book 7, Chap. C3. 1981. 110 pages.
- 8-A1 Methods of measuring water levels in deep wells, by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chap. A1. 1968. 23 pages.
- 8-A2 Installation and service manual for U.S. Geological Survey manometers, by J. D. Craig: USGS--TWRI Book 8, Chap. A2. 1983. 57 pages.
- 8-B2 Calibration and maintenance of vertical-axis type current meters, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chap. B2. 1968. 15 pages.

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: Oct. 25 to Nov. 8, Nov. 30 to Dec. 4, and Dec. 8 to Mar. 16. Records good except for period of ice effect, Dec. 8 to Mar. 16 and periods of no gage-height record, Oct. 25 to Nov. 8 and Nov. 30 to Dec. 4, which are fair. Several observations of water temperature and specific conductance were made during the year. Telephone gage-height telemeter at station.

AVERAGE DISCHARGE.--50 years, 349 ft³/s, 31.18 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)
Oct. 14	0700	a4,570	8.12	Apr. 9	2100	a*6,610	*9.38
Oct. 24	1400	a5,240	8.57				

a from rating curve extended above 4,300 ft³/s

Minimum discharge, 18 ft³/s, July 31, Aug. 1, gage height, 1.11 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	453	e375	e490	e580	e114	e86	295	846	853	61	20	260
2	326	e350	e320	e420	e109	e115	266	1280	381	50	27	153
3	385	e325	e265	e350	e107	e350	253	871	235	44	28	119
4	251	e310	e250	e305	e117	e700	291	650	238	40	25	100
5	769	e295	635	e270	e128	e525	574	527	306	36	313	98
6	511	e630	461	e245	e135	e475	1920	481	241	39	395	86
7	307	e430	397	e225	e132	e455	3420	1130	178	49	137	76
8	224	e275	e320	e210	e125	e500	4220	728	144	47	71	67
9	309	240	e271	e204	e120	e410	5520	547	120	68	48	59
10	704	300	e241	e196	e115	e320	4620	441	104	53	568	54
11	539	324	e176	e188	e108	e250	2400	376	92	39	505	121
12	803	236	e156	e182	e102	e225	1210	332	86	33	249	109
13	1180	251	e154	e175	e98	e198	810	287	96	31	146	74
14	3530	265	e151	e168	e96	e182	672	251	87	52	94	63
15	1660	420	e150	e164	e94	e168	797	224	86	55	69	62
16	754	1200	e150	e160	e89	e160	1550	199	276	36	60	215
17	536	1310	e149	e154	e85	157	1820	208	1030	28	55	157
18	469	769	e157	e150	e82	161	1500	380	545	26	70	98
19	1120	525	e235	e147	e85	180	1150	259	269	24	674	474
20	1050	436	e228	e142	e100	226	1150	200	176	23	2160	815
21	622	368	e210	e138	e155	210	1310	173	139	21	722	323
22	497	327	e370	e134	e195	167	2590	153	117	21	474	203
23	456	338	e1000	e130	e150	149	1920	134	104	93	317	154
24	3410	372	e1930	e127	e125	134	1180	124	93	155	219	138
25	e2700	365	e790	e124	e110	138	1190	114	83	61	161	462
26	e860	310	e540	e119	e105	135	1190	106	75	37	131	848
27	e650	254	e400	e116	e95	137	1130	568	67	32	119	473
28	e540	479	e360	e115	e88	408	925	579	60	27	216	353
29	e475	1290	e335	e120	---	835	689	285	118	23	432	411
30	e435	e1050	e430	e118	---	536	663	207	88	21	202	343
31	e400	---	e885	e116	---	339	---	282	---	19	262	---
TOTAL	26925	14419	12606	5992	3164	9031	47225	12942	6487	1344	8969	6968
MEAN	869	481	407	193	113	291	1574	417	216	43.4	289	232
MAX	3530	1310	1930	580	195	835	5520	1280	1030	155	2160	848
MIN	224	236	149	115	82	86	253	106	60	19	20	54
CFSM	5.71	3.16	2.68	1.27	.74	1.92	10.4	2.75	1.42	.29	1.90	1.53
IN.	6.59	3.53	3.09	1.47	.77	2.21	11.56	3.17	1.59	.33	2.20	1.71

CAL YR 1990 TOTAL 161756 MEAN 443 MAX 4770 MIN 45 CFSM 2.92 IN. 39.59
WTR YR 1991 TOTAL 156072 MEAN 428 MAX 5520 MIN 19 CFSM 2.81 IN. 38.20

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. November and December 1912, monthly discharges only, published in WSP 1301. Prior to 1922, published as "at Errol Dam."
Water-quality records: Water years 1955, 1958.

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.--No estimated daily discharges. Records excellent. Flow regulated by Rangeley, Mooselookmeguntic, Richardson, Azischoos, and Umbagog Lakes (Reservoirs in Androscoggin River Basin), combined usable capacity, 28,100,000 ft³, 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.--85 years, 1,904 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, 10,300 ft³/s, Apr. 10, gage height, 7.40 ft; minimum daily, 784 ft³/s, Apr. 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1880	4270	2380	3000	3170	3360	1770	3260	1350	1860	1490	1970
2	1850	4280	2380	2850	3180	3340	1760	3190	1270	1780	1490	1970
3	2060	4280	2370	2860	3180	3330	1720	3190	1450	1750	1490	1970
4	2150	4310	2380	2970	3310	3450	1520	3280	1460	1680	1470	1980
5	2450	4280	2390	2850	3440	3450	1230	3280	1320	1650	1470	2040
6	2610	4590	2230	2670	3440	3330	902	2900	1380	1650	1850	2060
7	2600	4850	2190	2620	3440	3150	784	2580	1450	1650	1980	2080
8	2430	4840	2190	2610	3430	2890	1800	2590	1510	1640	1460	2000
9	2340	4840	2210	2600	3430	2890	4370	2680	1550	2630	1460	2010
10	2340	4720	2150	2600	3430	2720	9320	2360	1550	3180	1330	2080
11	2040	4520	2090	2620	3430	2620	8640	1930	1610	2950	1260	2080
12	1840	4340	2090	2570	3440	2610	6190	1720	1650	2900	1400	2000
13	1900	3980	2090	2620	3420	2580	5410	1620	1640	2880	1350	2050
14	2380	3300	2160	2650	3440	2550	4150	1370	1650	2980	1260	2070
15	3640	3050	2220	2980	3440	2400	3440	1560	1650	1990	1250	2090
16	3560	3050	2220	3290	3430	2350	3450	1630	1660	1490	1250	2070
17	2950	3020	2210	3640	3420	2380	3440	1500	1660	1520	1250	2080
18	2630	3040	2220	3650	3430	2340	3460	1470	1570	1560	1250	2080
19	2750	3050	2260	3650	3420	2290	3450	1440	1450	1580	1760	2070
20	3040	3060	2290	3640	3420	2280	3440	1440	1520	1580	2100	2080
21	3490	2580	2300	3510	3420	2220	3640	1500	1610	1580	1810	2080
22	3480	2600	2310	3270	3430	2150	4380	1530	1650	1580	1620	2080
23	3480	2610	2920	3330	3420	2200	5450	1530	1790	1590	1610	2020
24	4570	2600	4610	3340	3410	2180	5870	1530	1860	1590	1610	2180
25	6650	2580	4860	3340	3410	2210	5830	1540	1850	1580	1610	2230
26	6610	2490	4020	3350	3390	2210	5480	1540	1850	1540	1690	2600
27	4560	2390	3130	3340	3390	2240	4970	1520	1860	1520	1720	3090
28	3930	2370	2930	3360	3380	2080	4030	1410	1850	1530	1710	3070
29	3860	2380	2860	3290	---	1660	3690	1480	1850	1550	1720	1790
30	4210	2400	2980	3170	---	1570	3440	1540	1860	1550	1850	1290
31	4220	---	3300	3180	---	1760	---	1540	---	1530	1970	---
TOTAL	98500	104670	80940	95420	94990	78790	117026	61650	48380	58040	48540	63260
MEAN	3177	3489	2611	3078	3392	2542	3901	1989	1613	1872	1566	2109
MAX	6650	4850	4860	3650	3440	3450	9320	3280	1860	3180	2100	3090
MIN	1840	2370	2090	2570	3170	1570	784	1370	1270	1490	1250	1290

CAL YR 1990 TOTAL 839920 MEAN 2301 MAX 6650 MIN 1330
WTR YR 1991 TOTAL 950206 MEAN 2603 MAX 9320 MIN 784

ANDROSCOGGIN RIVER BASIN

25

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 September 1928, 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 fair. 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.

AVERAGE DISCHARGE.--72 years (water years 1914-22, 1929 to current year), 2,494 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, 14,200 ft³/s, Apr. 10, gage height, 8.73 ft; minimum daily, 1,420 ft³/s, Aug. 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2330	4810	3350	4240	3280	3570	2470	4540	2730	1970	1590	2810
2	2260	4770	3260	3890	3200	3580	2370	5040	2260	1950	1600	2440
3	2220	4740	3000	3610	3380	3740	2420	4620	1880	1850	1590	2270
4	2400	4730	3040	3340	3400	4000	2500	4220	1920	1840	1610	2230
5	2910	4710	3590	3390	3580	4130	2600	4080	2070	1790	1690	2200
6	3050	4940	3380	3330	3660	3810	3340	3920	1850	1790	1910	2230
7	3010	5650	3010	3060	3670	3860	5070	4320	1720	1790	2430	2190
8	2920	5550	2880	2740	3670	3650	6150	3970	1640	1830	1760	2190
9	2740	5370	2780	2680	3650	3410	8250	3600	1780	1800	1640	2130
10	2910	5410	2800	3060	3670	3290	13100	3420	1760	1800	2100	2130
11	2880	5710	2510	2740	3600	3040	13700	2950	1730	1620	2260	2280
12	2500	5230	2310	2910	3540	2950	10100	2360	1810	1590	1700	2210
13	2760	4860	2670	2950	3390	2900	7320	2270	1810	1570	1660	2100
14	4960	4290	2510	2800	3650	2840	6270	1960	1820	1650	1470	2170
15	5570	3910	2470	3070	3600	2750	4620	1940	1830	1610	1430	2200
16	4800	3960	2700	3300	3520	2600	4960	1950	1970	1600	1520	2330
17	4070	4030	2620	3770	3480	2630	5190	1780	2420	1640	1460	2290
18	3360	4670	2700	3940	3550	2640	5060	2070	2470	1610	1420	2230
19	3940	4220	2860	3840	3520	2770	4640	1940	1880	1620	1960	2280
20	4280	3930	2910	3840	3580	2830	4500	1830	1730	1630	5780	2430
21	4150	3620	2830	3840	3770	2750	4780	1810	1680	1680	3970	2340
22	4160	3240	3170	3490	3780	2540	8630	1870	1810	1720	2990	2250
23	4080	3250	4420	3350	3680	2600	8580	1830	1830	1800	2280	2290
24	8290	3390	8090	3500	3500	2580	8130	1800	1980	1780	2070	2240
25	11400	3420	7430	3440	3630	2500	7530	1780	1960	1700	1950	2610
26	9240	3200	5890	3400	3560	2470	7030	1750	2000	1750	1880	3310
27	6740	2990	4400	3510	3500	2530	6370	1980	1980	1670	1950	3630
28	5070	3000	3720	3510	3540	3070	5670	2060	1960	1650	1910	3560
29	4660	3570	3640	3500	---	3360	4650	1740	2030	1620	2120	3250
30	4880	3580	4020	3420	---	2800	4450	1870	1950	1640	2020	1640
31	4890	---	5240	3350	---	2460	---	1940	---	1630	2790	---
TOTAL	133430	128750	110200	104810	99550	94650	180450	83210	58260	53190	64510	72460
MEAN	4304	4292	3555	3381	3555	3053	6015	2684	1942	1716	2081	2415
MAX	11400	5710	8090	4240	3780	4130	13700	5040	2730	1970	5780	3630
MIN	2220	2990	2310	2680	3200	2460	2370	1740	1640	1570	1420	1640

CAL YR 1990 TOTAL 1092930 MEAN 2994 MAX 11400 MIN 1610
WTR YR 1991 TOTAL 1183470 MEAN 3242 MAX 13700 MIN 1420

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 fair except those for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--27 years (water years 1965-91), 34.4 ft³/s, 42.86 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)
Oct. 13	1715	a909	4.34	Apr. 21	1800	a552	3.60
Oct. 24	0845	a878	4.28	May 6	2100	a407	3.23
Dec. 24	--	unknown	ice jam	Aug. 19	2000	a*1,610	*5.54
Apr. 9	1845	a447	3.34				

a From rating curve extended above 390 ft³/s.

Minimum discharge, 6.6 ft³/s, Aug. 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	32	e19	e30	e15	e9.0	17	100	53	13	7.1	29
2	24	31	e18	e26	14	e15	16	97	33	13	6.8	23
3	26	30	e18	e24	e13	e48	17	59	27	13	6.7	21
4	42	28	e58	e22	e12	e25	23	54	35	12	12	20
5	54	27	e56	e21	e19	e18	46	49	38	13	27	20
6	33	60	e35	e20	e15	e12	135	102	34	13	24	18
7	26	38	e30	e19	14	e30	227	119	28	13	15	18
8	24	32	e27	e18	e13	27	242	57	25	16	13	17
9	23	27	e25	e18	e11	e24	275	45	23	14	13	16
10	29	34	e23	e17	e15	e20	145	41	21	12	181	16
11	30	37	e22	e17	e13	e18	66	41	21	11	47	38
12	32	29	e20	e16	e25	e17	41	53	20	11	27	21
13	250	31	e18	e16	e19	e15	34	45	21	11	21	19
14	129	28	e17	e15	13	e14	31	39	19	13	17	18
15	55	43	e17	e15	12	14	32	34	20	11	16	22
16	40	74	e16	e14	e11	14	55	34	24	9.8	16	30
17	34	68	e16	e14	e11	15	47	50	27	9.4	14	24
18	33	44	e16	e13	11	14	38	53	22	9.1	13	21
19	93	35	e17	e13	11	20	33	35	20	9.0	318	24
20	49	31	e18	e13	e10	16	31	31	19	8.6	144	24
21	40	28	e19	e13	e10	19	167	29	19	8.5	76	20
22	36	27	e50	e14	e11	14	174	28	17	8.3	54	19
23	42	e26	e100	e19	e12	14	81	26	16	13	37	18
24	346	e25	e200	15	e13	15	66	26	16	9.6	28	18
25	83	e25	e80	14	e11	13	69	27	15	8.7	24	42
26	59	e24	e50	e13	e11	13	64	25	15	9.1	21	50
27	48	e23	e40	e13	e10	14	79	34	14	8.8	19	34
28	43	e23	e35	e12	e9.5	64	59	30	14	7.9	20	26
29	41	e21	e31	e13	---	34	54	27	15	7.5	23	24
30	37	e20	e28	14	---	22	106	25	14	7.4	18	22
31	34	---	e26	e16	---	19	---	48	---	7.3	45	---
TOTAL	1862	1001	1145	517	364.5	626.0	2470	1463	685	331.0	1303.6	712
MEAN	60.1	33.4	36.9	16.7	13.0	20.2	82.3	47.2	22.8	10.7	42.1	23.7
MAX	346	74	200	30	25	64	275	119	53	16	318	50
MIN	23	20	16	12	9.5	9.0	16	25	14	7.3	6.7	16
CFSM	5.51	3.06	3.39	1.53	1.19	1.85	7.55	4.33	2.09	.98	3.86	2.18
IN.	6.35	3.42	3.91	1.76	1.24	2.14	8.43	4.99	2.34	1.13	4.45	2.43

CAL YR 1990 TOTAL 14830 MEAN 40.6 MAX 424 MIN 10 CFSM 3.73 IN. 50.61
WTR YR 1991 TOTAL 12480.1 MEAN 34.2 MAX 346 MIN 6.7 CFSM 3.14 IN. 42.59

e Estimated

SACO RIVER BASIN

27

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.--27 years, 11.1 ft³/s, 32.21 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,660 ft³/s, Aug. 11, 1990, gage height, 9.67 ft, 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)
Oct. 13	1700	a191	6.56	Apr. 21	1830	a251	6.76
Oct. 24	0845	a515	7.41	Aug. 19	1820	a*903	*8.03
Dec. 24	0815	a261	6.79				

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

Minimum discharge, 0.36 ft³/s, Aug. 2-4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.4	16	9.4	e16	5.5	e4.6	14	22	7.0	1.1	.54	7.4
2	4.1	15	9.1	e13	5.4	e9.0	14	18	4.8	1.0	.43	6.6
3	3.9	14	8.5	e12	5.2	e45	14	16	4.1	.95	.36	6.1
4	4.7	13	30	e11	5.4	e22	17	14	5.1	.93	2.5	5.8
5	6.1	12	30	e11	5.3	e13	28	13	5.4	.93	3.3	5.3
6	4.6	27	19	e10	5.1	e11	47	24	4.5	1.1	1.3	4.7
7	4.3	23	16	e10	5.1	e45	54	40	3.6	1.2	.92	4.4
8	4.1	18	14	e9.5	5.1	e25	49	23	3.2	3.2	.71	4.1
9	4.2	16	13	e9.2	5.1	e22	48	18	3.0	2.2	.77	3.8
10	8.4	27	12	e8.8	5.3	e17	36	16	2.8	1.2	62	3.7
11	7.4	51	11	e8.6	5.4	13	28	15	2.8	1.0	19	3.7
12	8.8	29	10	e8.5	6.8	11	22	13	2.7	.98	8.9	3.3
13	62	22	9.6	e8.0	9.6	10	19	12	2.5	1.1	6.1	3.0
14	48	20	8.8	e7.8	9.7	9.9	17	11	2.4	1.7	4.7	3.0
15	24	18	e8.5	e7.6	6.4	9.2	17	10	2.1	1.2	4.2	3.7
16	17	19	e8.4	e7.5	5.6	8.9	19	9.5	2.9	.93	3.7	4.2
17	13	21	e8.2	e7.2	5.6	9.2	17	9.5	3.7	.80	3.2	3.4
18	12	21	8.4	e7.0	5.6	9.6	17	12	2.8	.70	3.2	3.0
19	20	18	e8.6	e6.8	5.3	19	16	9.3	2.2	.68	167	4.7
20	15	16	e9.0	e6.8	5.1	16	15	8.5	1.9	.63	64	4.6
21	13	15	e9.8	e6.8	5.1	12	72	7.9	1.6	.63	45	3.2
22	11	14	e30	e10	5.4	11	88	6.9	1.4	.61	31	3.0
23	14	13	e55	e9.0	5.7	13	46	6.6	1.4	.89	20	3.0
24	163	13	111	e8.6	6.5	23	31	6.2	1.4	.79	15	3.0
25	45	12	41	e7.8	6.0	10	25	6.2	1.4	.63	12	21
26	31	11	28	e7.2	5.3	10	21	5.5	1.4	.78	10	30
27	25	11	22	e6.6	4.9	11	19	6.2	1.3	1.0	8.9	18
28	23	11	19	e6.2	e4.8	23	18	5.9	1.2	.72	9.7	11
29	24	10	e16	e6.0	---	25	16	5.0	1.1	.62	14	8.6
30	20	9.8	e14	6.9	---	19	18	4.6	1.1	.57	9.1	7.4
31	18	---	e14	5.7	---	16	---	6.2	---	.57	9.1	---
TOTAL	664.0	535.8	611.3	267.1	161.3	502.4	862	381.0	82.8	31.34	540.63	196.7
MEAN	21.4	17.9	19.7	8.62	5.76	16.2	28.7	12.3	2.76	1.01	17.4	6.56
MAX	163	51	111	16	9.7	45	88	40	7.0	3.2	167	30
MIN	3.9	9.8	8.2	5.7	4.8	4.6	14	4.6	1.1	.57	.36	3.0
CFSM	4.58	3.82	4.21	1.84	1.23	3.46	6.14	2.63	.59	.22	3.73	1.40
IN.	5.28	4.26	4.86	2.12	1.28	3.99	6.85	3.03	.66	.25	4.30	1.56

CAL YR 1990 TOTAL 5334.6 MEAN 14.6 MAX 281 MIN 2.2 CFSM 3.12 IN. 42.40
WTR YR 1991 TOTAL 4836.37 MEAN 13.3 MAX 167 MIN .36 CFSM 2.83 IN. 38.44

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: Dec. 12-18 and Dec. 26 to Feb. 28. Records good except for periods of ice-effect, Dec. 12-18, and Dec. 26 to Feb. 28, which are fair. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--68 years (water years 1904-09, 1930 to current year), 936 ft³/s, 33.03 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)
Oct. 24	1615	14,600	9.61	Apr. 22	0230	12,100	8.91
Dec. 24	1345	*26,200	*12.38	Aug. 20	0400	15,600	9.88

Minimum discharge, 103 ft³/s, Aug. 3, 4, gage height, 1.99 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	423	1020	712	e1530	e380	318	974	2340	960	173	111	754
2	394	1020	679	e1330	e365	363	896	1990	642	164	110	505
3	340	940	638	e1250	e380	1270	882	1640	497	158	106	428
4	329	857	1260	e1190	e410	1360	955	1400	475	153	137	388
5	636	790	2150	e1100	e440	1110	1390	1250	567	151	325	371
6	539	1310	1300	e1070	e450	923	2740	1230	522	160	304	344
7	408	1610	1100	e1050	e410	1450	4740	3480	448	176	249	317
8	355	1160	979	e1020	e375	1710	5230	2000	401	206	189	296
9	332	981	903	e940	e347	1080	5660	1530	366	281	166	278
10	429	1010	853	e900	e317	949	5290	1360	345	213	2050	266
11	530	2850	771	e820	e295	808	3010	1230	323	180	1640	284
12	583	1730	e714	e720	e275	720	2100	1150	307	166	672	335
13	1660	1330	e680	e680	e265	662	1700	1090	301	163	434	271
14	5700	1160	e635	e630	e262	647	1470	986	296	203	337	251
15	2180	1080	e604	e610	e258	594	1380	902	278	201	287	247
16	1360	1510	e593	e600	e252	572	1540	826	301	171	263	335
17	1040	1730	e587	e650	e252	567	1500	780	390	154	238	348
18	878	1570	e617	e580	e261	615	1420	996	372	142	230	294
19	1550	1260	877	e500	e269	1010	1270	860	310	137	1730	305
20	1310	1110	786	e450	e330	1090	1190	741	274	131	8280	428
21	991	1010	710	e420	e430	842	2370	670	250	125	2670	367
22	867	931	3260	e400	e365	751	9290	616	233	120	2080	304
23	825	902	9220	e390	e360	713	5880	561	227	128	1330	278
24	8130	922	19700	e370	e345	687	3130	531	225	153	962	265
25	4590	860	9030	e355	e330	650	2480	506	214	137	770	623
26	2450	791	e4070	e350	e320	611	2160	489	203	127	651	1520
27	1810	734	e2520	e340	e305	633	1960	519	192	142	569	1220
28	1500	813	e2040	e335	e300	1150	1860	562	185	141	507	750
29	1500	941	e1810	e330	---	1860	1540	503	178	125	724	580
30	1270	838	e2200	e365	---	1340	1540	479	177	118	585	499
31	1130	---	e2800	e395	---	1060	---	461	---	114	575	---
TOTAL	46039	34770	74798	21670	9348	28115	77547	33678	10459	4913	29281	13451
MEAN	1485	1159	2413	699	334	907	2585	1086	349	158	945	448
MAX	8130	2850	19700	1530	450	1860	9290	3480	960	281	8280	1520
MIN	329	734	587	330	252	318	882	461	177	114	106	247
CFSM	3.86	3.01	6.27	1.82	.87	2.36	6.71	2.82	.91	.41	2.45	1.16
IN.	4.45	3.36	7.23	2.09	.90	2.72	7.49	3.25	1.01	.47	2.83	1.30

CAL YR 1990 TOTAL 460893 MEAN 1263 MAX 19700 MIN 194 CFSM 3.28 IN. 44.53
WTR YR 1991 TOTAL 384069 MEAN 1052 MAX 19700 MIN 106 CFSM 2.73 IN. 37.11

e Estimated

PISCATAQUA RIVER BASIN

29

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.--No estimated daily discharges. 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.--23 years, 192 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, 620 ft³/s, Sept. 26, gage height, 4.35 ft; minimum daily, 25 ft³/s, July 5-7, 11, 12, 24, 28-31, Aug. 1-4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	110	118	124	319	181	138	274	235	92	27	25	72
2	84	118	124	311	181	139	237	236	92	27	25	69
3	47	118	124	306	178	159	199	237	92	27	25	75
4	47	118	234	299	178	254	144	236	92	26	25	54
5	46	118	416	291	180	320	144	235	92	25	26	54
6	46	118	399	284	185	310	146	235	92	25	26	53
7	46	118	316	279	192	313	147	340	68	25	26	52
8	46	155	232	264	207	341	147	403	50	27	26	49
9	96	215	236	225	219	336	147	341	50	27	26	47
10	221	215	237	200	221	319	194	259	49	26	26	35
11	216	333	235	201	217	302	234	259	49	25	26	29
12	211	416	235	205	210	285	231	259	49	25	27	29
13	210	338	233	204	197	276	228	259	48	26	27	29
14	208	218	231	204	193	231	228	223	48	26	28	29
15	208	218	229	204	187	178	211	181	48	27	29	29
16	208	215	229	207	177	178	195	181	48	27	29	42
17	208	214	235	223	168	178	195	136	48	27	29	58
18	207	209	235	239	159	178	195	92	46	27	29	58
19	204	208	235	247	157	189	195	92	43	27	219	58
20	204	208	237	250	152	232	194	102	42	27	429	60
21	204	196	301	245	152	251	194	126	42	27	411	61
22	202	177	350	237	155	251	359	145	42	27	256	63
23	241	177	350	224	159	247	470	137	42	26	169	63
24	305	177	425	216	161	245	320	132	42	25	171	86
25	338	177	523	204	160	236	238	131	41	26	152	189
26	338	177	508	194	155	229	237	131	41	26	101	428
27	338	177	363	185	145	229	237	131	41	26	71	492
28	338	177	282	180	139	255	235	130	33	25	74	440
29	331	146	289	174	---	301	235	113	27	25	75	361
30	328	124	302	167	---	335	235	92	27	25	72	254
31	215	---	315	177	---	320	---	92	---	25	73	---
TOTAL	6051	5693	8784	7165	4965	7755	6645	5901	1616	809	2753	3418
MEAN	195	190	283	231	177	250	221	190	53.9	26.1	88.8	114
MAX	338	416	523	319	221	341	470	403	92	27	429	492
MIN	46	118	124	167	139	138	144	92	27	25	25	29

CAL YR 1990 TOTAL 71495 MEAN 196 MAX 523 MIN 36
WTR YR 1991 TOTAL 61555 MEAN 169 MAX 523 MIN 25

PISCATAQUA RIVER BASIN

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.--57 years, 19.6 ft³/s, 22.00 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. 11	0015	300	4.09	Aug. 19	1915	*458	*4.95

Minimum discharge, 0.77 ft³/s, Aug. 2, 4, 8, 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	17	14	38	e13	19	31	41	8.3	1.9	1.1	5.5
2	2.4	15	14	30	e14	34	28	32	6.2	1.7	1.0	5.1
3	1.9	20	13	27	e15	50	25	26	4.9	1.6	1.0	8.1
4	1.7	22	78	23	e17	95	23	21	5.9	1.7	1.0	8.2
5	2.2	20	91	20	e19	73	22	17	6.3	1.6	1.7	11
6	2.3	38	55	e17	e22	50	21	31	5.3	2.0	1.3	9.1
7	2.3	31	40	e17	e25	64	20	63	4.7	2.3	.93	7.3
8	2.2	24	34	e15	e35	56	18	40	4.0	3.1	.84	6.3
9	3.1	21	30	15	e28	43	19	30	3.6	3.6	.89	5.0
10	3.7	56	27	e14	e25	36	22	25	3.2	2.4	11	4.6
11	4.7	200	23	14	e22	31	22	20	3.1	2.6	6.6	5.1
12	4.6	88	21	14	e20	28	18	18	4.7	2.6	3.6	4.1
13	7.6	53	20	e14	e18	27	16	16	5.7	3.8	2.2	3.7
14	58	40	19	e15	e17	26	15	14	4.1	6.2	1.8	3.2
15	23	36	18	15	e16	25	16	13	2.3	3.1	1.6	3.6
16	16	32	e18	19	e15	23	22	13	6.0	2.0	1.5	6.7
17	12	29	e18	35	e15	22	19	17	8.5	1.6	1.3	6.5
18	9.6	27	e19	34	e15	24	17	41	5.9	1.5	1.2	5.3
19	33	25	e19	e26	e16	58	15	24	4.4	1.5	146	7.5
20	20	23	e20	e24	e17	42	15	28	3.6	1.9	177	22
21	14	21	e22	e20	e17	34	69	24	3.0	1.6	103	14
22	12	20	e30	e17	e18	30	127	20	2.8	1.2	74	10
23	23	19	35	e15	e17	28	73	17	2.2	1.3	46	8.4
24	105	23	81	e14	e16	32	46	15	2.3	1.3	31	7.5
25	62	21	80	e13	e15	35	37	13	2.0	.96	23	80
26	41	18	51	e13	e14	40	30	11	1.8	1.1	17	111
27	30	17	38	e12	e13	43	26	10	1.8	2.3	13	82
28	25	17	30	e12	e13	63	23	10	1.7	1.5	11	48
29	30	17	31	e12	---	49	21	8.9	1.6	1.2	8.7	35
30	22	15	33	e12	---	41	29	8.4	1.7	1.2	7.5	27
31	19	---	49	e12	---	35	---	7.9	---	1.2	6.6	---
TOTAL	595.8	1005	1071	578	507	1256	885	675.2	121.6	63.56	704.36	560.8
MEAN	19.2	33.5	34.5	18.6	18.1	40.5	29.5	21.8	4.05	2.05	22.7	18.7
MAX	105	200	91	38	35	95	127	63	8.5	6.2	177	111
MIN	1.7	15	13	12	13	19	15	7.9	1.6	.96	.84	3.2
CFSM	1.59	2.77	2.86	1.54	1.50	3.35	2.44	1.80	.33	.17	1.88	1.54
IN.	1.83	3.09	3.29	1.78	1.56	3.86	2.72	2.08	.37	.20	2.17	1.72

CAL YR 1990 TOTAL 8498.48 MEAN 23.3 MAX 200 MIN .98 CFSM 1.92 IN. 26.13
WTR YR 1991 TOTAL 8023.32 MEAN 22.0 MAX 200 MIN .84 CFSM 1.82 IN. 24.67

e Estimated

PISCATAQUA RIVER BASIN

31

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.--57 years, 283 ft³/s, 21.00 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, 1,720 ft³/s, Aug. 22, gage height, 6.65 ft; minimum daily, 12 ft³/s, Aug. 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	412	272	574	e200	678	e400	426	89	28	15	97
2	65	387	283	e540	e210	937	324	446	86	27	14	86
3	73	345	308	e460	e220	e945	302	426	80	25	13	77
4	75	314	505	e390	e235	e955	287	371	82	24	13	70
5	73	283	885	e345	e260	e920	263	309	88	24	14	73
6	69	323	992	e300	e300	e850	251	306	89	24	13	77
7	67	368	899	e270	e350	775	242	541	81	26	13	74
8	70	388	672	e250	e400	744	232	606	74	27	13	69
9	66	367	549	e240	535	648	199	565	67	26	12	62
10	88	471	498	e230	511	570	213	455	63	24	29	55
11	82	1300	447	e220	442	489	212	369	59	22	44	51
12	121	1300	397	e215	340	430	197	313	59	20	36	46
13	201	1160	366	e210	321	369	185	273	59	23	30	42
14	578	841	338	e225	e300	339	175	239	55	51	26	39
15	687	637	286	e255	e280	323	169	210	53	51	23	41
16	645	553	e285	283	e260	291	196	190	64	41	20	53
17	491	499	e280	392	e240	263	200	179	73	35	18	60
18	371	457	e310	447	e235	346	197	256	77	30	18	61
19	436	421	e315	448	e240	e475	186	243	74	27	371	66
20	458	393	e345	415	e250	e675	177	212	70	24	1410	128
21	403	366	e410	375	e260	e540	370	184	63	22	1560	142
22	339	341	e460	316	e270	e475	1070	161	56	20	1540	133
23	326	325	496	266	e260	e450	1050	138	51	20	1010	115
24	738	330	664	e240	e250	e425	865	122	45	19	621	99
25	896	323	909	e220	e240	e460	620	110	42	17	406	362
26	898	310	1030	e215	e230	e480	470	105	38	17	286	902
27	725	293	848	e200	e250	e525	379	98	35	19	215	1090
28	552	288	651	e190	421	e620	330	106	32	21	171	1050
29	507	298	558	e180	---	e775	292	98	30	20	143	784
30	464	290	536	e180	---	e600	303	93	30	18	115	532
31	425	---	628	e190	---	e480	---	89	---	17	103	---
TOTAL	11045	14383	16422	9281	8310	17852	10356	8239	1864	789	8315	6536
MEAN	356	479	530	299	297	576	345	266	62.1	25.5	268	218
MAX	898	1300	1030	574	535	955	1070	606	89	51	1560	1090
MIN	56	283	272	180	200	263	169	89	30	17	12	39
CFSM	1.95	2.62	2.89	1.64	1.62	3.15	1.89	1.45	.34	.14	1.47	1.19
IN.	2.25	2.92	3.34	1.89	1.69	3.63	2.11	1.67	.38	.16	1.69	1.33

CAL YR 1990 TOTAL 123150 MEAN 337 MAX 1460 MIN 31 CFSM 1.84 IN. 25.03
WTR YR 1991 TOTAL 113392 MEAN 311 MAX 1560 MIN 12 CFSM 1.70 IN. 23.05

e Estimated

MERRIMACK RIVER BASIN

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.--28 years, 4.84 ft³/s, 22.36 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)
Oct. 13	1745	111	2.89	Apr. 21	1830	*140	*3.04
Nov. 10	2115	135	3.02	Aug. 19	2000	105	2.86
Dec. 24	0745	104	2.85				

Minimum discharge, 0.09 ft³/s, July 20-23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.5	3.2	2.2	e5.0	e1.3	.85	4.3	e9.2	3.8	.11	.11	.16
2	2.0	2.9	2.1	e3.5	1.5	e6.0	4.0	e7.7	1.5	.11	.11	.14
3	1.3	2.6	2.1	e3.0	e1.4	e29	3.9	e5.7	.83	.10	.11	.13
4	1.0	2.3	16	e2.3	e1.5	e25	4.4	4.5	.60	.10	.26	.16
5	1.8	2.1	16	e2.1	e1.7	e11	7.8	3.7	.59	.10	.39	.17
6	1.2	5.9	8.2	e1.9	e2.0	e6.0	16	6.4	.55	.11	.21	.15
7	.79	5.8	6.1	e1.7	e2.3	e5.0	18	14	.42	.12	.18	.14
8	.56	4.2	5.0	e1.5	e3.1	e11	14	6.7	.31	.21	.16	.13
9	.49	3.4	e4.0	e1.4	e3.0	e32	15	4.9	.24	.15	.24	.12
10	1.4	29	e3.5	e1.3	e3.0	e20	11	3.9	.21	.12	1.8	.12
11	1.6	40	3.1	e1.2	2.9	e8.0	7.6	3.3	.19	.11	1.0	.33
12	1.8	14	2.7	e1.2	e2.3	e5.0	5.4	2.7	.21	.11	.66	.18
13	28	8.5	2.2	e1.2	e2.0	3.5	4.5	2.2	.27	.19	.44	.15
14	21	6.0	1.5	e1.2	1.8	3.3	4.0	1.9	.24	.19	.36	.14
15	7.4	4.7	e1.0	1.6	1.6	2.9	4.3	1.5	.24	.12	.34	.28
16	4.6	8.0	e1.1	e2.3	1.4	2.7	6.5	1.2	.36	.11	.39	1.3
17	3.4	8.6	1.7	e3.2	1.3	3.0	5.3	1.1	.62	.11	.33	1.3
18	2.9	6.5	e1.5	e2.8	1.2	3.6	4.8	1.4	.55	.10	.23	.66
19	16	5.0	e2.0	e2.5	1.2	5.6	4.4	1.2	.38	.10	26	.76
20	7.2	4.0	4.3	e2.2	1.2	4.3	3.7	.94	.25	.10	19	1.4
21	4.8	3.5	5.4	e2.0	1.5	3.6	42	.76	.18	.09	11	1.3
22	3.8	3.0	50	e1.8	e1.4	3.1	40	.59	.15	.09	4.4	.84
23	3.8	3.3	53	e1.6	e1.3	2.8	21	.49	.14	.12	1.8	.60
24	43	3.4	59	e1.5	e1.2	3.1	11	.43	.13	.11	.94	.51
25	15	3.3	20	e1.4	e1.1	2.6	e7.3	.36	.12	.11	.55	12
26	8.0	2.9	12	e1.3	e1.0	3.2	e5.9	.36	.12	.11	.31	14
27	5.8	2.7	e6.0	e1.3	e.95	4.9	e5.0	.46	.11	.13	.25	6.3
28	4.9	2.7	e4.0	e1.3	e.90	29	e4.1	.58	.11	.12	.22	3.0
29	4.8	2.7	e3.5	1.5	---	14	e3.7	.45	.11	.11	.17	1.8
30	3.9	2.6	e3.7	e1.3	---	7.3	e5.9	.41	.11	.11	.15	1.3
31	3.5	---	e4.5	e1.3	---	5.4	---	1.8	---	.11	.19	---
TOTAL	210.24	196.8	307.4	59.4	47.05	266.75	294.8	90.83	13.64	3.68	72.30	49.57
MEAN	6.78	6.56	9.92	1.92	1.68	8.60	9.83	2.93	.45	.12	2.33	1.65
MAX	43	40	59	5.0	3.1	32	42	14	3.8	.21	26	14
MIN	.49	2.1	1.0	1.2	.90	.85	3.7	.36	.11	.09	.11	.12
CFSM	2.31	2.23	3.37	.65	.57	2.93	3.34	1.00	.15	.04	.79	.56
IN.	2.66	2.49	3.89	.75	.60	3.38	3.73	1.15	.17	.05	.91	.63

CAL YR 1990 TOTAL 2377.17 MEAN 6.51 MAX 98 MIN .12 CFSM 2.22 IN. 30.08
WTR YR 1991 TOTAL 1612.46 MEAN 4.42 MAX 59 MIN .09 CFSM 1.50 IN. 20.40

e Estimated

MERRIMACK RIVER BASIN

33

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.--88 years, 1,363 ft³/s, 29.76 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)
Oct. 14	0330	13,200	10.11	Dec. 24	1730	ice jam	*11.54
Oct. 24	1800	*14,100	10.57				

Minimum discharge, 125 ft³/s, Aug. 3, 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1210	1350	1040	2190	e550	e600	1480	3350	1330	195	136	548
2	941	1230	993	e1800	e510	e700	1300	2960	965	184	135	386
3	728	1140	942	e1500	e560	e1000	1310	2450	724	177	131	329
4	628	1070	1780	e1200	e540	e2800	1390	2030	622	173	161	303
5	1980	1000	4140	e1100	e660	e3200	2030	1720	588	170	578	310
6	1240	1370	2230	e1300	e700	e2000	3590	1650	560	180	423	291
7	914	1920	1770	e1100	e660	e2500	5810	4710	521	208	324	261
8	739	1380	1460	e900	e840	e3400	6240	2930	481	265	240	241
9	652	1140	1300	e800	e800	e2200	6580	2200	454	442	224	225
10	878	1420	1190	e900	e780	e1600	6390	1840	415	276	1790	214
11	1050	6970	1140	e800	e640	e1300	4230	1600	364	227	1550	229
12	1130	3350	1160	e780	e650	e1200	2870	1390	362	207	713	255
13	2750	2230	1060	e780	e600	e1100	2250	1250	364	213	467	223
14	10000	1800	1010	e780	e640	1090	1890	1130	364	327	357	207
15	4240	1550	e720	e770	e530	942	1720	1040	329	317	304	216
16	2550	1890	e840	e820	e560	880	2170	949	380	244	274	579
17	1880	2550	e950	e1100	e540	889	2040	888	605	209	252	603
18	1490	2420	e900	e1200	e550	973	1840	1150	591	186	236	445
19	3220	1890	e1400	e1000	e550	1640	1650	1040	459	173	1010	423
20	2710	1600	e1500	e900	e520	1570	1480	895	387	164	6900	621
21	1880	1400	e1200	e850	e630	1170	2270	795	336	155	3040	519
22	1550	1270	e3000	e700	e630	1060	8130	714	287	215	2160	399
23	1430	1250	e4500	e820	e600	1020	5960	643	270	180	1310	338
24	8970	1330	e6800	e700	e500	972	3730	592	256	242	917	314
25	6670	1240	e5000	e700	e540	912	2850	567	243	190	692	937
26	3680	1120	e3500	e670	e560	874	2440	552	230	166	564	2360
27	2600	1030	e2000	e660	e550	1030	2200	626	222	157	493	1810
28	2150	1090	e1900	e660	e540	2600	2040	757	212	166	433	1060
29	2140	1290	e2100	e600	---	3850	1740	630	200	153	448	780
30	1790	1230	2350	e580	---	2390	1790	568	207	145	395	632
31	1540	---	3230	e640	---	1700	---	662	---	136	383	---
TOTAL	75330	51520	63105	29300	16930	49162	91410	44278	13328	6442	27040	16058
MEAN	2430	1717	2036	945	605	1586	3047	1428	444	208	872	535
MAX	10000	6970	6800	2190	840	3850	8130	4710	1330	442	6900	2360
MIN	628	1000	720	580	500	600	1300	552	200	136	131	207
CFSM	3.91	2.76	3.27	1.52	.97	2.55	4.90	2.30	.71	.33	1.40	.86
IN.	4.51	3.08	3.77	1.75	1.01	2.94	5.47	2.65	.80	.39	1.62	.96

CAL YR 1990 TOTAL 725822 MEAN 1989 MAX 17200 MIN 228 CFSM 3.20 IN. 43.41
WTR YR 1991 TOTAL 483903 MEAN 1326 MAX 10000 MIN 131 CFSM 2.13 IN. 28.94

e Estimated

MERRIMACK RIVER BASIN

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.--No estimated daily discharges. Records excellent. Flow completely regulated by powerplant upstream and by Squam and Little Squam Lakes.

AVERAGE DISCHARGE.--52 years, 89.1 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, 174 ft³/s, Oct. 24, Nov. 10, gage height, 10.92 ft; minimum daily, 9.6 ft³/s, July 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	160	162	165	118	77	59	60	61	11	59	59
2	59	158	161	165	118	77	60	59	61	10	59	59
3	59	156	161	165	118	77	60	60	61	10	59	59
4	59	156	164	165	118	78	59	61	61	9.6	59	59
5	59	156	164	165	118	77	59	60	60	9.8	59	59
6	59	159	164	165	118	78	59	60	60	10	59	59
7	59	158	164	165	118	80	60	60	60	10	59	60
8	59	157	165	164	118	79	60	59	60	43	59	60
9	86	156	165	164	118	79	60	61	60	61	58	60
10	99	162	165	164	118	79	60	61	60	61	59	59
11	98	163	162	165	118	79	60	61	60	61	59	59
12	97	162	161	165	118	79	62	61	59	61	59	59
13	103	162	161	165	118	79	62	60	59	62	59	59
14	107	163	160	164	118	79	59	60	60	61	57	59
15	104	161	160	164	118	79	59	63	60	61	58	59
16	101	164	160	164	118	79	60	62	60	61	57	59
17	101	164	160	165	118	79	62	59	60	59	57	59
18	102	165	160	165	120	79	62	60	59	61	57	59
19	102	164	160	165	119	80	62	60	60	61	59	59
20	101	165	160	162	117	66	60	64	60	61	59	62
21	102	165	160	158	117	59	61	60	60	61	59	66
22	101	165	160	158	117	58	60	59	59	62	59	66
23	104	163	162	158	117	57	60	59	58	59	59	66
24	127	163	166	158	117	57	60	62	59	59	59	66
25	163	163	165	158	117	58	60	62	59	59	59	66
26	163	164	164	158	117	58	61	60	59	59	59	66
27	163	165	165	158	117	59	62	61	59	60	59	66
28	164	165	165	158	92	60	61	61	39	60	59	66
29	162	163	165	158	---	60	60	61	11	59	58	65
30	160	162	165	158	---	59	64	61	11	59	58	62
31	161	---	165	139	---	59	---	61	---	59	59	---
TOTAL	3244	4849	5041	5010	3273	2203	1813	1878	1675	1500.4	1817	1841
MEAN	105	162	163	162	117	71.1	60.4	60.6	55.8	48.4	58.6	61.4
MAX	164	165	166	165	120	80	64	64	61	62	59	66
MIN	59	156	160	139	92	57	59	59	11	9.6	57	59

CAL YR 1990 TOTAL 44945.5 MEAN 123 MAX 754 MIN 9.1
WTR YR 1991 TOTAL 34144.4 MEAN 93.5 MAX 166 MIN 9.6

MERRIMACK RIVER BASIN

35

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.--73 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)
Nov. 10	2300	*1,250	*5.80	Dec. 24	1200	1,200	5.71

Minimum daily discharge, 9.1 ft³/s, Aug. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	125	142	95	188	e66	62	236	362	110	15	9.9	22
2	103	131	93	e170	e67	73	207	302	97	14	9.5	22
3	76.0	125	94	e150	69	180	209	240	63	14	9.1	19
4	63.0	116	221	124	73	434	216	192	54	13	10	18
5	76.0	107	437	115	83	384	265	165	54	13	17	17
6	92.0	187	295	e110	109	272	343	200	55	14	11	16
7	70.0	236	227	e90	124	423	411	465	49	16	10	15
8	60.0	179	175	77	153	515	409	371	41	17	9.9	14
9	54.0	146	152	e78	154	343	411	247	35	17	10	13
10	51.0	321	137	e74	144	221	424	195	31	15	24	12
11	83	862	117	71	120	168	332	166	30	13	27	12
12	93	772	113	e72	105	139	254	145	48	12	24	11
13	224	623	110	e75	94	128	207	126	53	15	17	10
14	623	321	96	e80	85	125	182	111	40	21	14	11
15	498	237	77	e82	84	112	169	101	34	20	13	13
16	269	213	e90	92	77	109	239	91	47	17	13	22
17	180	198	e100	143	75	121	227	85	77	14	11	25
18	141	203	106	159	69	154	205	115	76	13	10	20
19	237	186	e130	129	68	299	191	107	55	12	89	26
20	226	162	e140	113	72	245	165	86	42	11	236	48
21	171	148	153	104	85	191	379	73	34	11	209	44
22	140	138	247	85	e84	162	1030	65	28	10	155	32
23	150	135	532	78	e80	147	928	58	25	13	82	26
24	679	140	1030	e74	e75	138	603	54	23	11	52	23
25	727	132	951	e70	e72	130	356	52	21	10	37	123
26	531	122	647	e67	e70	134	253	48	20	11	30	246
27	315	112	381	e66	e66	170	207	59	19	13	26	192
28	231	110	244	e66	e65	458	178	67	17	11	22	107
29	210	107	211	e66	---	645	157	58	16	11	20	68
30	182	102	217	e66	---	469	199	52	15	10	18	51
31	161	---	256	e66	---	298	---	69	---	10	23	---
TOTAL	6841.0	6713	7874	3000	2488	7449	9592	4527	1309	417	1248.4	1278
MEAN	221	224	254	96.8	88.9	240	320	146	43.6	13.5	40.3	42.6
MAX	727	862	1030	188	154	645	1030	465	110	21	236	246
MIN	51	102	77	66	65	62	157	48	15	10	9.1	10
CFSM	2.57	2.61	2.96	1.13	1.04	2.80	3.73	1.70	.51	.16	.47	.50
IN.	2.97	2.91	3.41	1.30	1.08	3.23	4.16	1.96	.57	.18	.54	.55

CAL YR 1990 TOTAL 76637.0 MEAN 210 MAX 1620 MIN 14 CFSM 2.45 IN. 33.23
WTR YR 1991 TOTAL 52736.4 MEAN 144 MAX 1030 MIN 9.1 CFSM 1.68 IN. 22.86

e Estimated

MERRIMACK RIVER BASIN

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, 4.32 ft, May 18, 19, 20; minimum daily, 2.61 ft, Mar. 1, 2.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.44	3.82	3.70	3.92	3.13	2.61	3.20	3.99	4.22	3.75	3.25	3.50
2	3.40	3.81	3.66	3.90	3.10	2.61	3.21	3.98	4.20	3.73	3.22	3.48
3	3.38	3.79	3.64	3.86	3.06	2.63	3.20	3.98	4.19	3.72	3.20	3.45
4	3.36	3.78	3.73	3.83	3.03	2.70	3.21	3.99	4.19	3.69	3.21	3.44
5	3.34	3.78	3.77	3.79	3.01	2.71	3.21	4.02	4.17	3.67	3.22	3.42
6	3.34	3.80	3.80	3.73	2.99	2.72	3.32	4.08	4.13	3.65	3.20	3.40
7	3.33	3.81	3.80	3.67	2.98	2.78	3.25	4.19	4.10	3.64	3.19	3.38
8	3.33	3.79	3.80	3.65	2.97	2.80	3.27	4.22	4.07	3.62	3.17	3.36
9	3.33	3.77	3.77	3.62	2.95	2.81	3.32	4.25	4.07	3.57	3.17	3.34
10	3.36	3.82	3.74	3.59	2.94	2.83	3.35	4.27	4.03	3.55	3.27	3.31
11	3.37	3.88	3.70	3.57	2.91	2.84	3.32	4.29	4.03	3.54	3.27	3.26
12	3.37	3.87	3.70	3.60	2.88	2.83	3.34	4.28	4.04	3.53	3.25	3.23
13	3.44	3.86	3.66	3.57	2.87	2.82	3.36	4.30	3.96	3.54	3.24	3.20
14	3.54	3.87	3.62	3.55	2.88	2.80	3.37	4.30	3.97	3.56	3.22	3.19
15	3.56	3.89	3.63	3.53	2.89	2.79	3.39	4.30	3.97	3.54	3.22	3.19
16	3.57	3.89	3.65	3.51	2.86	2.76	3.43	4.29	3.99	3.53	3.26	3.25
17	3.58	3.90	3.62	3.52	2.85	2.74	3.45	4.30	4.00	3.50	3.25	3.23
18	3.59	3.94	3.65	3.50	2.83	2.74	3.46	4.32	3.99	3.49	3.23	3.22
19	3.59	3.90	3.64	3.47	2.82	2.83	3.46	4.32	3.98	3.48	3.36	3.23
20	3.59	3.86	3.64	3.45	2.80	2.86	3.47	4.32	3.97	3.46	3.53	3.25
21	3.61	3.88	3.64	3.42	2.78	2.88	3.57	4.29	3.94	3.44	3.58	3.21
22	3.61	3.88	3.68	3.39	2.76	2.89	3.69	4.28	3.94	3.43	3.60	3.20
23	3.64	3.87	3.69	3.36	2.73	2.91	3.75	4.28	3.92	3.42	3.60	3.18
24	3.80	3.85	3.80	3.33	2.72	2.99	3.79	4.23	3.90	3.40	3.61	3.16
25	3.89	3.82	3.91	3.29	2.70	3.01	3.81	4.22	3.88	3.38	3.59	3.28
26	3.91	3.80	3.92	3.27	2.68	3.01	3.83	4.24	3.86	3.38	3.55	3.34
27	3.88	3.80	3.94	3.23	2.65	3.03	3.86	4.27	3.82	3.36	3.55	3.30
28	3.89	3.79	3.95	3.20	2.63	3.10	3.87	4.25	3.80	3.34	3.54	3.29
29	3.84	3.75	3.94	3.17	---	3.14	3.88	4.23	3.78	3.33	3.55	3.29
30	3.84	3.73	3.94	3.15	---	3.16	3.95	4.22	3.77	3.31	3.54	3.28
31	3.82	---	3.90	3.15	---	3.19	---	4.24	---	3.30	3.54	---
MEAN	3.57	3.83	3.75	3.51	2.87	2.86	3.49	4.22	4.00	3.51	3.36	3.30
MAX	3.91	3.94	3.95	3.92	3.13	3.19	3.95	4.32	4.22	3.75	3.61	3.50
MIN	3.33	3.73	3.62	3.15	2.63	2.61	3.20	3.98	3.77	3.30	3.17	3.16
(†)	17,480	17,280	17,700	16,100	15,080	16,220	17,860	18,340	17,580	16,340	16,880	16,400
(‡)	276	-77.2	157	-597	-422	-426	633	179	-293	-463	202	-185

CAL YR 1990 MEAN 3.74 MAX 4.71 MIN 2.64 (†) 58.8

WTR YR 1991 MEAN 3.52 MAX 4.32 MIN 2.61 (‡) -10.8

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

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

MERRIMACK RIVER BASIN

37

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 current year.

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. May 24, 1944 and September 1983, record obtained from water-stage recorder, deflection meter, and measuring flume.

REMARKS.--Records good except those for estimated daily discharges, which are fair. 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.--54 years, 536 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, 1,830 ft³/s, Jan. 5, minimum daily, 8.2 ft³/s, Oct. 10, 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	507	690	1110	1100	1030	706	655	297	266	253	221	165
2	541	689	1150	1200	1020	642	730	296	265	254	221	166
3	541	710	889	1060	1020	638	729	292	510	265	166	323
4	538	703	835	1290	1050	750	723	250	506	260	165	372
5	528	684	772	1830	1060	827	592	250	509	259	221	491
6	328	647	838	1710	1040	833	330	290	512	257	223	453
7	325	e689	805	1320	e877	815	329	448	514	258	224	167
8	236	705	795	1080	912	770	539	455	267	258	223	164
9	9.50	e703	979	1070	912	329	459	509	266	247	219	300
10	8.20	715	977	1080	936	329	486	400	284	249	169	307
11	8.60	712	941	1080	940	663	522	291	270	247	170	292
12	10.0	e705	e970	1080	951	820	427	275	269	250	221	439
13	11.0	e705	904	1080	724	975	327	520	260	248	224	440
14	8.40	e708	899	1070	905	965	325	517	265	246	223	162
15	8.20	725	e900	1080	819	966	326	514	266	246	220	161
16	118	725	903	1070	e876	973	325	519	256	243	222	260
17	227	723	905	1070	872	970	321	513	258	248	162	477
18	221	718	904	1080	863	787	294	260	270	249	173	480
19	342	e710	899	1080	e800	669	295	265	266	249	207	489
20	212	723	901	1040	e880	e699	247	517	269	233	218	451
21	166	725	899	1070	872	e595	240	520	263	255	218	163
22	344	728	903	1070	847	563	244	511	263	245	224	162
23	694	725	902	1060	795	365	298	510	261	253	220	483
24	699	730	883	1060	855	367	293	520	261	270	169	315
25	706	726	912	1060	864	547	292	272	259	264	167	292
26	695	707	915	1060	775	583	298	263	258	264	343	282
27	698	715	908	1060	815	566	244	263	259	171	315	320
28	e701	727	1010	1050	679	634	241	511	258	167	300	165
29	e705	777	1030	1060	---	606	297	512	250	189	300	499
30	e703	996	1030	1060	---	368	289	264	251	221	297	386
31	706	---	924	1050	---	372	---	470	---	221	151	---
TOTAL	11544.90	21645	28592	35130	24989	20692	11717	12294	9131	7539	6796	9626
MEAN	372	721	922	1133	892	667	391	397	304	243	219	321
MAX	706	996	1150	1830	1060	975	730	520	514	270	343	499
MIN	8.2	647	772	1040	679	329	240	250	250	167	151	161

CAL YR 1990 TOTAL 236559.90 MEAN 648 MAX 1150 MIN 8.2
WTR YR 1991 TOTAL 199695.90 MEAN 547 MAX 1830 MIN 8.2

e Estimated

MERRIMACK RIVER BASIN

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 except for estimated daily discharges, which are fair. 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.--54 years, 705 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, 1,630 ft³/s, Jan. 7, gage height, 5.27 ft, minimum daily, 98 ft³/s, Oct. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	534	957	971	1190	1080	827	814	585	520	259	227	348
2	523	856	974	1180	1070	852	809	625	517	258	224	343
3	517	848	976	1170	1070	913	805	548	514	264	224	343
4	515	837	1080	1160	1070	991	799	392	517	262	232	347
5	518	779	1220	1300	1090	954	797	368	519	266	230	349
6	515	825	1200	1600	1100	974	800	395	466	266	225	354
7	520	858	1160	1550	1090	1150	805	605	357	271	225	352
8	511	820	e1100	1330	1050	1170	727	740	348	272	225	350
9	503	795	e1100	1320	1040	1080	612	711	345	264	230	349
10	505	916	e1100	1310	1040	1040	610	662	340	260	253	346
11	511	1170	e1090	e1240	1020	1020	592	638	344	258	242	346
12	501	1180	e1060	e1200	1000	1010	587	625	348	259	229	343
13	227	1080	1010	1200	998	888	573	615	342	273	227	343
14	187	1040	1000	e1180	1000	857	563	691	338	275	227	344
15	162	1020	986	e1170	994	892	562	826	340	269	229	349
16	136	1010	998	e1150	988	994	578	754	350	265	227	363
17	e112	1010	1000	e1130	989	1000	571	616	351	262	230	359
18	e98	1030	1010	e1120	986	1020	566	610	351	261	225	349
19	148	1030	1070	e1100	985	1120	559	609	347	259	353	371
20	140	1010	e1050	e1100	980	1110	552	601	340	258	616	390
21	167	953	1070	e1100	936	985	589	588	313	258	680	384
22	395	851	1200	1080	852	824	642	514	263	256	615	370
23	751	843	e1200	1070	859	808	648	362	253	258	562	362
24	1080	842	e1250	1070	842	804	605	341	250	253	534	360
25	1220	838	e1300	1070	837	795	569	344	255	246	515	498
26	1070	830	1340	1070	832	799	555	344	265	237	445	700
27	1030	823	1370	1070	829	819	551	345	270	235	326	687
28	1040	822	1360	1070	826	898	541	393	265	229	333	621
29	1030	829	1350	1070	---	913	529	496	264	229	311	576
30	1010	948	1340	1070	---	869	549	511	263	227	327	557
31	998	---	1320	1080	---	830	---	517	---	227	352	---
TOTAL	17174	27650	35255	36520	27453	29206	19059	16971	10555	7936	10100	12153
MEAN	554	922	1137	1178	980	942	635	547	352	256	326	405
MAX	1220	1180	1370	1600	1100	1170	814	826	520	275	680	700
MIN	98	779	971	1070	826	795	529	341	250	227	224	343

CAL YR 1990 TOTAL 302289 MEAN 828 MAX 1650 MIN 98
WTR YR 1991 TOTAL 250032 MEAN 685 MAX 1600 MIN 98

e Estimated

MERRIMACK RIVER BASIN

39

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 fair. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--29 years, 11.7 ft³/s, 27.63 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)
Oct. 13	1700	118	5.96	Mar. 7	0900	123	6.01
Oct. 24	1045	131	6.09	Mar. 28	1530	134	6.12
Dec. 24	0700	167	6.42	Apr. 21	1715	*191	*6.62
Mar. 4	0445	163	6.38	Aug. 19	1830	133	6.11

Minimum discharge, 0.18 ft³/s, Aug. 8, 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.7	8.5	e5.7	e18	e5.3	e4.7	18	35	10	.94	.25	1.3
2	2.6	7.8	e5.5	e11	e4.8	33	17	22	4.8	.69	.26	1.0
3	2.1	7.5	e5.6	e9.0	e4.7	65	16	18	3.3	.66	.22	.93
4	2.1	6.9	e10	e8.0	e5.4	85	16	15	3.3	.65	.24	.75
5	3.5	6.3	e50	e7.0	e7.0	40	19	13	5.3	.66	.35	.88
6	2.7	30	e30	e6.4	e10	29	22	35	4.9	.86	.30	.75
7	2.2	19	e17	e6.0	e14	83	22	50	3.4	1.1	.24	.68
8	2.0	13	e12	e5.6	e13	40	20	25	2.8	1.2	.18	.61
9	2.0	11	e10	e5.3	e11	30	30	19	2.3	.82	.25	.55
10	2.6	37	e9.2	e5.2	e9.8	21	26	16	2.0	.60	4.1	.51
11	4.0	65	e8.5	e5.0	e8.6	16	20	14	1.7	.54	1.5	.53
12	4.4	32	e8.2	e4.9	e7.6	13	16	12	1.9	.46	.77	.52
13	40	21	e7.8	e4.8	e7.0	12	14	10	2.1	.97	.53	.42
14	29	16	e7.6	e4.7	e6.6	11	13	8.7	1.6	2.3	.38	.44
15	14	15	e7.7	e4.6	e6.2	10	14	7.7	2.7	1.1	.37	.90
16	9.4	14	e10	e6.0	e5.8	9.9	20	6.5	8.4	.70	.44	1.7
17	7.2	14	e15	e11	e5.6	11	15	11	7.4	.53	.36	1.2
18	6.7	14	13	e9.0	e5.4	18	16	15	4.7	.42	.32	.82
19	32	12	30	e7.6	e5.3	37	14	9.7	3.2	.36	41	2.2
20	15	11	18	e7.0	e5.2	21	13	7.5	2.6	.38	19	3.1
21	10	10	14	e6.1	e5.3	16	81	6.1	1.9	.33	39	1.5
22	8.9	8.7	43	e5.7	e5.6	14	107	5.0	1.6	.31	15	1.2
23	22	e8.2	38	e5.3	e6.6	12	45	4.3	1.5	.33	5.9	1.0
24	91	e8.6	102	e5.1	e8.0	12	28	4.0	1.4	.31	3.4	.94
25	32	e9.5	43	e4.9	e6.0	11	22	3.5	1.3	.26	2.5	38
26	20	e8.2	24	e4.7	e5.4	13	18	3.4	1.1	.39	2.0	32
27	14	e7.2	19	e4.6	e5.0	19	16	3.8	.82	.85	1.6	17
28	13	e6.4	14	e4.5	e4.9	74	14	4.2	.75	.55	1.3	8.7
29	13	e6.0	15	e4.3	---	44	12	3.1	.58	.37	1.0	5.7
30	10	e5.9	23	e4.4	---	28	34	3.8	.89	.29	.89	4.4
31	9.5	---	25	e4.9	---	20	---	5.5	---	.27	1.7	---
TOTAL	430.6	439.7	640.8	200.6	195.1	852.6	738	396.8	90.24	20.20	145.35	130.23
MEAN	13.9	14.7	20.7	6.47	6.97	27.5	24.6	12.8	3.01	.65	4.69	4.34
MAX	91	65	102	18	14	85	107	50	10	2.3	41	38
MIN	2.0	5.9	5.5	4.3	4.7	4.7	12	3.1	.58	.26	.18	.42
CFSM	2.42	2.55	3.59	1.13	1.21	4.78	4.28	2.23	.52	.11	.82	.75
IN.	2.79	2.84	4.15	1.30	1.26	5.52	4.77	2.57	.58	.13	.94	.84

CAL YR 1990 TOTAL 5806.0 MEAN 15.9 MAX 188 MIN 1.1 CFSM 2.77 IN. 37.56
WTR YR 1991 TOTAL 4280.22 MEAN 11.7 MAX 107 MIN .18 CFSM 2.04 IN. 27.69

e Estimated

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 1990. 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 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)
Oct. 25	0345	a*1,020	*8.55	Dec. 5	0715	a731	7.63
Nov. 11	1500	a831	7.95	Dec. 25	0130	a737	7.65

a backwater from tree.

Minimum discharge 7.0 ft³/s; Aug. 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR MARCH 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39	145	101	e190	e105	e140	e150	e190	49	e17	e10	e35
2	38	131	100	e180	e115	e200	e140	e230	48	e16	e9.5	e30
3	33	124	102	e170	e120	e300	e130	e190	40	e15	e8.6	e27
4	35	118	256	e160	e135	e410	e125	e150	37	e14	e8.2	e40
5	40	108	605	e150	e150	e525	e120	e130	41	e12	e9.4	e66
6	44	183	370	e140	e165	e410	e110	e175	41	11	e8.8	e45
7	41	297	282	e130	e190	e340	e105	e275	37	11	e8.6	e35
8	37	202	235	e125	e230	e285	e100	e250	34	e10	e7.4	30
9	34	160	202	e120	e205	e250	e98	e230	31	e10	e7.0	28
10	33	192	180	e110	e180	e220	e95	e200	29	e10	21	25
11	29	704	155	e105	e165	e175	e91	e180	28	e9.5	43	23
12	50	502	144	e105	e150	166	e85	e160	30	e8.4	27	21
13	72	342	133	e110	e140	155	e81	e130	28	e12	20	19
14	336	265	125	e105	e130	164	e80	e115	25	e36	17	19
15	268	232	e120	e110	e125	158	e85	e100	26	e30	15	e21
16	155	219	e120	e120	e120	148	e100	e95	39	e20	14	e23
17	118	193	e125	e210	e120	142	e120	e85	46	e16	14	e29
18	102	e190	e130	e280	e110	143	e160	122	41	12	12	e25
19	197	e180	e135	e230	e115	259	e190	96	37	11	60	e23
20	184	e165	e140	e180	e125	282	e230	81	34	e10	366	e50
21	133	e155	e155	e150	e130	219	e300	75	30	e9.0	294	e105
22	117	e140	e175	e135	e135	189	e360	67	28	e8.4	248	e80
23	121	e135	239	e125	e130	174	e425	61	27	e8.8	157	51
24	535	e130	465	e115	e120	169	e300	56	e24	e8.4	109	46
25	690	e125	584	e110	e115	169	e240	53	e21	e8.0	81	212
26	388	e120	378	e105	e110	175	e190	47	e17	10	65	574
27	293	e115	325	e100	e100	206	e160	46	e16	12	54	437
28	223	e110	276	e95	e105	e190	e130	49	e18	e13	47	270
29	222	e105	246	e93	---	e180	e115	47	e17	e14	43	195
30	197	e105	207	e94	---	e170	e140	45	e15	12	41	156
31	163	---	e210	e98	---	e160	---	46	---	e11	e40	---
TOTAL	4967	5892	7020	4250	3840	6873	4755	3776	934	405.5	1865.5	2740
MEAN	160	196	226	137	137	222	158	122	31.1	13.1	60.2	91.3
MAX	690	704	605	280	230	525	425	275	49	36	366	574
MIN	29	105	100	93	100	140	80	45	15	8.0	7.0	19
CFSM	1.96	2.40	2.76	1.67	1.67	2.71	1.94	1.49	.38	.16	.73	1.12
IN.	2.26	2.68	3.19	1.93	1.74	3.12	2.16	1.72	.42	.18	.85	1.24

CAL YR 1990 TOTAL 54033 MEAN 148 MAX 734 MIN 19 CFSM 1.81 IN. 24.54
WTR YR 1991 TOTAL 47318.0 MEAN 130 MAX 704 MIN 7.0 CFSM 1.58 IN. 21.49

e Estimated

MERRIMACK RIVER BASIN

41

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 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.--55 years, 5,288 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)
Dec. 25	2100	*a24,000	b9.79	No other peak greater than base discharge.			

Minimum daily discharge, 315 ft³/s, Aug. 3.

a about

b affected by backwater from Coffey dam

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e2010	e6750	e4800	e9500	e3780	e3570	e6710	e6220	e2480	e829	e386	e1770
2	e2620	e5860	e4230	e8470	e3810	e4290	e6270	e8680	e3510	e929	e334	e1330
3	e2700	e5070	e4340	e7780	e4250	e4860	e6830	e8350	e2660	e839	e315	e1590
4	e2360	e4940	e5850	e7520	e4160	e8650	e5750	e6000	e2520	e728	e325	e1790
5	e2560	e4380	e8640	e6170	e4170	e10600	e5760	e5250	e2210	e783	e420	e1270
6	e2920	e4980	e8280	e5930	e4690	e9650	e5860	e5260	e2210	e750	e1260	e1570
7	e3300	e6280	e6480	e5500	e5500	e9350	e6990	e9840	e2080	e747	e662	e1810
8	e2350	e7240	e6000	e4460	e6390	e10200	e10700	e11600	e2180	e676	e479	e1640
9	e2060	e6610	e5660	e4150	e6400	e9360	e11400	e9240	e1750	e725	e591	e1270
10	e2180	e6360	e5670	e3590	e6240	e7340	e11000	e6580	e1380	e708	e1340	e1330
11	e2190	e9710	e5350	e3540	e5700	e6000	e14800	e5370	e1460	e754	e2120	e1220
12	e3080	e10400	e5010	e3630	e4600	e5800	e12500	e5670	e1470	e795	e3090	e1250
13	e3440	e8820	e4680	e4290	e4430	e5460	e9670	e4630	e1350	e750	e1350	e1000
14	e6340	e7270	e5010	e4170	e4550	e5380	e4890	e4360	e1190	e1240	e604	e1110
15	e10500	e5680	e4550	e4120	e4310	e5290	e4930	e4310	e1390	e814	e690	e779
16	e8820	e5490	e4330	e4660	e4480	e5230	e5010	e4130	e1440	e918	e815	e1550
17	e7480	e4820	e4680	e5740	e3910	e4680	e5850	e3530	e1960	e927	e724	e1200
18	e4670	e5100	e5250	e5830	e3830	e4540	e5220	e3840	e2420	e924	e661	e1480
19	e4800	e4920	e5630	e5710	e4000	e6370	e4860	e4090	e2870	e780	e2500	e1670
20	e6210	e4910	e6610	e5080	e3900	e8130	e4680	e3980	e2440	e656	e5640	e1670
21	e4600	e4880	e6360	e5090	e4110	e7670	e4910	e3550	e1830	e696	e9060	e1710
22	e4620	e4630	e6590	e4240	e4240	e6730	e10700	e2910	e1420	e624	e8150	e2000
23	e4710	e4840	e9390	e3760	e4490	e6430	e13900	e2450	e1550	e750	e6970	e1920
24	e8790	e4910	e15900	e4200	e3920	e5490	e13200	e2040	e1390	e846	e5760	e2740
25	e17900	e4750	e19400	e3860	e4210	e4680	e10100	e2300	e1290	e914	e4730	e3660
26	e18100	e4400	e18400	e3640	e4030	e5390	e8860	e2120	e846	e985	e4210	e6920
27	e14700	e4340	e15200	e3470	e3710	e5510	e7310	e2150	e496	e1450	e3840	e8180
28	e11900	e4170	e11200	e3860	e3290	e7640	e6150	e2230	e872	e596	e2870	e8510
29	e10500	e4710	e9550	e3740	---	e9900	e5350	e2010	e1090	e658	e2230	e7740
30	e8860	e4770	e9090	e3860	---	e10400	e5260	e2460	e909	e684	e1820	e5970
31	e7520	---	e9300	e4250	---	e10500	---	e2140	---	e588	e1800	---
TOTAL	194790	171990	241430	153810	125100	215090	235420	147290	52663	25063	75746	77649
MEAN	6284	5733	7788	4962	4468	6938	7847	4751	1755	808	2443	2588
MAX	18100	10400	19400	9500	6400	10600	14800	11600	3510	1450	9060	8510
MIN	2010	4170	4230	3470	3290	3570	4680	2010	496	588	315	779

CAL YR 1990 TOTAL 2318427 MEAN 6352 MAX 27700 MIN 784
WTR YR 1991 TOTAL 1716041 MEAN 4701 MAX 19400 MIN 315

e Estimated

MERRIMACK RIVER BASIN

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

AVERAGE DISCHARGE.--28 years, 7.08 ft³/s, 26.71 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)
Oct. 24	0800	116	3.87	Apr. 21	1715	*186	4.22
Nov. 10	2015	154	4.07	Aug. 19	--	unknown	ab*5.76

Minimum discharge not determined, occurred during period when control was leaking; minimum daily, 0.18 ft³/s, Aug. 7.
 a backwater from logs.
 b from crest stage.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	4.8	4.5	e13	e4.3	e6.6	8.8	23	3.6	.87	e.25	1.6
2	1.1	4.4	4.5	e9.0	e4.1	e15	8.4	15	2.5	.57	e.23	1.3
3	.94	5.0	4.4	e8.0	e4.0	27	8.2	12	1.9	.51	e.21	1.3
4	1.0	4.5	28	e7.5	e4.8	43	7.8	10	2.3	.51	e.25	1.2
5	1.6	4.1	19	e7.0	e6.6	29	7.3	9.4	2.9	.50	.40	2.0
6	1.1	13	12	e6.4	e9.0	19	7.3	33	2.9	.65	e.25	1.7
7	.93	9.7	9.3	e6.0	e13	32	6.7	34	2.2	.67	e.18	1.3
8	.76	6.9	8.2	e5.6	e11	20	6.4	17	1.8	1.0	e.19	1.0
9	.84	5.4	7.4	e5.4	e9.8	21	6.5	13	1.5	.70	e.30	.90
10	1.0	35	6.8	e5.2	e8.5	17	6.8	12	1.2	.43	7.7	.81
11	2.4	35	6.3	e5.0	e7.2	12	6.5	10	1.0	.28	2.2	.74
12	2.4	17	6.0	e4.9	e6.7	10	6.1	9.4	1.6	.22	.96	.74
13	15	12	6.0	e4.8	e6.2	9.0	5.9	8.4	1.6	1.5	.62	.72
14	20	9.4	5.6	e4.7	e5.8	8.8	5.6	7.5	1.0	2.7	.40	.71
15	7.8	8.6	6.1	e4.6	e5.6	8.3	5.5	6.7	3.8	1.0	.36	.99
16	4.4	7.5	7.0	e7.0	e5.3	7.8	6.2	6.3	14	.62	.55	1.4
17	3.5	7.3	6.3	e9.0	e5.1	7.7	5.8	5.8	6.1	.42	.33	.95
18	3.0	7.8	7.3	e7.4	e4.9	9.0	5.8	6.4	4.4	.27	.43	.72
19	9.4	6.8	10	e6.6	e4.7	18	5.9	5.6	3.2	.25	e30	3.0
20	6.1	6.4	7.7	e6.2	e4.6	12	5.2	5.0	2.8	.31	e21	6.5
21	4.5	6.0	7.1	e5.6	e4.5	9.5	78	4.5	2.0	.25	e16	2.9
22	4.0	5.5	9.4	e5.4	e4.4	8.7	54	4.1	1.4	.31	14	2.0
23	8.1	6.0	9.0	e4.9	e5.2	8.2	23	3.7	1.1	.29	8.0	1.8
24	45	6.8	45	e4.7	e7.0	8.2	16	3.3	.99	e.20	4.8	1.6
25	17	6.2	21	e4.5	e5.1	7.8	13	2.9	.86	e.22	3.7	e27
26	11	5.2	14	e4.3	e4.5	8.6	11	2.8	.72	.27	3.3	e21
27	7.7	4.8	15	e4.1	e4.1	10	9.5	2.6	.61	.64	2.7	17
28	6.6	4.9	11	e4.0	e4.0	18	8.6	2.5	.52	.33	2.2	10
29	6.6	4.9	10	e3.9	---	15	8.0	2.1	.45	e.26	1.8	7.4
30	5.8	4.7	15	e3.8	---	11	27	1.9	1.0	e.24	1.6	5.9
31	4.9	---	18	e5.0	---	9.6	---	3.0	---	e.23	1.7	---
TOTAL	205.87	265.6	346.9	183.5	170.0	446.8	380.8	282.9	71.95	17.22	126.61	126.18
MEAN	6.64	8.85	11.2	5.92	6.07	14.4	12.7	9.13	2.40	.56	4.08	4.21
MAX	45	35	45	13	13	43	78	34	14	2.7	30	27
MIN	.76	4.1	4.4	3.8	4.0	6.6	5.2	1.9	.45	.20	.18	.71
CFSM	1.84	2.46	3.11	1.64	1.69	4.00	3.53	2.53	.67	.15	1.13	1.17
IN.	2.13	2.74	3.58	1.90	1.76	4.62	3.93	2.92	.74	.18	1.31	1.30

CAL YR 1990 TOTAL 3069.88 MEAN 8.41 MAX 83 MIN .35 CFSM 2.34 IN. 31.72
 WTR YR 1991 TOTAL 2624.33 MEAN 7.19 MAX 78 MIN .18 CFSM 2.00 IN. 27.12

e Estimated

MERRIMACK RIVER BASIN

43

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.

AVERAGE DISCHARGE.--5 years, 81.0 ft³/s, 22.05 in/yr.

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)
Aug. 20	0917	*764	*9.74	Sept. 26	1435	491	8.73

Minimum discharge, 4.8 ft³/s, Aug. 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	87	52	147	e56	74	98	142	25	17	6.7	31
2	11	80	50	128	e60	101	89	137	25	15	6.3	24
3	9.7	74	48	112	e62	157	82	122	22	14	5.9	22
4	10	71	103	97	e66	239	75	97	20	12	5.5	21
5	16	64	228	e90	e80	295	73	81	23	11	6.1	61
6	18	71	197	e80	e90	238	71	84	22	10	5.1	52
7	15	89	159	e75	e110	218	66	180	21	10	4.9	38
8	13	85	125	e70	e130	217	65	153	19	10	4.3	30
9	18	71	106	e65	e125	174	66	125	16	9.6	4.4	25
10	27	85	94	e62	e110	151	60	108	19	9.5	13	22
11	28	316	84	e60	e100	127	58	86	13	8.4	19	20
12	21	319	76	e58	e90	114	52	75	31	7.8	12	18
13	54	250	72	e58	e85	105	49	68	59	11	7.1	16
14	300	181	67	e60	e75	101	47	63	32	33	6.1	16
15	263	136	e70	e62	e70	101	46	56	26	26	6.1	19
16	177	113	e70	72	e65	95	55	53	78	17	6.4	27
17	115	99	e72	124	e65	88	58	43	78	14	6.0	25
18	90	94	e74	138	e65	85	53	55	58	12	5.4	20
19	145	87	e75	122	e65	110	52	53	48	10	107	42
20	131	81	e76	e105	e70	110	49	47	43	9.0	652	103
21	101	75	e80	e90	e75	99	94	45	37	8.4	513	79
22	92	71	e90	e80	e75	95	233	36	29	7.9	374	60
23	87	68	e110	e70	e70	95	215	35	25	8.2	217	47
24	257	74	173	e65	e65	113	167	31	22	7.0	132	41
25	300	74	241	62	e65	128	125	32	20	6.6	88	198
26	226	68	199	58	e60	129	102	31	17	6.8	68	462
27	167	64	161	53	e55	125	89	33	18	9.7	53	431
28	128	66	128	e52	e55	122	77	45	19	11	44	302
29	125	66	112	e52	---	111	65	32	17	9.6	39	202
30	110	58	116	e52	---	108	81	26	16	8.0	33	141
31	97	---	157	e54	---	110	---	25	---	7.4	34	---
TOTAL	3162.7	3137	3465	2473	2159	4135	2512	2199	898	356.9	2484.3	2595
MEAN	102	105	112	79.8	77.1	133	83.7	70.9	29.9	11.5	80.1	86.5
MAX	300	319	241	147	130	295	233	180	78	33	652	462
MIN	9.7	58	48	52	55	74	46	25	13	6.6	4.3	16
CFSM	2.13	2.19	2.34	1.67	1.61	2.79	1.75	1.48	.63	.24	1.68	1.81
IN.	2.46	2.44	2.70	1.92	1.68	3.22	1.95	1.71	.70	.28	1.93	2.02

CAL YR 1990 TOTAL 32020.7 MEAN 87.7 MAX 459 MIN 6.3 CFSM 1.84 IN. 24.92
WTR YR 1991 TOTAL 29576.9 MEAN 81.0 MAX 652 MIN 4.3 CFSM 1.70 IN. 23.02

e Estimated

MERRIMACK RIVER BASIN

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 1990 TO SEPTEMBER 1991

	Newfound Lake	Franklin Falls Reservoir	Edward MacDowell Reservoir
Sept. 30, 1990.....	1318	107.0	10.1
Oct. 31.....	1285	159.0	10.8
Nov. 30.....	1087	129.0	10.1
Dec. 31.....	1250	206.0	44.5
Jan. 31, 1991.....	982	115.0	21.6
Feb. 28.....	962	111.0	14.4
Mar. 31.....	1126	193.0	16.7
Apr. 30.....	1468	155.0	16.7
May 31.....	1488	120.0	8.6
June 30.....	1363	102.0	6.7
July 31.....	1221	110.0	6.1
Aug. 31.....	1289	113.0	11.5
Sept. 30.....	1282	173.0	28.5

	Blackwater Reservoir	Everett Lake
Sept. 30, 1990.....	0.5	45.8
Oct. 31.....	3.0	50.4
Nov. 30.....	1.1	49.2
Dec. 31.....	6.5	51.5
Jan. 31, 1991.....	1.0	49.8
Feb. 28.....	1.0	49.2
Mar. 31.....	21.7	50.4
Apr. 30.....	165.0	59.4
May 31.....	0.6	47.5
June 30.....	0.2	47.5
July 31.....	0.1	45.3
Aug. 31.....	0.4	46.4
Sept. 30.....	1.0	48.7

CONNECTICUT RIVER BASIN

45

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.--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.--35 years, 564 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, 3,500 ft³/s, Apr. 10, gage height, 6.55 ft; minimum daily, 119 ft³/s, Mar. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	689	858	946	1020	873	898	294	287	689	531	173	262
2	501	842	904	1170	872	901	275	329	407	528	179	225
3	497	829	865	1160	866	992	252	340	394	523	179	291
4	440	820	818	1100	865	1090	299	405	502	521	173	365
5	696	837	833	1110	882	1030	481	379	528	517	185	363
6	498	874	864	1100	904	900	983	416	513	520	294	362
7	369	932	863	1070	908	938	1700	703	444	517	222	359
8	340	867	844	1070	908	979	1740	652	394	520	189	367
9	404	835	828	1110	908	940	2620	624	384	435	179	366
10	510	867	821	1110	905	909	2210	599	447	305	247	366
11	487	1150	787	1090	913	868	1220	575	505	260	253	371
12	1030	861	781	1090	915	704	614	557	565	234	269	372
13	1190	868	803	1080	913	581	438	537	611	235	227	372
14	1260	931	824	1080	907	368	378	520	608	240	198	370
15	725	850	838	1080	903	171	375	510	613	236	187	372
16	657	903	850	1070	900	163	608	499	692	234	189	379
17	681	1280	838	1070	893	167	837	514	1140	233	193	375
18	713	977	837	1080	887	157	544	579	732	232	199	372
19	1110	845	899	1080	917	175	430	537	719	234	223	762
20	889	880	897	1070	955	193	384	514	682	231	420	770
21	695	889	873	1070	967	204	381	497	651	235	239	546
22	673	880	947	1060	1040	178	553	486	635	229	233	465
23	740	900	e1490	1050	1050	165	451	424	624	256	212	430
24	1610	935	1720	1050	1030	149	383	383	614	284	206	412
25	1380	913	741	1050	1020	146	363	380	606	254	195	531
26	938	884	814	1040	1010	119	298	377	581	212	192	738
27	933	855	1040	1040	971	123	274	608	538	184	203	587
28	865	971	1020	1040	905	377	249	574	541	180	369	537
29	890	1170	1060	1030	---	732	229	472	554	176	336	548
30	916	952	1250	946	---	433	229	439	541	168	246	536
31	884	---	1330	878	---	347	---	625	---	169	272	---
TOTAL	24210	27455	29225	33064	25987	16097	20092	15341	17454	9633	7081	13171
MEAN	781	915	943	1067	928	519	670	495	582	311	228	439
MAX	1610	1280	1720	1170	1050	1090	2620	703	1140	531	420	770
MIN	340	820	741	878	865	119	229	287	384	168	173	225

CAL YR 1990 TOTAL 243694 MEAN 668 MAX 2640 MIN 182
WTR YR 1991 TOTAL 238810 MEAN 654 MAX 2620 MIN 119

e Estimated

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.--43 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, 3,110 ft³/s, Apr. 9, gage height, unknown; minimum daily, 53 ft³/s, July 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	381	118	194	357	e33	e54	286	163	685	25	7.8	77
2	173	106	170	295	e37	e54	273	245	266	22	12	50
3	208	97	134	226	e42	e290	268	208	160	18	8.5	39
4	137	89	136	174	e41	784	388	186	117	16	8.1	31
5	388	111	200	e148	e43	568	611	146	100	17	41	31
6	210	155	142	e106	e44	371	1200	150	82	14	118	28
7	138	200	129	e96	e53	427	1770	441	68	14	47	24
8	105	133	116	e90	e57	399	1540	269	54	14	27	22
9	118	106	103	e84	e54	294	2310	211	44	68	23	20
10	225	184	101	e80	e57	239	1520	170	39	33	158	18
11	164	660	75	e78	e64	189	939	142	35	22	108	25
12	830	320	72	e76	e58	171	551	118	32	17	64	29
13	844	238	85	e73	e51	149	413	92	29	13	42	21
14	1430	197	77	e71	e48	133	334	82	27	20	29	17
15	505	175	62	e69	e44	121	320	71	30	18	24	17
16	292	364	67	e63	e41	116	664	63	136	13	19	46
17	216	854	67	e64	e38	107	724	85	720	12	17	41
18	185	452	64	e58	e36	114	470	153	252	11	19	29
19	1040	276	152	e55	e36	135	367	96	119	10	31	477
20	501	208	114	e51	e36	159	312	72	70	11	199	381
21	287	174	93	e47	e38	125	303	58	51	8.1	85	168
22	219	149	480	e43	e44	112	381	52	41	11	58	103
23	236	192	1080	e40	e55	96	307	46	35	48	45	78
24	1950	249	749	e37	e64	87	239	39	31	40	40	64
25	830	206	515	e35	e62	100	207	34	28	23	29	287
26	402	171	298	e33	e67	101	170	36	24	17	24	381
27	276	137	195	e32	e62	130	145	337	21	15	21	217
28	217	332	158	e30	e58	862	132	185	20	10	122	207
29	194	466	178	e30	---	731	111	111	70	7.2	158	226
30	159	267	731	e30	---	413	105	82	36	6.4	66	210
31	138	---	590	e30	---	304	---	477	---	5.3	100	---
TOTAL	12998	7386	7327	2701	1363	7935	17360	4620	3422	579.0	1750.4	3364
MEAN	419	246	236	87.1	48.7	256	579	149	114	18.7	56.5	112
MAX	1950	854	1080	357	67	862	2310	477	720	68	199	477
MIN	105	89	62	30	33	54	105	34	20	5.3	7.8	17
CFSM	4.93	2.90	2.78	1.03	.57	3.01	6.81	1.75	1.34	.22	.66	1.32
IN.	5.69	3.23	3.21	1.18	.60	3.47	7.60	2.02	1.50	.25	.77	1.47

CAL YR 1990 TOTAL 70418 MEAN 193 MAX 2530 MIN 20 CFSM 2.27 IN. 30.82
WTR YR 1991 TOTAL 70805.4 MEAN 194 MAX 2310 MIN 5.3 CFSM 2.28 IN. 30.99

e Estimated

CONNECTICUT RIVER BASIN

47

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.

AVERAGE DISCHARGE.--5 years, 67.7 ft³/s, 25.05 in/yr.

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, 6.4 ft³/s, July 30.

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)
Oct. 14	0215	a959	6.68	Apr. 9	1715	a1,730	7.32
Oct. 24	--	unknown	unknown	Apr. 21	2145	a817	6.52
Dec. 23	1445	a*2,980	*7.99	May 31	1630	a762	6.45
Apr. 7	1830	a1,080	6.80	Aug 19	2200	a1,100	6.82

a From rating curve extended above 200 ft³/s

Minimum discharge, 6.4 ft³/s, July 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	73	e65	79	e130	e30	e50	72	119	106	17	9.5	28
2	45	e60	75	e90	e28	e150	73	213	54	15	15	22
3	48	e56	62	e75	e29	e300	80	116	41	13	9.4	20
4	65	e54	81	e65	e30	e260	124	105	43	12	8.6	19
5	93	e52	101	e60	e35	e240	188	88	48	11	128	20
6	48	e80	75	e56	e43	e140	484	104	41	14	73	18
7	35	e90	67	e53	e35	e300	692	157	32	14	24	18
8	32	61	62	e50	e30	e170	640	100	28	16	16	17
9	64	55	59	e45	e26	e100	956	83	25	30	13	16
10	133	126	58	e50	e24	e80	491	73	24	15	81	18
11	62	139	51	e45	e23	e70	294	66	22	14	38	e82
12	94	88	e48	e44	e22	e60	171	61	21	12	28	e46
13	255	76	e43	e44	e21	e56	139	55	23	12	19	e35
14	378	70	e40	e44	e21	e53	126	50	20	24	17	e28
15	112	73	e38	e44	e21	e52	148	49	23	17	15	e26
16	82	159	e34	e50	e21	e50	263	45	66	13	15	e40
17	69	266	e33	e66	e21	e50	253	68	84	11	15	e38
18	65	126	e37	e60	e22	e60	173	73	41	10	30	e35
19	225	96	e35	e55	e24	e84	144	50	28	9.8	268	e45
20	98	80	56	e48	e27	e60	130	44	23	9.0	219	e54
21	79	75	67	e45	e33	60	278	40	24	8.7	70	e40
22	69	69	281	e38	e29	50	303	36	22	9.3	47	e30
23	74	91	998	e45	e28	48	191	33	20	23	34	e30
24	e600	95	427	e37	e27	42	140	33	18	14	26	e45
25	e300	82	157	e37	e26	42	124	33	18	10	22	e60
26	e150	73	108	e37	e26	39	110	30	15	9.1	20	85
27	e110	68	90	e36	e27	49	104	74	15	9.4	19	57
28	e95	144	85	e35	e30	280	93	47	15	8.4	28	53
29	e85	171	100	e33	---	159	84	39	35	8.0	34	50
30	e75	97	234	e32	---	91	90	35	19	7.5	23	42
31	e70	---	e260	e35	---	74	---	191	---	8.0	55	---
TOTAL	3783	2837	3941	1584	759	3319	7158	2310	994	404.2	1419.5	1117
MEAN	122	94.6	127	51.1	27.1	107	239	74.5	33.1	13.0	45.8	37.2
MAX	600	266	998	130	43	300	956	213	106	30	268	85
MIN	32	52	33	32	21	39	72	30	15	7.5	8.6	16
CFSM	3.33	2.58	3.46	1.39	.74	2.92	6.50	2.03	.90	.36	1.25	1.01
IN.	3.83	2.88	3.99	1.61	.77	3.36	7.26	2.34	1.01	.41	1.44	1.13

CAL YR 1990 TOTAL 29943 MEAN 82.0 MAX 1410 MIN 16 CFSM 2.24 IN. 30.35
WTR YR 1991 TOTAL 29625.7 MEAN 81.2 MAX 998 MIN 7.5 CFSM 2.21 IN. 30.03

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.--61 years, 1,584 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, 13,900 ft³/s, Apr. 10, gage height, 10.16 ft; minimum daily, 292 ft³/s, July 31.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2170	1970	2410	3470	e1200	e1150	1750	1690	4070	858	307	1170
2	1680	1860	2200	e3000	e1150	e1200	1640	3080	2020	810	323	834
3	1790	1780	1980	e2600	e1100	e1350	1590	2390	1410	785	323	658
4	1490	1710	2140	e2200	e1150	e2000	1790	2060	1290	767	306	695
5	2770	1730	2730	e2100	e1200	e2800	2970	1770	1430	752	842	735
6	2170	1980	2290	e1900	e1300	e2700	5490	1630	1250	775	1630	696
7	1550	2490	2110	e1700	e1350	e2600	10000	3160	1140	795	978	654
8	1250	2040	1940	e1650	e1300	e2700	11300	2560	975	787	627	621
9	1330	1800	1820	e1600	e1250	e2650	12300	2130	884	906	494	594
10	2550	2060	1750	e1550	e1250	e2400	13300	1840	832	729	1340	582
11	2020	4820	1540	e1650	e1300	e2100	9260	1670	899	568	1410	785
12	3430	3400	e1100	e1600	e1250	e1700	5050	1540	902	485	926	770
13	5800	2470	e1200	e1600	e1200	e1500	3240	1420	987	448	766	673
14	7310	2360	e1400	e1700	e1150	e1250	2550	1330	974	560	591	624
15	5200	2180	e1200	e1550	e1100	e1000	2360	1280	962	585	493	628
16	2890	2580	e1250	e1650	e1100	e940	3630	1200	1330	480	464	952
17	2320	5310	e1300	e1600	e1050	e920	4790	1250	2860	432	432	885
18	2050	4670	e1350	e1650	e1100	e700	3610	1790	2110	410	494	743
19	4800	3050	e1400	e1700	e1150	e840	2740	1460	1480	397	833	2780
20	4680	2530	e1550	e1500	e1200	e930	2360	1270	1260	387	2560	3740
21	2870	2290	1810	e1600	e1250	1090	2300	1170	1120	376	1550	1980
22	2280	2110	3790	e1550	e1300	1010	3640	1100	1050	375	1070	1440
23	2200	2270	8250	e1450	e1500	977	3020	1020	1000	497	873	1190
24	7940	2600	11600	e1400	e1400	874	2330	913	964	660	720	1060
25	8960	2460	7030	e1400	e1350	862	2020	892	933	511	609	1760
26	4800	2270	3520	e1350	e1300	813	1780	889	904	430	530	2930
27	3250	1990	2840	e1350	e1250	840	1620	1500	847	380	486	2150
28	2680	2510	2430	e1400	e1200	2870	1480	1840	814	336	498	1680
29	2500	3810	2740	e1300	---	4460	1330	1330	1100	317	1000	1620
30	2320	3040	4740	e1250	---	2790	1290	1190	974	300	786	1530
31	2140	---	6370	e1250	---	1930	---	1680	---	292	1280	---
TOTAL	101190	78240	89780	53270	34400	51946	122530	50044	38771	17190	25541	37159
MEAN	3264	2608	2896	1718	1229	1676	4084	1614	1292	555	824	1239
MAX	8960	5310	11600	3470	1500	4460	13300	3160	4070	906	2560	3740
MIN	1250	1710	1100	1250	1050	700	1290	889	814	292	306	582

CAL YR 1990 TOTAL 798686 MEAN 2188 MAX 17700 MIN 685
WTR YR 1991 TOTAL 700061 MEAN 1918 MAX 13300 MIN 292

e Estimated

CONNECTICUT RIVER BASIN

49

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 current year.
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.--49 years, 475 ft³/s, 27.80 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)
Oct. 14	0500	3,650	5.99	Apr. 9	2000	a*6,160	*7.66
Oct. 25	0600	4,880	6.74	Apr. 22	2300	2,910	5.74
Dec. 23	1900	4,850	6.73				

a from rating curve extended above 5,600 ft³/s.

Minimum discharge 61 ft³/s, Aug. 3, 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	580	527	709	1270	e230	e300	486	1040	1050	107	66	845
2	370	486	619	1010	e200	347	430	1570	593	102	64	428
3	321	475	532	751	e190	1030	429	1290	373	98	62	285
4	289	448	462	547	e200	1560	528	1030	349	95	67	220
5	770	424	849	e480	e210	1180	902	826	428	94	196	197
6	622	533	703	e410	e220	783	1800	782	370	97	397	168
7	407	777	605	e470	e210	e720	3100	1640	292	101	185	144
8	295	583	509	e410	e200	e800	3870	1310	237	109	116	131
9	341	474	451	e350	e180	e650	4820	948	203	132	96	121
10	695	538	421	e310	e170	e500	4970	762	180	113	390	114
11	592	923	286	e340	e160	e400	3230	662	163	102	553	223
12	585	678	e280	e310	e150	e350	2000	567	156	97	275	222
13	1170	501	e260	e290	e145	e310	1380	491	173	95	158	146
14	3110	468	e240	e290	e145	e290	1080	434	155	121	120	128
15	2080	480	e220	e290	e140	e280	982	391	146	125	104	127
16	1030	699	e210	e290	e140	e260	1290	350	288	104	99	259
17	699	1600	e230	e350	e145	e280	1300	358	703	92	94	225
18	571	1540	e220	e430	e145	e300	1110	572	463	87	91	167
19	1230	1050	e230	e400	e155	e380	921	448	283	83	615	346
20	1170	807	e250	e370	e180	e450	824	349	203	78	2450	514
21	784	687	e500	e320	e200	e400	1090	297	164	76	1680	316
22	533	589	e1500	e270	e220	e300	2450	256	141	75	851	218
23	599	626	e3000	e280	e190	e270	2400	230	135	93	529	175
24	3240	706	4350	e300	e180	e250	1600	243	128	109	341	157
25	4130	681	2770	e270	e180	e240	1210	233	123	90	244	420
26	2100	613	1480	e260	e175	238	1040	229	118	81	189	981
27	1270	511	871	e250	e175	237	930	426	113	79	158	683
28	961	636	686	e250	e190	702	845	458	110	74	158	450
29	834	1210	773	e240	---	1080	718	326	120	70	355	334
30	693	1020	1490	e230	---	796	709	286	117	68	265	286
31	600	---	2280	e220	---	547	---	438	---	66	907	---
TOTAL	32771	21290	27986	12258	5025	16230	48444	19242	8077	2913	11875	9030
MEAN	1057	710	903	395	179	524	1615	621	269	94.0	383	301
MAX	4130	1600	4350	1270	230	1560	4970	1640	1050	132	2450	981
MIN	289	424	210	220	140	237	429	229	110	66	62	114
CFSM	4.56	3.06	3.89	1.70	.77	2.26	6.96	2.68	1.16	.41	1.65	1.30
IN.	5.25	3.41	4.49	1.97	.81	2.60	7.77	3.09	1.30	.47	1.90	1.45

CAL YR 1990 TOTAL 243273 MEAN 667 MAX 7460 MIN 102 CFSM 2.87 IN. 39.01
WTR YR 1991 TOTAL 215141 MEAN 589 MAX 4970 MIN 62 CFSM 2.54 IN. 34.50

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.--64 years, 2,898 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, 21,600 ft³/s, Apr. 11, gage height, 18.30 ft; minimum daily, 359 ft³/s, July 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1700	3480	4390	e9190	e2050	e1800	3730	3660	4080	1160	365	3500
2	3100	3410	3720	e5720	e1750	e2000	3430	5170	4890	1070	389	2640
3	2300	3220	3440	e4700	e1700	2190	3270	6130	3130	996	397	1750
4	2440	3140	3230	e4100	e1800	4260	3330	4870	2440	895	533	1230
5	3000	2870	4820	e3700	e1900	6130	4280	4050	2200	920	557	1240
6	4290	2890	4340	e3600	e1950	6040	6750	3630	2270	954	1990	1290
7	3050	3970	3810	e3300	e2100	5260	11200	5330	2030	956	1950	1120
8	2570	4080	3560	e3000	e2200	5440	14700	6090	1570	1130	1180	1030
9	1920	3140	3140	e2700	e1900	6040	17300	4870	1550	1060	708	922
10	2680	3170	2970	e2700	e1950	4970	19900	4130	1370	1180	1230	919
11	3840	6010	2740	e2850	e2000	4060	21200	3820	1310	872	2540	1470
12	3420	6710	1770	e2600	e1850	3440	17400	3230	1200	810	2110	1500
13	5820	4880	2110	e2700	e1800	3030	10500	2910	1250	659	1230	1260
14	10800	3990	2480	e3000	e1750	2740	6460	2650	1360	683	988	1270
15	11400	3680	1980	e2600	e1650	2490	5230	2390	1360	881	838	848
16	7990	3760	2010	e2800	e1600	2320	5680	2270	1390	847	761	882
17	4880	6120	e2100	e2700	e1550	2030	6990	1880	2550	823	666	1830
18	3830	8330	e2300	e2750	e1600	1550	7110	2330	3670	448	572	1190
19	5150	6720	e2500	e2800	e1700	2020	5770	3020	2860	591	1200	1780
20	7920	4850	e2800	e2500	e1750	2170	4810	2430	2190	464	5150	5010
21	6200	4210	3080	e2700	e1850	2600	4470	2080	1690	559	5390	4160
22	4480	3730	4670	e2650	e2400	2600	8210	1930	1380	561	3510	3000
23	3800	3860	8940	e2300	e2350	2620	8600	1680	1450	547	2450	1980
24	8860	4210	15900	e2250	e2300	2320	6850	1590	1330	774	1520	1800
25	14800	4270	17000	e2150	e2200	2140	5250	1510	1160	885	1250	1870
26	13900	3850	12400	e2100	e2100	1950	4520	1470	1180	598	901	4250
27	8820	3550	8850	e2050	e2000	1890	3970	1600	1100	635	963	4530
28	6120	3470	4720	e2250	e1900	3130	3580	2600	1140	476	955	3380
29	5250	4720	e4940	e2050	---	7430	3190	2490	969	506	1690	2720
30	4710	5610	e6290	e2000	---	6800	2980	2240	1470	359	1910	2610
31	3810	---	e9840	e2100	---	4650	---	1870	---	364	2270	---
TOTAL	172850	129900	156840	94610	53650	108110	230660	95920	57539	23663	48163	62981
MEAN	5576	4330	5059	3052	1916	3487	7689	3094	1918	763	1554	2099
MAX	14800	8330	17000	9190	2400	7430	21200	6130	4890	1180	5390	5010
MIN	1700	2870	1770	2000	1550	1550	2980	1470	969	359	365	848

CAL YR 1990 TOTAL 1373855 MEAN 3764 MAX 32800 MIN 900
WTR YR 1991 TOTAL 1234886 MEAN 3383 MAX 21200 MIN 359

e Estimated

CONNECTICUT RIVER BASIN

51

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.--44 years, 196 ft³/s, 26.37 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,340 ft³/s, July 1, 1973, gage height, 12.04 ft; minimum, 2.2 ft³/s, Aug. 4, 1991.

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)
Oct. 24	2200	1,900	8.89	Apr. 9	1900	1,650	8.54
Dec. 24	0230	*2,270	*9.38				

Minimum discharge, 2.2 ft³/s, Aug. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	323	159	188	e350	e65	e64	203	314	226	11	3.3	238
2	136	146	168	e300	e60	e70	181	450	100	10	3.0	77
3	104	135	138	e250	e61	e270	198	405	61	8.4	2.6	48
4	117	126	189	e220	e62	e630	233	264	52	7.5	3.0	35
5	454	119	441	e180	e64	e720	370	212	73	7.2	51	33
6	304	149	300	e200	e74	e600	579	192	62	8.4	68	27
7	142	247	231	e170	e86	e410	1020	439	47	13	35	22
8	104	171	181	e150	e80	e440	1260	319	38	15	18	18
9	136	136	163	e130	e76	e340	1460	230	32	25	12	15
10	303	164	151	e140	e70	e230	1380	189	28	17	212	13
11	208	641	140	e130	e68	e160	1050	163	25	13	135	202
12	360	547	e130	e120	e66	e140	654	145	23	9.7	50	105
13	530	276	e125	e115	e64	e130	411	127	26	9.0	29	51
14	877	223	108	e105	e62	e120	308	110	28	24	20	35
15	657	193	93	e100	e60	e110	279	100	23	24	14	31
16	325	222	99	e110	e58	102	378	88	36	14	13	144
17	212	458	96	e140	e56	105	359	95	194	9.4	13	101
18	174	583	91	e130	e54	121	290	172	99	7.8	10	72
19	417	350	206	e120	e56	128	247	104	53	6.8	40	241
20	456	237	238	e110	e64	154	224	79	36	6.3	314	529
21	252	207	155	e95	e95	135	242	69	27	5.2	172	224
22	193	179	350	e84	e80	111	465	66	21	5.2	98	114
23	186	211	918	e94	e70	115	426	56	19	11	55	76
24	940	258	1820	e80	e64	98	293	49	17	21	34	68
25	1250	236	1090	e80	e60	88	240	47	16	11	24	182
26	577	199	573	e79	e57	86	210	53	14	7.4	17	427
27	319	160	402	e78	e56	97	191	151	12	7.1	15	250
28	246	188	378	e76	e54	280	179	129	12	6.6	17	152
29	251	334	e360	e72	---	534	162	74	13	5.2	248	104
30	213	275	e370	e68	---	361	170	67	14	4.3	68	88
31	191	---	617	e72	---	227	---	84	---	3.5	275	---
TOTAL	10957	7529	10509	4148	1842	7176	13662	5042	1427	334.0	2068.9	3722
MEAN	353	251	339	134	65.8	231	455	163	47.6	10.8	66.7	124
MAX	1250	641	1820	350	95	720	1460	450	226	25	314	529
MIN	104	119	91	68	54	64	162	47	12	3.5	2.6	13
CFSM	4.70	3.34	4.51	1.78	.87	3.08	6.06	2.16	.63	.14	.89	1.65
IN.	5.42	3.72	5.20	2.05	.91	3.55	6.76	2.49	.71	.17	1.02	1.84

CAL YR 1990 TOTAL 85829 MEAN 235 MAX 3130 MIN 16 CFSM 3.13 IN. 42.46
WTR YR 1991 TOTAL 68416.9 MEAN 187 MAX 1820 MIN 2.6 CFSM 2.49 IN. 33.84

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.--64 years, 748 ft³/s, 23.30 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)
Oct. 24	1615	*6,940	*11.41	Apr. 9	1015	5,330	9.60
Dec. 24	1215	6,590	11.03				

Minimum discharge, 28 ft³/s, Sept. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1240	937	951	e1450	e610	e390	1020	1550	898	158	97	776
2	775	876	897	e1300	e570	e450	967	2400	618	151	95	351
3	621	833	817	e1150	e600	e1150	1030	1790	434	133	87	254
4	529	775	1420	e980	e650	e2500	1130	1320	384	104	103	207
5	1300	751	2270	e920	e670	3990	1610	1100	538	161	404	188
6	1140	969	1340	e870	e700	2530	2460	1070	451	164	483	186
7	736	1260	1150	e840	e840	2840	3690	2010	370	126	296	158
8	561	956	1010	e780	e780	2560	4250	1430	329	217	178	144
9	617	802	929	e740	e740	1710	5030	1140	280	225	128	141
10	1210	1410	878	e720	e670	1300	5040	984	245	182	875	104
11	1020	3760	762	e700	e570	994	4010	875	244	150	764	635
12	1340	2030	e790	e680	e470	860	2490	796	232	127	273	512
13	2640	1380	e830	e700	e490	786	1840	710	258	147	227	278
14	3210	1190	e780	e730	e480	733	1500	653	203	266	187	206
15	2050	1090	e680	e780	e450	721	1410	612	197	204	157	192
16	1310	1200	727	e740	e420	853	1860	549	299	153	146	403
17	1000	2310	766	e1300	e410	831	1660	571	1060	136	136	404
18	905	2110	779	e1200	e390	808	1430	907	657	124	130	336
19	1850	1480	1210	e940	e410	814	1270	680	404	112	239	967
20	1670	1160	1220	e880	e430	811	1160	557	331	110	759	1640
21	1160	1090	1040	e780	e710	728	1280	470	252	106	561	828
22	949	994	1970	e680	e620	688	2220	432	213	109	380	475
23	1050	1150	4220	e720	e520	706	1860	387	215	200	264	376
24	5410	1320	6290	e740	e450	609	1390	376	187	203	207	322
25	4040	1200	3500	e680	e410	604	1180	357	183	141	171	807
26	2130	1060	1980	e650	e390	610	1060	371	177	73	156	1410
27	1510	910	1380	e670	e370	714	969	649	162	131	141	889
28	1270	989	1170	e650	e350	2220	892	733	165	113	119	556
29	1240	1350	1330	e640	---	2380	826	514	176	107	525	448
30	1120	1250	2310	e630	---	1520	917	446	182	100	333	396
31	1030	---	2740	e640	---	1050	---	606	---	94	723	---
TOTAL	46633	38592	48136	25880	15170	39460	57451	27045	10344	4527	9344	14589
MEAN	1504	1286	1553	835	542	1273	1915	872	345	146	301	486
MAX	5410	3760	6290	1450	840	3990	5040	2400	1060	266	875	1640
MIN	529	751	680	630	350	390	826	357	162	73	87	104
CFSM	3.45	2.95	3.56	1.91	1.24	2.92	4.39	2.00	.79	.33	.69	1.12
IN.	3.98	3.29	4.11	2.21	1.29	3.37	4.90	2.31	.88	.39	.80	1.24

CAL YR 1990 TOTAL 419577 MEAN 1150 MAX 8850 MIN 200 CFSM 2.64 IN. 35.80
WTR YR 1991 TOTAL 337171 MEAN 924 MAX 6290 MIN 73 CFSM 2.12 IN. 28.77

e Estimated

CONNECTICUT RIVER BASIN

53

01137500 AMMONOOSUC 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.--52 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)
Dec. 23	1700	3,360	7.13	Aug. 19	2345	*3,740	*7.44

Minimum discharge, 25 ft³/s, Aug. 2-4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	114	196	235	e300	e64	64	156	448	584	47	25	324
2	93	183	214	e230	e60	273	146	528	257	44	25	181
3	99	175	193	e180	e62	662	139	372	184	42	25	135
4	118	162	454	e150	e63	553	146	341	189	40	35	117
5	383	156	545	e130	e68	496	211	277	177	40	63	124
6	200	243	305	e150	e70	274	456	331	156	43	100	100
7	139	273	255	e120	e70	658	955	565	133	45	59	88
8	116	196	223	110	e62	377	1040	344	116	50	43	80
9	108	164	205	e95	e55	216	1260	275	103	56	39	74
10	159	242	193	e105	e52	172	755	242	95	46	124	70
11	140	520	149	e96	e50	e150	466	222	89	40	117	277
12	132	270	142	e94	e45	e130	334	217	86	39	72	160
13	514	204	179	e92	e45	e125	280	212	106	39	58	108
14	809	187	142	e92	e45	e120	253	188	96	42	50	91
15	376	183	119	e90	e45	117	288	171	82	45	47	85
16	259	394	158	e100	e45	109	337	156	103	40	47	134
17	207	702	141	e140	e45	107	295	181	140	34	44	136
18	183	443	154	e130	e46	107	251	304	122	35	49	113
19	581	310	314	e120	e50	176	223	206	91	33	540	127
20	355	254	199	e110	e58	145	208	169	77	30	1100	176
21	255	225	207	e95	e72	113	1020	150	70	30	346	128
22	218	205	981	e82	e64	106	873	136	64	33	260	107
23	209	257	e1700	e95	e58	99	529	122	62	47	175	94
24	1370	289	e1000	e82	e56	99	386	115	58	42	131	89
25	691	246	e650	e82	e56	98	347	109	55	36	108	213
26	412	217	e410	e80	e56	96	321	108	53	34	94	314
27	317	198	e270	e80	e56	112	325	132	52	37	85	238
28	272	301	e240	e80	e58	523	287	132	49	37	99	164
29	258	429	e280	e72	---	410	255	114	49	32	336	135
30	226	295	e510	e68	---	226	395	115	47	27	142	126
31	214	---	e560	e74	---	163	---	421	---	25	513	---
TOTAL	9527	8119	11327	3524	1576	7076	12937	7403	3545	1210	4951	4308
MEAN	307	271	365	114	56.3	228	431	239	118	39.0	160	144
MAX	1370	702	1700	300	72	662	1260	565	584	56	1100	324
MIN	93	156	119	68	45	64	139	108	47	25	25	70
CFSM	3.51	3.09	4.17	1.30	.64	2.61	4.92	2.73	1.35	.45	1.82	1.64
IN.	4.05	3.45	4.81	1.50	.67	3.00	5.49	3.14	1.51	.51	2.10	1.83

CAL YR 1990 TOTAL 94907 MEAN 260 MAX 2590 MIN 49 CFSM 2.97 IN. 40.30
WTR YR 1991 TOTAL 75503 MEAN 207 MAX 1700 MIN 25 CFSM 2.36 IN. 32.06

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.--42 years, 4,834 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)
Oct. 25	0630	27,900	9.39	Apr. 11	1700	25,600	8.87
Dec. 24	1930	*32,300	*10.55				

Minimum daily discharge, 588 ft³/s, July 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3070	5990	9770	12800	e4200	4270	7550	7440	4550	899	883	3400
2	3920	5550	9080	10200	e3700	3670	6280	8150	3710	731	1260	2910
3	3760	4130	6920	8340	e3300	6080	6290	8230	5160	1620	1250	2730
4	3910	4790	6690	7470	e3500	9580	7380	7910	4430	889	1270	2580
5	5440	6900	11400	6610	e4100	12400	8380	7680	3810	626	1360	2900
6	5010	6100	8620	6310	e5000	10100	9730	7800	2810	588	1850	1890
7	2900	5980	7390	6290	e4600	9540	11500	10200	3400	917	1660	3230
8	3940	6780	5960	7280	e4800	9110	12600	10400	2240	1000	1490	1320
9	4170	5320	4170	7480	e4000	8050	15100	9900	2120	1880	1880	1680
10	5870	6380	5670	7120	e3700	7680	20300	8840	3930	1210	1640	977
11	6580	14700	5330	e5400	4610	7580	23200	7570	3690	1190	2390	1560
12	7260	13900	5390	e5000	5480	7300	22600	7460	3800	1480	2400	3220
13	8530	11000	5400	e4700	4960	7410	16400	6550	1970	1190	2090	2010
14	16800	7720	5700	e5000	4060	7410	12900	4730	1480	1380	2790	1590
15	16200	5620	2690	e5500	3610	7370	10600	4680	1380	1140	2160	1150
16	13300	5680	3940	e6200	3400	7280	10900	4120	1400	1240	1430	2710
17	10900	10700	5120	e5400	3110	7430	10800	4600	2710	1170	1150	3710
18	7030	14700	6380	e4500	3830	7480	10700	4920	3500	2340	750	3360
19	7960	12200	6230	e3800	4230	7530	9850	3360	2800	3130	1910	3580
20	9600	9980	6270	e3600	4010	7630	9050	4480	3750	1090	4270	5460
21	10300	9020	6640	e4400	4370	7410	9440	4430	3650	653	3060	4200
22	10400	7720	10700	e5400	5100	7330	11600	5060	1660	1390	3100	2970
23	7900	6080	17800	e5200	5530	5290	10500	3720	1220	1560	2960	3040
24	15800	7200	28600	e3800	4550	3330	9640	2880	2120	755	1330	3880
25	23700	8020	27700	e4100	5410	5020	9430	4090	1940	1440	1840	4910
26	18900	7600	20900	e3600	4850	4390	8680	2220	2810	1270	1880	7740
27	16100	7360	15300	e3300	4430	5860	7850	2780	3690	1150	2790	5540
28	14900	7250	9810	e3800	4450	7540	7750	4370	3970	720	3930	4700
29	10400	7620	8070	e3600	---	9310	7530	4050	1390	1400	4460	2520
30	7470	9840	9980	e3700	---	9460	6580	3760	751	660	4800	4470
31	7470	---	14300	e3400	---	8590	---	3960	---	689	2680	---
TOTAL	289490	241830	297920	173300	120890	228430	331110	180340	85841	37397	68713	95937
MEAN	9338	8061	9610	5590	4317	7369	11040	5817	2861	1206	2217	3198
MAX	23700	14700	28600	12800	5530	12400	23200	10400	5160	3130	4800	7740
MIN	2900	4130	2690	3300	3110	3330	6280	2220	751	588	750	977

CAL YR 1990 TOTAL 2584496 MEAN 7081 MAX 31200 MIN 936
WTR YR 1991 TOTAL 2151198 MEAN 5894 MAX 28600 MIN 588

e Estimated

CONNECTICUT RIVER BASIN

55

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.--51 years, 146 ft³/s, 20,15 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)
Oct. 24	1300	a*1,900	*5.79	Mar. 4	2230	1,380	5.05
Dec. 24	1600	1,190	4.78				

a from rating curve extended above 1,400 ft³/s.

Minimum daily discharge, 13 ft³/s, Aug. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	210	189	198	e280	e97	e95	212	295	198	27	15	86
2	143	179	189	e250	e96	e170	199	302	132	25	14	54
3	112	173	178	e220	e97	e470	208	255	107	22	13	41
4	95	165	392	e190	e120	856	232	224	96	21	26	33
5	221	157	513	e180	e145	807	318	194	97	21	80	33
6	127	222	325	e170	e170	427	441	210	92	30	50	28
7	97	236	268	e160	e190	506	577	404	79	44	36	25
8	81	195	236	e145	e170	358	543	268	70	86	29	22
9	78	170	219	e135	e160	238	552	222	65	106	26	20
10	129	287	209	e130	e150	194	555	195	59	62	246	19
11	118	689	171	e125	e140	170	594	178	57	52	140	26
12	136	407	160	e120	e120	161	418	161	66	40	83	28
13	350	304	186	e120	e125	153	325	132	84	37	58	22
14	445	262	175	e120	e130	145	272	125	68	67	43	20
15	270	227	164	e130	e120	142	251	122	60	54	34	20
16	212	265	184	e180	e115	148	363	117	91	39	70	66
17	173	478	180	e165	e105	158	286	128	165	32	53	63
18	152	420	178	e150	e110	169	269	181	114	29	40	46
19	315	318	285	e140	e115	204	239	144	86	26	114	99
20	255	259	252	e125	e120	185	212	126	67	24	245	152
21	200	241	229	e115	e130	164	317	115	57	22	154	95
22	173	222	369	e120	e125	156	553	106	47	20	111	67
23	204	269	726	e130	e120	154	415	99	42	29	74	55
24	1240	289	1030	e125	e110	153	312	91	38	32	51	50
25	732	257	649	e120	e105	148	261	88	35	23	39	196
26	448	232	416	e115	e100	156	229	97	34	21	31	218
27	332	211	288	e110	e98	185	209	129	30	29	30	140
28	271	234	262	e105	e97	547	192	127	29	26	27	101
29	255	257	272	e105	---	454	182	108	29	21	24	78
30	224	226	412	e100	---	318	215	105	29	18	21	67
31	209	---	469	e98	---	235	---	174	---	16	103	---
TOTAL	8007	8040	9784	4478	3480	8426	9951	5222	2223	1101	2080	1970
MEAN	258	268	316	144	124	272	332	168	74.1	35.5	67.1	65.7
MAX	1240	689	1030	280	190	856	594	404	198	106	246	218
MIN	78	157	160	98	96	95	182	88	29	16	13	19
CFSM	2.62	2.72	3.21	1.47	1.26	2.76	3.37	1.71	.75	.36	.68	.67
IN.	3.03	3.04	3.70	1.69	1.32	3.19	3.76	1.97	.84	.42	.79	.74

CAL YR 1990 TOTAL 95604 MEAN 262 MAX 1770 MIN 36 CFSM 2.66 IN. 36.14
WTR YR 1991 TOTAL 64762 MEAN 177 MAX 1240 MIN 13 CFSM 1.80 IN. 24.48

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.--33 years, 16.0 ft³/s, 24.28 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 800 ft³/s, July 23, 1990, gage height, 5.90 ft from flood marks, 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)
Oct. 24	0630	a*194	3.84	Jan. 6	0345	ice jam	*5.10

a from rating curve extended above 160 ft³/s.

Minimum discharge, 78 ft³/s, Aug. 3, 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	23	24	e33	e10	e8.1	e16	30	18	1.2	.95	4.9
2	7.3	22	22	e31	e10	e15	e15	31	9.1	1.0	.90	3.1
3	6.5	22	20	e29	e10	e26	e17	27	7.5	1.0	.79	2.9
4	12	21	46	e27	e11	e60	24	26	8.4	1.0	25	3.3
5	13	20	29	e25	e12	e20	32	24	8.0	1.4	11	3.2
6	7.3	28	e26	e23	e13	e17	43	35	6.7	1.6	3.3	2.8
7	6.1	21	e23	e22	e12	e21	47	33	5.6	2.0	2.7	2.6
8	5.8	20	e21	e21	e11	e23	43	27	4.8	18	2.2	2.3
9	7.1	19	e20	e20	e11	e30	47	25	4.2	4.9	3.1	2.1
10	18	38	e19	e19	e10	e24	50	24	3.9	2.4	36	2.0
11	11	30	e18	e19	e9.8	e21	46	22	5.5	2.3	6.1	7.9
12	14	25	e17	e19	e9.7	e20	40	20	6.8	1.9	3.9	3.2
13	50	23	e19	e18	e9.6	e16	37	19	6.5	3.5	3.4	3.0
14	24	22	e18	e18	e9.6	e12	33	18	4.1	6.7	3.1	3.8
15	14	23	e17	e18	e9.5	e8.7	34	16	4.5	2.6	2.6	6.6
16	13	32	e18	e25	e9.4	e9.4	37	15	15	2.0	2.4	25
17	12	36	e17	e23	e9.3	e9.9	31	21	15	1.5	2.2	7.9
18	14	27	e18	e20	e9.2	e11	33	22	6.5	1.4	4.6	4.6
19	29	25	e25	e16	e9.1	e13	28	16	3.2	1.3	20	19
20	17	24	e23	e15	e10	e11	26	14	2.5	1.1	15	13
21	15	25	e22	e14	e9.6	e10	50	12	2.0	1.0	12	8.5
22	16	24	e26	e15	e9.1	e9.8	48	10	1.9	1.1	5.2	6.9
23	28	29	e37	e16	e9.0	e9.7	36	8.8	1.8	2.9	3.2	6.6
24	76	27	e48	e14	e8.8	e9.0	32	7.9	1.7	1.7	2.9	6.7
25	29	26	e40	e13	e8.6	e8.0	30	11	1.6	1.2	2.8	41
26	27	24	e35	e13	e8.5	e10	29	10	1.4	1.7	2.5	22
27	27	23	e30	e12	e8.4	e12	28	17	1.3	2.7	2.2	16
28	29	25	e28	e12	e8.1	e35	27	11	1.2	1.6	2.0	13
29	28	26	e27	e11	---	e22	26	7.6	1.2	1.3	2.0	12
30	27	23	e31	e11	---	e18	33	12	1.3	1.1	2.0	12
31	23	---	e36	e11	---	e17	---	23	---	.97	16	---
TOTAL	618.1	753	800	583	275.3	536.6	1018	595.3	161.2	76.07	202.04	267.9
MEAN	19.9	25.1	25.8	18.8	9.83	17.3	33.9	19.2	5.37	2.45	6.52	8.93
MAX	76	38	48	33	13	60	50	35	18	18	36	41
MIN	5.8	19	17	11	8.1	8.0	15	7.6	1.2	.97	.79	2.0
CFSM	2.23	2.80	2.88	2.10	1.10	1.93	3.79	2.15	.60	.27	.73	1.00
IN.	2.57	3.13	3.33	2.42	1.14	2.23	4.23	2.47	.67	.32	.84	1.11

CAL YR 1990 TOTAL 8312.0 MEAN 22.8 MAX 114 MIN 4.5 CFSM 2.54 IN. 34.55
WTR YR 1991 TOTAL 5886.51 MEAN 16.1 MAX 76 MIN .79 CFSM 1.80 IN. 24.47

e Estimated

CONNECTICUT RIVER BASIN

57

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 fair 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.--29 years, 7.67 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 55 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 24	--	unknown	unknown	Mar. 11	1315	ice jam	*3.01
Nov. 11	--	unknown	unknown	Mar. 28	1430	61	2.31
Dec. 5	1215	64	2.32	Apr. 21	--	unknown	unknown
Dec. 24	0800	*113	2.58	Sept. 20	0830	82	2.43
Mar. 2	1815	ice jam	unknown				

Minimum discharge, 0.15 ft³/s, Aug. 2, 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.4	e8.0	5.6	e12	e3.3	e2.7	11	e18	e2.5	e1.5	.18	1.4
2	3.9	e7.2	5.6	e10	3.4	e40	11	e14	e2.1	e.70	.15	.81
3	3.1	e6.6	5.4	e8.0	3.5	e30	10	e11	e2.3	e.43	.15	2.7
4	4.0	e6.0	4.9	e5.6	4.0	e20	11	e9.5	e2.9	e.42	.26	3.0
5	5.3	e5.6	33	e5.0	5.5	e18	14	e15	e2.7	e.42	.52	1.3
6	3.3	e15	17	e4.5	6.7	e19	16	e22	e2.4	e.70	.33	.90
7	2.8	e15	16	e4.0	8.1	e25	18	e15	e2.1	e.98	.25	.72
8	2.5	e9.5	9.7	e3.7	7.6	e17	18	e12	e1.8	e.70	.21	.66
9	2.4	e15	9.0	e3.3	6.7	e11	23	e10	e1.6	e.50	.32	16
10	6.5	e25	8.2	e3.1	6.1	e9.0	19	e9.0	e1.5	e.45	4.7	9.5
11	4.2	e52	e6.0	e3.0	e5.8	e8.0	16	e8.2	e1.5	e.40	1.2	4.4
12	3.7	e30	e4.0	e2.9	e5.0	e7.0	13	e7.2	e2.0	e.35	.61	2.9
13	e20	e20	e3.0	e2.9	e3.7	e6.4	11	e6.2	e1.6	e.45	.40	2.2
14	16	e16	e2.6	e3.2	e3.3	e5.4	10	e5.6	e3.0	e.86	.33	1.7
15	9.0	e13	e2.7	e4.4	e3.2	e5.4	13	e5.0	e20	e.70	.29	1.8
16	6.5	e20	e2.8	e7.5	e3.1	e5.6	18	e4.8	e10	e.58	.35	5.0
17	5.6	e22	e3.1	e6.6	e3.0	e6.4	13	e5.6	e4.5	e.45	.28	2.9
18	6.7	e16	e4.0	e5.9	e2.9	8.1	15	e5.0	e2.7	e.38	.25	2.4
19	25	e13	e5.8	e5.4	e3.0	11	12	e4.3	e2.4	e.34	1.1	2.1
20	19	e10	e7.0	e4.8	4.3	7.9	e37	e3.9	e2.0	e.33	.56	38
21	e13	e8.5	e11	e4.3	3.9	7.5	e40	e3.3	e1.5	e.32	.45	19
22	e10	e8.0	e15	e3.9	e3.7	6.4	e30	e3.0	e1.3	e.47	.40	11
23	e10	e8.8	32	e3.6	e3.4	5.6	e22	e2.8	e1.1	e.37	.36	7.7
24	e50	e8.6	57	e3.4	e3.1	7.4	e18	e2.5	e.96	e.30	.33	e5.5
25	e35	e8.5	24	e3.2	e2.9	5.7	e14	e2.4	e.86	e.26	.29	e5.0
26	e22	e7.5	e18	e3.1	e2.7	8.6	e12	e2.3	e.80	e.23	.45	e4.0
27	e14	e7.0	e12	e3.1	e2.5	16	e11	e2.7	e.72	.51	.39	e3.0
28	e13	e7.0	e9.6	e3.2	e2.5	41	e9.6	e2.4	e.66	.31	.32	e1.7
29	e12	e7.0	e8.6	e3.2	---	22	e23	e2.6	e.64	.26	.34	e1.5
30	e10	e5.7	e10	e3.2	---	15	e21	e3.5	e.95	.22	.94	e1.3
31	e9.0	---	e11	e3.2	---	14	---	e3.1	---	.21	2.9	---
TOTAL	354.9	401.5	363.6	143.2	116.9	412.1	509.6	221.9	81.09	15.10	19.61	160.09
MEAN	11.4	13.4	11.7	4.62	4.17	13.3	17.0	7.16	2.70	.49	.63	5.34
MAX	50	52	57	12	8.1	41	40	22	20	1.5	4.7	38
MIN	2.4	5.6	2.6	2.9	2.5	2.7	9.6	2.3	.64	.21	.15	.66
CFSM	2.49	2.91	2.55	1.00	.91	2.89	3.69	1.56	.59	.11	.14	1.16
IN.	2.87	3.25	2.94	1.16	.95	3.33	4.12	1.79	.66	.12	.16	1.29

CAL YR 1990 TOTAL 3109.55 MEAN 8.52 MAX 60 MIN .16 CFSM 1.85 IN. 25.15
WTR YR 1991 TOTAL 2799.59 MEAN 7.67 MAX 57 MIN .15 CFSM 1.67 IN. 22.64

e Estimated

CONNECTICUT RIVER BASIN

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 and periods of shifting control, July 10-29, which are fair. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--51 years (water years 1940-75, 1977-91), 47.8 ft³/s, 21.28 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)
Oct. 24	1000	a*688	*6.41	Dec. 24	--	500	5.55
Nov. 10	2200	455	5.37	Mar. 4	0930	453	5.36

a from rating curve extended above 500 ft³/s.

Minimum discharge, 2.2 ft³/s, Aug. 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e40	68	52	e140	e30	e33	112	86	41	e5.5	2.6	9.9
2	e23	65	52	e110	e29	77	111	83	33	4.8	2.5	6.5
3	e21	61	49	e90	e31	120	110	77	29	4.6	2.3	5.5
4	e25	57	115	e80	e35	347	115	72	29	4.4	4.6	5.2
5	e49	53	101	e78	e45	214	126	66	29	4.4	11	5.2
6	e30	81	90	e68	57	148	168	84	26	5.0	5.4	4.7
7	e25	69	71	e58	61	223	228	107	24	5.2	4.3	4.1
8	e22	60	e64	e55	57	150	e205	82	20	28	3.7	4.0
9	e24	55	e61	e52	e54	136	e190	75	20	15	3.7	3.9
10	52	159	e52	e48	e45	126	e210	71	18	7.7	52	3.8
11	38	199	e50	e47	e36	90	e180	70	17	6.2	18	12
12	52	114	e52	e46	e35	90	e140	64	17	5.1	9.8	7.3
13	87	95	e50	e46	e37	80	e120	58	17	5.3	6.6	5.2
14	99	86	e49	e45	e38	75	e110	59	17	8.2	5.4	4.8
15	65	89	e48	e51	e33	71	e100	55	16	6.3	4.8	4.9
16	53	117	e47	59	e31	71	e120	44	19	5.0	4.8	37
17	47	140	e46	90	e29	78	e100	42	27	4.7	4.7	20
18	45	108	e45	69	e30	76	e115	45	20	4.3	4.3	11
19	88	94	66	e48	e35	91	e100	42	16	4.1	12	33
20	59	85	61	e45	e40	84	e88	38	13	3.8	26	32
21	53	82	84	e40	e39	75	e160	36	e11	3.5	15	17
22	50	78	95	e36	e36	72	e260	33	e11	3.4	14	12
23	71	80	e220	e38	e36	68	e165	30	e9.8	4.0	9.2	10
24	429	77	e400	e37	e37	65	e130	29	e9.8	4.5	7.2	9.6
25	177	72	e180	e36	e38	65	e110	28	e8.8	3.4	6.4	82
26	126	67	e130	e36	e35	76	e96	29	e8.0	3.7	5.7	55
27	102	63	e110	e35	e34	91	e86	47	e7.4	5.0	4.8	33
28	91	63	e105	e34	e33	248	e75	42	e5.4	4.2	4.7	24
29	83	61	e100	e33	---	165	e70	36	e6.1	3.4	4.4	20
30	77	57	208	e32	---	142	85	37	e5.8	2.9	4.2	18
31	73	---	200	e31	---	114	---	50	---	2.7	8.9	---
TOTAL	2276	2555	3053	1713	1076	3561	3985	1717	531.1	178.3	273.0	500.6
MEAN	73.4	85.2	98.5	55.3	38.4	115	133	55.4	17.7	5.75	8.81	16.7
MAX	429	199	400	140	61	347	260	107	41	28	52	82
MIN	21	53	45	31	29	33	70	28	5.4	2.7	2.3	3.8
CFSM	2.41	2.79	3.23	1.81	1.26	3.77	4.36	1.82	.58	.19	.29	.55
IN.	2.78	3.12	3.72	2.09	1.31	4.34	4.86	2.09	.65	.22	.33	.61

CAL YR 1990 TOTAL 26642 MEAN 73.0 MAX 429 MIN 11 CFSM 2.39 IN. 32.49
WTR YR 1991 TOTAL 21419.0 MEAN 58.7 MAX 429 MIN 2.3 CFSM 1.92 IN. 26.12

e Estimated

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.--76 years, 1,195 ft³/s, 23.52 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)
Oct. 24	1145	*16,500	*12.50	Mar. 4	2200	11,600	10.78
Dec. 23	2130	11,900	10.87	Apr. 22	0130	12,500	11.11
Dec. 24	1545	11,800	10.84				

Minimum daily discharge, 89 ft³/s, Aug. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	685	1270	1080	3010	e720	e740	2000	2360	806	163	100	203
2	616	1190	1050	e2500	e660	e1100	1840	2260	611	160	95	222
3	512	1120	1000	e2100	e700	e4400	1790	2130	502	149	90	175
4	471	1060	1900	e1700	e750	8710	1790	1950	479	148	89	153
5	863	992	2800	e1500	e900	6480	2160	1720	500	148	144	148
6	770	1250	1820	e1350	e1150	3460	3140	1750	468	150	225	150
7	586	1540	1630	e1200	e1400	4610	4730	2920	419	159	178	138
8	506	1220	1430	e890	e1300	3690	4270	2110	382	244	150	124
9	473	1130	1330	e880	e1250	2440	4150	1820	353	558	128	115
10	e860	1610	1270	e840	e1150	2070	4040	1630	327	299	638	108
11	933	4540	1130	e820	e950	1830	3720	1460	309	213	616	107
12	891	2590	1050	e800	e790	1750	2720	1320	369	184	335	157
13	1590	2020	1130	e820	e820	1510	2280	1180	399	171	261	176
14	2660	1770	1080	e840	e840	1440	2040	1080	365	231	206	149
15	1720	1650	719	e940	e800	1330	1880	1000	324	270	175	138
16	1250	2550	1070	e900	e710	1250	2160	916	464	209	157	364
17	1050	4140	1080	e1700	e690	1280	1860	861	570	167	150	588
18	943	3090	1010	e1600	e700	1430	1880	1010	505	152	138	408
19	1480	2330	1680	e1100	e740	1720	1730	850	391	138	186	310
20	1500	1980	1470	e1000	e830	1660	1540	772	329	130	547	923
21	1180	1790	1220	e900	e1200	1390	3330	707	284	123	521	558
22	1050	1640	3810	e750	e1050	1300	8800	646	254	118	470	402
23	1010	1670	7460	e800	e950	1240	4650	586	235	114	342	332
24	9790	1670	9310	e840	e700	1190	3220	546	223	126	255	291
25	4770	1500	5090	e800	e690	1200	2650	512	212	136	209	506
26	2890	1350	3230	e780	e670	1330	2270	545	203	119	176	1510
27	2230	1250	2350	e790	e650	1650	2040	712	191	130	159	924
28	1900	1250	2050	e760	e640	3990	1830	806	179	158	152	650
29	1720	1250	2160	e760	---	3870	1690	612	164	139	142	511
30	1510	1170	4300	e750	---	2790	1860	583	161	119	128	439
31	1390	---	6280	e740	---	2150	---	840	---	108	133	---
TOTAL	49799	53582	73989	35160	24400	75000	84060	38194	10978	5433	7295	10979
MEAN	1606	1786	2387	1134	871	2419	2802	1232	366	175	235	366
MAX	9790	4540	9310	3010	1400	8710	8800	2920	806	558	638	1510
MIN	471	992	719	740	640	740	1540	512	161	108	89	107
CFSM	2.33	2.59	3.46	1.64	1.26	3.51	4.06	1.79	.53	.25	.34	.53
IN.	2.68	2.89	3.99	1.90	1.32	4.04	4.53	2.06	.59	.29	.39	.59

CAL YR 1990 TOTAL 615643 MEAN 1687 MAX 11700 MIN 203 CFSM 2.44 IN. 33.19
WTR YR 1991 TOTAL 468869 MEAN 1285 MAX 9790 MIN 89 CFSM 1.86 IN. 25.28

e Estimated

CONNECTICUT RIVER BASIN

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 except those for estimated daily discharges, which are fair. 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.--77 years (water years 1912-76, 1980-91), 7,149 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)
Oct. 24	1530	37,500	16.10	Dec. 24	1830	*41,900	*17.15

Minimum daily discharge, 1,040 ft³/s, July 31.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4380	9420	10600	17600	6590	6560	10900	11700	6040	1380	1330	e4500
2	4170	6910	10900	14500	6070	5960	9830	11500	6280	1410	1520	e3300
3	4460	6150	9860	13100	5010	12300	9860	11600	5380	1670	1510	e3100
4	4590	6410	10200	11300	4420	18500	9840	11000	6250	1100	1490	e2800
5	7270	8780	15500	10100	5230	21700	10700	10900	5800	1090	1660	e2500
6	5450	7790	13600	7390	6480	16800	14800	10900	4270	1090	2160	e2600
7	4150	8070	11500	8840	7720	16200	17500	14400	4260	1100	2310	e3300
8	3750	6960	7870	9180	8750	16200	19400	13500	4200	1400	2640	e1700
9	4960	7590	6180	8490	6530	13300	21000	13200	3040	2690	2130	e1800
10	6920	10300	6860	8180	5390	10800	25800	12400	4380	2470	1870	e1200
11	7390	20800	7410	9650	6680	10500	28300	10400	4250	2600	3770	e1600
12	8130	20100	7000	8540	7230	9870	29000	9360	4130	2470	3460	e3300
13	10900	16600	6500	5440	6310	9450	25500	8270	2940	2280	3100	e2400
14	17200	11800	6950	6930	6340	9330	19100	7340	2690	1960	3040	e2100
15	19600	9080	5680	8730	5670	9450	14500	7240	2300	1820	2900	e2300
16	17300	9260	4940	9030	5430	9290	14700	6390	2670	1690	2340	e4000
17	13700	13400	6220	9770	5120	10200	14300	6360	4110	1840	1420	e5000
18	9760	20200	7620	8730	5450	10800	14200	6360	4700	2990	1780	e3600
19	10300	17000	9760	7880	5800	11900	13400	5230	4360	3150	5060	e4800
20	11500	14200	8290	6070	6200	10500	12300	6020	4830	1610	4000	e7600
21	9740	12600	7580	6740	7100	9510	13000	5540	5190	1960	5370	e4700
22	12000	12100	15000	7310	6990	9750	25300	6480	2100	1590	e3400	e3200
23	12000	8220	25200	6640	7250	8140	19000	4620	1570	2470	e3300	e3400
24	26600	10100	37500	6870	5790	6620	16100	4690	2910	1620	e1800	e5200
25	30200	7810	38600	7120	6150	6880	14000	3390	2450	1280	e2000	e8600
26	27000	9210	32800	6560	6350	7210	13300	3580	3040	1110	e2800	e8400
27	22900	9200	23800	4340	6010	7160	11600	4670	3610	1080	e3300	e7700
28	18500	10600	15800	5730	6220	12700	10600	6390	4070	1100	e3700	e4500
29	15700	9940	13200	5950	---	17000	9690	5330	2470	1240	e4100	e3500
30	10000	11000	13900	5340	---	15300	9720	5210	1300	1070	e5500	e3000
31	8450	---	20900	5650	---	12000	---	4690	---	1040	e3200	---
TOTAL	368970	331600	417720	257700	174280	351880	477240	248660	115590	53370	87960	115700
MEAN	11900	11050	13470	8313	6224	11350	15910	8021	3853	1722	2837	3857
MAX	30200	20800	38600	17600	8750	21700	29000	14400	6280	3150	5500	8600
MIN	3750	6150	4940	4340	4420	5960	9690	3390	1300	1040	1330	1200

CAL YR 1990 TOTAL 3667530 MEAN 10050 MAX 43100 MIN 1420
WTR YR 1991 TOTAL 3000670 MEAN 8221 MAX 38600 MIN 1040

e Estimated

CONNECTICUT RIVER BASIN

61

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.--No estimated daily discharges. Records good. 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.--68 years, 217 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, 1,740 ft³/s, Dec. 25, gage height, 4.31 ft; minimum daily, 25 ft³/s, July 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	273	273	271	363	110	98	349	270	101	27	27	47
2	290	276	266	353	110	101	280	389	158	25	27	47
3	286	277	215	340	110	111	268	384	131	31	27	46
4	284	275	242	295	107	316	266	337	112	32	27	46
5	284	273	369	261	105	472	285	298	98	31	27	46
6	280	275	388	257	105	473	545	283	88	30	27	46
7	274	280	346	254	106	475	530	540	84	29	27	46
8	264	287	298	249	108	540	406	639	79	34	26	45
9	254	287	300	244	111	597	549	395	73	38	26	44
10	255	298	300	158	112	568	702	261	68	38	27	44
11	253	825	298	115	114	401	565	267	61	37	26	44
12	246	1230	292	137	114	275	407	253	62	36	29	43
13	255	1060	261	137	114	189	351	244	61	35	32	43
14	273	663	206	135	114	123	304	236	62	35	31	43
15	524	408	190	132	114	124	274	222	63	35	31	43
16	763	365	190	171	114	125	284	168	69	40	31	43
17	521	370	190	239	114	127	308	127	76	44	31	43
18	380	384	190	252	114	188	307	127	88	44	31	43
19	410	387	191	250	114	247	290	130	91	43	32	44
20	498	378	197	247	113	247	272	127	85	43	147	44
21	453	361	254	191	112	246	331	95	76	42	208	44
22	380	347	300	149	113	167	755	72	70	42	211	44
23	350	336	400	147	108	63	1120	73	65	42	156	44
24	730	328	1250	147	103	64	952	72	58	42	117	44
25	1110	322	1720	134	104	66	506	71	50	42	115	46
26	1160	316	1440	112	104	68	357	70	44	42	78	113
27	904	311	912	112	102	71	342	57	41	41	51	185
28	733	297	610	112	100	81	333	55	37	41	51	186
29	666	281	494	111	---	427	267	64	33	34	48	185
30	492	276	474	110	---	662	219	68	31	28	46	119
31	269	---	417	110	---	517	---	74	---	27	47	---
TOTAL	14114	12046	13471	6024	3069	8229	12724	6468	2215	1130	1817	1900
MEAN	455	402	435	194	110	265	424	209	73.8	36.5	58.6	63.3
MAX	1160	1230	1720	363	114	662	1120	639	158	44	211	186
MIN	246	273	190	110	100	63	219	55	31	25	26	43

CAL YR 1990 TOTAL 123203 MEAN 338 MAX 2040 MIN 26
WTR YR 1991 TOTAL 83207 MEAN 228 MAX 1720 MIN 25

CONNECTICUT RIVER BASIN

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 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.--7 years, 58.5 ft³/s, 33.95 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)
Oct. 24	1115	*629	*6.24	Apr. 22	0415	625	6.22

Minimum discharge 2.8 ft³/s, Aug. 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	43	36	137	e26	e25	79	104	33	8.6	3.3	7.1
2	35	41	34	91	e24	103	72	101	23	7.5	3.2	4.9
3	30	38	31	76	e24	247	66	86	19	6.9	3.0	4.2
4	37	35	72	56	e27	274	70	77	19	6.6	3.2	4.6
5	69	33	90	48	47	253	93	69	22	6.7	5.8	6.5
6	46	56	e62	e45	65	142	145	86	19	7.3	5.0	4.8
7	34	48	49	e39	74	198	204	118	16	7.9	4.3	4.1
8	29	38	43	e36	80	e180	195	88	14	9.7	4.0	3.8
9	25	32	39	e28	67	e125	192	75	13	8.2	4.7	3.5
10	43	81	e36	e27	56	e88	166	66	12	6.9	6.9	3.4
11	39	161	e33	e26	e41	e76	150	58	40	6.1	21	4.3
12	42	99	28	e28	e37	57	110	53	66	5.4	13	4.1
13	90	73	32	e28	e30	50	91	46	36	8.1	9.9	3.5
14	134	57	e30	e28	e29	46	80	41	24	17	8.3	3.7
15	87	61	e28	e27	e28	42	75	37	39	10	7.3	4.3
16	63	107	29	e31	e26	41	91	33	100	7.6	7.2	9.9
17	50	157	29	e61	e24	40	78	37	64	6.5	5.7	13
18	45	129	33	e54	e23	45	72	40	41	6.2	4.9	9.0
19	112	93	91	e46	e23	65	64	31	29	5.4	19	12
20	82	76	64	e36	77	54	57	28	24	4.9	27	17
21	64	65	55	e33	68	44	156	26	20	4.2	50	11
22	53	59	178	e32	55	41	514	25	17	3.9	29	8.7
23	70	64	262	e28	e47	37	245	22	16	10	17	7.5
24	472	60	271	e26	e42	41	142	20	14	6.8	12	7.0
25	257	48	165	e24	e32	42	114	20	13	5.2	10	53
26	122	42	105	e23	e29	45	98	19	12	4.5	8.4	40
27	91	41	e83	e22	e26	60	88	29	11	6.4	7.6	23
28	76	46	64	e21	e25	193	79	27	9.4	4.6	6.9	17
29	67	51	72	e21	---	187	71	21	8.3	3.7	5.2	14
30	54	40	150	e30	---	115	91	22	8.5	3.6	4.2	12
31	44	---	190	e34	---	89	---	27	---	3.4	8.4	---
TOTAL	2522	1974	2484	1242	1152	3045	3748	1532	782.2	209.8	387.5	320.9
MEAN	81.4	65.8	80.1	40.1	41.1	98.2	125	49.4	26.1	6.77	12.5	10.7
MAX	472	161	271	137	80	274	514	118	100	17	69	53
MIN	25	32	28	21	23	25	57	19	8.3	3.4	3.0	3.4
CFSM	3.48	2.81	3.42	1.71	1.76	4.20	5.34	2.11	1.11	.29	.53	.46
IN.	4.01	3.14	3.95	1.97	1.83	4.84	5.96	2.44	1.24	.33	.62	.51

CAL YR 1990 TOTAL 25580.4 MEAN 70.1 MAX 472 MIN 4.6 CFSM 3.00 IN. 40.67
WTR YR 1991 TOTAL 19399.4 MEAN 53.1 MAX 514 MIN 3.0 CFSM 2.27 IN. 30.84

e Estimated

CONNECTICUT RIVER BASIN

63

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.--No estimated daily discharges. 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.--61 years, 402 ft³/s, 24.70 in/yr.

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, 3,720 ft³/s, Oct. 24, gage height, 7.09 ft; minimum, 3.9 ft³/s, Oct. 18, 19; minimum daily, 20 ft³/s, May 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	384	221	316	855	234	281	572	996	252	72	38	58
2	164	557	323	520	197	354	576	727	224	53	21	21
3	149	346	311	606	238	1350	583	1350	82	59	21	49
4	163	350	667	385	282	2100	587	557	182	46	21	21
5	423	336	810	382	301	1760	603	534	199	52	65	49
6	244	490	658	479	551	1010	1080	530	180	64	40	21
7	196	577	490	428	487	1370	1230	826	93	130	21	46
8	152	380	399	153	569	1410	1480	905	93	46	39	21
9	178	292	433	196	499	745	1290	592	112	58	21	21
10	248	480	396	424	460	665	1010	193	120	45	185	41
11	241	732	307	235	344	600	884	20	53	39	202	42
12	255	1910	302	234	234	517	711	440	387	43	21	21
13	505	1500	392	324	284	485	598	525	152	60	43	167
14	1170	737	337	271	332	445	589	303	149	78	40	21
15	676	575	156	304	283	329	512	291	63	112	39	21
16	358	674	335	325	254	473	597	267	561	45	39	45
17	302	1010	376	516	225	396	520	266	295	44	21	21
18	260	911	303	500	254	467	586	358	194	41	43	22
19	438	691	551	296	236	633	548	238	143	21	80	21
20	730	586	485	288	312	549	420	248	134	53	258	203
21	567	574	317	349	646	409	736	211	147	21	144	21
22	359	537	628	185	312	97	2970	174	67	42	192	21
23	370	491	1550	169	441	56	3150	174	123	45	59	21
24	2770	513	2120	336	210	58	1710	169	68	61	54	21
25	2470	434	2190	240	323	982	918	175	84	21	48	108
26	932	390	620	196	274	1100	755	153	77	52	42	397
27	736	374	672	225	272	376	675	240	76	51	40	22
28	686	376	556	223	234	1380	712	200	73	47	44	59
29	478	372	600	227	---	1600	589	155	56	21	21	68
30	702	347	866	218	---	1240	556	143	63	41	47	54
31	498	---	1300	312	---	726	---	266	---	21	54	---
TOTAL	17804	17763	19766	10401	9288	23963	27747	12226	4502	1584	2003	1724
MEAN	574	592	638	336	332	773	925	394	150	51.1	64.6	57.5
MAX	2770	1910	2190	855	646	2100	3150	1350	561	130	258	397
MIN	149	221	156	153	197	56	420	20	53	21	21	21

CAL YR 1990 TOTAL 200596 MEAN 550 MAX 3860 MIN 16
WTR YR 1991 TOTAL 148771 MEAN 408 MAX 3150 MIN 20

CONNECTICUT RIVER BASIN

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.--63 years, 409 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)
Nov. 11	0700	*3,010	*5.12	No other peak greater than base discharge.			
Minimum daily discharge, 35 ft ³ /s, Aug. 18.							

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	180	504	340	e900	e340	e260	982	923	247	65	39	97
2	154	470	329	e800	e350	e290	841	950	274	58	38	82
3	142	443	321	e720	e370	786	736	880	233	57	37	70
4	144	423	574	e660	e400	1160	659	767	192	57	41	64
5	165	405	1200	e600	e430	1190	611	654	169	57	44	63
6	182	507	894	e540	e470	1020	601	587	164	58	44	58
7	157	584	736	e500	e520	1040	641	866	155	60	42	55
8	145	515	639	e460	e700	1200	696	950	145	61	37	54
9	131	468	573	e420	e820	1040	795	889	129	53	41	50
10	142	784	528	e390	e700	872	963	785	126	51	73	51
11	153	2620	489	e360	e580	741	949	698	114	51	67	51
12	234	1620	451	e340	e470	636	894	637	111	50	62	48
13	632	1220	426	e345	e420	560	804	597	110	59	51	45
14	1300	973	406	e350	e400	508	706	506	110	71	47	48
15	854	799	361	e345	e380	473	618	435	111	59	45	56
16	638	749	e330	e340	e360	445	589	390	156	57	43	69
17	508	732	e350	e400	e340	424	586	356	205	52	39	64
18	442	748	e370	e520	e330	411	569	349	205	50	35	57
19	731	672	e410	e480	e345	497	552	343	198	44	173	81
20	641	610	e460	e440	e350	570	520	331	159	44	593	119
21	512	570	e530	e380	e355	540	553	314	142	49	474	114
22	452	534	803	e340	e370	469	1450	290	124	40	356	93
23	489	539	1180	e320	e380	416	1560	269	108	47	232	76
24	1650	548	1990	e340	e355	381	1400	251	104	44	159	71
25	1500	518	2600	e360	e335	370	1150	236	94	41	116	332
26	1060	470	2030	e340	e320	365	940	225	81	49	94	611
27	835	446	1620	e310	e300	417	790	216	69	56	70	456
28	713	439	e1200	e290	e280	983	701	211	62	47	70	300
29	673	439	e1000	e270	---	1590	634	204	61	53	62	203
30	578	383	e860	e265	---	1440	604	192	67	47	58	163
31	544	---	e820	e290	---	1210	---	204	---	41	94	---
TOTAL	16681	20732	24820	13415	11770	22304	24094	15505	4225	1628	3376	3701
MEAN	538	691	801	433	420	719	803	500	141	52.5	109	123
MAX	1650	2620	2600	900	820	1590	1560	950	274	71	593	611
MIN	131	383	321	265	280	260	520	192	61	40	35	45

CAL YR 1990 TOTAL 224938 MEAN 616 MAX 3850 MIN 65
WTR YR 1991 TOTAL 162251 MEAN 445 MAX 2620 MIN 35

e Estimated

CONNECTICUT RIVER BASIN

65

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 fair except those for estimated daily discharges, which are poor. Low flow regulated by powerplant upstream.

AVERAGE DISCHARGE.--5 years, 223 ft³/s, 27.04 in/yr.

EXTREMETS FOR PERIOD OF RECORD.--Maximum discharge, 11,500 ft³/s, Mar. 31, 1987, gage height, 10.69 ft, from rating curve extended above 3,800 ft³/s. Minimum, 14 ft³/s, Aug. 23, 1988, Sept. 10-14, 1989, Aug. 2-4, Sept. 7, 1991.

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)
Oct. 24	0815	2,710	6.56	Dec. 24	0730	a4,670	7.87
Nov. 10	2145	3,710	7.28	Apr. 21	1915	a*5,710	*8.42

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

Minimum discharge, 14 ft³/s, Aug. 2-4, Sept. 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	112	102	e180	e110	e150	350	621	78	37	15	38
2	40	109	103	e170	e120	e400	310	438	60	27	15	26
3	36	101	99	e160	e135	573	304	353	52	24	14	23
4	38	94	530	e150	e150	1130	324	303	61	24	16	21
5	62	88	462	e145	e175	663	418	267	78	24	47	21
6	49	199	249	e135	e215	448	578	429	71	24	29	21
7	39	172	207	e130	e250	937	593	597	56	38	20	17
8	36	134	187	e125	e290	531	488	374	47	53	18	18
9	35	117	171	e120	e220	346	570	308	45	34	19	17
10	40	951	167	e115	e170	294	452	269	40	26	151	16
11	50	1110	138	e110	e135	238	352	244	37	22	59	17
12	50	451	143	e115	e120	208	277	214	37	21	35	17
13	231	303	145	e110	e125	214	245	189	51	23	27	16
14	281	240	133	e120	e120	190	225	167	39	43	22	15
15	126	217	144	e110	e115	179	216	154	103	32	20	17
16	88	215	188	e145	e120	176	267	136	530	26	24	32
17	73	196	139	e220	e115	187	217	129	185	21	21	28
18	70	190	149	e150	e110	263	320	158	120	19	18	22
19	217	167	238	e130	e115	509	257	121	81	17	209	38
20	119	152	176	e115	e125	343	211	108	67	16	218	57
21	89	145	169	e105	e145	284	1900	96	52	17	244	36
22	79	133	446	e115	e135	244	2090	89	44	25	148	27
23	116	153	977	e135	e125	221	883	80	39	24	76	24
24	1290	151	2280	e145	e120	220	568	66	36	22	52	23
25	422	134	748	e115	e115	233	444	62	33	18	41	282
26	256	121	438	e105	e105	268	369	60	30	17	35	212
27	197	114	281	e100	e100	314	325	60	27	29	31	109
28	168	113	e250	e93	e97	1090	280	71	26	24	28	68
29	152	111	e225	e88	---	773	252	56	24	18	25	52
30	133	106	e205	e100	---	524	630	66	29	16	23	44
31	122	---	e220	e120	---	404	---	96	---	15	30	---
TOTAL	4745	6599	10109	3976	3977	12554	14715	6381	2178	776	1730	1354
MEAN	153	220	326	128	142	405	490	206	72.6	25.0	55.8	45.1
MAX	1290	1110	2280	220	290	1130	2090	621	530	53	244	282
MIN	35	88	99	88	97	150	211	56	24	15	14	15
CFSM	1.37	1.96	2.91	1.15	1.27	3.62	4.38	1.84	.65	.22	.50	.40
IN.	1.58	2.19	3.36	1.32	1.32	4.17	4.89	2.12	.72	.26	.57	.45

CAL YR 1990 TOTAL 107146 MEAN 294 MAX 3500 MIN 25 CFSM 2.62 IN. 35.59
WTR YR 1991 TOTAL 69094 MEAN 189 MAX 2280 MIN 14 CFSM 1.69 IN. 22.95

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.

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 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.--49 years, 9,540 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, 56,600 ft³/s, Dec. 24, gage height, 21.65 ft; minimum daily, 1,490 ft³/s, July 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5960	12100	13500	24200	7350	7860	15900	17500	6780	1910	1540	4080
2	5690	10800	13200	19300	7220	9250	13900	16800	7520	1920	1550	4270
3	5790	8630	13200	17100	6860	12200	13700	16300	6350	1900	1520	3160
4	6080	8900	15100	14300	6940	24900	13400	16000	6780	1630	1650	3170
5	7970	10700	21900	12800	8450	31400	14000	14000	7380	1540	1570	3510
6	8700	12300	19500	12200	8530	26800	19600	15600	5350	1490	1540	3090
7	5300	11300	15700	11300	9970	24900	23600	20000	5800	1570	1710	3180
8	5730	10900	13500	10500	12600	26300	26800	19400	4510	1510	2050	1990
9	6390	9830	9720	9780	11900	18200	27600	17700	3920	2030	2060	1900
10	7060	15200	10300	8960	9060	15300	31500	16500	4220	2130	2830	1690
11	9250	32000	10400	10900	9770	14100	33900	13600	4400	2120	3610	1940
12	9310	30800	10200	10700	9610	13900	33900	12700	4650	2570	3800	2160
13	12600	25300	9840	8610	8520	13200	31800	12300	3570	2980	3250	2770
14	22900	17800	9900	8230	8520	12100	24600	9740	2980	2270	3110	2270
15	24200	14200	9430	8520	8380	12200	18200	9840	2630	2130	2970	2420
16	22300	12900	7230	11700	6870	12000	18900	8740	6090	1890	2480	3980
17	17500	17000	7900	13400	6690	12500	18300	8530	5090	1870	2160	5220
18	14200	24700	9390	13100	6840	14400	18400	8860	5660	2420	2860	4530
19	12800	22300	12500	11700	6880	15600	17700	7010	5230	2840	6060	4780
20	16100	18400	12600	8880	7980	15300	16000	7440	5080	2120	6000	6620
21	13500	17100	12400	8300	8620	13700	19300	6850	5520	1990	6740	6700
22	14400	15500	16900	8490	10100	12200	37600	7020	4080	1840	6600	3420
23	16800	14400	29400	8790	9580	11200	32400	6080	2010	2150	4040	3560
24	30800	11400	50700	8260	8320	9830	24600	5380	3060	1810	2670	5700
25	42800	13700	52200	8540	7940	9820	20300	4340	2590	1710	2550	8660
26	35700	11100	43500	7990	8610	10300	18400	3760	3080	1530	3010	11600
27	29500	12000	33200	5870	7260	11000	15700	5480	3380	1590	3550	10500
28	24600	12100	22400	6790	7340	18300	15400	8420	3890	1550	4010	5970
29	20200	13600	18700	6770	---	26500	13500	6080	2580	1560	4430	4610
30	16000	13300	18200	6590	---	23000	13800	5190	2270	1550	5010	5270
31	12200	---	26200	7570	---	17300	---	5430	---	1510	4980	---
TOTAL	482330	460260	568810	330140	236710	495560	642700	332390	136450	59630	101910	132720
MEAN	15560	15340	18350	10650	8454	15990	21420	10720	4548	1924	3287	4424
MAX	42800	32000	52200	24200	12600	31400	37600	20000	7520	2980	6740	11600
MIN	5300	8630	7230	5870	6690	7860	13400	3760	2010	1490	1520	1690

CAL YR 1990 TOTAL 5257260 MEAN 14400 MAX 56000 MIN 2400
WTR YR 1991 TOTAL 3979610 MEAN 10900 MAX 52200 MIN 1490

CONNECTICUT RIVER BASIN

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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 1990 TO SEPTEMBER 1991

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 29...	1200	13000	98	8.2	6.0	5.0	1.5	754	11.9	94	33
MAR 28...	1030	14000	112	8.6	19.5	5.0	2.5	743	12.9	104	33
JUN 20...	1300	7540	115	8.0	27.0	22.0	1.3	752	8.8	102	34
SEP 26...	0930	12300	112	8.0	11.0	16.0	1.0	742	8.3	86	270

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 29...	37	43	15	1.4	4.2	1.0	48	7.5	6.0	0.20	6.3
MAR 28...	60	42	14	1.6	5.0	0.90	23	7.5	8.5	<0.10	5.6
JUN 20...	K13	47	16	1.6	6.2	1.1	25	6.7	9.0	0.10	5.1
SEP 26...	390	41	14	1.5	5.3	1.2	39	7.7	7.0	<0.10	4.9

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 ₃)	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...	67	64	0.300	0.060	0.08	<0.20	<0.010	<0.010	<0.010	40	<1
MAR 28...	60	65	0.410	<0.010	--	0.30	<0.010	<0.010	<0.010	20	<1
JUN 20...	74	70	0.280	0.010	0.01	0.60	<0.010	<0.010	<0.010	30	<1
SEP 26...	69	64	0.190	0.040	0.05	0.40	0.010	0.010	0.010	20	<1

K Results based on colony count outside the acceptable range (non-ideal colony count).

CONNECTICUT RIVER BASIN

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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...	8	<0.5	<1.0	<1	<3	7	80	1	<4	18	--
MAR 28...	8	<0.5	<1.0	<1	3	3	65	2	<4	29	<0.1
JUN 20...	9	0.7	<1.0	<1	<3	4	38	1	<4	2	<0.1
SEP 26...	8	--	--	--	<3	--	53	--	<4	15	--

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. X FINER THAN .062 MM
NOV 29...	<10	2	<2	<1.0	69	<6	8	10	351	54
MAR 28...	<10	1	<1	<1.0	64	<6	6	20	756	56
JUN 20...	<10	1	<1	<1.0	77	<6	3	4	81	65
SEP 26...	<10	<1	<1	<1.0	66	<6	--	7	232	67

CONNECTICUT RIVER BASIN

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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.--81 years, 678 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, 3,470 ft³/s, Nov. 11, gage height, 6.74 ft; minimum daily, 50 ft³/s, Aug. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	198	683	511	e1150	e520	e500	1310	1660	359	114	82	176
2	199	638	500	e1200	e570	e600	1360	1670	298	108	70	159
3	192	604	486	e980	e590	1330	1210	1350	228	100	69	141
4	179	579	732	e870	e570	2280	973	1090	199	97	50	131
5	216	559	1630	e800	e560	2920	820	871	183	91	57	139
6	232	637	1690	e700	e580	2420	785	945	184	102	61	136
7	204	772	1460	e640	e650	2190	772	1860	185	79	63	134
8	186	733	1230	e580	e830	2350	758	1900	168	92	60	107
9	170	675	1080	e560	e1300	2090	795	1500	156	83	61	107
10	163	947	920	e550	e1250	1800	922	1190	149	90	96	106
11	193	3100	675	e540	e1100	1600	1070	1010	134	81	132	92
12	188	2620	590	e550	e900	1380	1020	862	156	76	127	136
13	299	2030	575	e555	e800	927	878	749	212	85	121	184
14	890	1790	552	e560	e740	897	781	651	197	78	95	212
15	898	1640	491	e540	e690	930	686	588	165	97	94	201
16	697	1380	e520	e550	e800	893	618	523	345	96	164	209
17	543	1130	e580	e620	e720	864	589	465	738	91	170	211
18	454	1090	631	e740	e680	832	611	502	621	78	128	198
19	858	1000	907	e730	e650	1050	610	476	467	72	453	300
20	996	863	1030	e690	e640	1170	546	428	360	83	2380	673
21	784	764	1030	e640	e660	1070	733	385	295	76	2700	624
22	641	706	1240	e610	e640	1010	1620	336	237	87	2370	425
23	613	692	1330	e590	e610	994	2040	309	199	76	1740	335
24	1760	732	2110	e580	e580	1010	1970	277	173	92	924	300
25	2030	713	2910	e560	e560	1080	1410	250	157	81	592	1360
26	1730	680	2380	e530	e520	1010	1090	235	138	93	439	2950
27	1350	541	e2000	e510	e480	998	966	218	132	87	347	2680
28	979	504	e1650	e500	e450	1050	856	213	109	101	280	1970
29	835	517	e1400	e470	---	1180	742	203	100	95	231	1380
30	771	516	e1200	e460	---	1390	827	202	107	91	195	1020
31	727	---	e1100	e470	---	1340	---	281	---	74	177	---
TOTAL	20175	29835	35140	20025	19640	41155	29368	23199	7151	2746	14528	16796
MEAN	651	994	1134	646	701	1328	979	748	238	88.6	469	560
MAX	2030	3100	2910	1200	1300	2920	2040	1900	738	114	2700	2950
MIN	163	504	486	460	450	500	546	202	100	72	50	92

CAL YR 1990 TOTAL 342958 MEAN 940 MAX 5140 MIN 80
WTR YR 1991 TOTAL 259758 MEAN 712 MAX 3100 MIN 50

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, 508,000,000 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 1990 TO SEPTEMBER 1991

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, 1990.....	2446.7	3342.4	5310.4	0.83	733.8	112.0
Oct. 31.....	3128.5	4125.4	5644.3	1.3	578.1	118.0
Nov. 30.....	2980.3	3962.6	5984.8	1.3	462.4	122.0
Dec. 31.....	2932.2	4056.6	5736.6	5.5	516.7	109.1
Jan. 31, 1991.....	1830.5	3175.4	5023.4	5.3	426.5	123.0
Feb. 28.....	972.2	2226.4	3225.4	7.6	516.6	123.0
Mar. 31.....	1035.8	2170.3	1737.0	2.7	763.3	95.6
Apr. 30.....	3122.1	3886.2	5644.3	2.8	924.0	122.0
May 31.....	3282.1	4056.6	5167.8	0.74	977.2	122.0
June 30.....	3167.5	3818.8	5212.8	0.41	962.0	122.0
July 31.....	2868.1	3423.1	4846.4	0.51	881.3	122.0
Aug. 31.....	3109.4	3415.0	5634.2	0.25	900.1	123.0
Sept. 30.....	2901.5	4108.2	5893.8	0.50	923.1	122.0

	Sunapee Lake	North Springfield Lake	Ball Mountain Reservoir	Townshend Reservoir	Surry Mountain Lake	Otter Brook Lake
Sept. 30, 1990.....	478	23.3	30.1	38.3	64.5	37.6
Oct. 31.....	464	28.4	28.3	38.3	74.4	38.6
Nov. 30.....	362	26.9	23.6	38.3	94.2	38.2
Dec. 31.....	445	33.4	78.1	41.8	106.7	53.9
Jan. 31, 1991.....	301	26.2	46.0	38.3	101.1	43.2
Feb. 28.....	223	26.2	41.6	38.3	88.8	37.9
Mar. 31.....	400	26.2	66.9	41.8	135.2	51.9
Apr. 30.....	638	33.4	15.6	38.3	80.7	42.1
May 31.....	622	25.4	30.1	34.8	61.0	37.9
June 30.....	600	23.3	100.4	34.8	56.3	37.2
July 31.....	524	22.5	104.4	34.8	52.1	36.8
Aug. 31.....	541	23.3	100.4	34.8	59.8	37.6
Sept. 30.....	527	24.0	33.7	38.3	74.4	38.2

HUDSON RIVER BASIN

71

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.--60 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)
Nov. 10	2145	*2,340	*6.05	No other peak greater than base discharge			
Minimum discharge, 36 ft ³ /s, Aug. 9.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	182	188	137	e410	e155	137	264	491	143	111	45	98
2	123	176	135	e335	e140	244	258	451	112	80	52	71
3	108	165	131	e280	e140	398	253	346	95	71	49	61
4	118	156	329	e245	e140	705	249	311	90	67	56	61
5	237	148	322	e210	e155	595	280	271	92	63	53	66
6	154	235	212	e210	e200	382	410	322	91	65	46	57
7	126	211	187	e175	363	571	586	402	85	71	43	52
8	113	185	175	e150	353	409	535	300	80	72	39	49
9	108	162	168	e145	257	297	1350	261	82	59	48	46
10	128	724	160	e150	e200	251	924	242	75	52	152	45
11	115	943	137	e155	e155	225	544	226	81	50	94	47
12	110	437	e130	e155	e140	212	407	210	142	50	69	44
13	232	323	e125	e150	e135	198	347	191	137	63	56	45
14	303	277	e120	e155	e135	192	304	182	95	111	47	48
15	200	255	e120	e155	e130	187	302	176	121	70	98	56
16	162	248	e140	e200	e135	178	323	159	937	56	167	81
17	144	252	175	e400	e135	182	273	211	369	50	121	62
18	147	243	318	310	e140	188	302	268	212	46	75	53
19	356	213	626	e210	e155	223	268	186	153	43	604	243
20	228	194	334	e170	299	200	236	161	122	41	504	234
21	184	185	318	e140	237	179	418	146	104	40	382	120
22	165	176	e450	e115	197	175	555	135	92	40	358	87
23	191	213	517	e140	173	180	403	122	88	151	199	75
24	1000	209	1220	e140	145	262	314	115	79	84	136	75
25	487	188	e600	e130	e150	355	277	123	73	58	107	417
26	332	171	e400	e140	e140	270	250	122	68	73	91	378
27	267	161	e300	e135	e135	274	244	111	64	108	80	221
28	238	156	e280	e135	132	502	223	109	60	67	72	152
29	233	153	e290	137	---	446	207	110	59	53	66	126
30	209	145	e600	164	---	350	420	149	149	48	60	110
31	202	---	e700	237	---	285	---	209	---	44	107	---
TOTAL	6902	7492	9856	5983	4971	9252	11726	6818	4150	2057	4076	3280
MEAN	223	250	318	193	178	298	391	220	138	66.4	131	109
MAX	1000	943	1220	410	363	705	1350	491	937	151	604	417
MIN	108	145	120	115	130	137	207	109	59	40	39	44

CAL YR 1990 TOTAL 97727 MEAN 268 MAX 2110 MIN 45
WTR YR 1991 TOTAL 76563 MEAN 210 MAX 1350 MIN 39

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 good except those for estimated daily discharges, which are fair. 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.--63 years, 257 ft³/s, 18.66 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)
Oct. 24	1730	a3,750	13.53	Nov. 11	0415	*4,170	*14.19
a from rating curve extended above 2,600 ft ³ /s.							
Minimum daily discharge, 5.8 ft ³ /s, July 24.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	96	225	282	573	e140	127	437	445	47	10	6.9	8.2
2	80	193	272	e480	e140	521	392	472	55	29	7.3	10
3	67	175	263	e460	e135	750	359	398	52	30	7.7	42
4	66	153	405	e390	e130	1300	329	362	37	24	8.4	7.7
5	73	141	1140	e360	e170	1560	312	325	53	24	10	7.9
6	63	262	637	e330	341	1060	313	333	58	24	9.3	7.9
7	81	292	506	e310	494	1190	314	435	54	24	9.4	8.2
8	62	254	449	e290	664	795	304	353	25	22	9.4	8.3
9	82	235	412	e270	551	602	368	304	26	18	9.1	8.3
10	107	857	382	e260	470	494	502	297	45	18	16	8.3
11	104	2990	345	e240	379	420	514	277	35	18	19	9.4
12	110	1410	308	e230	e290	375	427	264	46	16	47	10
13	238	1040	261	e220	e270	308	438	250	51	12	11	9.3
14	365	820	251	e215	e260	296	407	201	57	23	7.4	37
15	296	499	215	e210	e250	278	384	182	55	39	7.4	8.2
16	254	480	225	e230	e220	251	443	188	163	39	7.4	8.3
17	238	554	226	635	e200	245	394	179	253	29	6.9	9.4
18	183	516	219	827	e160	245	413	193	211	24	6.9	35
19	270	431	479	596	e145	298	356	182	194	24	27	25
20	254	379	531	e330	190	281	302	105	171	24	16	37
21	187	357	408	e300	241	253	400	89	63	22	7.8	16
22	184	325	1090	e320	201	244	827	105	31	18	19	42
23	237	399	1280	e330	224	248	599	57	38	8.9	20	22
24	2360	366	1550	e230	158	313	502	74	32	5.8	13	8.6
25	1770	321	1660	e215	173	448	449	53	36	7.1	8.9	102
26	1110	304	1130	e190	142	532	413	59	26	9.0	24	75
27	915	323	903	e160	143	616	381	65	41	7.5	6.9	78
28	755	318	816	e155	131	1200	330	59	36	8.3	6.9	29
29	423	308	709	e150	---	1120	283	55	26	44	6.9	35
30	324	295	513	e145	---	924	329	61	16	6.7	6.9	21
31	249	---	846	e145	---	745	---	66	---	6.5	8.3	---
TOTAL	11603	15222	18713	9796	7012	18039	12221	6488	2033	614.8	378.1	734.0
MEAN	374	507	604	316	250	582	407	209	67.8	19.8	12.2	24.5
MAX	2360	2990	1660	827	664	1560	827	472	253	44	47	102
MIN	62	141	215	145	130	127	283	53	16	5.8	6.9	7.7
CFSM	2.00	2.71	3.23	1.69	1.34	3.11	2.18	1.12	.36	.11	.07	.13
IN.	2.31	3.03	3.72	1.95	1.39	3.59	2.43	1.29	.40	.12	.08	.15

CAL YR 1990 TOTAL 141707.4 MEAN 388 MAX 2990 MIN 6.4 CFSM 2.08 IN. 28.19
WTR YR 1991 TOTAL 102853.9 MEAN 282 MAX 2990 MIN 5.8 CFSM 1.51 IN. 20.46

e Estimated

ST. LAWRENCE RIVER BASIN

73

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

AVERAGE DISCHARGE.--7 years, 117 ft³/s, 22.63 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)
Oct. 24	0715	a1,510	4.40	Nov. 10	1915	a*1,850	*4.63

a From rating curve extended above 925 ft³/s.

Minimum discharge, 13 ft³/s, Sept. 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	57	138	86	e230	e85	e70	183	175	59	34	20	55
2	40	129	90	e190	e100	224	174	205	52	24	21	23
3	35	120	86	e170	e80	234	167	175	46	23	18	24
4	41	115	224	e160	e90	427	157	164	48	24	21	23
5	69	112	191	e150	e100	447	145	151	49	21	43	25
6	56	127	156	e130	e120	326	150	172	48	26	25	19
7	47	100	136	e120	e150	397	163	175	46	52	20	22
8	45	91	127	e120	e155	296	160	158	41	41	18	21
9	41	88	120	e160	e135	242	291	146	39	31	21	21
10	79	506	120	e120	e125	208	270	137	39	23	44	18
11	70	459	104	e105	e100	181	242	130	35	24	33	19
12	63	293	102	e120	e90	165	209	122	33	29	26	19
13	104	230	106	e130	e95	151	188	106	40	23	19	17
14	131	194	92	e140	e100	145	171	103	37	38	20	15
15	132	184	106	e115	e90	135	166	99	39	29	21	19
16	119	191	100	e130	e80	129	169	90	97	27	23	e25
17	105	200	86	e200	e100	122	147	92	60	22	e19	e23
18	102	186	114	e150	e90	136	160	93	50	24	e18	e21
19	199	164	243	e130	e80	151	141	88	42	21	e16	e25
20	143	149	161	e110	e150	124	130	70	39	22	79	e38
21	125	136	200	e100	e100	111	220	72	34	58	86	e35
22	116	133	383	e90	e100	111	278	67	33	47	68	e30
23	132	164	327	e110	e80	115	214	61	31	33	e56	e26
24	704	138	402	e125	e70	141	189	59	29	36	e48	e28
25	380	127	e300	e100	e80	158	169	54	28	24	e40	e105
26	283	115	e250	e120	e75	158	157	53	26	22	e33	e90
27	231	115	e210	e150	e70	186	155	57	25	43	e27	e66
28	206	106	e200	e130	e70	314	141	56	27	27	28	e50
29	179	100	e200	e90	---	248	131	46	22	22	33	e44
30	164	93	e250	e90	---	212	177	52	33	20	33	e40
31	150	---	e300	e80	---	189	---	59	---	21	45	---
TOTAL	4348	5003	5572	4065	2760	6253	5414	3287	1227	911	1022	986
MEAN	140	167	180	131	98.6	202	180	106	40.9	29.4	33.0	32.9
MAX	704	506	402	230	155	447	291	205	97	58	86	105
MIN	35	88	86	80	70	70	130	46	22	20	16	15
CFSM	2.00	2.38	2.56	1.87	1.40	2.87	2.57	1.51	.58	.42	.47	.47
IN.	2.30	2.65	2.95	2.15	1.46	3.31	2.87	1.74	.65	.48	.54	.52

CAL YR 1990 TOTAL 51024 MEAN 140 MAX 704 MIN 17 CFSM 1.99 IN. 27.04
WTR YR 1991 TOTAL 40848 MEAN 112 MAX 704 MIN 15 CFSM 1.59 IN. 21.65

e Estimated

ST. LAWRENCE RIVER BASIN

04280800 EAST CREEK NEAR ORWELL, VT.

LOCATION.--Lat 43°48'20", long 73°19'16", Addison county, Hydrologic Unit 02010001, on right bank. go west from junction of routes 73 and 22a 0.3 mi and bear right 0.5 mi to left on dirt road for 0.9 mi to gate in fence.

DRAINAGE AREA.--13.4 mi².

PERIOD OF RECORD.--March 1, 1990 to current year.

GAGE.--Nonrecording. Elevation of gage is 150 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 259 ft³/s, Apr. 4, 1990, gage height, 3.14 ft, from rating curve extended above 100 ft³/s; minimum daily discharge, 45 ft³/s, Sept. 9, 1991.

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

Date	Time	1990 Discharge (ft ³ /s)	Gage height (ft)	Date	Time	1991 Discharge (ft ³ /s)	Gage height (ft)
Mar. 23	1430	a102	2.42	Oct. 24	1600	a193	*2.87
Apr. 4	1430	a*259	*3.14	Nov. 11	1530	a165	2.75
Apr. 11	1330	a130	2.58	Dec. 24	1215	a*202	2.79
May 14	1630	a112	2.48	Mar. 4	1335	a115	2.39

a from rating curve extended above 100 ft³/s

a from rating curve extended above 100 ft³/s

Minimum daily, 1.2 ft³/s, Aug. 2-5.

Minimum daily 0.45 ft³/s, Sept. 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e19	29	9.2	13	2.2	1.3	1.9
2	e25	41	7.2	12	2.1	1.2	1.9
3	e22	106	6.3	9.1	2.0	1.2	1.7
4	e15	217	6.5	8.1	2.3	1.2	1.5
5	e14	129	11	8.5	4.1	1.2	1.3
6	12	79	18	7.8	2.9	3.3	1.3
7	8.9	58	27	6.3	2.1	27	1.3
8	7.3	44	31	5.7	2.0	31	1.4
9	8.5	34	28	5.9	2.0	24	1.8
10	15	40	36	5.4	1.8	15	2.0
11	26	108	67	7.6	1.7	22	1.8
12	48	83	60	8.5	1.7	23	1.6
13	72	58	64	7.8	1.6	23	1.5
14	80	42	101	6.7	1.6	40	1.4
15	84	36	88	5.8	1.6	35	1.6
16	88	32	62	5.0	1.6	26	1.5
17	84	28	67	4.8	1.6	16	1.4
18	75	23	73	4.3	1.6	11	1.4
19	64	21	59	3.6	1.6	7.2	1.4
20	78	20	46	3.4	1.6	5.0	1.4
21	87	27	56	2.8	1.6	4.0	1.4
22	95	29	51	3.0	2.5	2.9	1.5
23	98	24	36	4.6	15	2.3	1.5
24	77	20	28	4.6	6.6	2.1	1.5
25	61	20	25	4.5	4.5	2.0	1.5
26	48	21	22	4.3	2.5	1.9	1.5
27	38	22	18	3.8	1.9	1.9	1.4
28	31	16	14	3.2	1.5	1.9	1.4
29	27	13	12	2.7	1.4	1.7	1.4
30	26	12	14	2.6	1.3	1.6	1.7
31	27	---	14	---	1.3	1.8	---
TOTAL	1460.7	1432	1157.2	175.4	79.8	338.7	45.9
MEAN	47.1	47.7	37.3	5.85	2.57	10.9	1.53
MAX	98	217	101	13	15	40	2.0
MIN	7.3	12	6.3	2.6	1.3	1.2	1.3

e Estimated

ST. LAWRENCE RIVER BASIN

75

04280800 EAST CREEK NEAR ORWELL, VT.--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	13	10	55	e6.6	e12	29	23	4.0	e1.0	e.51	e1.7
2	1.9	11	8.9	e50	e7.4	e20	26	30	3.0	e.96	e.49	e1.0
3	1.9	9.0	16	e40	e6.8	e42	24	26	2.8	e.85	e.47	e.80
4	2.1	8.5	76	e32	e7.5	e103	21	22	2.7	e.78	e1.0	e.70
5	2.0	7.6	76	26	e8.4	e105	19	17	2.6	e1.0	e2.9	e.78
6	1.9	14	56	e24	e10	94	20	18	2.6	e1.2	e2.0	e.66
7	1.9	20	44	e16	e12	67	20	26	2.5	e1.2	e1.2	e.56
8	1.8	16	32	e13	e13	44	20	23	2.4	2.0	e1.0	e.50
9	1.8	14	28	e12	e13	29	24	18	2.3	2.0	e.88	e.45
10	2.3	30	24	e12	e13	25	30	14	2.1	e1.5	e2.9	e.46
11	2.5	135	19	e12	e11	21	25	11	2.0	e1.2	e2.0	e2.9
12	3.1	112	16	e11	e9.2	19	20	9.4	2.1	e1.0	e1.9	e1.7
13	7.1	68	15	e12	e11	17	18	7.7	2.0	e.98	e1.4	e1.2
14	20	47	14	e11	e9.2	16	15	6.2	1.9	e1.4	e1.1	e1.0
15	25	34	14	e11	e8.5	16	15	5.2	2.0	e1.2	e.96	e1.5
16	22	29	e22	e11	e8.0	15	15	5.3	4.8	e1.0	e.88	e8.4
17	10	35	e31	e12	e8.2	14	17	5.2	5.8	e.80	e.80	e3.0
18	8.8	35	43	e12	e8.8	14	18	4.4	4.2	e.75	e.74	e2.2
19	27	28	53	e12	e7.6	15	18	4.5	2.9	e.70	e1.0	e9.8
20	27	23	50	e11	e9.4	14	18	4.3	2.7	e.64	e2.1	e7.0
21	19	20	e70	e9.5	e8.4	13	29	4.1	2.3	e.56	e1.8	e3.5
22	13	20	99	e9.0	e8.6	13	74	3.2	2.1	e.55	e1.5	e2.3
23	28	26	e136	e9.0	e9.0	14	59	2.7	e1.8	e1.0	e1.1	e2.0
24	154	26	187	e9.5	e9.2	e37	40	2.5	e1.7	e1.1	e.85	e1.9
25	125	21	e129	e10	e9.2	e60	29	2.6	e1.6	e.75	e.75	e7.6
26	80	18	77	e11	e8.8	53	23	2.6	e1.4	e.64	e.70	e7.0
27	48	15	53	e10	e8.8	52	17	3.4	e1.3	e.90	e.60	e4.0
28	31	14	e50	e9.0	e9.0	72	16	3.6	e1.2	e.70	e.55	2.4
29	23	13	54	e8.0	---	67	15	3.4	e1.1	e.60	e.52	2.3
30	18	11	62	e7.0	---	49	15	3.6	e1.1	e.54	e.50	2.3
31	14	---	e61	e7.2	---	34	---	4.9	---	e.52	e1.3	---
TOTAL	724.9	873.1	1625.9	494.2	259.6	1166	729	316.8	73.0	30.02	36.40	81.61
MEAN	23.4	29.1	52.4	15.9	9.27	37.6	24.3	10.2	2.43	.97	1.17	2.72
MAX	154	135	187	55	13	105	74	30	5.8	2.0	2.9	9.8
MIN	1.8	7.6	8.9	7.0	6.6	12	15	2.5	1.1	.52	.47	.45

WTR YR 1991 TOTAL 6410.53 MEAN 17.6 MAX 187 MIN .45

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.--63 years, 554 ft³/s, 24.51 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)
Oct. 24	1045	*3,690	*7.94	No other peak greater than base discharge.			

Minimum daily discharge, 61 ft³/s, Aug. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	555	507	445	1320	443	338	891	1130	201	114	68	128
2	332	485	456	1080	445	926	860	933	164	105	65	104
3	266	478	421	1000	472	1740	787	809	145	124	61	108
4	252	452	871	816	490	2090	732	708	199	85	62	126
5	484	400	1220	719	565	2180	839	622	213	72	81	119
6	348	533	818	e640	791	1620	1070	692	201	80	79	75
7	247	659	688	e580	1020	1650	1440	1020	189	124	73	70
8	231	534	640	e420	1010	1590	1470	776	127	169	65	67
9	221	462	590	e410	872	1060	1550	630	119	119	69	85
10	420	949	569	e400	751	830	1570	556	132	91	209	106
11	371	2270	492	e400	608	711	1280	538	275	79	163	129
12	333	1900	485	e390	438	682	931	487	268	76	117	117
13	581	1140	531	e400	468	612	763	438	200	91	89	101
14	1110	886	483	e430	494	630	670	404	172	155	81	73
15	863	812	321	e500	506	665	644	372	264	136	73	86
16	556	976	453	e600	371	630	833	347	1060	127	72	161
17	439	1150	483	1050	374	624	693	331	902	108	72	228
18	399	1060	484	1110	378	663	681	404	480	90	71	166
19	816	865	1040	842	388	771	633	340	316	75	126	206
20	688	732	858	740	618	652	557	298	230	69	336	235
21	498	688	753	640	856	553	1040	280	164	66	369	158
22	433	645	1790	507	649	520	2360	245	142	117	334	124
23	500	716	2030	508	540	495	1940	228	134	150	182	119
24	2650	726	2800	553	362	534	1270	207	138	144	128	136
25	2270	629	2500	451	e355	745	1020	169	151	110	106	430
26	1470	555	1540	379	e350	769	862	169	124	87	107	e600
27	960	483	909	403	e330	831	773	198	91	111	122	e350
28	772	474	823	409	316	1750	687	235	90	110	102	e240
29	701	493	921	422	---	1770	656	209	83	103	78	e190
30	602	465	1310	419	---	1270	867	203	90	110	70	e160
31	549	---	1780	465	---	962	---	268	---	93	123	---
TOTAL	20917	23124	29504	19003	15260	30863	30369	14246	7064	3290	3753	4997
MEAN	675	771	952	613	545	996	1012	460	235	106	121	167
MAX	2650	2270	2800	1320	1020	2180	2360	1130	1060	169	369	600
MIN	221	400	321	379	316	338	557	169	83	66	61	67
CFSM	2.20	2.51	3.10	2.00	1.78	3.24	3.30	1.50	.77	.35	.39	.54
IN.	2.53	2.80	3.58	2.30	1.85	3.74	3.68	1.73	.86	.40	.45	.61

CAL YR 1990 TOTAL 255499 MEAN 700 MAX 3420 MIN 64 CFSM 2.28 IN. 30.96
WTR YR 1991 TOTAL 202390 MEAN 554 MAX 2800 MIN 61 CFSM 1.81 IN. 24.52

e Estimated

ST. LAWRENCE RIVER BASIN

77

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.--75 years (water years 1904-06, 1911-19, 1929-91), 997 ft³/s, 21.56 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, 2,710 ft³/s, Dec. 24; gage height, 4.73 ft; maximum gage height 4.86 ft/s, Dec. 31 (ice jam).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	844	1860	870	e1800	721	e570	1860	1470	621	222	192	212
2	836	1630	814	e1650	769	918	1800	1690	556	229	172	202
3	606	1390	806	e1450	684	1720	1690	1700	474	275	156	213
4	563	1100	1060	e1250	753	2200	1540	1660	434	268	166	275
5	699	962	1480	e1100	877	2370	1380	1570	495	246	221	357
6	736	933	1550	e950	993	2340	1310	1430	529	222	200	336
7	590	1070	1550	e900	1270	2460	1420	1430	517	229	177	214
8	497	1090	1470	e800	1450	2490	1550	1470	466	362	165	164
9	470	976	1360	e700	1470	2470	1760	1430	375	451	163	151
10	630	1230	1230	e630	e1350	2430	1920	1300	342	359	274	154
11	753	2290	1110	e600	e1200	2320	1960	1110	351	275	334	232
12	726	2190	995	e600	e1000	2170	1950	974	553	229	327	258
13	855	2210	876	e600	e800	1970	1930	879	655	218	260	254
14	1590	2230	862	e660	e750	1740	1840	792	499	290	200	200
15	1520	2260	766	e740	e800	1490	1700	725	456	334	195	195
16	1470	2290	612	e1000	e670	1290	1560	716	706	307	188	416
17	1310	2370	760	e1200	e620	1190	1450	694	1230	276	166	417
18	1050	2280	919	e1400	e620	1120	1350	729	1220	243	154	426
19	1330	2170	1330	e1300	e630	1140	1270	751	912	230	185	537
20	1350	2080	1480	e1150	839	1140	1180	715	628	212	349	723
21	1260	1960	1540	e950	1060	1050	1170	627	524	205	451	558
22	1050	1820	2070	e850	1150	933	1690	549	431	204	485	409
23	1000	1740	2290	e800	1120	894	1810	529	355	185	452	318
24	2160	1640	2610	e800	852	891	1900	523	351	213	321	281
25	2180	1530	2590	e900	695	1140	1980	450	386	251	235	482
26	2170	1400	e2300	771	e640	1350	2010	420	357	230	205	937
27	2220	1220	e1900	636	e600	1390	1960	494	317	236	181	928
28	2250	1020	e1400	644	e580	1610	1840	586	293	234	177	685
29	2240	947	e1500	645	---	1760	1650	547	249	218	180	518
30	2170	907	e1700	650	---	1830	1490	536	229	188	177	420
31	2050	---	e1850	698	---	1870	---	642	---	185	202	---
TOTAL	39175	48795	43650	28824	24963	50256	49920	29138	15511	7826	7310	11472
MEAN	1264	1626	1408	930	892	1621	1664	940	517	252	236	382
MAX	2250	2370	2610	1800	1470	2490	2010	1700	1230	451	485	937
MIN	470	907	612	600	580	570	1170	420	229	185	154	151
CFSM	2.01	2.59	2.24	1.48	1.42	2.58	2.65	1.50	.82	.40	.38	.61
IN.	2.32	2.89	2.29	1.71	1.48	2.98	2.96	1.73	.92	.46	.43	.68

CAL YR 1990 TOTAL 485637 MEAN 1331 MAX 3720 MIN 228 CFSM 2.12 IN. 28.77
WTR YR 1991 TOTAL 356840 MEAN 978 MAX 2610 MIN 151 CFSM 1.56 IN. 21.14

e Estimated

ST. LAWRENCE RIVER BASIN

04282525 NEW HAVEN RIVER AT BROOKSVILLE NEAR MIDDLEBURY, VT.

LOCATION.--Lat 44°03'42", long 73°10'16", Rutland County, Hydrologic Unit 02010002, 3 mi north of Middlebury off Rt 7 and on secondary road that parallels Route 7.

DRAINAGE AREA.-- 115 mi².

PERIOD OF RECORD.--Discharge: October 1990 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 275 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Sept. 5, 1990, nonrecording gage at same site and datum.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,770 ft³/s, Oct. 24, 1991, gage height, 9.97 ft, from rating curve extended above 500 ft³/s; minimum discharge, 20 ft³/s, Sept. 9, 10, 1991.

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

Date	Time	1990 Discharge (ft ³ /s)	Gage height (ft)	Date	Time	1991 Discharge (ft ³ /s)	Gage height (ft)
Apr. 11	--	a unknown	unknown	Oct. 13	2145	2,140	8.05
May 13	--	a unknown	unknown	Oct. 19	0300	a1,500	7.05
				Oct. 24	0945	a*3,770	*9.97
				Nov. 10	2220	a3,310	9.48
				Dec. 23	1800	a2,440	8.44
				Apr. 21	2215	a1,780	7.53

a from rating curve extended above 500 ft³/s;

a from rating curve extended above 500 ft³/s;

Maximum daily discharge 1,800 ft³/s, Apr. 11,

Minimum discharge, 20 ft³/s, Sept. 9, 10.

minimum daily discharge, 56 ft³/s, July 21, 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e620	305	207	180	159	99	e107
2	e800	516	191	173	111	101	e102
3	e760	842	174	190	110	98	98
4	e560	1140	167	312	107	86	88
5	e350	744	169	218	104	102	e80
6	e330	487	178	160	99	283	81
7	e240	373	238	148	95	607	90
8	e250	311	282	147	88	527	145
9	e280	274	272	142	85	503	99
10	e350	468	298	179	82	529	96
11	e780	1800	562	406	78	575	93
12	e660	750	e700	276	73	609	88
13	e900	460	e900	162	68	559	87
14	e850	363	1070	137	65	419	79
15	762	349	503	122	61	347	172
16	699	347	377	114	58	230	174
17	718	334	389	111	58	178	123
18	773	324	489	112	58	149	120
19	466	279	507	121	58	129	e120
20	412	280	520	125	58	116	124
21	524	452	536	113	56	108	121
22	483	515	527	102	56	107	110
23	674	417	483	132	106	107	152
24	460	345	272	295	487	107	138
25	365	296	228	178	376	107	91
26	284	276	211	125	159	107	e100
27	246	265	191	110	96	109	e100
28	145	255	182	100	86	130	e96
29	183	241	245	143	84	177	e92
30	198	221	250	440	75	163	e150
31	207	---	195	---	82	127	---
TOTAL	15329	14029	11513	5273	3338	7595	3316
MEAN	494	468	371	176	108	245	111
MAX	900	1800	1070	440	487	609	174
MIN	145	221	167	100	56	86	79
CFSM	4.30	4.07	3.23	1.53	.94	2.13	.96
IN.	4.96	4.54	3.72	1.71	1.08	2.46	1.07

e Estimated

ST. LAWRENCE RIVER BASIN

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04282525 NEW HAVEN RIVER AT BROOKSVILLE NEAR MIDDLEBURY, VT.--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e325	235	210	410	e72	109	205	318	177	46	24	80
2	e162	216	203	351	e84	466	199	683	134	43	23	50
3	e126	205	181	289	e78	613	202	476	112	38	22	38
4	164	188	461	e250	e88	1110	196	398	118	36	52	33
5	467	177	475	e230	e100	671	211	304	164	39	140	36
6	204	287	274	e200	e130	385	265	324	141	56	79	33
7	152	261	e230	e160	e145	532	455	432	110	55	62	27
8	130	207	e200	e140	e150	360	415	296	95	96	47	25
9	130	185	e180	e140	e150	276	593	250	86	117	42	21
10	416	939	e170	e135	e145	225	712	230	81	68	139	21
11	248	1200	e160	e135	e120	192	484	205	74	54	96	138
12	253	541	e140	e125	e105	181	323	184	105	48	93	89
13	771	387	e150	e135	e120	174	263	164	200	45	68	57
14	1110	320	e140	e130	e105	172	234	152	132	63	53	47
15	444	333	e130	e125	e96	168	218	145	97	57	45	57
16	300	532	e145	e125	e92	160	290	133	128	45	42	412
17	242	866	e135	e130	e90	155	233	189	289	37	39	172
18	249	525	e120	e135	e100	161	248	272	163	35	35	103
19	904	382	e180	e140	e90	184	217	174	114	33	49	466
20	399	313	e130	e120	e110	178	193	148	94	29	101	328
21	284	288	410	e110	e90	153	550	130	80	26	89	168
22	240	264	1290	e100	e100	152	922	118	73	26	72	124
23	314	419	1340	e105	e105	160	497	109	69	48	53	101
24	2010	344	1360	e110	e102	193	350	102	65	51	42	89
25	688	283	669	e120	e105	343	287	109	63	35	36	369
26	460	248	455	e130	e105	317	246	137	58	30	32	325
27	356	229	376	e115	e100	284	222	213	53	42	30	193
28	304	238	309	e100	e100	540	203	185	51	36	28	139
29	289	239	323	e90	---	398	189	133	47	28	24	113
30	261	224	677	e80	---	277	233	138	47	25	23	103
31	268	---	715	e80	---	222	---	231	---	24	64	---
TOTAL	12670	11075	11948	4745	2977	9511	9855	7082	3220	1411	1744	3957
MEAN	409	369	385	153	106	307	328	228	107	45.5	56.3	132
MAX	2010	1200	1360	410	150	1110	922	683	289	117	140	466
MIN	126	177	120	80	72	109	189	102	47	24	22	21
CFSM	3.55	3.21	3.35	1.33	.92	2.67	2.86	1.99	.93	.40	.49	1.15
IN.	4.10	3.58	3.86	1.53	.96	3.08	3.19	2.29	1.04	.46	.56	1.28

WTR YR 1991 TOTAL 80195 MEAN 220 MAX 2010 MIN 21 CFSM 1.91 IN. 25.94

e Estimated

ST. LAWRENCE RIVER BASIN

04282650 LITTLE OTTER CREEK AT FERRISBURG, VT.

LOCATION.--Lat 44°11'51", long 73°14'58", Addison County, Hydrologic Unit 02010002, on left bank at highway bridge on Route 7, 1.1 mi north of junction of Routes 22a and 7 in Ferrisburg.

DRAINAGE AREA.-- 57.1 mi².

PERIOD OF RECORD.--March 1990 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 145 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 23, 1990, nonrecording gage at same site and datum.

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 933 ft³/s, Nov. 11, 1990, gage height, 4.44 ft, from outside gage, from rating curve extended above 220 ft³/s; minimum discharge, 4.3 ft³/s, Sept. 8-10, 1991.

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

1990				1991			
Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 24	1225	a509	b3.47	Oct. 25	1015	a917	4.41
Apr. 4	1215	*a583	*b3.67	Nov. 11	2230	*a933	*4.44
Aug. 14	1200	a519	b350	Dec. 22	--	unknown	ice jam
				Mar. 3	--	unknown	ice jam

a from rating curve extended above 220 ft³/s;

b from outside gage

Minimum daily discharge 5.1 ft³/s, July 14, 19.

a from rating curve extended above 220 ft³/s;

Minimum discharge, 4.3 ft³/s, Sept. 8-10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e200	78	29	22	e50	21	e27
2	e240	e130	27	19	45	21	e23
3	e220	203	23	13	32	20	e21
4	e170	503	22	e15	e25	16	18
5	e100	443	19	17	e15	e15	16
6	e94	293	e35	18	e12	24	17
7	e74	188	30	17	e11	95	16
8	e76	125	39	e13	e10	100	13
9	e80	95	37	e12	9.7	97	e20
10	e100	120	38	e14	9.4	108	e15
11	e240	421	42	16	8.0	293	16
12	e200	467	e70	18	7.6	355	22
13	e270	319	e150	17	6.5	251	22
14	e240	160	341	14	5.1	457	15
15	192	112	280	12	5.8	398	e15
16	194	90	169	e10	5.8	287	21
17	226	78	126	e9.5	5.7	146	23
18	227	65	153	e9.0	5.5	e100	20
19	175	55	107	12	5.1	50	16
20	e155	e80	e115	12	5.3	48	17
21	268	117	130	11	7.5	33	13
22	389	e145	154	e9.4	8.3	25	e12
23	438	117	125	e12	e20	20	15
24	498	82	102	e23	58	16	e17
25	e350	67	e80	15	43	e16	e10
26	e200	64	48	12	31	e16	e11
27	99	55	42	10	e28	34	e11
28	75	47	e38	8.9	e25	106	e10
29	61	40	e35	e100	23	81	e10
30	59	e35	32	82	21	49	15
31	e68	---	28	---	17	30	---
TOTAL	5978	4794	2666	572.8	561.3	3328	497
MEAN	193	160	86.0	19.1	18.1	107	16.6
MAX	498	503	341	100	58	457	27
MIN	59	35	19	8.9	5.1	15	10
CFSM	3.38	2.80	1.51	.33	.32	1.88	.29
IN.	3.89	3.12	1.74	.37	.37	2.17	.32

e Estimated

ST. LAWRENCE RIVER BASIN

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04282650 LITTLE OTTER CREEK AT FERRISBURG, VT.--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e33	73	e48	e95	e25	e100	94	56	38	5.8	7.6	8.7
2	e20	63	e44	e84	e28	e200	84	99	28	5.4	6.7	9.5
3	e16	55	e42	e76	e33	e400	81	117	23	5.3	6.1	7.7
4	15	51	e120	e65	e40	e200	75	102	20	6.8	6.8	6.5
5	e42	46	e76	e54	e47	e135	71	72	23	6.8	14	6.5
6	e27	62	e51	e44	e52	e200	74	72	22	6.3	21	5.5
7	e23	79	e49	e44	e55	e120	86	164	18	7.0	13	4.7
8	21	70	e48	e43	e48	e95	91	136	15	8.3	9.1	4.4
9	e26	63	e47	e42	e44	e85	139	92	13	16	8.2	4.3
10	e44	189	e45	e41	e33	e70	182	67	12	14	9.4	4.3
11	e50	855	e48	e40	e35	e60	167	52	11	11	13	4.4
12	e66	834	e44	e39	e33	e55	129	42	13	11	13	5.9
13	e130	539	e40	e40	e31	e52	95	34	16	10	11	6.4
14	e170	316	e48	e40	e29	e53	74	29	16	11	9.1	5.9
15	e62	186	e40	e42	e35	e55	64	26	13	13	8.0	5.2
16	e296	159	e39	e43	e33	e62	67	23	12	12	7.3	16
17	164	190	e59	e45	e28	e57	64	21	22	11	7.1	27
18	124	190	e42	e40	e36	e54	70	32	23	11	6.5	21
19	275	159	e70	e38	e29	e48	67	31	16	11	9.1	39
20	e297	121	e130	e39	e32	e46	56	26	14	9.9	6.6	94
21	e220	93	e220	e42	e34	e44	73	22	12	8.4	7.3	105
22	e134	77	e450	e42	e35	e43	211	19	10	7.3	9.2	70
23	e104	140	e430	e39	e34	e48	199	16	9.0	9.1	7.6	36
24	663	140	e200	e42	e33	e55	135	14	8.4	9.5	6.5	23
25	881	124	e110	e36	e32	e70	88	13	7.8	10	5.7	61
26	664	94	e95	e33	e29	e190	68	17	7.2	9.1	5.6	144
27	398	73	e90	e29	e28	201	55	34	6.8	8.5	5.6	157
28	218	64	e130	e27	e50	227	45	41	6.3	8.6	5.2	108
29	139	57	e180	e25	---	223	40	29	6.2	8.3	4.9	57
30	105	e56	e120	e24	---	173	38	27	6.2	8.8	4.9	33
31	84	---	e130	e24	---	124	---	44	---	8.5	5.5	---
TOTAL	5511	5218	3285	1357	1001	3545	2782	1569	447.9	288.7	260.6	1080.9
MEAN	178	174	106	43.8	35.7	114	92.7	50.6	14.9	9.31	8.41	36.0
MAX	881	855	450	95	55	400	211	164	38	16	21	157
MIN	15	46	39	24	25	43	38	13	6.2	5.3	4.9	4.3
CFSM	3.11	3.05	1.86	.77	.63	2.00	1.62	.89	.26	.16	.15	.63
IN.	3.59	3.40	2.14	.88	.65	2.31	1.81	1.02	.29	.19	.17	.70

WTR YR 1991 TOTAL 26346.1 MEAN 72.2 MAX 881 MIN 4.3 CFSM 1.26 IN. 17.16

e Estimated

ST. LAWRENCE RIVER BASIN

04282780 LEWIS CREEK AT NORTH FERRISBURG, VT.

LOCATION.--Lat 44°14'57", long 73°13'44", Addison County, Hydrologic Unit 02010002, on right bank 100 ft east of State Highway 7 crossing, 3 mi northeast of Ferrisburg, Vt.

DRAINAGE AREA.--77.2 mi².

PERIOD OF RECORD.--March 1990 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 105 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good below 500 ft³/s, except those for estimated daily discharges and those above 500 ft³/s, which are fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,100 ft³/s, Oct. 24, 1990, gage height, 5.02 ft, from rating curve extended above 200 ft³/s. Minimum discharge, 14 ft³/s, Aug. 3-4, 1991.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 800 ft³/s and maximum (*):

1990				1991			
Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 23	1330	a*1,210	*4.31	Oct. 14	1415	a996	4.09
Aug. 11	1015	a1,130	4.23	Oct. 24	1915	a*2,100	*5.02
Aug. 14	1130	a832	3.90	Nov. 11	1245	a1,330	4.42
				Dec. 23	1115	a1,410	4.49
				Mar. 4	--	ab916	ice jam

a from rating curve extended above 200 ft³/s;

Minimum discharge, 26 ft³/s, July 18, 19.

a from rating curve extended above 200 ft³/s;

b about

Minimum discharge, 14 ft³/s, Aug. 3, 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	378	157	82	67	75	64	60
2	482	245	76	66	68	58	56
3	475	320	72	59	60	53	53
4	347	680	70	58	54	51	51
5	211	372	69	66	72	49	48
6	189	260	91	59	65	53	51
7	139	229	82	58	54	272	46
8	144	195	83	53	50	193	53
9	155	179	90	50	48	93	47
10	212	192	81	50	46	72	45
11	479	478	128	59	44	545	44
12	391	348	121	79	43	229	47
13	547	280	140	61	43	235	48
14	517	258	366	55	40	594	46
15	269	251	193	50	40	230	50
16	216	187	153	47	40	192	60
17	217	164	140	46	42	151	50
18	314	137	192	45	39	118	51
19	185	132	130	51	35	124	49
20	241	105	136	51	40	102	48
21	351	253	216	48	43	88	54
22	281	221	190	79	39	77	53
23	412	164	151	76	350	72	59
24	276	140	123	79	251	68	50
25	206	107	105	62	81	65	51
26	180	130	94	53	64	64	50
27	154	115	84	49	54	80	46
28	147	102	78	43	145	98	42
29	134	91	62	47	128	74	39
30	134	87	79	89	78	68	49
31	147	---	76	---	64	63	---
TOTAL	8530	6579	3753	1755	2295	4295	1496
MEAN	275	219	121	58.5	74.0	139	49.9
MAX	547	680	366	89	350	594	60
MIN	134	87	62	43	35	49	39
CFSM	3.56	2.84	1.57	.76	.96	1.79	.65
IN.	4.11	3.17	1.81	.85	1.11	2.07	.72

ST. LAWRENCE RIVER BASIN

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04282780 LEWIS CREEK AT NORTH FERRISBURG, VT.--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	83	154	109	e230	e62	e90	129	172	100	19	14	24
2	55	137	101	e210	e70	e300	121	298	80	18	14	18
3	58	126	94	e180	e85	e340	117	213	68	17	14	16
4	62	116	218	e170	e110	e540	108	184	72	16	16	15
5	109	108	244	e180	e200	e430	107	148	94	18	25	15
6	83	138	151	e140	e230	e255	115	182	73	21	21	15
7	68	141	131	e130	e235	e300	152	266	59	22	18	14
8	55	115	123	e110	e240	e170	149	172	50	25	16	14
9	58	103	121	e120	e170	e140	352	143	43	54	16	14
10	124	358	116	e120	e140	e120	400	124	38	28	23	14
11	134	829	e105	e120	e120	e110	280	108	35	26	25	15
12	117	433	e95	e120	e105	e98	204	96	37	24	26	19
13	230	316	e90	e120	e100	e90	169	84	52	22	20	16
14	699	258	e93	e120	e100	84	145	76	50	33	17	15
15	302	282	e100	e130	e98	81	129	72	39	33	15	15
16	188	356	e110	e200	e70	79	174	64	46	28	15	67
17	149	510	106	e250	e72	77	143	68	81	25	15	43
18	165	357	134	e160	e75	78	168	107	61	24	15	29
19	501	264	347	e120	e90	82	140	78	47	21	16	204
20	262	218	181	e100	e200	84	123	68	39	21	20	185
21	196	196	201	e93	e160	72	204	62	34	19	19	92
22	166	175	530	e85	e130	70	503	60	30	21	17	69
23	204	296	819	e80	e110	72	283	47	29	20	16	54
24	1500	234	811	e75	e95	111	207	42	27	19	15	46
25	636	193	e450	e70	e86	198	171	59	26	16	15	162
26	352	165	e270	e68	e82	185	145	83	24	15	14	176
27	279	150	e230	e66	e78	181	125	130	22	16	17	99
28	236	148	e200	e65	e75	335	110	111	21	16	15	74
29	219	131	e260	e64	---	269	97	79	20	15	14	59
30	192	119	e300	e60	---	189	107	66	20	15	14	52
31	175	---	e270	e55	---	144	---	111	---	15	21	---
TOTAL	7657	7126	7110	3811	3388	5374	5377	3573	1417	682	538	1650
MEAN	247	238	229	123	121	173	179	115	47.2	22.0	17.4	55.0
MAX	1500	829	819	250	240	540	503	298	100	54	26	204
MIN	55	103	90	55	62	70	97	42	20	15	14	14
CFSM	3.20	3.08	2.97	1.59	1.57	2.25	2.32	1.49	.61	.28	.22	.71
IN.	3.69	3.43	3.43	1.84	1.63	2.59	2.59	1.72	.68	.33	.26	.80

WTR YR 1991 TOTAL 47703 MEAN 131 MAX 1500 MIN 14 CFSM 1.69 IN. 22.99

e Estimated

ST. LAWRENCE RIVER BASIN

04282795 LAPLATTE RIVER AT SHELBURNE, VT.

LOCATION.--Lat 44°22'12", long 73°13'00", Chittenden County, Hydrologic Unit 02010003, on left bank at Shelburne Falls, 2.0 mi above mouth.

DRAINAGE AREA.--44.6 mi².

PERIOD OF RECORD.--March 1990 to current year.

GAGE.--Nonrecording gage at site 100 ft downstream, March to October 23, 1990. Water-stage recorder, October 24, 1990 to current year. Elevation of gage is 150 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,320 ft³/s, gage height, 5.40 ft, from rating curve extended above 200 ft³/s, minimum discharge, 0.82 ft³/s, gage height, 0.90 ft, July 31, 1991.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 598 ft³/s and maximums (*):

1990				1991			
Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 24	--	a*748	*3.900	Oct. 24	0815	a1,210	5.22
				Nov. 10	2145	a*1,320	*5.40
				Feb. 6	--	ice jam	3.49
				Mar. 4	1500	a950	4.74

a from rating curve extended above 200 ft³/s

a from rating curve extended above 200 ft³/s

Minimum discharge, 0.82 ft³/s, July 31.

Minimum discharge, 3.9 ft³/s, July 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e33	135	28	15	9.9	13	e20
2	15	177	26	18	9.9	11	e13
3	18	176	24	35	9.9	10	e10
4	32	438	24	34	18	9.9	e7.0
5	91	357	27	29	73	9.9	e5.0
6	60	151	32	20	29	30	e5.0
7	23	86	35	14	11	200	e5.0
8	7.8	69	32	12	7.4	169	e5.0
9	4.8	64	30	12	6.5	55	e5.0
10	9.1	105	41	11	6.3	72	e5.0
11	19	451	68	11	5.2	392	e5.0
12	50	373	74	11	4.5	319	e5.0
13	118	153	82	11	4.4	182	e5.1
14	e110	108	128	11	3.9	404	e5.1
15	e98	84	107	10	4.4	338	e5.2
16	e86	69	68	9.9	11	170	e5.6
17	e77	63	96	9.9	7.0	92	e5.4
18	e70	56	150	10	5.2	81	e5.4
19	e80	51	83	11	4.4	79	e5.4
20	e110	55	76	11	3.9	70	e5.4
21	196	99	180	10	6.6	58	e5.4
22	262	91	132	11	6.5	50	e5.4
23	338	76	79	11	60	42	e5.5
24	e204	75	63	11	539	34	e5.2
25	e130	64	45	10	248	26	e5.1
26	e80	52	33	9.9	77	19	e5.1
27	e56	42	26	9.9	42	17	e5.1
28	46	35	19	9.9	36	34	e5.0
29	42	32	16	9.9	19	47	e5.0
30	41	28	19	9.9	10	32	e5.0
31	60	---	16	---	8.3	e25	---
TOTAL	2566.7	3815	1859	408.3	1287.2	3090.8	184.4
MEAN	82.8	127	60.0	13.6	41.5	99.7	6.15
MAX	338	451	180	35	539	404	20
MIN	4.8	28	16	9.9	3.9	9.9	5.0
CFSM	1.86	2.85	1.34	.31	.93	2.24	.14
IN.	2.14	3.18	1.55	.34	1.07	2.58	.15

e Estimated

ST. LAWRENCE RIVER BASIN

85

04282795 LAPLATTE RIVER AT SHELBURNE, VT.--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e10	40	35	e140	e16	12	60	e35	18	3.2	1.6	8.5
2	e6.0	34	32	e90	e16	82	60	e70	16	3.0	1.4	5.8
3	e6.0	31	29	e80	e19	162	60	e100	13	2.9	1.2	4.2
4	e15	28	145	e65	e23	385	56	e80	13	2.9	2.3	2.8
5	e10	26	287	e54	e31	346	54	e55	19	2.6	4.9	2.7
6	e6.0	39	99	e47	e38	151	64	e65	15	3.3	5.5	2.1
7	e3.5	59	57	e41	e55	185	114	e180	12	4.0	3.7	2.0
8	e2.4	39	e45	e38	e70	91	92	90	9.6	4.8	2.7	1.8
9	e2.4	33	e40	e35	e50	62	190	62	8.3	6.7	2.9	1.6
10	e50	356	e36	e32	e40	57	245	49	7.3	6.6	5.3	2.2
11	e49	1040	e33	e31	e35	46	142	40	6.9	4.4	6.2	3.5
12	e57	367	e31	e29	e30	32	87	34	7.0	4.7	4.1	3.2
13	e110	157	e29	e28	e25	40	69	30	9.2	3.6	3.3	3.6
14	e200	96	e28	e27	e22	25	58	25	9.2	4.1	2.8	8.8
15	e100	113	e26	e27	e20	24	51	23	7.6	5.0	2.6	5.9
16	e22	231	e25	e30	e19	24	78	20	9.0	4.0	2.6	27
17	e22	281	e29	e37	e18	24	65	22	20	3.0	2.2	19
18	e62	209	e40	e45	e19	24	78	39	15	2.6	2.4	12
19	e384	109	e90	e35	20	24	62	25	11	2.4	2.7	50
20	e230	76	e160	e31	175	26	47	20	9.4	2.4	4.1	71
21	e100	65	e100	e28	59	24	86	19	8.4	2.1	5.0	25
22	e52	55	e70	e25	37	22	268	e18	7.1	2.4	6.0	16
23	e125	148	e95	e23	42	22	128	e15	6.8	3.2	3.9	11
24	928	125	e200	e21	28	45	e110	e13	5.6	2.7	2.8	8.0
25	451	77	e200	e20	19	153	e65	e12	5.9	2.5	2.0	60
26	171	56	e150	e19	20	178	e55	e12	5.1	1.9	1.8	113
27	96	46	e110	e18	15	141	e45	e13	5.0	1.9	1.9	41
28	70	44	e95	e17	13	215	e40	e15	4.1	1.8	1.7	23
29	60	42	e70	e17	---	169	e30	e16	4.0	1.7	1.9	15
30	57	36	e85	e16	---	100	e33	18	3.5	1.4	1.7	12
31	47	---	e220	e16	---	69	---	18	---	1.4	5.4	---
TOTAL	3504.3	4058	2691	1162	974	2960	2592	1233	291.0	99.2	98.6	561.7
MEAN	113	135	86.8	37.5	34.8	95.5	86.4	39.8	9.70	3.20	3.18	18.7
MAX	928	1040	287	140	175	385	268	180	20	6.7	6.2	113
MIN	2.4	26	25	16	13	12	30	12	3.5	1.4	1.2	1.6
CFSM	2.53	3.03	1.95	.84	.78	2.14	1.94	.89	.22	.07	.07	.42
IN.	2.92	3.38	2.24	.97	.81	2.47	2.16	1.03	.24	.08	.08	.47

WTR YR 1991 TOTAL 20224.8 MEAN 55.4 MAX 1040 MIN 1.2 CFSM 1.24 IN. 16.87

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. 7-21, Dec. 26 to Mar. 12, which are fair, and period of no gage-height record, Oct. 1, Mar. 13, 14, 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.--61 years, 55.1 ft³/s, 19.24 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, 432 ft³/s, Dec. 24, gage height, 4.73 ft; maximum gage height 5.69 ft, Mar. 3 (ice jam); minimum discharge 0.99 ft³/s, Aug. 3, 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e30	52	63	e150	e26	e24	53	91	99	3.6	1.2	18
2	e19	50	59	e100	e23	e54	38	86	41	2.9	1.1	8.2
3	17	48	56	e76	e27	e140	30	67	27	2.6	1.0	5.5
4	26	46	151	e68	e29	e300	25	60	23	3.0	11	4.5
5	58	44	195	e64	e33	e170	73	52	23	4.9	24	5.6
6	25	85	106	e58	e40	e115	159	67	20	6.4	7.3	4.3
7	20	76	e84	e54	e55	e130	243	129	17	10	4.4	4.5
8	17	61	e76	e50	e52	e105	198	69	15	31	3.1	3.4
9	17	54	e72	e46	e49	e80	188	57	13	24	2.8	3.2
10	43	102	e66	e44	e45	e70	190	50	11	11	69	3.8
11	37	230	e60	e43	e42	e59	191	46	9.7	7.6	18	13
12	40	119	e58	e42	e34	e50	118	41	19	6.2	9.6	8.5
13	148	87	e60	e41	e35	e44	91	36	18	6.2	5.8	6.2
14	163	78	e56	e40	e36	e37	79	33	13	16	4.3	5.6
15	64	81	e54	e40	e33	e37	80	31	11	9.4	3.1	4.3
16	47	144	e54	e42	e31	e40	120	28	33	6.0	3.0	47
17	38	267	e53	e62	e29	51	84	35	56	4.7	2.8	17
18	33	176	e52	e47	e28	51	87	51	34	3.6	2.5	8.5
19	110	112	e78	e43	e29	72	71	36	20	3.1	25	69
20	61	86	e58	e39	e38	52	61	30	12	2.9	52	44
21	45	82	e70	e37	e37	52	122	25	9.1	2.6	22	24
22	40	78	165	e35	e36	44	323	22	7.5	2.4	14	17
23	62	110	317	e34	e33	42	172	19	6.7	3.1	8.0	13
24	354	151	420	e35	e34	40	111	19	5.9	3.4	5.4	12
25	361	166	391	e33	e35	39	81	22	5.3	2.4	4.5	120
26	133	128	e150	e32	e31	46	67	28	4.6	2.4	4.0	72
27	73	84	e115	e32	e28	61	61	44	4.5	3.5	3.6	35
28	68	82	e110	e31	e25	127	58	33	3.8	2.3	3.2	26
29	67	80	e115	e30	---	61	54	23	3.4	1.7	3.0	21
30	58	65	e130	e28	---	72	76	26	3.8	1.5	2.8	19
31	56	---	e260	e27	---	54	---	71	---	1.3	30	---
TOTAL	2330	3024	3754	1503	973	2319	3304	1427	569.3	191.7	351.5	643.1
MEAN	75.2	101	121	48.5	34.7	74.8	110	46.0	19.0	6.18	11.3	21.4
MAX	361	267	420	150	55	300	323	129	99	31	69	120
MIN	17	44	52	27	23	24	25	19	3.4	1.3	1.0	3.2
MEAN†	76.3	101	125	44.0	34.4	78.2	109	47.0	14.5	6.56	11.5	21.1
CFSM†	1.96	2.60	3.21	1.13	.88	2.01	2.80	1.21	.37	.17	.30	.54
IN†	2.26	2.89	3.70	1.30	.92	2.32	3.14	1.39	.41	.19	.34	.61
CAL YR 1990	TOTAL 28512.8	MEAN 78.1	MAX 420	MIN 7.7	MEAN† 78.6	CFSM† 2.02	IN† 27.42					
WTR YR 1991	TOTAL 20389.6	MEAN 55.9	MAX 420	MIN 1.0	MEAN† 55.8	CFSM† 1.43	IN† 19.49					

e Estimated

† Adjusted for change in contents in East Barre Detention Reservoir.

ST. LAWRENCE RIVER BASIN

87

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 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.--58 years, 135 ft³/s, 26.49 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, 1,100 ft³/s, July 5 and Oct. 24, 1990, 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, 1,100 ft³/s, Oct. 24, gage height, 3.96 ft; minimum daily, 7.0 ft³/s, Aug. 3, 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	180	116	160	319	e43	e93	203	168	139	10	7.6	34
2	184	117	113	213	e60	e63	186	436	63	10	7.1	24
3	122	94	94	169	e48	e158	176	323	45	7.5	7.0	24
4	117	84	157	e102	e60	e350	175	222	36	7.7	8.0	24
5	423	76	226	e130	e70	e700	262	180	39	7.7	7.8	23
6	274	148	190	115	e110	e950	630	181	37	9.0	7.3	23
7	187	179	176	104	e147	e520	837	326	32	8.5	7.2	14
8	155	111	114	e125	e107	e340	843	248	24	8.8	7.0	12
9	118	104	106	e115	e110	214	874	189	24	8.7	7.7	12
10	246	204	105	66	e89	183	884	176	24	9.5	8.9	12
11	271	771	81	86	e92	e145	863	120	24	10	46	12
12	675	612	68	93	e73	e92	780	79	24	10	19	12
13	767	290	97	69	e64	e105	634	70	24	10	21	12
14	988	207	83	76	e63	e96	292	85	24	10	20	12
15	945	189	52	67	e71	e100	183	54	24	10	20	12
16	770	297	68	116	e64	e82	214	57	25	10	17	68
17	273	738	94	77	e35	e110	205	61	30	10	14	23
18	187	698	81	72	e61	e130	214	77	33	10	13	23
19	383	351	148	64	e59	e187	193	55	24	8.7	88	228
20	343	216	107	61	e95	e131	161	59	24	7.7	157	282
21	227	184	112	69	e80	e89	171	45	24	7.7	45	139
22	181	172	282	75	e87	e109	445	37	24	7.7	28	52
23	196	155	854	e84	e80	e132	327	37	24	7.6	24	42
24	990	193	1010	e42	e78	e105	229	30	24	7.7	24	76
25	1030	192	987	59	e61	e104	186	30	23	7.7	23	146
26	971	180	909	82	e74	e126	159	40	17	8.1	24	203
27	903	166	657	81	e59	e145	86	101	12	8.4	21	152
28	796	133	213	62	e51	e280	100	73	9.2	8.4	14	68
29	338	188	197	52	---	763	127	47	8.5	8.0	13	60
30	183	184	376	47	---	423	121	45	10	7.7	12	34
31	131	---	766	e44	---	234	---	88	---	8.0	45	---
TOTAL	13554	7349	8683	2936	2091	7259	10760	3739	894.7	270.8	843.7	1858
MEAN	437	245	280	94.7	74.7	234	359	121	29.8	8.74	27.2	61.9
MAX	1030	771	1010	319	147	950	884	436	139	10	157	282
MIN	117	76	52	42	35	63	86	30	8.5	7.5	7.0	12
MEAN †	437	246	285	88.4	74.6	236	357	121	25.9	9.10	29.0	62.6
CFSM †	6.32	3.55	4.12	1.28	1.08	3.41	5.16	1.75	.37	.13	.42	.90
IN. †	7.29	3.96	4.76	1.47	1.12	3.93	5.76	2.01	.42	.15	.48	1.01

CAL YR 1990 TOTAL 84374 MEAN 231 MAX 1080 MIN 21 MEAN 232 CFSM 3.35 IN. 45.48
WTR YR 1991 TOTAL 60238.2 MEAN 165 MAX 1030 MIN 7.0 MEAN 165 CFSM 2.38 IN. 32.40

e Estimated

† Adjusted for change in contents in Wrightsville Detention Reservoir.

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, 1,143.08 ft Dec. 24; 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, 652.58 ft, Oct. 24; minimum, 633.20 ft, July 5, 6.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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.	1129.78	5.3	--	--
Oct. 31.	1132.03	8.3	+3.0	+1.12
Nov. 30.	1131.87	8.1	-0.2	- .08
Dec. 31.	1136.99	18.4	+10.3	+3.85
CAL YR 1990	--	--	+13.9	+ .44
Jan. 31.	1130.60	6.3	-12.1	-4.52
Feb. 28.	1129.96	5.5	- .8	- .33
Mar. 31.	1135.62	14.6	+9.1	+3.40
Apr. 30.	1134.80	12.8	-1.8	- .69
May 31.	1135.98	15.4	+2.6	+ .97
June 30.	1128.40	3.7	-11.7	-4.51
July 31.	1129.30	4.7	+1.0	+ .37
Aug. 31.	1129.73	5.2	+ .5	+ .19
Sept. 30.	1129.00	4.4	- .8	- .31
WTR YR 1991	--	--	- .9	- .03
04285000 Wrightsville Detention Reservoir				
Sept. 30.	634.49	105.4	--	--
Oct. 31.	634.53	105.7	+0.3	+ .11
Nov. 30.	634.75	107.5	+1.8	+ .69
Dec. 31.	636.49	121.9	+14.4	+5.38
CAL YR 1990	--	--	+20.6	- .65
Jan. 31.	634.45	105.1	+16.8	-6.27
Feb. 28.	634.42	104.9	- .2	- .08
Mar. 31.	635.07	110.1	+5.2	+1.94
Apr. 30.	634.55	105.9	-4.2	-1.62
May 31.	634.62	106.4	+ .5	+ .19
June 30.	633.33	96.3	-10.1	-3.90
July 31.	633.46	97.3	+1.0	+ .37
Aug. 31.	634.06	102.0	+4.7	+1.75
Sept. 30.	634.27	103.7	+1.7	+ .66
WTR YR 1991	--	--	-1.7	- .05

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.--72 years (water years 1915-23, 1929-91), 594 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)
Oct. 24	0945	a*7,190	11.49	Mar. 4	unknown	ice jam	b*12.75
Dec. 24	unknown	5,500	b9.80				

a from rating curve extended above 6,900 ft³/s
Minimum daily discharge, 53 ft³/s, Aug. 3.

b from peak stage indicator.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	765	739	693	e1400	e335	e425	893	1070	868	87	76	319
2	574	685	620	e950	e365	e820	831	1570	424	82	56	145
3	441	628	592	e700	e345	e1800	830	1260	322	74	53	126
4	410	575	1260	e620	e375	e3200	873	953	294	74	95	113
5	972	506	1800	e630	e415	e2900	1170	739	354	79	177	130
6	648	855	1180	e660	e590	e1700	1710	845	314	99	121	101
7	498	954	1020	e635	e610	e1250	2230	1600	265	136	89	85
8	425	689	741	e580	e630	e1100	2110	1160	339	161	77	109
9	422	673	668	e630	e620	e920	2270	799	367	166	73	75
10	930	1340	677	e660	e500	e830	2610	702	193	114	447	71
11	765	2960	648	e570	e400	704	2460	594	172	106	273	138
12	1160	1790	634	e500	e380	677	1920	504	198	86	146	103
13	1620	1300	588	e560	e365	612	1600	450	206	90	121	82
14	2540	1060	551	e530	e350	569	1190	438	192	125	108	78
15	1810	978	476	e610	e355	e680	1040	387	168	114	211	84
16	1410	1490	565	e660	e335	e630	1400	355	248	88	229	334
17	795	2630	598	e770	e315	675	1140	393	426	83	110	220
18	653	2060	741	e790	e295	716	1120	579	302	78	89	141
19	1510	1440	1110	e610	e325	762	996	415	218	74	257	715
20	1320	1160	709	e640	e390	676	826	365	192	68	683	861
21	848	995	679	e560	e490	584	1170	314	171	63	284	407
22	675	924	e1600	e475	e425	581	2230	282	190	61	216	224
23	887	1140	e3700	e475	e395	583	1580	256	130	70	145	179
24	5170	1250	e4600	e470	e355	529	1240	235	126	84	118	197
25	3280	1150	e3100	e415	e360	541	1050	258	119	84	110	1090
26	2300	1180	e2500	e400	e335	710	889	298	107	70	106	918
27	1920	958	e1600	e370	e305	828	748	505	102	78	99	496
28	1730	981	e1300	e360	e325	2010	684	435	92	70	81	295
29	1360	1010	e1220	e355	---	2050	634	315	91	61	93	238
30	1090	831	e1650	e350	---	1380	705	293	93	57	74	192
31	804	---	e2000	e375	---	965	---	573	---	60	332	---
TOTAL	39732	34931	39820	18310	11285	32407	40149	18942	7283	2742	5149	8266
MEAN	1282	1164	1285	591	403	1045	1338	611	243	88.5	166	276
MAX	5170	2960	4600	1400	630	3200	2610	1600	868	166	683	1090
MIN	410	506	476	350	295	425	634	235	91	57	53	71
(†)	318.2	330.0	324.7	137.6	115.8	251.6	389.2	495.6	429.8	433.1	436.6	428.3

CAL YR 1990 TOTAL 347799 MEAN 953 MAX 5170 MIN 155

WTR YR 1991 TOTAL 259016 MEAN 710 MAX 5170 MIN 53

e Estimated

(†) Month-end 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.--57 year, 124 ft³/s, 22.13 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)
Oct. 24	0730	a*3,500	*6.63	Dec. 24	1030	a2,060	5.19
Dec. 23	1515	a2,750	5.94				

a from rating curve extended above 1,500 ft³/s.

Minimum discharge, 7.7 ft³/s, Aug. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	95	147	124	326	62	74	226	199	85	16	10	26
2	58	133	118	282	e60	165	212	280	61	15	9.8	19
3	53	121	111	233	66	424	210	225	51	14	8.8	16
4	64	114	244	e210	74	e1050	229	188	53	14	22	15
5	123	107	281	e195	92	616	318	162	56	16	42	15
6	78	177	208	175	118	371	505	199	48	18	21	14
7	65	152	177	146	141	566	611	276	43	20	16	13
8	56	126	159	e130	133	384	458	206	39	36	14	12
9	57	115	147	e120	132	288	411	176	35	34	15	12
10	125	241	140	e115	123	251	463	158	33	24	95	12
11	110	364	119	e115	e105	214	396	141	32	21	40	17
12	175	263	e120	e110	e88	184	298	122	39	18	26	16
13	272	223	121	e110	e90	163	255	110	37	17	21	14
14	500	199	109	e105	90	153	227	102	31	25	17	13
15	235	204	e110	e100	88	140	216	95	29	20	16	15
16	168	532	e110	105	e80	138	246	86	43	16	15	62
17	134	768	106	156	e74	149	206	94	74	15	14	35
18	124	404	103	117	e72	160	237	104	44	14	15	23
19	324	302	158	e110	72	169	202	83	37	13	41	86
20	204	252	114	e100	99	159	180	75	33	12	63	80
21	160	227	129	e96	98	139	355	68	25	11	37	43
22	139	203	371	e90	e94	129	617	61	25	11	29	32
23	193	225	1260	e88	e88	121	377	56	22	14	22	27
24	1650	216	1220	e90	e90	121	286	52	22	14	19	25
25	493	192	532	e86	91	117	244	56	21	11	17	204
26	335	171	e330	e84	92	139	214	60	20	13	15	152
27	268	157	e245	e84	84	167	190	89	19	19	14	80
28	234	165	e240	78	86	539	169	72	15	14	14	56
29	205	167	242	72	---	420	153	57	17	12	13	45
30	181	141	647	70	---	310	182	61	16	11	13	40
31	164	---	576	70	---	244	---	93	---	10	31	---
TOTAL	7042	6808	8671	3968	2582	8264	8893	3806	1105	518	745.6	1219
MEAN	227	227	280	128	92.2	267	296	123	36.8	16.7	24.1	40.6
MAX	1650	768	1260	326	141	1050	617	280	85	36	95	204
MIN	53	107	103	70	60	74	153	52	15	10	8.8	12
CFSM	2.99	2.98	3.68	1.68	1.21	3.50	3.90	1.61	.48	.22	.32	.53
IN.	3.44	3.33	4.24	1.94	1.26	4.04	4.35	1.86	.54	.25	.36	.60

CAL YR 1990 TOTAL 67770 MEAN 186 MAX 1720 MIN 20 CFSM 2.44 IN. 33.13
WTR YR 1991 TOTAL 53621.6 MEAN 147 MAX 1650 MIN 8.8 CFSM 1.93 IN. 26.21

e Estimated

ST. LAWRENCE RIVER BASIN

91

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.--63 years (water years 1928-91), 260 ft³/s, 25.40 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)
Oct. 24	0800	a*8,060	*10.34	Dec. 23	1615	a6,120	9.10

a From rating curve extended above 2,700 ft³/s.

Minimum discharge, 11 ft³/s, Aug. 3, 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	287	e330	261	e800	e120	e150	328	413	216	33	15	79
2	154	e310	248	e540	e115	e330	313	898	146	30	13	45
3	138	e290	225	e470	e130	e840	305	653	115	28	11	33
4	172	e270	501	e400	e150	e2000	324	570	131	27	20	29
5	414	e260	520	e360	e180	1130	478	440	172	32	104	30
6	215	e380	378	e310	e230	646	887	534	124	46	52	26
7	160	e330	309	e270	e260	1050	1350	655	101	48	35	22
8	138	e300	273	e250	e250	652	982	461	86	130	25	19
9	145	e270	252	e230	e240	498	1310	380	77	111	26	17
10	363	e450	246	e220	e220	435	1280	326	69	54	269	19
11	267	e1000	e230	e210	e200	391	837	284	65	55	93	e46
12	419	e720	e220	e210	e170	346	553	248	102	40	77	e38
13	931	e540	e215	e200	e175	305	449	216	138	37	52	e36
14	1270	e430	e210	e195	e180	249	379	195	99	55	37	e34
15	534	e450	e210	e190	e170	235	359	178	80	41	30	e36
16	370	e1200	e205	e210	e150	225	467	159	135	31	27	e175
17	288	e2100	e205	e300	e145	233	367	215	278	27	23	e110
18	263	e1000	e200	e230	e140	244	425	260	151	28	21	e90
19	926	580	e300	e210	e150	303	342	183	104	24	75	e230
20	497	476	e220	e190	e180	265	297	158	82	21	142	e220
21	365	414	e330	e180	e170	219	972	141	69	19	76	e160
22	304	361	e780	e170	e165	212	1460	126	61	18	64	133
23	455	464	e2900	e160	e160	204	765	111	56	30	46	102
24	e4900	436	e2800	e170	e165	201	547	102	52	33	35	86
25	e1600	373	e1400	e160	e170	228	447	115	48	20	30	540
26	e840	327	e740	e160	e165	313	376	131	45	20	28	406
27	e600	300	e500	e155	e160	357	330	270	40	34	25	223
28	e500	350	e460	e150	e160	1030	291	187	37	25	22	159
29	e450	365	e480	e140	---	674	262	136	34	18	21	130
30	e410	297	e1400	e135	---	475	340	141	35	16	19	115
31	e370	---	e1200	e130	---	362	---	256	---	15	98	---
TOTAL	18745	15373	18418	7705	4870	14802	17822	9142	2948	1146	1611	3388
MEAN	605	512	594	249	174	477	594	295	98.3	37.0	52.0	113
MAX	4900	2100	2900	800	260	2000	1460	898	278	130	269	540
MIN	138	260	200	130	115	150	262	102	34	15	11	17
CFSM	4.35	3.69	4.27	1.79	1.25	3.44	4.27	2.12	.71	.27	.37	.81
IN.	5.02	4.11	4.93	2.06	1.30	3.96	4.77	2.45	.79	.31	.43	.91

CAL YR 1990 TOTAL 146381 MEAN 401 MAX 4900 MIN 33 CFSM 2.89 IN. 39.18
WTR YR 1991 TOTAL 115970 MEAN 318 MAX 4900 MIN 11 CFSM 2.29 IN. 31.04

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, 598.22 ft, Dec. 25; minimum elevation, 543.33 ft, Mar. 1.

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	589.91	590.93	590.53	593.20	567.19	543.42	574.19	586.75	589.34	589.68	589.91	589.70
2	589.85	591.05	590.48	592.51	566.92	546.00	574.99	588.25	589.28	589.70	589.93	589.80
3	589.72	591.02	590.73	591.80	566.70	551.09	575.50	588.60	589.45	589.73	589.93	589.87
4	589.98	591.43	591.04	591.10	566.20	559.02	576.06	588.39	589.67	589.75	589.99	589.58
5	591.00	591.23	590.75	590.36	565.66	562.25	577.21	588.47	589.63	589.80	590.28	589.60
6	591.59	591.65	590.44	590.28	565.24	563.88	580.38	588.93	589.79	589.95	590.36	589.64
7	591.80	591.27	590.10	589.79	564.27	566.58	583.31	588.92	589.71	590.03	590.24	589.68
8	591.66	591.78	589.84	588.74	563.25	568.00	585.76	588.42	589.73	590.17	590.10	589.69
9	591.25	591.37	589.55	588.07	562.07	568.97	588.96	588.72	589.70	590.02	590.07	589.73
10	591.27	591.66	589.10	587.38	560.75	569.73	590.73	589.28	589.80	589.70	590.50	589.61
11	590.80	592.05	589.44	586.35	559.34	570.36	591.20	589.77	589.88	589.74	590.56	589.65
12	591.31	591.79	589.60	585.37	557.63	570.98	591.07	589.75	589.99	589.31	590.65	589.75
13	594.01	591.34	590.04	584.33	555.97	571.34	590.61	590.10	589.95	589.40	590.70	589.53
14	593.89	590.76	590.10	583.25	554.65	570.85	590.01	589.93	590.07	589.51	590.51	589.54
15	592.96	590.38	589.74	582.16	553.55	569.62	589.46	589.59	590.01	589.60	590.06	589.66
16	592.27	592.08	590.15	581.16	552.38	568.38	589.26	589.22	590.33	589.64	590.07	590.06
17	591.64	593.97	589.55	580.33	551.22	567.22	588.82	589.03	590.37	589.68	590.10	590.34
18	591.34	593.22	588.72	579.34	550.00	566.07	588.38	588.83	590.23	589.70	590.31	590.23
19	593.00	592.57	589.49	578.20	548.78	564.39	587.88	588.69	589.99	589.73	589.71	591.23
20	592.61	592.02	589.96	577.08	548.60	564.22	587.17	588.38	589.74	589.76	589.21	590.94
21	592.09	591.46	589.92	575.84	548.17	563.87	587.49	588.60	589.40	589.77	589.22	591.02
22	591.54	590.82	592.42	574.50	547.22	563.54	588.06	588.80	589.41	589.78	589.32	591.08
23	591.65	590.62	596.34	573.17	547.99	564.22	587.91	588.94	589.35	590.08	589.36	590.66
24	597.07	590.95	598.20	571.70	548.63	564.87	587.42	588.97	589.38	590.07	589.40	588.86
25	596.05	591.25	598.14	570.32	547.93	564.86	586.82	589.06	589.37	590.09	589.45	590.41
26	594.26	591.14	597.73	570.54	546.86	565.09	586.15	589.28	589.42	590.12	589.48	590.90
27	593.07	590.25	596.32	569.98	545.77	565.78	585.29	589.68	589.49	590.16	589.50	590.61
28	592.33	591.04	594.41	569.38	544.60	569.56	584.44	590.00	589.50	590.17	589.42	590.17
29	591.77	591.58	593.63	568.82	---	571.44	584.72	590.01	589.58	590.19	589.42	589.51
30	591.10	591.21	594.97	568.33	---	572.58	585.57	589.87	589.64	590.13	589.49	588.92
31	591.02	---	594.21	567.84	---	573.42	---	589.50	---	589.91	589.54	---
MEAN	592.06	591.46	591.79	580.68	555.63	565.21	585.49	589.06	589.71	589.84	589.90	590.00
MAX	597.07	593.97	598.20	593.20	567.19	573.42	591.20	590.10	590.37	590.19	590.70	591.23
MIN	589.72	590.25	588.72	567.84	544.60	543.42	574.19	586.75	589.28	589.31	589.21	588.86
(†)	1,544.6	1,551.9	1,668.9	839.6	371.3	481.9	1,348.4	1,487.3	1,492.2	1,501.8	1,488.7	1,466.7
(‡)	+2.82	+2.82	+43.7	-31.0	-194	+228	+141	+51.8	+1.89	+3.58	-4.89	-8.49

CAL YR 1990 MEAN 585.62 MAX 598.20 MIN 553.57 (†) +17.2
WTR YR 1991 MEAN 584.42 MAX 598.20 MIN 543.42 (‡) -4.5

† Contents, in millions of cubic feet, at end of month.

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

ST. LAWRENCE RIVER BASIN

93

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.--56 years, 242 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, 1,850 ft³/s, Oct. 25, gage height, 9.95 ft³/s; minimum daily, 13 ft³/s, July 25-29, Aug. 2, 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	138	268	549	854	277	301	23	24	303	14	14	16
2	271	162	272	704	329	18	23	281	156	14	13	16
3	300	226	106	590	349	20	100	424	17	14	13	16
4	312	19	309	555	279	42	117	548	17	14	14	153
5	237	270	556	557	319	24	109	291	108	14	15	16
6	90	397	408	281	351	48	27	296	16	17	103	16
7	126	570	391	377	506	27	370	560	103	15	110	16
8	231	90	340	552	486	22	410	557	58	16	94	15
9	391	393	332	436	499	30	567	190	74	110	81	15
10	479	579	393	437	496	23	571	21	16	165	17	107
11	555	585	17	547	465	19	568	20	16	15	60	89
12	555	581	102	546	493	17	526	201	16	203	14	15
13	550	578	23	542	495	82	561	19	89	15	14	140
14	1380	576	127	543	427	322	558	213	15	15	116	16
15	999	555	295	542	337	520	558	285	78	14	236	16
16	698	405	16	543	355	518	557	274	17	14	16	20
17	584	1030	370	542	331	515	556	267	287	14	15	18
18	579	1060	548	532	336	515	555	260	181	14	17	131
19	711	760	212	538	352	513	499	198	184	14	372	401
20	754	608	17	533	339	398	552	239	169	14	335	395
21	627	574	323	533	321	261	557	17	198	14	66	88
22	576	573	440	529	407	261	557	16	40	14	16	82
23	577	575	600	526	24	18	556	16	60	15	16	251
24	772	313	603	524	20	18	553	81	32	48	16	402
25	1260	233	589	513	268	183	552	90	46	13	16	234
26	1390	331	585	64	312	185	550	17	15	13	16	75
27	949	366	932	266	306	105	549	111	15	13	15	271
28	679	459	1180	283	300	39	547	18	25	13	62	318
29	550	273	899	262	---	29	125	107	14	13	16	358
30	563	458	993	254	---	25	23	171	14	48	15	333
31	302	---	1150	250	---	24	---	411	---	106	255	---
TOTAL	18185	13867	13677	14755	9779	5122	12376	6223	2379	1035	2178	4039
MEAN	587	462	441	476	349	165	413	201	79.3	33.4	70.3	135
MAX	1390	1060	1180	854	506	520	571	560	303	203	372	402
MIN	90	19	16	64	20	17	23	16	14	13	13	15

CAL YR 1990 TOTAL 130091 MEAN 356 MAX 2260 MIN 13
WTR YR 1991 TOTAL 103615 MEAN 284 MAX 1390 MIN 13

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.--63 years, 1,725 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 ft³/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)
Oct. 24	2145	*23,000	*14.78	Mar. 4	1430	18,300	12.40
Dec. 24	0400	18,500	12.50				

Minimum daily discharge, 204 ft³/s, Aug. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1410	e2100	2280	4700	e1220	e1170	2390	2350	1900	359	276	1080
2	1520	e1700	1990	3930	e1250	e1280	2240	3980	1280	353	224	493
3	1410	e1450	1840	3350	e1190	e4350	2210	3830	808	745	204	395
4	1190	e1370	1820	2720	e1250	9930	2230	3500	905	294	221	400
5	2060	e1360	4750	2490	e1350	9680	2570	2670	933	281	380	398
6	2020	e1500	3140	2290	e1470	4880	3680	2380	1000	350	589	348
7	1250	2350	2690	2000	e1800	5160	6340	4240	909	364	449	277
8	1220	2280	2340	e1750	e2050	4750	6350	3470	1050	408	366	280
9	1160	1780	2060	e1820	e2120	2850	7670	2680	527	685	348	279
10	2150	3160	2010	e1950	e2050	2500	7890	2030	437	539	614	396
11	2480	9000	1750	e2050	e1850	1980	7150	1840	474	450	1020	577
12	2610	5520	1270	e1750	e1600	1870	4980	1560	596	480	508	544
13	3780	3870	1500	e1900	e1420	1900	4030	1420	751	376	416	466
14	9740	3230	1570	e2100	e1440	1790	3340	1280	757	365	417	351
15	5670	3000	1240	e2150	e1310	2070	2900	1420	507	387	504	315
16	3800	4570	1410	e2350	e1240	1980	3430	1350	906	339	501	958
17	2750	10200	1380	2730	e1200	2030	3150	1310	1230	306	410	1200
18	2270	7640	2040	2870	e1160	2210	3060	1700	1290	275	334	856
19	5560	4870	3300	2460	e1200	2280	2880	1510	884	295	435	2300
20	4640	3680	2210	e2150	e1280	2340	2670	1260	811	296	1450	3470
21	3180	3060	1880	e2100	e1400	1840	2790	1180	900	251	990	1780
22	2530	2870	5980	e1850	e1520	1680	7520	894	428	249	565	1080
23	2510	3270	11200	e1650	e1490	1760	5460	812	326	306	450	801
24	14600	3540	16800	e1750	e1070	1470	3860	669	349	276	374	881
25	e13500	2770	9880	e1800	e1080	1770	3200	783	477	286	331	1810
26	e9800	2640	5580	e1600	e1100	2010	2850	1020	387	275	304	3380
27	e6500	2570	4370	e1520	e1200	2520	2600	975	423	245	286	1860
28	e4400	2590	4160	e1440	e1170	4640	2420	1480	347	265	300	1490
29	e4250	2610	3890	e1350	---	6130	2000	1150	345	257	328	1190
30	e3500	2430	6250	e1270	---	3730	1720	920	357	246	271	1110
31	e2250	---	9080	e1210	---	2650	---	1280	---	236	761	---
TOTAL	125710	102980	121660	67050	39480	97200	115580	56943	22294	10839	14626	30765
MEAN	4055	3433	3925	2163	1410	3135	3853	1837	743	350	472	1025
MAX	14600	10200	16800	4700	2120	9930	7890	4240	1900	745	1450	3470
MIN	1160	1360	1240	1210	1070	1170	1720	669	326	236	204	277

CAL YR 1990 TOTAL 1020020 MEAN 2795 MAX 16800 MIN 287
WTR YR 1991 TOTAL 805127 MEAN 2206 MAX 16800 MIN 204

e Estimated

ST. LAWRENCE RIVER BASIN

95

04290580 INDIAN BROOK NEAR COLCHESTER, VT.

LOCATION.--Lat 44°32'53", long 73°09'57", Chittenden County, Hydrologic Unit 02010005, on left bank at junction of Routes 127 and 2A near Colchester.

DRAINAGE AREA.-10.8 mi².

PERIOD OF RECORD.--March 1990 to current year.

GAGE.--Nonrecording gage. Elevation of gage is 170 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair. Discharge computed by once-a-day staffplate readings. several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 132 ft³/s, Apr. 11, 1990, from rating curve extended above 100 ft³/s. Minimum daily discharge, 1.9 ft³/s, Sept. 28, 1990.

EXTREMES FOR THE 1990 WATER YEAR.--Maximum daily discharge, 132 ft³/s, Apr. 11; minimum daily discharge, 1.9 ft³/s, Sept. 28, from rating curve extended above 100 ft³/s.

EXTREMES FOR THE 1991 WATER YEAR.--Maximum daily discharge, 119 ft³/s, Nov. 11; minimum daily discharge, 2.0 ft³/s, July 30, from rating curve extended above 100 ft³/s.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e37	e15	e7.8	e13	e9.7	e5.9	e4.2
2	e48	e30	e9.1	e14	e8.1	e5.3	e3.3
3	e46	e54	e6.3	e14	e5.3	e3.3	e3.0
4	e32	e65	e6.6	e15	e6.6	e2.7	e3.3
5	e20	e42	e8.1	e15	e20	e2.7	e4.0
6	e16	e29	e10	e8.9	e14	e11	e4.5
7	e14	e24	e13	e7.6	e7.6	e22	e6.1
8	e15	e19	e13	e6.3	e3.7	e28	e8.6
9	e17	e15	e11	e6.1	e3.1	e13	e6.1
10	e25	e27	e11	e5.6	e3.5	e8.9	e4.5
11	e45	e132	e23	e5.9	e3.1	e18	e3.3
12	e40	e69	e32	e7.3	e2.5	e14	e2.9
13	e54	e35	e40	e5.6	e2.5	e12	e2.7
14	e50	e28	e43	e4.0	e2.5	e19	e2.7
15	e25	e24	e30	e3.3	e4.7	e15	e3.1
16	e22	e19	e16	e3.3	e30	e10	e4.5
17	e21	e16	e20	e3.1	e15	e8.1	e3.7
18	e30	e13	e26	e2.9	e3.5	e7.6	e3.1
19	e18	e12	e30	e3.0	e2.7	e9.1	e3.0
20	e25	e11	e32	e3.7	e2.6	e7.1	e4.0
21	e35	e15	e33	e5.9	e2.5	e4.7	e4.0
22	e27	e19	e25	e7.6	e3.1	e3.7	e3.3
23	e40	e20	e20	e9.7	e18	e3.0	e3.3
24	e25	e16	e18	e12	e43	e2.9	e3.3
25	e18	e13	e14	e7.3	e20	e2.9	e2.8
26	e17	e13	e11	e4.7	e9.7	e2.8	e2.7
27	e15	e14	e8.9	e3.7	e6.6	e2.7	e2.6
28	e14	e12	e6.6	e3.0	e4.7	e3.3	e1.9
29	e13	e10	e6.1	e3.1	e4.7	e4.7	e4.7
30	e13	e8.6	e11	e8.3	e5.9	e6.1	e3.5
31	e14	---	e13	---	e3.3	e6.3	---
TOTAL	831	819.6	554.5	212.9	272.2	265.8	112.7
MEAN	26.8	27.3	17.9	7.10	8.78	8.57	3.76
MAX	54	132	43	15	43	28	8.6
MIN	13	8.6	6.1	2.9	2.5	2.7	1.9

e Estimated

ST. LAWRENCE RIVER BASIN
04290580 INDIAN BROOK NEAR COLCHESTER, VT.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e21	e12	e11	e25	e6.5	e8.0	e18	e19	e9.1	e2.4	e2.3	e13
2	e9.4	e11	e10	e23	e7.5	e30	e18	e39	e8.1	e2.4	e2.1	e4.5
3	e6.1	e10	e11	e20	e9.0	e45	e18	e32	e6.3	e2.4	e2.4	e3.0
4	e7.1	e12	e27	e18	e13	e60	e16	e25	e5.0	e2.5	e5.3	e2.7
5	e11	e10	e39	e20	e20	e35	e16	e18	e4.7	e3.1	e25	e2.8
6	e9.7	e14	e25	e16	e24	e28	e20	e18	e4.5	e6.6	e23	e2.8
7	e6.6	e17	e16	e14	e25	e32	e25	e37	e4.0	e8.3	e8.3	e2.7
8	e4.0	e13	e9.4	e12	e26	e22	e34	e25	e3.5	e8.3	e3.1	e2.7
9	e7.6	e9.7	e12	e13	e19	e18	e77	e18	e3.2	e5.0	e2.8	e2.5
10	e23	e24	e13	e13	e15	e15	e84	e14	e3.2	e3.2	e3.7	e2.7
11	e18	e119	e11	e13	e13	e13	e61	e12	e3.2	e3.1	e3.7	e4.5
12	e29	e65	e9.7	e13	e11	e12	e41	e10	e4.0	e2.9	e3.1	e5.3
13	e37	e35	e9.4	e13	e11	e11	e28	e11	e7.6	e3.1	e2.7	e3.5
14	e43	e25	e8.9	e13	e11	e10	e21	e8.6	e5.4	e2.7	e2.5	e3.1
15	e27	e24	e8.6	e15	e10	e9.8	e20	e7.6	e5.4	e2.7	e2.5	e5.9
16	e15	e33	e8.9	e20	e8.5	e9.6	e31	e7.6	e9.1	e2.7	e2.5	e18
17	e11	e39	e9.1	e27	e7.5	e9.5	e25	e14	e10	e2.5	e2.5	e9.7
18	e16	e42	e14	e20	e8.0	e9.5	e25	e15	e7.1	e2.5	e2.7	e8.3
19	e60	e26	e41	e14	e9.0	e9.5	e18	e11	e4.0	e2.4	e3.1	e27
20	e25	e20	e32	e11	e22	e10	e17	e8.9	e2.9	e2.3	e3.5	e23
21	e18	e18	e20	e10	e18	e9.5	e24	e11	e3.1	e2.2	e3.0	e10
22	e18	e20	e35	e9.0	e15	e9.2	e39	e6.8	e3.0	e2.3	e2.6	e6.8
23	e31	e36	e67	e8.5	e13	e11	e34	e3.7	e2.7	e3.5	e2.5	e5.3
24	e95	e28	e106	e8.0	e11	e19	e23	e4.5	e2.5	e7.8	e2.4	e7.3
25	e60	e23	e73	e7.5	e10	e32	e19	e6.3	e2.9	e5.3	e2.4	e20
26	e34	e19	e24	e7.4	e9.5	e38	e15	e7.6	e2.8	e2.6	e2.3	e18
27	e24	e16	e15	e7.3	e8.8	e45	e13	e11	e2.7	e2.4	e2.3	e14
28	e18	e15	e24	e7.0	e8.5	e48	e12	e10	e2.8	e2.3	e2.5	e9.1
29	e16	e13	e30	e6.8	---	e41	e11	e8.3	e2.8	e2.2	e2.9	e7.3
30	e18	e12	e35	e6.5	---	e28	e10	e7.8	e2.5	e2.0	e5.9	e5.9
31	e13	---	e29	e6.0	---	e20	---	e8.9	---	e2.3	e28	---
TOTAL	731.5	760.7	784.0	417.0	369.8	697.6	813	436.6	138.1	106.0	163.6	251.4
MEAN	23.6	25.4	25.3	13.5	13.2	22.5	27.1	14.1	4.60	3.42	5.28	8.38
MAX	95	119	106	27	26	60	84	39	10	8.3	28	27
MIN	4.0	9.7	8.6	6.0	6.5	8.0	10	3.7	2.5	2.0	2.1	2.5

WTR YR 1991 TOTAL 5669.3 MEAN 15.5 MAX 119 MIN 2.0

e Estimated

ST. LAWRENCE RIVER BASIN

97

04290610 MALLETS CREEK NEAR COLCHESTER, VT.

LOCATION.--Lat 44°34'49", long 73°07'34", Chittenden County, Hydrologic Unit 02010005, on right bank. From junction of I89 (north) to exit 16 and Highway 7 and 2. Go north to Route 2. Turn right on 2a, left on Middle Road, right onto Austin Highway Road and right onto East Road to culvert over Malletts Creek.

DRAINAGE AREA.--16.2 mi².

PERIOD OF RECORD.--March 1990 to current year.

GAGE.--Nonrecording gage. Elevation of gage is 250 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair. Discharge computed from once-a-day staffplate readings. Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 262 ft³/s, Oct. 24, 1990, from rating curve extended above 120 ft³/s; minimum discharge, 3.0 ft³/s, July 30, 1991.

EXTREMES FOR THE 1990 WATER YEAR.--Maximum daily discharge, 260 ft³/s, Apr. 11, from rating curve extended above 120 ft³/s; minimum daily discharge, 3.8 ft³/s, Sept. 28, 1991.

EXTREMES FOR THE 1991 WATER YEAR.--Maximum daily discharge, 262 ft³/s, Oct. 24, 1990, from rating curve extended above 120 ft³/s; minimum daily discharge, 3.0 ft³/s, July 30, 1991.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e75	e35	e16	e26	e19	e12	e8.0
2	e94	e60	e18	e27	e12	e9.0	e6.2
3	e90	e110	e13	e28	e10	e6.0	e5.8
4	e60	e120	e15	e29	e13	e5.5	e6.6
5	e40	e80	e17	e30	e38	e5.4	e7.5
6	e35	e60	e20	18	e30	e10	e9.0
7	e28	e45	e25	e15	e20	e45	e12
8	e30	e35	e26	e12	e10	e54	e16
9	e35	e30	e21	e11	e6.0	e25	e11
10	e60	e70	e22	e11	e6.8	e17	e8.5
11	e90	e260	e40	e12	e5.5	e35	e7.0
12	e80	e150	e60	e14	e4.9	e28	e5.5
13	e105	e80	e80	e9.0	e4.8	e24	e5.2
14	e100	e56	e85	e7.0	e5.0	e36	e5.6
15	e60	e45	e50	e6.4	e15	e28	e6.6
16	e43	e35	e32	e6.4	e60	e20	e8.8
17	e42	e28	e40	e6.0	e20	e17	e6.4
18	e60	e25	e50	e5.8	e9.0	e15	e6.0
19	e38	e24	e60	e6.8	e8.0	e18	e5.8
20	e50	e22	e62	e8.0	e7.5	e13	e7.8
21	e68	e30	e65	e13	e7.0	e8.0	e8.0
22	e56	e38	e50	e16	e15	e7.0	e6.4
23	e78	e40	e40	e19	e25	e6.0	e6.4
24	e60	e30	e35	e23	e84	e5.8	e6.4
25	e40	e26	e25	e13	e40	e5.6	e5.4
26	e33	e26	e20	e9.0	e20	e5.5	e5.2
27	e30	e28	e15	e7.0	e15	e5.4	e4.5
28	e28	e23	e13	e6.0	e9.0	e6.0	e3.8
29	e26	e19	e12	e6.2	e10	e9.0	e9.0
30	e27	e17	e20	e17	e12	e12	e7.2
31	e29	---	e25	---	e6.2	e12	---
TOTAL	1690	1647	1072	417.6	547.7	505.2	217.6
MEAN	54.5	54.9	34.6	13.9	17.7	16.3	7.25
MAX	105	260	85	30	84	54	16
MIN	26	17	12	5.8	4.8	5.4	3.8

e Estimated

ST. LAWRENCE RIVER BASIN
04290610 MALLETTS CREEK NEAR COLCHESTER, VT.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	22	17	e35	e9.0	e12	20	19	e13	e3.6	e3.5	e15
2	12	21	17	e32	e11	e20	22	42	e12	e3.5	e3.2	e6.4
3	e7.0	19	19	e28	e12	e35	20	38	e10	e3.5	e4.0	e4.5
4	8.1	17	38	e27	e15	e80	18	26	e8.0	e4.0	e12	e4.0
5	19	17	37	e29	e25	142	18	20	e7.0	e6.0	e37	e4.2
6	14	23	24	e24	e34	74	19	22	e6.5	e9.0	e34	e4.0
7	10	23	19	e20	e36	75	21	40	e5.5	e12	e15	e4.0
8	10	19	18	e18	e37	48	32	29	e5.2	e12	e6.0	e4.0
9	11	22	19	e17	e30	28	89	21	e4.8	e7.0	e4.2	e3.8
10	31	82	17	e18	e22	e23	124	17	e4.8	e5.0	e5.0	e3.6
11	27	223	16	e18	e18	e19	79	16	e4.7	e4.5	e5.6	e6.0
12	65	96	e14	e18	e16	e18	41	14	e7.0	e4.3	e4.5	e7.8
13	64	56	e13	e18	e16	e16	29	13	e11	e4.5	e4.0	e6.0
14	117	42	e13	e18	e15	15	23	11	e8.5	e4.0	e3.8	e4.6
15	119	46	e12	e20	e15	13	23	11	e8.0	e4.0	e3.7	e10
16	41	73	e13	e28	e12	e13	36	11	e13	e4.0	e3.7	e26
17	23	83	e13	e37	e11	e13	27	17	e14	e3.7	e3.7	e15
18	55	54	e20	e30	e12	e14	24	22	e12	e3.8	e4.0	e13
19	221	38	e56	e25	e13	17	20	14	e7.0	e3.6	e4.5	e25
20	82	30	30	e16	e32	16	17	10	e4.3	e3.3	e5.2	e38
21	43	29	28	e15	e25	13	24	e16	e4.6	e3.2	e4.5	e34
22	28	31	63	e14	e20	12	44	e12	e4.4	e3.5	e4.0	e12
23	52	59	119	e13	e18	12	39	e5.4	e4.0	e7.0	e3.8	e8.0
24	262	41	149	e12	e16	18	26	e7.0	e3.7	e11	e3.6	e15
25	123	29	103	e12	e14	34	21	e9.0	e4.4	e6.0	e3.5	e29
26	65	25	e60	e11	e13	42	23	e11	e4.3	e3.8	e3.5	e24
27	44	22	e25	e10	e13	48	18	e16	e4.0	e3.5	e3.4	e18
28	36	21	e30	e10	e12	88	13	e14	e4.1	e3.3	e3.8	e14
29	37	19	e45	e10	---	58	12	e13	e4.2	e3.2	e4.5	e11
30	29	19	e52	e9.5	---	33	13	e12	e3.7	e3.0	e10	e8.5
31	24	---	e40	e8.5	---	21	---	e13	---	e3.4	e34	---
TOTAL	1708.1	1301	1139	601.0	522.0	1070	935	541.4	207.7	156.2	245.2	378.4
MEAN	55.1	43.4	36.7	19.4	18.6	34.5	31.2	17.5	6.92	5.04	7.91	12.6
MAX	262	223	149	37	37	142	124	42	14	12	37	38
MIN	7.0	17	12	8.5	9.0	12	12	5.4	3.7	3.0	3.2	3.6

WTR YR 1991 TOTAL 8805.0 MEAN 24.1 MAX 262 MIN 3.0

e Estimated

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.--65 years (water years 1912-13, 1929-91), 537 ft³/s, 23.52 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)
Oct. 14	0500	5,470	10.65	Dec. 23	2030	6,550	11.71
Oct. 24	1530	a*9,060	*13.81				

a from rating table extended above 8,500 ft³/s.

Minimum discharge, 52 ft³/s, Aug. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	768	e710	e840	e3200	e295	e350	750	954	932	147	66	172
2	624	e660	e675	e1500	e300	e525	690	2400	646	135	68	100
3	486	589	e590	e1050	e315	e1420	710	1660	312	112	59	96
4	493	560	e600	e940	e330	e2580	760	1080	370	111	64	95
5	1200	531	e800	e910	e365	2510	1070	827	371	113	251	95
6	909	847	e1200	e820	e440	1440	1740	765	349	120	231	93
7	646	1070	e800	e710	e510	1520	2430	1510	288	117	142	93
8	441	743	e700	e640	e595	1290	2440	1020	257	116	113	91
9	397	608	e610	e610	e503	970	3070	837	208	123	100	91
10	1150	763	e560	e560	e460	760	2900	729	242	128	176	94
11	1100	3010	e500	e505	e405	595	2400	615	186	118	170	104
12	1550	1720	e470	e455	e388	548	1490	555	170	107	180	192
13	1930	1140	e570	e430	e375	570	1080	340	191	109	176	134
14	4270	985	e480	e435	e365	490	900	337	160	116	181	122
15	1760	882	e285	e460	e350	445	815	388	159	117	129	134
16	1110	1640	e350	e505	e310	498	1220	389	207	108	110	269
17	777	e3600	e498	e550	e295	515	1010	445	615	106	106	186
18	832	e2500	444	e630	e285	740	855	549	364	105	103	104
19	2640	e1700	896	e540	e305	690	745	484	274	101	109	637
20	1710	e1550	837	e480	e400	620	664	337	257	100	226	985
21	1020	e980	708	e455	e380	480	790	373	222	100	231	541
22	883	e850	1430	e395	e365	430	2270	332	204	96	176	313
23	968	e900	4060	e370	e355	420	1500	250	153	101	170	219
24	6370	e1050	4950	e365	e345	405	1020	222	125	88	150	319
25	e4500	e1150	e4300	e360	e330	470	836	216	127	83	139	492
26	e2400	e1000	e3100	e350	e315	500	711	173	134	74	139	698
27	e1400	e850	e2000	e330	e307	620	603	267	129	58	126	471
28	e1050	e760	e1700	e320	e320	2300	548	366	123	58	107	417
29	e930	e880	e1650	e305	---	2000	515	351	145	71	105	317
30	e840	e950	e2500	e295	---	1090	577	284	153	68	91	247
31	e760	---	e4000	e305	---	1100	---	631	---	70	151	---
TOTAL	45914	35178	43103	19780	10308	28891	37109	19686	8073	3176	4345	7921
MEAN	1481	1173	1390	638	368	932	1237	635	269	102	140	264
MAX	6370	3600	4950	3200	595	2580	3070	2400	932	147	251	985
MIN	397	531	285	295	285	350	515	173	123	58	59	91
CFSM	4.78	3.78	4.49	2.06	1.19	3.01	3.99	2.05	.87	.33	.45	.85
IN.	5.51	4.22	5.17	2.37	1.24	3.47	4.45	2.36	.97	.38	.52	.95

CAL YR 1990 TOTAL 322108 MEAN 882 MAX 6370 MIN 132 CFSM 2.85 IN. 38.65
WTR YR 1991 TOTAL 263484 MEAN 722 MAX 6370 MIN 58 CFSM 2.33 IN. 31.62

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 fair. Low flow regulated by powerplants upstream. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--62 years, 1,535 ft³/s, 24.63 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)
Oct. 25	0800	12,200	9.59	Mar. 05	0530	ice jam	*14.50
Dec 24	1300	*12,500	9.67				

Minimum daily discharge, 112 ft³/s, Aug. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1670	1340	1590	e6200	e680	e850	1580	1640	1980	356	112	536
2	1340	1210	1350	e3100	e700	e1850	1520	3540	1300	332	121	386
3	1250	1150	1240	e2500	e730	e3400	1500	3910	881	216	150	247
4	1010	1100	1390	e2150	e780	e6700	1480	2790	684	153	139	229
5	2250	1060	2910	e1870	e850	e7800	1920	1960	683	170	256	229
6	2220	1210	2080	e1650	e980	e3800	2990	1680	580	298	819	226
7	1380	2440	1670	e1450	e1100	e2900	4730	2880	588	328	497	201
8	1020	1680	1390	e1400	e1180	e3350	5350	2440	421	253	343	211
9	870	1330	1280	e1310	e1020	e2100	6870	1800	477	396	257	220
10	1920	2090	1200	e1240	e930	e1500	7500	1500	390	187	345	186
11	2270	6880	1040	e1100	e850	e1180	6080	1290	404	173	384	322
12	3180	4840	866	e980	e830	e1100	3690	1130	376	250	383	479
13	4400	2890	978	e930	e800	e1050	2580	967	357	179	376	414
14	6770	2280	1130	e940	e750	e980	2060	757	372	250	351	282
15	4580	2030	897	e970	e730	935	1780	765	348	259	289	210
16	2480	3530	806	e1050	e695	952	2270	747	375	236	252	372
17	1740	7450	915	e1150	e650	990	2370	881	1160	189	244	518
18	1560	6550	1040	e1190	e620	1150	1990	1350	971	223	225	348
19	5760	3620	2280	e1000	e670	1310	1660	1000	692	209	233	1140
20	4830	2390	1960	e950	e750	1270	1430	834	464	145	256	2460
21	2660	1990	1470	e860	e890	1040	1630	720	377	185	360	1210
22	1880	1730	3180	e830	e830	926	3960	696	374	186	363	823
23	2060	2130	7800	e820	e795	934	3440	615	364	207	318	574
24	6970	2610	11400	e805	e760	1040	2350	514	274	258	287	512
25	10600	2450	e9300	e790	e730	1290	1820	478	260	247	244	661
26	e6300	2020	e6000	e730	e690	1360	1520	501	255	145	316	1540
27	e3550	1690	e3750	e690	e700	1520	1300	532	238	151	220	1120
28	e2500	1670	e3050	e680	e730	3720	1170	675	291	220	227	846
29	e1900	2210	e2800	e675	---	5150	1020	655	316	e180	208	764
30	1600	2060	e4000	e660	---	2900	1060	612	342	165	255	694
31	1490	---	e5100	e670	---	1870	---	939	---	161	328	---
TOTAL	94010	77630	85862	41340	22420	66917	80620	40798	16594	6907	9158	17960
MEAN	3033	2588	2770	1334	801	2159	2687	1316	553	223	295	599
MAX	10600	7450	11400	6200	1180	7800	7500	3910	1980	396	819	2460
MIN	870	1060	806	660	620	850	1020	478	238	145	112	186
CFSM	4.42	3.77	4.04	1.94	1.17	3.15	3.92	1.92	.81	.32	.43	.87
IN.	5.10	4.21	4.66	2.24	1.22	3.63	4.37	2.21	.90	.37	.50	.97

CAL YR 1990 TOTAL 701096 MEAN 1921 MAX 11400 MIN 317 CFSM 2.80 IN. 38.02
WTR YR 1991 TOTAL 560216 MEAN 1535 MAX 11400 MIN 112 CFSM 2.24 IN. 30.38

e Estimated

ST. LAWRENCE RIVER BASIN

101

04292700 STONE BRIDGE BROOK NEAR GEORGIA PLAINS, VT.

LOCATION.--Lat 44°42'13", long 73°10'54", Franklin County, Hydrologic Unit 02010005, on left bank 20 ft upstream from culvert on gravel road and 1.5 mi southwest of Georgia Plains.

DRAINAGE AREA.--8.45 mi².

PERIOD OF RECORD.--Discharge: February 1963 to September 1974, March 1990 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 150 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.--12 years, 8.20 ft³/s, 13.18 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 412 ft³/s, July 5, 1990, gage height, 6.31 ft, from rating curve extended above 75 ft³/s; minimum discharge, 0.22 ft³/s, Aug. 5, 1965.

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

1990				1991			
Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 18	--	ab75	4.17	Oct. 24	1030	a*186	*5.08
Apr. 11	1300	a160	4.90	Nov. 11	0400	a122	4.61
July 5	0115	a*412	*6.31	Dec. 25	0945	a94	4.36
				Mar. 4	1830	ab139	4.75

a from rating table extended above 75 ft³/s.

a from rating table extended above 75 ft³/s.

b about

b about

Minimum discharge, 1.6 ft³/s, Aug. 5.

Minimum discharge, 0.9 ft³/s, Aug. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e3.3	13	5.7	2.9	e14	3.9	3.2
2	e3.0	18	4.8	2.5	e10	3.0	3.0
3	e2.8	21	4.1	3.3	8.8	2.6	2.6
4	e2.7	55	3.8	7.0	61	2.2	2.5
5	e2.6	47	7.5	4.7	255	1.8	2.7
6	e2.5	30	10	3.3	59	2.3	2.6
7	e2.4	19	8.5	3.1	19	15	4.5
8	e2.3	13	6.5	2.7	10	23	6.5
9	e2.5	15	5.6	2.5	8.1	12	3.9
10	e3.0	16	6.1	2.4	7.0	6.9	3.2
11	e6.0	94	22	3.2	4.8	26	3.5
12	e8.5	55	17	3.7	4.0	39	3.2
13	e12	26	15	2.9	3.4	23	3.2
14	e17	18	34	2.5	2.7	43	3.3
15	e23	15	17	2.4	2.6	21	6.3
16	e32	13	12	3.2	5.2	17	7.3
17	e40	12	10	2.5	5.9	13	5.9
18	e45	9.8	13	2.4	5.3	8.0	5.0
19	e20	8.6	11	5.2	3.8	7.2	4.4
20	e20	8.1	9.8	7.7	3.5	5.1	5.3
21	e21	15	20	4.1	5.2	3.7	5.8
22	e25	17	17	3.2	4.6	2.8	6.3
23	e23	14	13	3.5	11	2.3	6.5
24	e20	11	9.6	6.8	17	2.2	6.5
25	e17	10	8.7	9.0	11	2.0	6.0
26	e14	16	7.4	5.5	11	2.1	5.4
27	e12	11	5.0	3.2	4.8	3.5	4.9
28	11	9.8	3.9	e2.9	3.2	6.7	4.8
29	8.8	7.6	3.3	e2.7	2.6	16	4.6
30	8.0	6.1	4.7	e20	2.3	9.5	10
31	10	---	8.4	---	2.3	5.0	---
TOTAL	420.4	624.0	324.4	131.0	568.1	330.8	142.9
MEAN	13.6	20.8	10.5	4.37	18.3	10.7	4.76
MAX	45	94	34	20	255	43	10
MIN	2.3	6.1	3.3	2.4	2.3	1.8	2.5
CFSM	1.60	2.46	1.24	.52	2.17	1.26	.56
IN.	1.85	2.75	1.43	.58	2.50	1.46	.63

e Estimated

ST. LAWRENCE RIVER BASIN

04292700 STONE BRIDGE BROOK NEAR GEORGIA PLAINS, VT.--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	10	7.6	e23	e3.6	e8.0	12	9.7	5.4	1.6	1.0	3.8
2	9.0	13	7.5	e17	e4.0	e18	11	22	4.5	1.3	.98	2.6
3	6.0	9.3	6.6	e14	e5.0	e30	11	21	3.0	1.3	.92	2.1
4	6.0	7.3	14	e12	e6.0	e60	10	16	2.5	1.3	.95	2.0
5	15	7.0	21	e10	e7.8	e40	10	12	2.1	1.7	1.7	1.9
6	13	7.8	16	e9.0	e11	e28	12	13	1.9	2.7	2.4	1.6
7	8.2	9.1	11	e8.2	e15	e25	13	26	1.9	2.2	2.4	1.7
8	5.3	8.3	9.2	e7.7	e12	e20	19	18	2.0	2.5	2.0	1.3
9	5.3	7.6	e8.5	e7.2	e9.0	e15	49	13	1.8	2.4	2.0	1.3
10	13	24	e7.7	e6.8	e8.0	e11	65	10	1.8	2.1	2.7	1.8
11	13	96	e7.0	e6.4	e6.5	10	43	8.1	1.6	1.8	2.2	2.4
12	22	51	e6.6	e6.2	e5.5	7.8	24	7.6	1.7	1.7	1.9	1.9
13	32	28	e6.2	e6.0	e5.0	9.2	18	5.4	2.4	1.7	1.6	1.8
14	47	17	e6.0	e5.8	e4.5	12	15	4.9	2.3	1.6	1.5	1.8
15	24	16	e5.7	e6.2	e4.2	9.9	14	4.3	2.2	1.4	1.5	2.1
16	14	25	e5.4	e8.0	e4.0	11	18	4.2	3.2	1.3	1.4	2.4
17	9.9	26	5.9	e10	e3.8	11	17	8.1	5.9	1.2	1.3	2.4
18	10	23	7.7	e8.0	e4.0	11	15	14	4.7	1.2	1.3	2.1
19	51	16	e12	e7.0	e7.0	14	12	9.5	3.0	1.2	1.3	14
20	28	13	e20	e6.4	e13	13	12	5.8	2.4	1.1	1.2	13
21	16	13	e13	e5.6	e10	10	16	4.3	2.0	1.1	1.4	7.6
22	12	13	e10	e5.0	e8.5	9.0	33	3.8	1.7	1.1	1.8	4.7
23	15	19	47	e4.7	e7.5	8.9	24	3.0	1.6	1.5	1.9	3.2
24	127	19	57	e4.4	e6.5	18	17	2.7	1.4	1.4	1.7	2.5
25	64	15	58	e4.2	e6.0	33	13	2.7	1.4	1.3	1.3	5.3
26	29	11	e23	e4.0	e5.6	29	11	2.8	1.4	1.2	1.2	7.3
27	19	9.5	e17	e3.8	e5.2	24	10	3.4	1.5	1.1	1.2	6.1
28	15	9.3	e15	e3.7	e5.0	34	8.0	3.5	1.4	1.1	2.7	4.3
29	14	8.8	e18	e3.6	---	30	6.9	3.1	2.1	1.0	4.3	3.5
30	13	8.2	e50	e3.6	---	19	7.4	2.9	1.7	.99	3.2	3.4
31	12	---	e60	e3.6	---	14	---	4.4	---	1.1	5.5	---
TOTAL	682.7	540.2	559.6	231.1	193.2	592.8	546.3	269.2	72.5	46.19	58.45	111.9
MEAN	22.0	18.0	18.1	7.45	6.90	19.1	18.2	8.68	2.42	1.49	1.89	3.73
MAX	127	96	60	23	15	60	65	26	5.9	2.7	5.5	14
MIN	5.3	7.0	5.4	3.6	3.6	7.8	6.9	2.7	1.4	.99	.92	1.3
CFSM	2.61	2.13	2.14	.88	.82	2.26	2.16	1.03	.29	.18	.22	.44
IN.	3.01	2.38	2.46	1.02	.85	2.61	2.41	1.19	.32	.20	.26	.49

WTR YR 1991 TOTAL 3904.14 MEAN 10.7 MAX 127 MIN .92 CFSM 1.27 IN. 17.19

e Estimated

ST. LAWRENCE RIVER BASIN

103

04292800 STEVENS BROOK NEAR ST. ALBANS, VT.

LOCATION.--Lat 44°50'55", long 72°07'12", Franklin County, Hydrologic Unit 02010005, on right bank, 2.5 mi northwest of St. Albans off Newton Road, and 2.5 mi above mouth.

DRAINAGE AREA.--10.2 mi².

PERIOD OF RECORD.--September 1990 to current year.

GAGE.--Nonrecording gage. Discharge computed from once-a-day staff readings. Elevation of gage is 110 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 200 ft³/s, Nov. 10, 1990 and Mar. 4, 1991, gage height (unknown); minimum daily discharge, 0.18 ft³/s, Aug. 2, 1991.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	SEP
1	e1.6
2	e1.3
3	e1.2
4	e1.3
5	e1.3
6	e1.5
7	e2.5
8	e3.1
9	e1.8
10	e1.7
11	e1.6
12	e1.5
13	e1.6
14	e1.7
15	e2.7
16	e3.7
17	e3.0
18	e2.6
19	e2.3
20	e2.7
21	e3.0
22	e3.3
23	e3.5
24	e3.4
25	e3.2
26	e2.9
27	e2.7
28	e2.5
29	e2.4
30	e5.0
31	---
TOTAL	72.6
MEAN	2.42
MAX	5.0
MIN	1.2

e Estimated

ST. LAWRENCE RIVER BASIN

04292800 STEVENS BROOK NEAR ST. ALBANS, VT.--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e7.4	e6.1	e3.9	e16	e1.7	e1.3	8.0	7.7	e2.8	.55	.26	.73
2	e4.2	e5.3	e3.8	e11	e1.7	e7.5	8.1	15	e2.0	.50	.18	.64
3	e3.2	e4.8	e3.7	e9.0	e2.1	e40	8.0	16	e1.5	.42	.20	.53
4	e10	e5.0	e11	e7.0	e2.6	e200	7.8	8.8	e1.0	.40	.32	.51
5	e7.0	e6.0	e12	e6.0	e3.4	e110	8.4	6.8	.75	.61	.44	.50
6	e5.0	e7.3	e8.0	e5.0	e4.5	e50	12	6.5	.65	1.4	.26	.47
7	e3.5	e6.7	e5.6	e4.6	e6.5	e30	11	7.1	.62	.93	.20	.46
8	e3.0	e5.9	e5.0	e4.2	e8.0	e18	17	8.3	.53	.57	.22	.45
9	e3.0	e5.7	e4.5	e3.8	e5.5	e12	82	6.8	.51	.63	.48	.43
10	e5.0	e200	e4.1	e3.6	e4.5	e8.5	114	6.1	.51	.56	.64	.74
11	e8.0	e65	e3.8	e3.3	e3.8	e7.3	28	5.2	.53	.52	.64	3.1
12	e15	e25	e3.6	e3.2	e3.3	e7.2	13	4.6	.67	.49	.52	1.1
13	e25	e19	e3.3	e3.0	e2.8	7.2	11	4.1	.97	.40	.42	.66
14	e38	e17	e3.1	e2.9	e2.5	7.1	9.0	3.8	.61	.38	.33	.56
15	e9.0	e16	e2.9	e3.0	e2.3	7.0	9.4	3.5	.62	.35	.34	.57
16	e3.5	e35	e2.8	e3.4	e2.1	7.0	17	4.4	1.5	.35	.32	.85
17	e2.6	e22	e2.8	e4.2	e2.0	6.1	12	10	2.3	.32	.32	.64
18	e7.0	e14	e6.7	e5.0	e1.9	6.9	9.6	6.3	1.1	.32	.32	5.9
19	e45	e9.0	e20	e3.9	e1.9	8.9	8.1	4.4	.78	.32	.32	71
20	e21	e7.3	e7.2	e3.4	e30	7.3	8.2	3.4	.67	.32	.32	13
21	e12	e6.5	e6.2	e3.1	e17	6.5	e45	2.8	.61	.31	.43	e4.0
22	e6.0	e7.5	e6.0	e2.8	e9.0	6.3	e19	e2.2	.58	.35	1.2	1.1
23	e25	e20	e9.5	e2.6	e4.5	7.1	e13	e1.8	.52	.68	.82	1.1
24	e160	e16	e22	e2.4	e3.0	14	9.4	e1.6	.51	.37	.49	2.6
25	e70	e10	e20	e2.3	e2.3	15	8.0	e1.5	.50	.32	.39	16
26	e32	e7.0	e17	e2.1	e1.9	15	6.7	e1.6	.47	.31	.35	5.9
27	e15	e5.9	e13	e2.0	e1.6	19	6.2	e1.7	.48	.29	.33	2.9
28	e12	e5.5	e10	e1.9	e1.4	32	5.7	e1.6	.64	.28	.32	2.7
29	e11	e4.7	e8.0	e1.8	---	17	4.8	e1.5	1.2	.24	1.2	2.5
30	e8.5	e4.1	e9.5	e1.8	---	11	5.2	e1.7	.86	.19	.70	3.0
31	e7.2	---	e25	e1.8	---	9.7	---	e2.2	---	.58	1.1	---
TOTAL	584.1	569.3	264.0	130.1	133.8	701.9	524.6	159.0	26.99	14.26	14.38	144.64
MEAN	18.8	19.0	8.52	4.20	4.78	22.6	17.5	5.13	.90	.46	.46	4.82
MAX	160	200	25	16	30	200	114	16	2.8	1.4	1.2	71
MIN	2.6	4.1	2.8	1.8	1.4	1.3	4.8	1.5	.47	.19	.18	.43

WTR YR 1991 TOTAL 3267.07 MEAN 8.95 MAX 200 MIN .18

e Estimated

ST. LAWRENCE RIVER BASIN

105

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.--60 years, 270 ft³/s, 27.99 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)
Nov. 17	0600	*3,120	8.03	No peak greater than base discharge.			
Dec. 24	0100	ice jam	*8.47				

Minimum discharge, 18 ft³/s, July 17, 18, 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	551	183	337	412	e94	e110	301	327	676	53	28	189
2	266	169	290	374	e92	e230	305	960	251	44	25	90
3	356	161	244	284	e110	e650	331	660	163	39	21	67
4	257	157	e280	224	e145	e1450	379	423	109	37	53	71
5	822	169	e510	e220	e185	1400	676	304	109	38	582	51
6	438	398	e370	e210	e220	609	1300	287	102	40	284	37
7	244	478	e270	e180	e240	714	1630	531	88	48	125	43
8	170	279	e230	e140	e210	506	1550	345	74	53	69	39
9	167	214	e200	e200	e190	316	1820	271	78	54	50	36
10	559	231	e180	e210	e170	250	1520	226	74	44	150	35
11	367	406	e165	e190	e150	201	987	196	63	31	134	354
12	1220	346	167	e185	e135	188	580	173	57	37	107	151
13	867	277	231	e180	e125	190	488	157	81	36	82	91
14	1190	318	212	e175	e120	185	397	147	69	48	52	75
15	470	343	153	e160	e120	183	387	128	52	53	37	67
16	304	1290	170	e150	e115	202	777	120	211	33	49	153
17	252	2610	161	e180	e115	228	655	175	445	18	44	106
18	259	974	169	e250	e110	256	439	349	177	23	43	83
19	1730	521	e510	e180	e110	260	345	183	119	26	61	1340
20	666	374	286	e160	e170	239	291	144	78	26	151	733
21	377	313	225	e140	e160	208	588	129	68	24	106	255
22	313	279	e1000	e120	e140	188	1320	104	61	26	101	165
23	510	409	e2100	e110	e135	187	706	94	54	40	101	119
24	2400	564	e2200	e105	e130	165	437	93	50	38	88	106
25	947	468	e1250	e100	e130	181	336	97	42	49	50	324
26	469	385	e640	e98	e125	196	278	98	48	27	50	472
27	338	324	e370	e98	e120	327	244	258	43	19	36	233
28	274	755	e320	e96	e115	1470	215	174	46	30	34	301
29	245	1050	e440	e96	---	957	190	133	85	27	97	335
30	217	511	e1900	e94	---	458	205	119	71	25	90	267
31	199	---	1640	e98	---	305	---	261	---	25	435	---
TOTAL	17444	14956	17220	5419	3981	13009	19677	7666	3644	1111	3335	6388
MEAN	563	499	555	175	142	420	656	247	121	35.8	108	213
MAX	2400	2610	2200	412	240	1470	1820	960	676	54	582	1340
MIN	167	157	153	94	92	110	190	93	42	18	21	35
CFSM	4.30	3.81	4.24	1.33	1.09	3.20	5.01	1.89	.93	.27	.82	1.63
IN.	4.95	4.25	4.89	1.54	1.13	3.69	5.59	2.18	1.03	.32	.95	1.81

CAL YR 1990 TOTAL 129579 MEAN 355 MAX 3100 MIN 36 CFSM 2.71 IN. 36.80
WTR YR 1991 TOTAL 113850 MEAN 312 MAX 2610 MIN 18 CFSM 2.38 IN. 32.33

e Estimated

ST. LAWRENCE RIVER BASIN

04293500 MISSISSQUOI 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.--75 years, 929 ft³/s, 26.34 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)
Nov. 17	0930	8,340	10.57	Mar. 4	0930	ice jam	*14.11
Dec. 23	1700	8,810	10.88	Apr. 10	1400	*9,100	11.07
Dec. 30	2230	8,130	10.43				

Minimum discharge, 45 ft³/s, July 29, 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MEAN VALUES											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1330	754	1210	3980	e460	e500	1520	890	1250	150	51	628
2	1300	677	1030	2500	e450	e1120	1360	1740	963	127	64	284
3	1560	615	897	1900	e540	e3350	1340	2010	559	119	79	169
4	1220	587	1050	e1500	e700	e5800	1370	1400	416	106	69	135
5	2050	661	1590	e1350	e860	5590	1890	1050	345	102	691	134
6	1690	983	1250	e1150	e1000	4370	3110	962	298	105	1140	117
7	1160	1820	1120	e1000	e1050	3660	4450	1740	266	107	530	92
8	811	1320	1010	e940	e940	2880	4690	1490	227	113	333	94
9	683	1030	890	e880	e820	2080	5940	1170	201	127	234	87
10	1150	1310	781	e820	e740	1540	7620	967	194	115	267	85
11	1310	2410	e740	e780	e660	1120	5780	794	178	102	367	198
12	2500	1970	e820	e760	e600	936	3650	667	162	84	390	411
13	3110	1550	e1000	e750	e560	909	2420	573	169	80	292	210
14	3450	1380	e940	e730	e540	876	1830	507	176	86	220	149
15	2490	1390	e860	e710	e520	799	1480	455	163	86	167	130
16	1460	3430	e840	e700	e510	886	2160	401	413	93	134	157
17	1120	7330	e820	e800	e500	984	2710	566	1110	74	129	216
18	1050	5900	e860	e1100	e480	1070	1940	989	680	58	119	165
19	4180	3390	e1750	e900	e480	1240	1490	725	402	50	119	1590
20	3870	1930	1590	e750	e740	1180	1250	522	299	54	153	2340
21	2210	1430	1230	e660	e700	1110	1560	425	219	53	254	1050
22	1530	1210	3400	e600	e660	979	3320	368	188	53	209	549
23	1830	1420	6310	e540	e610	882	2870	303	166	73	209	391
24	5620	1800	6860	e510	e580	781	1870	273	148	101	192	291
25	5410	1640	4610	e500	e570	936	1400	271	139	93	162	385
26	3260	1440	2640	e480	e560	949	1150	286	126	79	123	1140
27	1850	1190	1870	e480	e540	1180	996	653	122	73	114	807
28	1320	1600	e1600	e475	e520	4000	856	812	146	56	98	605
29	1140	2270	1800	e470	---	4620	739	547	193	47	100	820
30	1010	1820	6080	e460	---	3060	700	468	178	51	154	728
31	861	---	6620	e470	---	1910	---	526	---	49	360	---
TOTAL	63535	56257	64068	29645	17890	61297	73461	24550	10096	2666	7523	14157
MEAN	2050	1875	2067	956	639	1977	2449	792	337	86.0	243	472
MAX	5620	7330	6860	3980	1050	5800	7620	2010	1250	150	1140	2340
MIN	683	587	740	460	450	500	700	271	122	47	51	85
CFSM	4.28	3.91	4.31	2.00	1.33	4.13	5.11	1.65	.70	.18	.51	.99
IN.	4.93	4.37	4.98	2.30	1.39	4.76	5.71	1.91	.78	.21	.58	1.10

CAL YR 1990 TOTAL 524287 MEAN 1436 MAX 10200 MIN 111 CFSM 3.00 IN. 40.72
WTR YR 1991 TOTAL 425145 MEAN 1165 MAX 7620 MIN 47 CFSM 2.43 IN. 33.02

e Estimated

ST. LAWRENCE RIVER BASIN

107

04294000 MISSISQUOI RIVER AT SWANTON, VT.

LOCATION.--Lat 44°54'00", long 73°06'00", Franklin County, Hydrologic Unit 02010007, on left bank at dam in Swanton, Vt.

DRAINAGE AREA.--850 mi².

PERIOD OF RECORD.--Discharge: March 1990 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 105 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 24, 1990, nonrecording gage at same site and datum.

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

EXTREMES FOR THE 1990 WATER YEAR.--Maximum discharge, 9,650 ft³/s, Mar. 18, gage height, 5.86 ft, from rating curve extended above 10,000 ft³/s; minimum daily, 220 ft³/s, Aug. 5.

EXTREMES FOR THE 1991 WATER YEAR.--Maximum discharge, 20,500 ft³/s, Mar. 5, gage height, 6.98 ft, from rating curve extended above 10,000 ft³/s; minimum daily, 74 ft³/s, July 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e2100	e2500	e1270	e640	e1680	e350	e530
2	e2200	e3990	e1100	e570	e2000	e300	e425
3	e2300	e4320	e980	e560	e1360	e290	e360
4	e2100	e7050	e898	e880	e1360	e250	e300
5	e2000	e8500	e1100	e990	e3800	e220	e280
6	e1800	e8390	e2200	e775	e4300	e270	e260
7	e1700	e6000	e2000	e660	e1800	e1100	e260
8	e1700	e3800	e1700	e625	e1100	e3000	e330
9	e1800	e3100	e1400	e560	e1000	e1600	e300
10	e1900	e5000	e1300	e550	e1300	e859	e270
11	e2500	e10700	e4500	e1250	e900	e1500	e250
12	e3500	e9000	e4400	e1400	e700	e3700	e250
13	e3700	e5000	e2600	e1000	e590	e2500	e250
14	e6500	e4500	e3190	e750	e490	e4600	e230
15	e10000	e4300	e2560	e600	e450	e3200	e240
16	e14000	e4300	e2020	e600	e460	e2200	e325
17	e21000	e3800	e1700	e730	e650	e1500	e380
18	e15100	e3160	e2020	e730	e500	e1060	e300
19	e10000	e2780	e2350	e1180	e400	e850	e300
20	e9350	e2670	e2810	e2500	e570	e700	e400
21	e7000	e2510	e3160	e1400	e780	e560	e850
22	e6400	e2050	e3190	e950	e600	e460	e700
23	e4800	e1880	e2200	e900	e950	e400	e890
24	e4500	e1630	e1800	e1270	e2500	e370	e1000
25	e4000	e1560	e1400	e1100	e1620	e350	e770
26	e3100	e1380	e1200	e850	e1000	e300	e620
27	e2500	e1480	e1000	e710	e760	e300	e500
28	e2200	e1460	e900	e710	e600	e380	e450
29	e2000	e1340	e800	e590	e475	e500	e400
30	e1700	e1450	e768	e600	e400	e700	e700
31	e1700	---	e730	---	e350	e650	---
MEAN	5005	3987	1911	888	1143	1130	437
MAX	21000	10700	4500	2500	4300	4600	1000
MIN	1700	1340	730	550	350	220	230

e Estimated

ST. LAWRENCE RIVER BASIN

04294000 MISSISQUOI RIVER AT SWANTON, VT.--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1520	e900	e1600	e4500	e570	650	2810	1290	2640	242	101	1000
2	e1700	e800	e1300	e3500	e570	893	2510	2300	1880	247	87	659
3	e1800	e750	e1150	e2300	e700	4880	2530	3470	1100	228	82	357
4	e1550	e740	e1500	e1900	e900	9020	2370	2720	736	177	89	261
5	e1900	e900	e1950	e1600	e1100	13300	2670	1960	553	132	257	209
6	e1800	e1100	e1500	e1450	e1400	8330	4080	1550	472	152	1870	135
7	e1300	e2200	e1350	e1300	1920	7020	6220	2670	410	186	1100	184
8	e1100	e1500	e1200	e1200	2520	5940	7070	2730	294	195	535	184
9	e860	e1300	e1050	e1100	2520	4930	8410	2070	379	197	396	166
10	e1500	e1600	e960	e1040	2070	3690	11600	1640	254	216	352	139
11	e2500	e2900	e920	e1000	1450	2370	10100	1330	180	188	321	344
12	e3500	e2300	e1100	e960	1070	1920	6610	1190	362	199	547	568
13	e4000	e1900	e1230	e930	858	1800	4280	954	248	158	416	530
14	e4200	e1700	e1150	e900	768	1800	3180	850	250	138	425	349
15	e3000	e1750	e1100	e880	707	1710	2520	759	284	138	266	193
16	e1700	e5000	e1060	e920	662	1610	2990	652	268	138	157	272
17	e1500	e9800	e1030	e1000	620	1750	4150	666	1770	137	160	304
18	e1300	e7000	e1100	e1400	608	1910	3450	1290	1510	137	157	329
19	e5000	e4000	e2200	e1100	613	2340	2540	1370	826	133	159	2260
20	e4600	e2500	e2000	e900	1230	2360	2080	857	509	95	201	4320
21	e2700	e1700	e1600	e800	3090	1990	1940	761	436	82	270	2090
22	e2000	e1500	e4500	e760	2510	1770	4530	599	272	74	295	1100
23	2450	e1800	e8000	e690	2540	1700	4830	525	200	122	296	761
24	e6750	e2200	e8800	e650	1850	1600	3410	392	254	115	313	630
25	e5850	e1900	e6000	e630	1390	2250	2410	401	210	102	251	e412
26	e4000	e1700	e3000	e600	1070	2250	1950	389	195	153	231	776
27	e2500	e1500	e2500	e600	857	2470	1550	598	201	130	149	832
28	e1600	e2100	e2000	e600	691	5480	1360	1090	196	120	138	988
29	e1300	e2700	e2300	e590	---	8060	1260	829	186	89	140	1280
30	e1250	e2300	e8000	e580	---	5800	1080	695	347	88	204	1120
31	e1000	---	e8400	e570	---	3650	---	1360	---	81	481	---
MEAN	2507	2335	2631	1192	1316	3718	3883	1289	581	148	337	758
MAX	6750	9800	8800	4500	3090	13300	11600	3470	2640	247	1870	4320
MIN	860	740	920	570	570	650	1080	389	180	74	82	135

WTR YR 1991 MEAN 1726 MAX 13300 MIN 74

e Estimated

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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.

Water-quality records: Water year 1971.

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, 6.29 ft, Jan. 3, affected by seiche; minimum, 1.07 ft Sept. 10. 15. affected by seiche.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.84	4.94	5.13	6.11	4.58	3.76	4.83	5.53	3.93	2.54	1.58	1.31
2	2.83	4.86	5.12	6.14	4.49	3.71	4.81	5.54	3.90	2.50	1.56	1.30
3	2.83	4.84	5.08	6.18	4.44	3.83	4.80	5.56	3.85	2.45	1.55	1.23
4	2.75	4.79	5.06	6.13	4.38	4.08	4.75	5.55	3.82	2.37	1.51	1.20
5	2.80	4.75	5.13	6.07	4.35	4.43	4.72	5.51	3.75	2.30	1.53	1.21
6	2.83	4.69	5.11	6.04	4.35	4.64	4.73	5.44	3.68	2.30	1.53	1.21
7	2.87	4.68	5.11	5.98	4.35	4.81	4.77	5.44	3.62	2.29	1.52	1.19
8	2.88	4.67	5.08	5.90	4.39	4.94	4.87	5.44	3.56	2.30	1.50	1.17
9	2.87	4.62	5.04	5.75	4.42	4.98	5.05	5.42	3.49	2.28	1.50	1.16
10	2.91	4.63	4.99	5.74	4.43	4.99	5.32	5.37	3.39	2.27	1.52	1.12
11	2.89	4.96	4.94	5.67	4.42	4.96	5.54	5.29	3.33	2.23	1.52	1.15
12	3.00	5.16	4.86	5.67	4.39	4.92	5.67	5.21	3.28	2.20	1.52	1.15
13	3.10	5.19	4.76	5.61	4.34	4.87	5.69	5.14	3.23	2.16	1.51	1.16
14	3.29	5.21	4.72	5.51	4.31	4.83	5.68	5.06	3.18	2.14	1.48	1.14
15	3.42	5.16	4.64	5.47	4.28	4.79	5.62	4.96	3.13	2.12	1.46	1.11
16	3.49	5.21	4.60	5.44	4.22	4.73	5.62	4.85	3.14	2.08	1.44	1.15
17	3.46	5.36	4.53	5.44	4.13	4.67	5.63	4.83	3.13	2.03	1.41	1.20
18	3.44	5.54	4.41	5.43	4.09	4.63	5.61	4.80	3.11	2.01	1.38	1.21
19	3.61	5.63	4.48	5.38	4.02	4.61	5.57	4.72	3.08	2.00	1.41	1.31
20	3.77	5.63	4.50	5.34	4.00	4.59	5.53	4.65	3.05	1.97	1.43	1.40
21	3.78	5.61	4.42	5.32	4.00	4.55	5.56	4.56	3.00	1.94	1.43	1.45
22	3.80	5.52	4.52	5.25	4.01	4.52	5.72	4.50	2.94	1.92	1.37	1.44
23	3.90	5.52	4.74	5.13	4.04	4.44	5.83	4.40	2.90	1.91	1.37	1.35
24	4.21	5.54	5.21	5.11	4.00	4.45	5.90	4.29	2.86	1.86	1.39	1.39
25	4.64	5.46	5.45	5.06	3.98	4.49	5.89	4.24	2.80	1.82	1.34	1.49
26	4.90	5.46	5.55	4.97	3.92	4.51	5.84	4.17	2.73	1.80	1.25	1.55
27	4.96	5.33	5.60	4.89	3.87	4.47	5.82	4.09	2.67	1.78	1.23	1.56
28	4.93	5.29	5.56	4.81	3.81	4.49	5.76	4.07	2.62	1.76	1.27	1.58
29	5.00	5.30	5.51	4.76	---	4.71	5.67	4.03	2.59	1.72	1.30	1.57
30	4.98	5.26	5.68	4.70	---	4.83	5.59	3.98	2.58	1.65	1.27	1.56
31	4.97	---	6.01	4.65	---	4.83	---	3.96	---	1.60	1.32	---
MEAN	3.61	5.16	5.02	5.47	4.21	4.58	5.41	4.86	3.21	2.07	1.43	1.30
MAX	5.00	5.63	6.01	6.18	4.58	4.99	5.90	5.56	3.93	2.54	1.58	1.58
MIN	2.75	4.62	4.41	4.65	3.81	3.71	4.72	3.96	2.58	1.60	1.23	1.11

CAL YR 1990	MEAN 4.47	MAX 7.23	MIN 2.54
WTR YR 1991	MEAN 3.86	MAX 6.18	MIN 1.11

ST. LAWRENCE RIVER BASIN

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.--October 1863 to December 1870 (maximum and minimum monthly gage heights at St. Johns, Quebec, published in WSP 97) and March 1871 to current year (daily gage heights prior to October 1970, elevations thereafter: those for 1871-1907 published in WSP 894). Gage heights prior to October 1, 1925, published as "Richelieu River at Fort Montgomery, Rouses Point". 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 Survey of Canada annual reports.

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, 99.51 ft, Jan. 1; minimum, 93.79 ft, Sept. 11.

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	95.65	97.73	98.18	99.17	97.38	96.59	97.67	98.43	96.76	95.29	94.54	94.09
2	95.69	97.77	97.90	99.04	97.38	96.57	97.63	98.38	96.73	95.28	94.42	94.14
3	95.68	97.65	97.90	98.99	97.29	96.58	97.60	98.32	96.67	95.29	94.43	94.26
4	95.94	97.59	98.00	99.00	97.24	96.85	97.60	98.31	96.55	95.31	94.41	94.17
5	95.72	97.53	97.92	98.94	97.18	97.22	97.58	98.31	96.51	95.39	94.38	94.09
6	95.78	97.55	98.04	98.82	97.16	97.49	97.56	98.36	96.51	95.26	94.34	94.05
7	95.67	97.45	97.95	98.71	97.20	97.60	97.61	98.33	96.47	95.24	94.36	94.05
8	95.62	97.41	97.89	98.66	97.23	97.68	97.71	98.26	96.37	95.17	94.36	94.01
9	95.61	97.48	97.89	98.71	97.25	97.76	97.84	98.25	96.32	95.09	94.37	93.99
10	95.66	97.41	97.66	98.49	97.23	97.74	98.17	98.19	96.32	95.07	94.40	94.12
11	95.87	97.72	97.71	98.48	97.20	97.72	98.25	98.16	96.23	95.06	94.38	93.93
12	95.80	97.85	97.71	98.47	97.21	97.69	98.41	98.01	96.15	95.06	94.36	93.94
13	95.92	97.89	97.66	98.42	97.17	97.66	98.52	97.97	95.97	95.06	94.37	93.94
14	96.07	98.04	97.49	98.41	97.11	97.61	98.49	97.84	95.99	94.97	94.39	93.97
15	96.27	98.13	97.52	98.32	97.08	97.54	98.55	97.80	95.97	94.96	94.40	94.15
16	96.31	98.08	97.34	98.27	97.03	97.53	98.47	97.75	95.92	94.98	94.33	94.09
17	96.50	98.04	97.35	98.24	97.00	97.48	98.43	97.55	95.94	94.95	94.41	94.05
18	96.52	98.27	97.53	98.24	96.91	97.44	98.44	97.56	95.97	94.90	94.31	94.08
19	96.41	98.34	97.21	98.26	96.93	97.38	98.40	97.57	95.95	94.88	94.10	94.14
20	96.56	98.41	97.35	98.12	96.85	97.30	98.30	97.50	95.91	94.86	94.18	94.18
21	96.86	98.39	97.50	98.08	96.86	97.35	98.09	97.42	95.81	94.80	94.27	94.23
22	96.73	98.57	97.37	98.07	96.81	97.25	98.51	97.31	95.76	94.73	94.31	94.35
23	96.64	98.42	97.55	98.09	96.82	97.42	98.67	97.27	95.71	94.79	94.19	94.56
24	96.95	98.38	97.91	97.93	96.85	97.30	98.70	97.22	95.67	94.76	94.14	94.22
25	97.41	98.43	98.47	97.86	96.75	97.29	98.69	97.07	95.66	94.72	94.24	94.27
26	97.53	98.21	98.40	97.84	96.73	97.33	98.69	97.05	95.63	94.69	94.34	94.40
27	97.79	98.51	98.41	97.77	96.69	97.52	98.58	97.08	95.60	94.59	94.21	94.44
28	97.96	98.29	98.52	97.68	96.64	97.52	98.55	96.91	95.55	94.57	94.13	94.40
29	97.69	98.09	98.64	97.55	---	97.50	98.53	96.86	95.41	94.55	94.15	94.41
30	97.80	98.09	98.46	97.49	---	97.54	98.50	96.82	95.36	94.59	94.18	94.44
31	97.76	---	98.69	97.45	---	97.69	---	96.77	---	94.59	94.09	---
MEAN	96.46	97.99	97.87	98.31	97.04	97.39	98.22	97.70	96.05	94.95	94.31	94.17
MAX	97.96	98.57	98.69	99.17	97.38	97.76	98.70	98.43	96.76	95.39	94.54	94.56
MIN	95.61	97.41	97.21	97.45	96.64	96.57	97.56	96.77	95.36	94.55	94.09	93.93

CAL YR 1990 MEAN 97.32 MAX 100.11 MIN 95.39
WTR YR 1991 MEAN 96.70 MAX 99.17 MIN 93.93

ST. LAWRENCE RIVER BASIN

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), 1990-91 (b).

MINOR ELEMENTS DATA: 1974-86 (b), 1987 (c), 1988 (d), 1989 (c), 1990-91 (b).

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), 1990-91 (b).

BIOLOGICAL DATA:

Bacteria--1974 (a), 1975-82 (c), 1983-89 (b), 1990-91 (b).

Phytoplankton--1974 (a), 1975-78 (c), 1979 (b), 1980-81 (c).

Periphyton--1975 (c), 1976-80 (b).

SEDIMENT DATA: 1975-82 (c), 1983-91 (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 1990 TO SEPTEMBER 1991

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, DIS- SOLVED SATUR- ATION	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)
NOV											
01...	0900	143	7.1	8.0	0.60	770	10.8	90	9	2	64
APR											
24...	0900	133	7.9	5.5	0.20	760	11.3	90	--	--	--
24...	0915	133	7.9	5.5	5.5	760	11.3	90	12	560	56
MAY											
16...	0945	70	8.4	12.0	1.4	765	9.5	88	1	0	59
16...	1000	70	8.4	12.0	0.60	765	9.5	88	--	--	--
JUL											
31...	0930	156	8.2	23.0	1.0	760	8.5	99	4	1	62

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
NOV										
01...	19	4.1	7.0	1.2	49	60	--	7.4	7.8	<0.1
APR										
24...	--	--	--	--	--	--	--	10	8.9	--
24...	16	3.8	6.4	1.4	--	55	2	10	9.5	<0.1
MAY										
16...	17	3.9	7.1	1.3	49	--	--	11	8.9	<0.1
16...	--	--	--	--	--	--	--	11	9.4	--
JUL										
31...	18	4.1	7.2	1.2	50	61	--	11	10	<0.1

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)
NOV										
01...	0.82	93	78	--	0.20	0.02	0.02	0.12	0.02	<0.01
APR										
24...	--	110	--	--	--	0.01	--	0.21	0.03	--
24...	1.6	90	79	0.22	0.24	0.02	0.02	0.50	0.06	0.01
MAY										
16...	0.17	105	80	0.20	0.22	0.02	0.02	0.50	<0.01	0.02
16...	--	86	--	--	--	<0.00	--	0.16	0.01	--
JUL										
31...	1.0	84	83	--	<0.05	0.01	0.01	0.40	0.01	<0.01

ST. LAWRENCE RIVER BASIN

04295000 RICHELIEU RIVER (LAKE CHAMPLAIN) AT ROUSES POINT, NY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	PHOS- PHORUS 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)
NOV 01...	<0.00	20	<10	<1	8	<0.5	<1	<1.0	<1	<3
APR 24...	0.00	230	--	--	--	--	<1	--	--	--
24...	<0.01	--	20	<1	9	<0.5	--	<1.0	<1	<3
MAY 16...	<0.01	--	<10	<1	7	<0.5	--	<1.0	1	<3
16...	<0.00	170	--	--	--	--	<1	--	--	--
JUL 31...	<0.01	20	<10	<1	7	<0.5	<1	<1.0	<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)
NOV 01...	3	2	60	8	1	<1	5	<10	2	<0.10
APR 24...	3	--	310	--	3	--	--	20	--	<0.10
24...	--	1	--	27	--	<1	<4	--	6	--
MAY 16...	--	1	--	12	--	1	<4	--	2	--
16...	5	--	60	--	1	--	--	<10	--	<0.10
JUL 31...	4	3	40	7	3	<1	<4	10	1	<0.10

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)
NOV 01...	<0.1	<10	2	1	<1	<1.0	83	<6	<10	12
APR 24...	--	--	3	--	--	--	--	--	<10	--
24...	<0.1	<10	--	<1	<1	<1.0	85	<6	--	6
MAY 16...	<0.1	<10	--	1	<1	<1.0	84	<6	--	110
16...	--	--	4	--	--	--	--	--	<10	--
JUL 31...	<0.1	<10	<1	<1	<1	<1.0	87	<6	<10	36

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 01...	0900	4	56
APR 24...	0900	9	--
24...	0915	9	96
MAY 16...	0945	2	--
16...	1000	2	--
JUL 31...	0930	1	100

ST. LAWRENCE RIVER BASIN

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04295500 LAKE MEMPHREMAGOG AT NEWPORT, VT.

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.

PERIOD OF RECORD.--Gage heights: May 1931 to current year.

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.

REMARKS.--Records good. Elevation of lake regulated by powerplant and gates at Magog, Quebec.

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, 10.50 ft, Apr. 6, affected by seiche; minimum gage height, 7.65 ft, Mar. 12, affected by seiche.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.43	9.84	9.96	10.49	9.20	8.69	8.89	10.08	9.94	9.39	8.50	8.45
2	8.49	9.82	10.01	10.43	9.18	8.65	8.95	10.20	9.96	9.32	8.52	8.36
3	8.54	9.84	10.02	10.36	9.17	8.69	9.01	10.31	9.94	9.28	8.47	8.34
4	8.54	9.84	10.06	10.23	9.15	8.92	9.07	10.30	9.93	9.23	8.49	8.32
5	8.66	9.85	10.07	10.10	9.16	9.13	9.16	10.23	9.91	9.18	8.62	8.32
6	8.72	9.86	9.99	9.96	9.18	9.21	9.30	10.16	9.85	9.15	8.66	8.31
7	8.80	9.90	9.94	9.84	9.20	9.26	9.51	10.16	9.80	9.14	8.64	8.30
8	8.83	9.89	9.86	9.81	9.22	9.26	9.71	10.10	9.79	9.15	8.62	8.28
9	8.85	9.85	9.81	9.80	9.21	9.21	9.93	10.01	9.75	9.16	8.60	8.25
10	8.88	9.90	9.80	9.81	9.19	9.13	10.18	10.02	9.68	9.10	8.62	8.20
11	8.89	10.21	9.77	9.79	9.16	9.03	10.40	10.02	9.64	9.06	8.61	8.30
12	9.05	10.38	9.74	9.84	9.13	8.91	10.41	10.05	9.63	9.03	8.62	8.24
13	9.22	10.43	9.72	9.83	9.10	8.80	10.29	10.01	9.69	9.00	8.58	8.19
14	9.41	10.35	9.72	9.78	9.07	8.71	10.20	10.00	9.58	9.03	8.56	8.17
15	9.56	10.27	9.69	9.79	9.04	8.64	10.08	9.96	9.54	8.97	8.54	8.14
16	9.68	10.28	9.67	9.79	8.99	8.56	10.09	9.90	9.59	8.93	8.52	8.16
17	9.70	10.43	9.64	9.77	8.97	8.50	10.13	9.91	9.67	8.90	8.48	8.16
18	9.72	10.50	9.62	9.71	8.96	8.44	10.12	9.94	9.67	8.88	8.48	8.14
19	9.98	10.49	9.66	9.61	8.93	8.40	10.10	9.93	9.66	8.85	8.54	8.33
20	10.04	10.38	9.68	9.51	8.97	8.34	10.10	9.91	9.64	8.83	8.52	8.45
21	10.01	10.28	9.64	9.42	8.97	8.29	10.16	9.88	9.63	8.81	8.49	8.52
22	10.02	10.10	9.72	9.37	9.00	8.22	10.19	9.86	9.59	8.80	8.48	8.51
23	10.03	10.00	9.93	9.34	9.01	8.16	10.24	9.82	9.55	8.81	8.50	8.47
24	10.27	9.94	10.34	9.28	8.99	8.14	10.23	9.78	9.51	8.78	8.47	8.51
25	10.51	9.86	10.48	9.27	8.97	8.09	10.20	9.81	9.46	8.73	8.41	8.56
26	10.60	9.82	10.49	9.22	8.92	8.07	10.14	9.80	9.42	8.70	8.36	8.61
27	10.48	9.77	10.45	9.21	8.85	8.08	10.17	9.84	9.39	8.69	8.36	8.64
28	10.31	9.84	10.35	9.22	8.76	8.27	10.18	9.88	9.38	8.65	8.38	8.68
29	10.26	9.94	10.24	9.19	---	8.55	10.16	9.87	9.45	8.61	8.38	8.68
30	10.04	9.97	10.32	9.21	---	8.74	10.10	9.86	9.41	8.57	8.36	8.67
31	9.93	---	10.48	9.22	---	8.83	---	9.87	---	8.53	8.46	---
MEAN	9.50	10.06	9.96	9.68	9.06	8.64	9.91	9.98	9.65	8.94	8.51	8.38
MAX	10.60	10.50	10.49	10.49	9.22	9.26	10.41	10.31	9.96	9.39	8.66	8.68
MIN	8.43	9.77	9.62	9.19	8.76	8.07	8.89	9.78	9.38	8.53	8.36	8.14

CAL YR 1990 MEAN 9.40 MAX 10.60 MIN 7.68

WTR YR 1991 MEAN 9.36 MAX 10.60 MIN 8.07

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.--40 years, 199 ft³/s, 22.15 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)
Oct. 24	1230	*1,950	*6.48	No other peak greater than base discharge			

Minimum discharge, 19 ft³/s, Aug. 2, 3, 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	281	246	294	619	e100	e90	337	303	310	36	20	104
2	231	221	246	542	e98	e150	309	687	185	33	19	66
3	155	207	221	419	e100	e490	319	606	112	32	19	52
4	162	196	295	e315	130	e870	347	519	87	30	28	48
5	451	183	445	e280	158	809	463	384	80	29	81	42
6	384	281	369	e250	e200	599	635	305	76	31	105	40
7	234	373	318	e210	e215	673	753	446	69	35	62	41
8	146	307	257	e190	e220	525	806	391	64	37	44	37
9	143	228	221	e180	e210	428	931	316	59	36	36	33
10	400	277	210	e160	e200	351	993	245	61	34	52	31
11	355	574	190	e160	e160	245	916	208	57	31	78	112
12	629	539	166	e150	e140	206	741	185	56	29	61	113
13	772	495	182	e140	e120	189	593	158	58	30	46	68
14	929	477	180	e135	e110	186	437	139	55	36	38	49
15	684	401	144	e130	e105	182	367	129	52	38	34	44
16	542	614	e140	e135	e96	202	452	118	79	35	32	68
17	362	1010	e135	e180	e90	241	426	136	169	30	29	83
18	263	780	e140	e190	e84	253	359	230	131	27	28	64
19	771	646	294	e180	e86	254	302	185	83	26	33	370
20	567	523	278	e160	e130	237	256	130	63	25	68	492
21	489	391	219	e140	e130	212	324	110	53	25	83	331
22	389	328	403	e130	e120	198	634	96	47	24	64	159
23	359	379	996	e125	e115	197	566	86	43	26	53	97
24	1590	473	1180	e120	e110	163	484	80	40	26	43	79
25	1220	453	848	e115	e105	177	361	75	39	25	37	135
26	1040	390	677	e115	e100	172	273	77	36	25	33	279
27	761	314	507	e110	e96	264	231	108	35	24	30	192
28	545	365	343	e110	e94	809	207	128	35	23	30	130
29	393	484	340	e105	---	808	188	100	38	22	46	119
30	328	407	944	e105	---	646	189	88	40	21	44	106
31	282	---	902	e100	---	463	---	147	---	21	83	---
TOTAL	15857	12562	12084	6000	3622	11289	14199	6915	2312	902	1459	3584
MEAN	512	419	390	194	129	364	473	223	77.1	29.1	47.1	119
MAX	1590	1010	1180	619	220	870	993	687	310	38	105	492
MIN	143	183	135	100	84	90	188	75	35	21	19	31
CFSM	4.19	3.43	3.20	1.59	1.06	2.98	3.88	1.83	.63	.24	.39	.98
IN.	4.84	3.83	3.68	1.83	1.10	3.44	4.33	2.11	.70	.28	.44	1.09

CAL YR 1990 TOTAL 110617 MEAN 303 MAX 1770 MIN 52 CFSM 2.48 IN. 33.73
WTR YR 1991 TOTAL 90785 MEAN 249 MAX 1590 MIN 19 CFSM 2.04 IN. 27.68

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 1990 TO SEPTEMBER 1991

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...	1015	408	120	7.9	-5.0	3.0	2.5	747	10.4	79	57
JAN 31...	1445	102	182	8.3	-6.0	0.0	1.0	735	11.3	80	20
MAR 27...	1215	194	172	8.7	9.5	3.5	2.5	736	10.8	84	K10
MAY 30...	1400	92	192	8.1	19.0	18.5	1.5	743	9.1	100	61
JUL 28...	1315	25	249	8.4	21.5	21.5	0.80	746	9.1	105	K18
SEP 25...	1215	108	186	8.3	9.5	10.5	1.6	732	9.0	84	K900

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...	38	58	19	2.5	2.4	1.2	46	8.1	4.2	<0.10	5.2
JAN 31...	K10	96	31	4.4	4.2	1.0	80	11	7.2	<0.10	6.7
MAR 27...	49	80	26	3.6	4.3	1.2	59	8.7	7.0	<0.10	5.6
MAY 30...	K7	100	33	4.4	4.1	1.2	75	8.8	4.4	<0.10	3.9
JUL 28...	51	120	38	7.0	5.0	1.1	105	18	8.9	<0.10	4.6
SEP 25...	390	87	28	4.2	4.0	1.1	74	6.7	3.5	<0.10	5.6

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, 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...	71	110	0.300	0.060	0.08	<0.40	<0.010	<0.010	<0.010	40	<1
JAN 31...	117	117	0.510	0.060	0.08	0.30	0.020	0.010	<0.010	--	--
MAR 27...	96	98	0.450	0.060	0.08	0.40	0.040	<0.010	<0.010	20	<1
MAY 30...	111	113	0.200	0.020	0.03	1.3	0.010	0.010	<0.010	--	--
JUL 28...	140	148	0.110	0.030	0.04	0.50	0.020	<0.010	<0.010	--	--
SEP 25...	102	99	0.170	0.020	0.03	0.40	0.020	0.010	<0.010	20	2

K Results based on colony count outside the acceptable range (non-ideal colony count).

ST. LAWRENCE RIVER BASIN

04296000 BLACK RIVER AT COVENTRY, VT.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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...	4	<0.5	<1.0	<1	<3	5	120	2	<4	19	<0.1
JAN 31...	--	--	--	--	--	--	--	--	--	--	--
MAR 27...	5	<0.5	<1.0	<1	<3	1	160	3	<4	49	<0.1
MAY 30...	--	--	--	--	--	--	--	--	--	--	--
JUL 28...	--	--	--	--	--	--	--	--	--	--	--
SEP 25...	5	<0.5	<1.0	2	<3	2	260	<1	<4	50	<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- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. X FINER THAN .062 MM
NOV 30...	<10	3	<2	<1.0	90	<6	10	12	13	69
JAN 31...	--	--	--	--	--	--	--	6	1.7	86
MAR 27...	<10	2	<1	<1.0	120	<6	5	9	4.7	92
MAY 30...	--	--	--	--	--	--	--	9	2.2	76
JUL 28...	--	--	--	--	--	--	--	4	0.27	79
SEP 25...	<10	2	<1	<1.0	140	<6	6	12	3.5	37

ST. LAWRENCE RIVER BASIN

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04296500 CLYDE RIVER AT NEWPORT, VT.

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.

DRAINAGE AREA.--142 mi².

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.

REVISED RECORDS.--WSP 744: 1913(M), drainage area. WSP 924: 1940. WSP 1307: 1913-15(M).

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.

REMARKS.--Records fair except those for periods of estimated daily discharges, which are poor. No estimated daily discharges. Records fair. Flow regulated by powerplant and reservoirs upstream and, since Mar. 6, 1957, by diversion around station through canal and penstock of Newport No. 11 powerplant. Diversion computed from relation of kilowatt-hour output and measured discharge, discharge computed by adding flow over control to flow diverted through powerplant. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--72 years (water years 1910-19, 1921, 1923-24, 1929-35, 1939-90), 258 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,900 ft³/s, Mar. 20, 1936, gage height, 5.76 ft, site and datum then in use, from rating curve extended above 2,800 ft³/s on basis of computation of peak flow over dam; maximum daily, 2,680 ft³/s, May 4, 1940; minimum daily, 2.6 ft³/s, June 18, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 1,180 ft³/s, Apr. 11 minimum daily, 29 ft³/s, Jun. 24, July 2, 4, Sept. 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	114	483	426	724	229	253	432	377	175	e86	32	62
2	139	429	425	678	114	186	424	426	186	e29	32	131
3	145	402	425	647	161	252	425	430	223	e44	35	159
4	196	413	424	574	237	326	425	438	261	e29	38	150
5	192	397	420	514	236	437	424	444	238	e72	132	251
6	224	412	311	484	222	444	419	464	232	e44	32	230
7	239	385	299	458	278	447	402	470	170	e43	33	32
8	253	285	287	440	307	445	419	457	156	e82	31	32
9	311	363	367	412	106	447	697	455	135	e54	38	63
10	308	359	372	401	139	446	1110	448	136	e31	68	119
11	302	376	374	390	230	448	1180	440	145	e31	33	58
12	358	584	376	367	221	432	1070	438	192	e32	90	44
13	443	551	279	250	207	447	918	439	96	e32	108	42
14	414	534	379	276	216	389	789	396	124	e83	104	29
15	420	513	346	386	202	423	708	289	80	e47	32	57
16	430	574	290	282	94	420	674	244	110	e63	75	69
17	642	634	283	278	86	355	650	258	152	e49	77	57
18	617	642	316	332	138	262	612	243	116	e55	65	212
19	680	632	376	238	153	144	575	202	133	e64	137	211
20	613	594	300	222	144	364	540	248	123	e36	72	231
21	599	570	267	255	276	281	534	245	122	e36	148	136
22	570	509	266	260	217	255	563	249	81	e50	128	158
23	576	485	284	247	90	285	563	176	83	e51	88	270
24	835	469	468	230	47	278	557	144	29	47	33	302
25	902	457	900	249	172	263	537	151	79	32	53	347
26	895	435	934	176	237	214	531	137	108	32	123	363
27	764	430	822	171	215	290	470	160	138	47	61	240
28	672	430	694	241	155	380	414	132	203	46	63	182
29	615	428	614	238	---	402	409	215	58	44	58	181
30	590	425	735	238	---	425	401	161	59	35	46	182
31	540	---	787	234	---	434	---	227	---	38	78	---
TOTAL	14598	14200	13846	10892	5129	10874	17872	9603	4143	1464	2143	4600
MEAN	471	473	447	351	183	351	596	310	138	47.2	69.1	153
MAX	902	642	934	724	307	448	1180	470	261	86	148	363
MIN	114	285	266	171	47	144	401	132	29	29	31	29
CFSM	3.32	3.33	3.15	2.47	1.29	2.47	4.20	2.18	.97	.33	.49	1.08
IN.	3.82	3.72	3.63	2.85	1.34	2.85	4.68	2.52	1.09	.38	.56	1.21

CAL YR 1990 TOTAL 124431 MEAN 341 MAX 1560 MIN 24 CFSM 2.40 IN. 32.60
WTR YR 1991 TOTAL 109364 MEAN 300 MAX 1180 MIN 29 CFSM 2.11 IN. 28.65

e Estimated

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

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 1991

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, 1985-91	10-13-90	9.08	9,790
†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, 1985-91	4-22-91	9.02	6,090
†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‡ 1983-91	10-24-90	11.41	12,800
†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 Peterborough, and 1.5 mi upstream from Nubanusit Brook.	68.1	1964-77‡ 1978-91	8-19-91	5.86	2,210
†01083000	Nubanusit Brook near Peterborough, N.H.	Lat 42°53'10", long 71°58'24", Hills-borough 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.	46.9	1920-31‡ 1945-91	8-22-91	4.13	597
†01085000	Contoocook River near Henniker, N.H.	Lat 43°09'10", long 71°51'24", Merrimack County, Hydrologic Unit 01070003, 0.6 mi downstream from Sand Brook and 2.5 mi southwest of Henniker.	368	1939-77‡ 1988-91	8-21-91	10.07	3,880
†01085500	Contoocook River below Hopkinton Dam, at West Hopkinton, N.H.	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.	427	1903-07‡ 1963-89‡ 1990-91	3- 6-91	6.37	3,320
†01087000	Blackwater River near Webster, N.H.	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.	129	1918-20‡ 1927-89‡ 1990-91	11-12-90	6.04	1,400
†01090800	Piscataquog River below Everett Dam, near East Weare, N.H.	Lat 43°05'29", long 71°39'36", Hills-borough County, Hydrologic Unit 01070002, on right bank 500 ft downstream from Everett Dam and 1.4 mi southeast of East Weare.	63.1	1963-89‡ 1990-91	4-23-91	7.55	818

See footnotes at end of table

Annual maximum discharge at crest-stage partial-record stations during water year 1991--continued

Station No.	Station name	Location	Drainage area (mi²)	Period of record	Date	Annual maximum	
						Gage height (feet)	Dis-charge (ft³/s)
Merrimack River basin							
†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† 1983-91	4-23-91	7.82	2,820
†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† 1979-91	4-22-91	6.61	2,370
Connecticut River basin							
†01141500	Ompompanoosuc River at Union Village, Vt.	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.	130	1940-89† 1990-91	10-24-90	7.17	1,730
†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 downstream from Indian River, 3.5 mi west of Canaan and at mile 19.3	80.5	1939-78† 1985-91	12-24-90	6.85	2,140
†01153000	Black River at North Springfield, Vt.	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.	158	1929-89† 1990-91	4-22-91	7.14	3,160
†01155500	West River at Jamaica, Vt.	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.	179	1946-89† 1990-91	4-22-91	8.83	4,230
†01156000	West River at Newfane, Vt.	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.	308	1919-23† 1928-89† 1990-91	4-23-91	9.20	7,740
†01158000	Ashuelot River below Surry Mountain near Keene, N.H.	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 Sturtevent Brook, 4.5 mi north of Keene, and at mile 34.0.	101	1945-89† 1990-91	11-13-90	7.53	691
†01158600	Otter Brook below Otter Brook Dam, near Keene, N.H.	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.	47.2	1958-89† 1990-91	8-22-91	8.25	540

† Also a miscellaneous site.

‡ Operated as a continuous-record gaging station.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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 1991

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Dis- charge (ft ³ /s)
Merrimack River Basin						
†01075000 Merrimack 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‡ 1978-91	10- 4-90 5- 7-91 6-20-91‡‡	255 1,710 166
†01076000 Baker River	do	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‡ 1978-91	6-20-91 6-20-91 8- 1-91 9-30-91	77.6 79.2 14.5 117
†01081500 Merrimack River	do	Lat 43°25'26", long 71°50'12", Merri- mack County at Franklin Junction, N.H., Hydrologic Unit 01070002, 1 mi downstream from confluence of Pemigewasset and Winnepesaukee Rivers.	1,507	1903-78‡ 1979-91	4-26-91	4,000
†01082000 Contoocook River	do	Lat 42°51'45", long 71°57'55", Hills- borough County, Hydrologic Unit 01070003, 1 mi south of Peterborough, and 1.5 mi upstream from Nubanusit Brook.	68.1	1964-77‡ 1978-91	10-31-90 4-29-91 6-10-91 8- 1-91	116 133 35.1 15.0
†01083000 Nubanusit Brook	do	Lat 42°53'10", long 71°58'24", Hills- borough 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.	46.9	1920-31‡ 1945-89‡ 1990-91	10-31-90 10-31-90 4-29-91 6-11-91 7-30-91 8- 1-91	38.9 44.5 86.8 20.9 9.9 8.6
†01085000 Contoocook River	do	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‡ 1978-91	5-10-91 8- 1-91 8- 1-91	1,350 62.0 58.6
†01085500 Contoocook River	do	Lat 43°11'31", long 71°44'05", Merri- mack 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.	427	1903-07‡ 1963-89‡ 1990-91	1-22-91 6-11-91 7-31-91	489 169 108
†01087000 Blackwater River	do	Lat 43°17'45", long 71°41'46", Merri- mack 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 ipstream from mouth.	129	1927-89‡ 1990-91	10-24-90 12-10-90 1-24-91 4-26-91 6-13-91 7-17-91	373 271 155 585 62.8 28.2
†01090800 Piscataquog River	do	Lat 43°05'29", long 71°39'36", Hills- borough County, Hydrologic Unit 01070002, on right bank 500 ft downstream from Everett Dam and 1.4 mi southeast of East Weare.	63.1	1963-89‡ 1990-91	10-16-90 12-10-90 1-23-91 4-20-91 5-31-91 7-30-91 7-30-91	113 154 76.9 165 41.7 10.1 10.0
†01091500 Piscataquog River	do	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 Geln Lake, and 2.5 mi east of Goffstown, N.H.	202	1939-78‡ 1979-91	10-22-90 4-29-91 6- 4-91 7-30-91 7-30-91	141 447 138 26.8 26.8

See footnotes at end of table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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Discharge measurements made at special study and miscellaneous sites during water year 1991

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Dis- charge (ft ³ /s)
Merrimack River Basin						
Contoocook River	Merrimack River	Lat 42°49'24", long 71°59'46", Hillsborough County, Hydrologic Unit 01070003, 45 ft downstream of Jaffrey pumping station.	--	1991	8- 2-91	6.8
Town Farm Brook	Contoocook River	Lat 42°50'15", long 71°58'52", Hillsborough County, Hydrologic Unit 01070003, west on Route 202 to Community Lane. Brook crosses Route 202.	--	1991	8- 2-91	.60
Gridley River	do	Lat 42°50'05", long 71°58'39", Hillsborough County, Hydrologic Unit 01070003, west on Route 202, past Peterborough Redimix to small cutout on left side of 202.	--	1991	8- 2-91	2.9
Meadow Brook	do	Lat 42°50'23", long 71°57'51", Hillsborough County, Hydrologic Unit 01070003, Route 202 west to Jct. of 202 and 101. Go on 202 west 1.5 mi past Noon Falls to Clark's Auto Sales. Left across road 1.0 mi past pump- ing station to sand pit and 100 ft upstream.	--	1991	8- 2-91	1.2
Unnamed Tributary	do	Lat 42°53'57", long 71°56'14", Hillsborough County, Hydrologic Unit 01070003, junction of Routes 202 and 136. Site is 50 ft upstream of bridge.	--	1991	8- 1-91	.17
Otter Brook	do	Lat 42°54'54", long 71°55'16", Hillsborough County, Hydrologic Unit 01070003, from Junction of Route 202 and 136, stream is approximately 600-700 ft from junction 50 ft upstream from bridge.	--	1991	8- 1-91	2.7
Moose Brook	do	Lat 42°59'11", long 71°57'26", Hillsborough County, Hydrologic Unit 01070003, from Antrim south on Route 202 past Powder Mill Pond, right to Route 137 south 0.30 mi to bridge on downstream side.	--	1991	8- 1-91	1.5
Great Brook	do	Lat 43°01'44", long 71°56'22", Hillsborough County, Hydrologic Unit 01070003, opposite side of road from Mills in Antrim. Culvert just below Antrim Reel Co.	--	1991	8- 1-91	.90
North Branch Contoocook River	do	Lat 43°04'54", long 71°58'44", Hillsborough County, Hydrologic Unit 01070003, on right bank at North Branch, 4 mi north- west of Antrim, and 6 mi upstream from mouth.	--	1924-70† 1991	8- 1-91	3.8
Cochran Brook	do	Lat 43°03'02", long 71°55'38", Hillsborough County, Hydrologic Unit 01070003, Route 202 south from Hillsborough past rest area. Second right after rest area to stream.	--	1991	8- 1-91	.20

See footnotes at end of table.

Discharge measurements made at special study and miscellaneous sites during water year 1991

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Dis- charge (ft ³ /s)
Merrimack River Basin						
Shedd Brook	Beards Brook	Lat 43°07'28", long 71°57'12", Hillsborough County, Hydrologic Unit 01070003, west on Route 202 through Hillsborough to junction of Route 31. Go right on Shedd Road past cemetery to bridge 100 ft upstream.	--	1991	8- 1-91	1.9
01084500 Beards Brook	Contoocook River	Lat 43°06'50", long 71°55'35", Hillsborough County, Hydrologic Unit 01070003, on right bank 300 ft upstream from bridge on State Highway 9, 500 ft from mouth and 0.5 mi west of Hillsborough.	55.4	1945-70; 1991	8- 1-91	3.7
Unnamed Tributary	Contoocook River	Lat 43°06'11", long 71°53'55", Hillsborough County, Hydrologic Unit 01070003, Route 109 south from Hillsborough. Go over contoocook River and sharp right on Mill St. Site is 80 ft upstream under railroad bridge.	--	1991	8- 1-91	.50
Chase Brook	Contoocook River	Lat 43°10'14", long 71°47'43", Hillsborough County, Hydrologic Unit 01070003, Route 114 south from Henniker. 1.5 mi and 1,000 ft before road to Pat's Peak, 10 ft culvert.	--	1991	8- 1-91	.06
Amey Brook	Contoocook River	Lat 43°11'01", long 71°47'41", Hillsborough County, Hydrologic Unit 01070003, from Concord west on Routes 202, 9. Left at lights on old Henniker Road. to bridge over stream.	--	1991	8- 1-91	2.2
Hoyt Brook	West Branch Warner River	Lat 43°15'32", long 71°57'15", Merrimack County, Hydrologic Unit 01070003, on Route 103 in Bradford go east on 103 0.4 mi to next right past store to covered bridge and 0.4 mi to stop sign. Turn left. Site is 20-30 ft upstream.	--	1991	8- 1-91	.16
Lane River	Warner River	Lat 43°17'48", long 71°54'19", Merrimack County, Hydrologic Unit 01070003, north on Route 103, turn left at bridge over Warner River 1.2 mi to bridge. Site downstream 30-40 ft.	--	1991	8- 1-91	.09
Warner River	Contoocook River	Lat 43°17'11", long 71°53'17", Merrimack County, Hydrologic Unit 01070003, north through Warner to Route 103 to Waterloo Road. Left to junction of 103 again Left on 103, 800 ft to bridge over river. Site 50-60 ft upstream.	--	1991	8- 1-91	3.8
Stevens Brook	Warner River	Lat 43°17'19", long 71°50'08", Merrimack County, Hydrologic Unit 01070003, go north through Warner to lumber yard on right just before entrance to I-89. Site is at bridge.	--	1991	8- 1-91	.40

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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Discharge measurements made at special study and miscellaneous sites during water year 1991

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Dis- charge (ft ³ /s)
Merrimack River Basin						
Warner River	Contoocook River	Lat 43°16'38", long 71°48'44", Merrimack County, Hydrologic Unit 01070003, in Warner, left off Main St. on Joppa West Road to covered bridge, 500 ft down- stream above riffle.	--	1991	8- 1-91	5.6
01086000 Warner River	do	Lat 43°15'06", long 71°43'54", Merrimack County, Hydrologic Unit 01070003, on left bank 60 ft downstream from bridge on State Highway 127 at Davisville, 2.2 mi northwest of Contoocook, and 2.4 mi up- stream from mouth.	146	1939-78† 1991	8- 2-91	9.5
Blackwater River	do	Lat 43°25'37", long 71°52'29", Merrimack County, Hydrologic Unit 01070003, on Route 11 at Cillyville on left bank 100 ft downstream of bridge.	--	1991	7-17-91 8- 1-91	6.5 5.2
Mountain Brook	Blackwater River	Lat 43°26'14", long 71°47'27", Merrimack County, Hydrologic Unit 01070003, at junction of Routes 4 and 11 across from AT&T building and 1,000 ft along tracks south to railroad bridge. Site is under bridge.	--	1991	7-17-91 8- 1-91	1.8 1.1
Bradley Brook	Blackwater River	Lat 43°23'38", long 71°47'36", Merrimack County, Hydrologic Unit 01070003, from Boscowen on Route 4 to left on West Salisbury Road to fork. Cross road and cross Blackwater River to Bradley Brook.	--	1991	7-17-91 8- 1-91	.09 .00
Blackwater River	Contoocook River	Lat 43°14'45", long 71°41'18", Merrimack County, Hydrologic Unit 01070003, 1,000 ft from intersection of Penacook and Duston Roads north of Concord and 0.4 mi from DeerMeadow Brook.	--	1991	8- 2-91	17.9
Dolf Brook	Contoocook River	Lat 42°14'10", long 71°39'12", Merrimack County, Hydrologic Unit 01070003, from River Hill take Broad Cove Road to four corners to bar way on right. 2,000 ft on dirt road to brook.	--	1991	8- 2-91	2.4
Merrimeeting River	Lake Winnepesaukee	Lat 43°26'15", long 71°10'21", Belknap County, Hydrologic Unit 01070002, 200 ft downstream from dam on Main St. in New Durham, 150 ft upstream of main branch.	17.4	1991	7- 3-91	8.6
Coffin Brook	Merrimeeting River	Lat 43°25'01", long 71°13'03", Belknap County, Hydrologic Unit 01070002, 3,500 ft west of Stockbridge Corners off Route 28, 50 ft upstream at old mill site.	6.06	1991	7- 3-91	.35

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at special study and miscellaneous sites during water year 1991

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Dis- charge (ft ³ /s)
Merrimack River Basin						
Unnamed Tributary	Merrimeeting River	Lat 43°25'15", long 71°10'33", Belknap County, Hydrologic Unit 01070002, upstream side culvert at Stockbridge Road 8,000 ft east of Stockbridge road on Route 11 in New Durham.	0.54	1991	7- 3-91	0
Unnamed Tributary	do	Lat 43°27'23", long 71°12'58", Belknap County, Hydrologic Unit 01070002, 1,200 ft from Alton at culvert under Route 28, 6,000 ft south of Alton Bay.	0.32	1991	7- 3-91	0
Unnamed Tributary	do	Lat 43°27'34", long 71°13'10", Belknap County, Hydrologic Unit 01070002, at culvert under Route 28, upstream side, 2,000 ft from Alton and 4,600 ft from Alton Bay.	0.31	1991	7- 3-91	0.00
Unnamed Tributary	do	Lat 43°27'11", long 71°13'48", Belknap County, Hydrologic Unit 01070002, at culvert down- stream side of Route 140, 3,000 ft west from Alton and 6,000 ft south of Alton Bay.	1.02	1991	7- 3-91	.06
Nineteen Mile Brook	Lake Winnepesaukee	Lat 43°38'00", long 71°14'42", Carroll County, Hydrologic Unit 01070002, downstream side culvert under Route 109A, 7,500 ft from Center Tuftonboro.	2.09	1991	7- 3-91	.54
Whitten Brook	Nineteen Mile Brook	Lat 43°38'17", long 71°14'43", Carroll County, Hydrologic Unit 01070002, 50 ft downstream of culvert under Route 109A 5,500 ft from Center Tuftonboro.	1.71	1991	7- 3-91	.28
Melvin River	Lake Winnepesaukee	Lat 43°42'40", long 71°17'34", Carroll County, Hydrologic Unit 01070002, 10 ft downstream of bridge at Route 171, 9,000 ft north of Melvin Village.	2.05	1991	7- 3-91	.24
Melvin River	do	Lat 43°41'44", long 71°17'07", Carroll County, Hydrologic Unit 01070002, 50 ft downstream of bridge on Sodom Road, 6,000 ft east of Melvin Village.	10.9	1991	7- 3-91	1.4
Melvin River	do	Lat 43°41'50", long 71°17'54", Carroll County, Hydrologic Unit 01070002, at downstream side of bridge on New Road, 4,000 ft north of Melvin Village.	11.5	1991	7- 3-91	1.0
Melvin River	do	Lat 43°41'37", long 71°18'26", Carroll County, Hydrologic Unit 01070002, 2,000 ft from Melvin Village, 50 ft upstream of bridge of Country Road, 2,500 ft from intersection with Route 109.	13.8	1991	7- 3-91	1.9

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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Discharge measurements made at special study and miscellaneous sites during water year 1991

Stream	Tributary to	Location	Drainage area (mi²)	Measured previously (water years)	Measurements	
					Date	Dis- charge (ft³/s)
Merrimack River Basin						
Shannon Brook	Lake Winnepesaukee	Lat 43°43'13", long 71°19'22", Carroll County, Hydrologic Unit 01070002, at upstream side bridge at Route 171, 1,300 ft from Melvin Village, 500 ft from intersection with Route 109.	3.39	1991	7- 3-91	0.58
Shannon Brook	do	Lat 43°43'01", long 71°19'28", Carroll County, Hydrologic Unit 01070002, 1,100 ft north of Melvin Village, 3 ft down- stream of culvert on Severence Road.	0.16	1991	7- 3-91	.01
Shannon Brook	do	Lat 43°43'49", long 71°21'29", Carroll County, Hydrologic Unit 01070002, 5 ft downstream of bridge at Route 109, 4,000 ft south of intersection with Route 171, 5,000 ft from outlet into Lake Winnepesaukee.	3.62	1991	7- 3-91	.32
Halfway Brook	do	Lat 43°45'02", long 71°21'49", Carroll County, Hydrologic Unit 01070002, 20 ft downstream of wooden bridge, 4,000 ft from Route 109, 3,000 ft from inter- section of Route 109 and 25.	1.39	1991	7- 3-91	.47
Halfway Brook	do	Lat 43°45'18", long 71°22'34", Belknap County, Hydrologic Unit 01070002, 25 ft upstream of culvert under Route 109, 4,000 ft from intersection of Route 109 and 25, 3,000 ft from Moultonboro Center.	1.49	1991	7- 3-91	.30
Halfway Brook	do	Lat 43°44'30", long 71°23'13", Carroll County, Hydrologic Unit 01070002, 30 ft down- stream of culvert under Lees Mill Road, 2,800 ft from Route 109, 5,000 ft from intersection of Routes 109 and 125.	5.28	1991	7- 3-91	.22
Gunstock Brook	do	Lat 43°31'45", long 71°24'16", Belknap County, Hydrologic Unit 01070002, 30 ft below bridge at downstream side of Hoyt Road, 6,500 ft from Gilford Village and 2,500 ft from Belknap Mountain Road.	3.83	1991	7- 3-91	.78
Gunstock Brook	do	Lat 43°33'00", long 71°24'15", Belknap County, Hydrologic Unit 01070002, 1,200 ft from intersection of Belknap Mountain Road and Route 11B.	5.84	1991	7- 3-91	.94
Gunstock Brook	do	Lat 43°33'58", long 71°23'58", Belknap County, Hydrologic Unit 01070002, 60 ft upstream of bridge at Henderson Road, 500 ft west of Route 11B.	8.26	1991	7- 3-91	1.26
Gunstock Brook	do	Lat 43°34'28", long 71°24'10", Belknap County, Hydrologic Unit 01070002, 40 ft down- stream of bridge at Old Lake- shore Road, 300 ft from inter- section of Route 11B, 1,000 ft from Giford Village.	8.74	1991	7- 3-91	1.13

Discharge measurements made at special study and miscellaneous sites during water year 1991

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Dis- charge (ft ³ /s)
Merrimack River Basin						
Hawkins Brook	Lake Winnepesaukee	Lat 43°40'09", long 71°30'16", Belknap County, Hydrologic Unit 01070002, downstream side of culvert, on Transfer Station Road, 4,500 ft north of Meridith.	2.20	1991	7- 3-91	0.14
Hawkins Brook	do	Lat 43°39'56", long 71°29'54", Belknap County, Hydrologic Unit 01070002, 40 ft upstream of culvert under road to Town Highway Department, through Town Park, 1,000 ft east of Route 3, 3,000 ft north of Meridith.	2.54	1991	7- 3-91	.51
Jewett Brook	Lake Winnisquam	Lat 43°31'54", long 71°24'16", Belknap County, Hydrologic Unit 01070002, 25 ft downstream of bridge at High St., 5,000 ft from intersection with Route 11A, 4,500 ft from intersection with Route 11 bypass.	5.26	1991	7- 3-91	.49
Durkee Brook	do	Lat 43°30'56", long 71°27'34", Belknap County, Hydrologic Unit 01070002, 20 ft upstream of bridge on connector between Routes 106 and 107, 1,300 ft from Route 11 bypass, 4,500 ft from Laconia.	1.96	1991	7- 3-91	.80
Wickwas Outlet	Lake Winnepesaukee	Lat 43°36'50", long 71°32'01", Belknap County, Hydrologic Unit 01070002, 40 ft upstream of bridge on Meridith Center Road, 6,000 ft from intersection of Route 104, 1,000 ft west of Meridith Center.	12.0	1991	7- 3-91	.29
Durgin Brook	Lake Winnisquam	Lat 43°29'29", long 71°30'09", Belknap County, Hydrologic Unit 01070002, 300 ft upstream of bridge at Bean Hill Road, 500 ft from intersection with Route 3, 2,000 ft north of bridge over Winnisquam Lake.	3.84	1991	7- 2-91	0
Unnamed Tributary	do	Lat 43°28'25", long 71°30'48", Belknap County, Hydrologic Unit 01070002, downstream side of culvert at Union Road, 6,500 ft east of Lochmere.	.39	1991	7- 2-91	.04
Windy Hill Brook	Silver Lake	Lat 43°28'26", long 71°32'38", Belknap County, Hydrologic Unit 01070002, at upstream side of culvert at Route 11 in Lochmere, 2,500 ft from East Tilton, 1,000 ft from intersection of Route 11 and I-93.	1.87	1991	7- 3-91	0
Tioga River	Winnepesaukee River	Lat 43°27'04", long 71°28'13", Belknap County, Hydrologic Unit 01070002, 4,500 ft from Belmont, 300 ft downstream of Badger Pond, 100 ft upstream of Route 106.	14.7	1991	7- 3-91	1.1

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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Discharge measurements made at special study and miscellaneous sites during water year 1991

Stream	Tributary to	Location	Drainage area (mi²)	Measured previously (water years)	Measurements	
					Date	Dis-charge (ft³/s)
Merrimack River Basin						
Pumping Station Brook	Tioga River	Lat 43°25'47", long 71°28'43", Belknap County, Hydrologic Unit 01070002, 300 ft downstream of culverts at Wareing Road, 5,000 ft south of Belmont.	2.35	1991	7- 3-91	0.80
Unnamed Tributary	do	Lat 43°26'38", long 71°29'41", Belknap County, Hydrologic Unit 01070002, 3,500 ft west of Belmont at confluence with Tioga River.	1.03	1991	7- 3-91	0
Tioga River	Winnepesaukee River	Lat 43°26'38", long 71°29'44", Belknap County, Hydrologic Unit 01070002, 3,500 ft from Belmont downstream of confluence with Unnamed Tributary.	18.7	1991	7- 3-91	3.9
Tioga River	do	Lat 43°26'33", long 71°31'06", Belknap County, Hydrologic Unit 01070002, at downstream edge of bridge abutment on South Road, 9,000 ft from Belmont, 1,200 ft from intersection on Route 140.	1.87	1991	7- 3-91	0
Gulf Brook	do	Lat 43°27'19", long 71°33'51", Belknap County, Hydrologic Unit 01070002, 10 ft upstream of old railroad trestle bridge on Pike Industries property, 500 ft downstream of Route 11, 1,500 ft from intersection of I-93.	5.52	1991	7- 2-91	.28
Williams Brook	do	Lat 43°25'59", long 71°36'06", Belknap County, Hydrologic Unit 01070002, 10 ft downstream of bridge at Sargent Road, 4,000 ft from Northfield, 2,500 ft from intersection of Route 132.	7.62	1991	7- 3-91	.66
†01094000 Souhegan River	Merrimack River	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† 1977-91	10-18-90 4-24-91 6-14-91 7-24-91 7-24-91 8-21-91	202 1,100 80.0 36.7 36.6 1,340
Connecticut River Basin						
John's River	Connecticut River	Lat 44°22'07", long 71°33'46", Coos County, Hydrologic Unit 01080101, downstream side of bridge at outlet of Hazens Pond, 150 ft north of intersection between Hazen Road and Boston and Maine Central railroad tracks, 2.3 mi west of Whitfield.	25.6	1990	7-10-91	4.7
John's River	do	Lat 44°24'26", long 71°37'55", Coos County, Hydrologic Unit 01080101, 20 ft downstream side of bridge on French Pond Road, 500 ft west of intersection between French Pond Road and Dalton Road, 3.0 mi east of Dalton, N.H.	58.6	1990	7-10-91	12.9

See footnotes at end of table

Discharge measurements made at special study and miscellaneous sites during water year 1991

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Dis-charge (ft ³ /s)
Connecticut River Basin						
Ammonoosuc River	Connecticut River	Lat 44°15'43", long 71°24'25", Coos County, Hydrologic Unit 01080101, approximately 2.6 mi northeast of inter- section between Base Road and Route 302, 1.7 mi northeast of Mount Washington Hotel in Bretton Woods.	14.2	1990	7-10-91	12.2
Ammonoosuc River	do	Lat 44°16'09", long 71°28'35", Coos County, Hydrologic Unit 01080101, 50 ft downstream side of bridge on Route 302, 850 ft west of intersection between Route 302 and Cherry Mountain Road, 1.9 mi northwest of Bretton Woods.	41.7	1990	7-10-91	23.4
Ammonoosuc River	Connecticut River	Lat 44°16'18", long 71°34'48", Coos County, Hydrologic Unit 01080101, at Carroll, Bethlehem town line at Route 3, 0.23 mi southeast of the intersection of the Ammonoosuc River and the mouth of Haystack Brook, 1.9 mi east of Twin Mountain.	81.2	1990	7-10-91	50.6
Gale River	Ammonoosuc Rvier	Lat 44°14'38", long 71°38'20", Grafton County, Hydrologic Unit 01080101, 60 ft downstream side of bridge on Route 3, 0.23 mi west at intersection of Route 3 and Trudeau Road, 3.7 mi southeast of Bethlehem.	16.5	1990	7-10-91	6.2
Gale River	do	Lat 44°13'06", long 71°43'46", Grafton County, Hydrologic Unit 01080101, 10 ft downstream side of bridge at intersection of US Route 93 and Plantation Road, 1.0 mi southeast of Franconia.	31.2	1990	7-10-91	11.4
Lafayette Brook	Meadow Brook	Lat 44°12'19", long 71°43'24", Grafton County, Hydrologic Unit 01080101, downstream side of bridge at intersection of N.H. Route 18 and N.H. Route 141, 1.9 mi southeast of Franconia.	7.2	1990	7- 9-91	3.7
Meadow Brook	Gale River	Lat 44°12'57", long 71°44'06", Grafton County, Hydrologic Unit 01080101, 70 ft downstream side of bridge at private drive, 0.34 mi southwest at intersection of N.H. Route 18 and Coal Hill Rd., 1.0 mi southeast of Franconia.	12.6	1990	7- 9-91	6.8
Ham Branch Brook	do	Lat 44°07'16", long 71°48'11", Grafton County, Hydrologic Unit 01080101, 10 ft downstream side of bridge at N.H. Route 116, 2.3 mi northeast at the intersection of N.H. Route 112 and N.H. Route 116, 2.0 mi southwest of Easton.	1.2	1990	7- 9-91	.25
Ham Branch Brook	do	Lat 44°08'39", long 71°47'51", Grafton County, Hydrologic Unit 01080101, 0.4 mi southwest at intersection of Gibson Road and N.H. Route 116, 0.5 mi southwest of Easton.	9.3	1990	7- 9-91	.41
Ham Branch Brook	do	Lat 44°09'33", long 71°46'33", Grafton County, Hydrologic Unit 01080101, 50 ft downstream side of bridge at Route 116, 0.2 mi southwest at the intersection of N.H. Route 116 and Paine Road, 1.0 mi northeast of Easton.	13.9	1990	7- 9-91	4.7

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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Discharge measurements made at special study and miscellaneous sites during water year 1991--continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Dis- charge (ft ³ /s)
Connecticut River Basin						
Ham Branch Brook	Gale River	Lat 44°11'21", long 71°45'30", Grafton County, Hydrologic Unit 01080101, 30 ft downstream side of bridge at Delage Road, 0.42 mi west of intersection of Delage Road and N.H. Route 116, 2.7 mi southwest of Franconia.	24.1	1990	7- 9-91	8.7
Ham Branch Brook	do	Lat 44°12'52", long 71°45'07", Grafton County, Hydrologic Unit 01080101, 70 ft upstream side of bridge at Bickford Hill Road, 200 ft southeast of inersection of Bickford Hill Road and Ridge Road, 1.0 mi southwest of Franconia.	30.7	1990	7- 9-91	11.6
Gale River	Ammonoosuc River	Lat 44°14'55", long 71°47'07", Grafton County, Hydrologic Unit 01080101, approximately 0.6 mi west of intersection of Crane Hill Road and Streeter Pond Road, 2.5 mi north of Sugar Hill.	87.6	1990	7-10-91	28.8
Ammonoosuc River	Connecticut Rvier	Lat 44°12'06", long 71°56'36", Grafton County, Hydrologic Unit 01080101, approximately 2.4 mi west of townline between Bath and Lisbon, near Gilman Hill road, 0.5 mi east of intersection between Gilman Hill Road and Pettyboro Road, 1.3 mi northeast of Bath.	302	1990	7-10-91	131
Wild Ammonoosuc River	Ammonoosuc River	Lat 44°05'52", long 71°50'55", Grafton County, Hydrologic Unit 01080101, 60 ft downstream side of bridge near N.H. Route 112, 0.1 mi west of intersection between N.H. Route 112 and Bowen Brook Road, 2.3 mi southwest of Eaton.	27.1	1990	7- 9-91	11.4
Wild Ammonoosuc River	do	Lat 44°09'15", long 71°58'46", Grafton County, Hydrologic Unit 01080101, 300 ft upstream from mouth of the Wild Ammonoosuc River, 0.1 mi northwest of intersection of N.H. Route 302 and N.H. Route 112, 0.7 mi southwest of Bath.	59.2	1990	7-10-91	12.1
Clark Brook	do	Lat 44°04'46", long 71°59'02", Grafton County, Hydrologic Unit 01080104, 50 ft downstream side of bridge at French Pond Road, 950 ft north of intersection between Benton road and Frech Pond Road, 0.18 mi north of Center Haverhill.	8.2	1990	7-10-91	1.2
Clark Brook	do	Lat 44°04'45", long 72°01'40", Grafton County, Hydrologic Unit 01080104, upstream side of bridge at N.H. Route 10, 0.4 mi south of intersection between N.H. Route 10 and Benton Road 0.4 mi south of North Haverhill.	20.0	1990	7- 9-91	5.4
Oliverian Brook	do	Lat 44°00'35", long 71°56'23", Grafton County, Hydrologic Unit 01080104, 20 ft upstream side of bridge at N.H. Route 25, 0.5 mi southeast of intersection between N.H. Route 25 and the Benton, Haverhill town line, 3.2 mi southwest of Benton. N.H.	11.4	1990	7- 9-91	9.4

Discharge measurements made at special study and miscellaneous sites during water year 1991--continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Dis- charge (ft ³ /s)
Connecticut River Basin						
Oliverian Brook	Ammonoosuc River	Lat 44°02'36", long 72°03'30", Grafton County, Hydrologic Unit 01080104, 50 ft downstream side of bridge at N.H. Route 10, 50 ft west of intersection between N.H. Routes 10 and 25, 0.3 mi northeast of Haverhill.	39.1	1990	7- 9-91	16.9
Jacob's Brook	Connecticut River	Lat 43°52'50", long 72°06'05", Grafton County, Hydrologic Unit 01080104, 10 ft downstream side of bridge at old Route 25A, 0.1 mi south of intersection between N.H. Route 25A and Dame Hill Road, 0.1 mi south of Orfordville.	16.1	1990	7- 9-91	2.8
Grant Brook	do	Lat 43°48'23", long 72°09'12", Grafton County, Hydrologic unit 01080104, 5 ft upstream side of bridge at Market Street, 0.14 mi south of intersection between Market Street and Dorchester Road, 0.2 mi southeast of Lyme.	12.7	1990	7- 9-91	1.3
Hewes Brook	do	Lat 43°47'07", long 72°11'54", Grafton County, Hydrologic unit 01080104, 200 ft southwest of intersection between River Road and Shoestrap Road, 1.3 mi southwest of Lyme.	11.5	1990	7-10-91	.66
Indian River	Mascoma River	Lat 43°40'43", long 71° 59'48", Grafton County, Hydrologic Unit 01080104, 50 ft downstream side bridge at N.H. Route 118, 0.1 mi north of N.H. Dept. of Transportation shed, 1.9 mi northeast of Canaan.	16.0	1990	7- 9-91	2.4
Indian River	Mascoma River	Lat 43°38'42", long 72°00'33", Grafton County, Hydrologic Unit 01080104, 50 ft downstream site of bridge at N.H. Route 4, 0.13 mi south of intersection between N.H. Routes 4 and 118, 0.3 mi southwest of Canaan.	32.0	1990	7- 8-91	5.1
Knox River	do	Lat 43°36'24", long 72°07'23", Grafton County, Hydrologic unit 01080104, 50 ft downstream side of bridge at Lakeview Drive, 900 ft northeast of intersection between Lakeview Drive and N.H. Route 4A, 1.3 mi northwest of Enfield Center.	7.7	1990	7- 8-91	1.7
†01141500 Ompompanoosuc River	Connecticut River	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.	130	1940-89† 1990-91	10-10-90 11-20-90 1-16-91 3-14-91 5- 3-91 7- 8-91 7- 8-91 8-15-91 8-15-91	185 284 151 153 332 37.0 16.6 17.7
†01145000 Mascoma River	do	Lat 43°39'00", long 72°04'50", Grafton County, Hydrologic unit 01080104, 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 Canaan and at mile 19.3.	80.5	1939-78† 1985-91	10-19-90 4-17-91 6-19-91 7-25-91 7-25-91	307 210 40.6 6.3 6.2
01152010 Sugar River	do	Lat 72°05'30", long 43°23'10", Sullivan County, Hydrologic Unit 01080107, on left bank below outlet of Lake Sunapee, 800 ft downstream from Route 11 and behind Crutch Factory.	--	1991	5- 6-91 5-10-91 6-12-91 6-12-91	104 143 22.9 23.9

Discharge measurements made at special study and miscellaneous sites during water year 1991--continued

Stream	Tributary to	Location	Drainage area (mi²)	Measured previously (water years)	Measurements	
					Date	Dis-charge (ft³/s)
Connecticut River Basin						
†01153000 Black River	Connecticut River	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.	158	1929-89† 1990-91	11- 5-90 1-30-91 5- 3-91 6-13-91 6-13-91 8- 4-91	126 135 466 58.1 66.2 29.1
†01155500 West River	do	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.	179	1946-89† 1991	3-27-91 5-13-91	358 151
†01156000 West River	do	Lat 43°59'43", long 72°38'13", Windham County, Hydrologic unit 01080107, on left bank 400 ft downstream from highway bridge, 1.0 mi northeast of Newfane, and at mile 12.7	308	1919-23† 1928-89† 1990-91	11- 5-90 3-27-91 5-13-91 7-17-91	305 585 354 72.9
†01158000 Ashuelot River	do	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 Sturtevent Brook, 4.5 mi north of Keene, and at mile 34.0.	101	1945-89† 1990-91	11- 1-90 1-25-91 3-15-91 5- 2-91 8- 9-91	185 80.7 284 410 124
†01158600 Otter Brook	Ashuelot River	Lat 42°56'45", long 72°14'14", Cheshire County, Hydrologic unit 01080201, on right bank 450 ft downstream from Otter Brook Dam, 2.0 mi upstream from Minnewawa Brook, and 4.9 mi upstream from mouth.	47.2	1958-89† 1990-91	11- 1-90 1-23-91 5-16-91 8- 9-91	52.8 51.9 55.5 4.4
St. Lawrence River Basin						
New Haven River	Lake Champlain	Lat 44°07'43", long 73°03'18", Addison County, Hydrologic unit 02010002, beneath State Route 116 bridge, 1.25 mi east of Bristol Town Hall or 0.75 mi east of Bristol Rock.	--	--	7- 3-91	18.9
New Haven River	do	Lat 44°07'43", long 73°04'02", Addison County, Hydrologic unit 02010002, State Route 116, 600 ft east of Bristol Rock, 0.5 mi east of Town Hall.	--	--	3-27-91 5-21-91 7- 3-91	149 74.8 21.6
New Haven River	do	Lat 44°07'49", long 73°04'36", Addison County, Hydrologic unit 02010002, 200 ft upstream of Basin St., .25 mi east of Bristol Town Hall.	--	--	7- 3-91	20.9
New Haven River	do	Lat 44°07'51", long 73°04'42", Addison County, Hydrologic unit 02010002, 300 ft downstream of Basin St., .2 mi east of Town Hall.	--	--	5-21-91 7- 3-91	94.5 24.8
New Haven River	do	Lat 44°08'00", long 73°04'42", Addison County, Hydrologic unit 02010002, 100 ft upstream of Ice Cream Stand .25 mi west of Bristol Town Hall.	--	--	7- 3-91 7-11-91	23.9 31.4
New Haven River	do	Lat 44°08'01", long 73°04'42", Addison County, Hydrologic unit 02010002, upstream end of island in bend in New Haven River. 0.3 mi west of	--	--	7-11-91	29.2

Discharge measurements made at special study and miscellaneous sites during water year 1991--continued

Stream	Tributary to	Location	Drainage area (mi²)	Measured previously (water years)	Measurements	
					Date	Dis- charge (ft³/s)
St. Lawrence River Basin						
New Haven River	Lake Champlain	Lat 44°07'56", long 73°04'42", Addison County, Hydrologic unit 02010002, 200 ft downstream of island in bend of New Haven River, 0.4 mi west of Bristol Town Hall.	--	--	5-21-91	79.6
					7- 3-91	21.2
					7-11-91	26.9
New Haven River	do	Lat 44°07'30", long 73°05'01", Addison County, Hydrologic unit 02010002, Notch Road, 1,400 ft downstream of bridge at north end of Hewill St., 0.6 mi south of Bristol Town Hall.	--	--	3-27-91	146
					5-21-91	84
					7- 3-91	26.5
					7-11-91	34.2
New Haven River	do	Lat 44°07'05", long 73°05'17", Addison County, Hydrologic unit 02010002, at trail at east end of lumber yard, 1.2 mi south of Bristol, VT.	--	--	5-21-91	83.9
					7- 3-91	26.1
Unnamed Stream	New Haven River	Lat 44°07'25", long 73°04'57", Addison County, Hydrologic unit 02010002, at culvert on Notch Road, 0.7 mi south of Bristol, VT.	--	--	7- 3-91	0
Unnamed Stream	do	Lat 44°06'58", long 73°05'42", Addison County, Hydrologic unit 02010002, 30 ft downstream of culvert on road into lumber mill, 0.8 mi south of Bristol, VT.	--	--	5-21-91	2.98
					7- 3-91	2.3
Unnamed Tributary	do	Lat 44°07'55", long 73°04'19", Addison County, Hydrologic unit 02010002, upstream of culvert at south end of Mountain St. Ext., 0.4 mi east of Bristol.	--	--	7- 3-91	0
Unnamed Tributary	do	Lat 44°08'14", long 73°04'36", Addison County, Hydrologic unit 02010002, upstream of culvert on Moutain St., 100 ft south of school, 0.3 mi east of Bristol.	--	--	5-21-91	.26
					7- 3-91	.05

† Also a crest-stage partial-record station.

‡ Operated as a continuous-record gaging station.

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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ANDROSCOGGIN RIVER BASIN

01052500 DIAMOND RIVER NEAR WENTWORTH, NH (LAT 44 52 40 LONG 071 03 25)

APR 1991					SEP 1991				
25...	0925	1,150	4.5	21	06...	0920	90	14.0	35
JUL									
15...	1105	67	19.0	35					

01053500 ANDROSCOGGIN RIVER AT ERROL, NH (LAT 44 46 57 LONG 071 07 46)

NOV 1990					JUL 1991				
09...	0825	4780	5.0	26	15...	0850	1370	20.0	26
MAY 1991									
14...	1135	1370	14.0	24					

SACO RIVER BASIN

01064300 ELLIS RIVER NEAR JACKSON, NH (LAT 44 13 12 LONG 071 15 00)

NOV 1990					MAY 1991				
06...	1222	71	5.5	--	01...	0955	104	4.0	27
MAR 1991									
19...	1522	24	2.0	125					

01064400 LUCY BROOK NEAR NORTH CONWAY, NH (LAT 44 04 10 LONG 071 10 30)

NOV 1990					APR 1991				
06...	1610	36	8.0	--	30...	1519	17	7.0	18
DEC					JUN				
08...	1045	8.0	0.0	--	12...	1312	2.7	15.0	22
FEB 1991					AUG				
05...	1105	5.4	0.0	17	21...	1345	56	14.5	19
MAR									
19...	1250	22	0.0	20					

01064500 SACO RIVER NEAR CONWAY, NH (LAT 43 59 27 LONG 071 05 29)

OCT 1990					MAR 1991				
12...	1215	606	12.5	40	01...	1300	318	0.5	50
JAN 1991					MAY				
31...	1315	398	0.0	48	10...	1200	1450	10.0	35

PISCATAQUA RIVER BASIN

01072100 SALMON FALLS RIVER AT MILTON, NH (LAT 43 24 50 LONG 070 59 15)

DEC 1990					APR 1991				
07...	0850	584	2.0	60	18...	0900	191	5.5	58
JAN 1991					MAY				
17...	0910	219	2.0	42	30...	1200	91	23.0	57
MAR					JUL				
07...	0835	375	2.5	62	23...	0755	26	26.0	64

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

01073000 OYSTER RIVER NEAR DURHAM, NH (LAT 43 08 55 LONG 070 57 56)

OCT 1990					MAY 1991				
16...	0745	16	13.0	124	28...	1215	11	21.0	125
JAN 1991					JUL				
16...	1030	15	0.0	--	22...	1130	1.2	25.0	260
MAR					AUG				
06...	1230	56	1.5	73	20...	1036	169	19.0	55
APR									
15...	0930	15	8.0	119					

01073500 LAMPREY RIVER NEAR NEWMARKET, NH (LAT 43 06 09 LONG 070 57 11)

OCT 1990					MAY 1991				
15...	1300	699	17.0	92	29...	1300	96	23.0	110
MAR 1991					JUL				
06...	0855	876	1.0	72	22...	1015	20	27.0	159

MERRIMACK RIVER BASIN

01075000 PEMIGEWASSET RIVER AT WOODSTOCK, NH (LAT 43 58 34 LONG 071 40 48)

OCT 1990					MAY 1991				
04...	1011	255	11.0	50	07...	1300	1710	8.0	30
DEC					JUN				
26...	1125	450	0.0	84	20...	1521	166	20.0	65
MAR 1991									
27...	1118	299	3.0	72					

01075800 STEVENS BROOK NEAR WENTWORTH, NH (LAT 43 50 12 LONG 071 53 07)

OCT 1990					FEB 1991				
05...	0812	2.0	10.0	37	11...	1000	2.7	0.0	25
NOV					MAR 1991				
14...	0855	5.7	1.0	25	27...	1531	3.5	2.5	27
DEC					MAY				
11...	1245	2.9	0.5	--	03...	1015	5.6	6.0	25

01076000 BAKER RIVER NEAR RUMNEY, NH (LAT 43 47 46 LONG 071 50 42)

MAR 1991					JUN 1991				
28...	--	584	3.0	45	20...	0959	78	19.0	55

01076500 PEMIGEWASSET RIVER AT PLYMOUTH, NH (LAT 43 45 33 LONG 071 41 10)

MAR 1991					JUN 1991				
28...	0910	2590	3.0	55	21...	0850	329	22.0	70
MAY									
16...	0800	891	13.0	58					

01077000 SQUAM RIVER AT ASHLAND, NH (LAT 43 42 19 LONG 071 37 49)

OCT 1990					MAR 1991				
05...	1230	59	14.0	48	29...	0800	58	3.0	50
DEC					MAY 1991				
07...	1230	163	2.0	30	08...	1519	61	11.0	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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MERRIMACK RIVER BASIN--continued

01078000 SMITH RIVER NEAR BRISTOL, NH (LAT 43 34 04 LONG 071 44 54)

OCT 1990					MAY 1991				
10...	0915	56	12.0	--	14...	0800	110	14.0	50
FEB 1991									
14...	1010	82	0.0	--	JUN				
APR					25...	0909	22	16.0	80
02...	1211	209	5.0	--					

01081000 WINNIPESAUKEE RIVER AT TILTON, NH (LAT 43 26 31 LONG 071 35 20)

NOV 1990					MAY 1991				
15...	1400	1060	6.0	--	15...	1422	848	16.0	75
FEB 1991									
20...	0945	957	1.0	75					

01082000 CONTOOCCOOK RIVER AT PETERBOROUGH, NH (LAT 42 51 45 LONG 071 57 35)

OCT 1990					JUN 1991				
31...	0945	116	5.5	74	10...	1130	35	20.0	80
APR 1991					AUG				
29...	1045	133	15.0	72	01...	1915	15	22.0	--

01083000 NUBANUSIT BROOK NEAR PETERBOROUGH, NH (LAT 42 53 10 LONG 071 58 24)

OCT 1990					JUN 1991				
31...	0800	39	4.5	48	11...	1130	21	24.0	46
APR 1991					JUL				
29...	1430	87	18.0	47	30...	1305	9.9	24.0	56

01085000 CONTOOCCOOK RIVER NEAR HENNIKER, NH (LAT 43 09 10N LONG 071 51 24W)

MAY 1991									
10...	0815	1350	14.5	50					

01085500 CONTOOCCOOK R BL HOPKINTON DAM AT W HOPKINTON, NH (LAT 43 11 31 LONG 071 44 51)

JAN 1991					JUL 1991				
22...	1215	489	0.0	76	31...	0700	108	23.0	73
JUN									
11...	0945	169	22.0	85					

01085800 WEST BRANCH WARNER RIVER NEAR BRADFORD, NH (LAT 43 15 33 LONG 072 01 35)

OCT 1990					MAR 1991				
29...	1145	12	5.5	--	14...	1455	11	3.0	28
JAN 1991					MAY				
25...	1500	5.2	0.0	70	16...	0800	6.8	12.0	30

SUPPLEMENTAL WATER-QUALITY DATA FOR GAGING STATIONS

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)
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MERRIMACK RIVER BASIN--continued

01087000 BLACKWATER RIVER NEAR WEBSTER, NH (LAT 43 17 45 LONG 071 41 46)

DEC 1990					JUN 1991				
10...	0840	265	1.5	46	13...	0700	63	19.0	64
JAN 1991									
24...	1130	155	0.0	40					

01089100 SOUCCOOK RIVER AT PEMBROKE ROAD NEAR CONCORD, NH (LAT 43 12 47 LONG 071 28 49)

OCT 1990					JUN 1991				
23...	0945	111	--	84	12...	1345	27	22.0	100
JAN 1991					JUL				
17...	1400	207	0.0	42	26...	1140	10	22.0	126
MAR									
11...	0940	114	0.0	58					

01090800 PISCATAQUOG RIVER BL EVERETT DAM, NR E WEARE, NH (LAT 43 05 29 LONG 071 39 36)

OCT 1990					MAY 1991				
16...	1045	113	16.0	66	31...	1105	42	22.0	73
DEC					JUL				
10...	1230	154	2.0	60	30...	1200	10	25.0	68
JAN 1991									
23...	1240	77	0.5	69					

01091500 PISCATAQUOG RIVER NEAR GOFFSTOWN, NH (LAT 43 00 58 LONG 071 33 03)

OCT 1990					JUL 1991				
22...	1130	135	14.0	81	30...	0745	27	20.0	87
JUN 1991									
04...	0850	138	21.0	74					

01092000 MERRIMACK R NR GOFFS FALLS, BELOW MANCHESTER, NH (LAT 42 56 54 LONG 071 27 52)

APR 1991									
25...	1115	14800	--	50					

01093800 STONY BROOK TRIBUTARY NEAR TEMPLE, NH (LAT 42 51 36 LONG 071 50 00)

OCT 1990					MAY 1991				
29...	0800	7.1	5.0	25	02...	0915	15	12.0	21
DEC					JUN				
17...	0950	5.9	1.0	--	10...	0930	1.1	16.0	19
JAN 1991									
24...	0930	4.7	0.0	15					

01094000 SOUHEGAN RIVER AT MERRIMACK, NH (LAT 42 51 27 LONG 071 30 24)

OCT 1990					JUN 1991				
18...	0915	202	13.0	--	14...	0700	80	15.5	136
APR 1991					JUL				
24...	1200	1100	10.0	63	24...	0930	37	27.0	156

010965852 BEAVER BROOK AT N. PELHAM, NH (LAT 42 46 59 LONG 071 21 14)

OCT 1990					APR 1991				
22...	0755	95	9.5	225	19...	0715	51	--	245
JAN 1991					JUN				
23...	0900	70	0.0	230	03...	1000	26	19.0	270
MAR					JUL				
08...	0850	230	3.0	198	24...	1215	6.7	21.0	290

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)
CONNECTICUT RIVER BASIN									
01129200 CONNECTICUT R BL INDIAN STREAM NR PITTSBURG, NH (LAT 45 02 25 LONG 071 26 37)									
MAR 1991 20...	1310	191	3.0	45	AUG 1991 22...	1225	224	18.0	37
01129440 MOHAWK RIVER NEAR COLEBROOK NH (LAT 44 52 28 LONG 071 24 38)									
NOV 1990 07...	1227	80	4.0	22	MAY 1991 02...	0857	221	7.0	58
FEB 1991 06...	1235	46	0.0	--	JUN 14...	0830	21	12.0	130
MAR 21...	0930	41	0.5	--					
01129500 CONNECTICUT RIVER AT NORTH STRATFORD, NH (LAT 44 44 56 LONG 071 37 50)									
MAR 1991 21...	1045	1160	1.0	80	MAY 1991 02...	1240	3700	10.0	55
01130000 UPPER AMMONOOSUC RIVER NEAR GROVETON, NH (LAT 44 37 30 LONG 071 28 10)									
DEC 1990 21...	0920	390	0.0	20	JUN 1991 11...	1100	165	18.0	40
MAY 1991 09...	0935	975	7.0	32					
01131500 CONNECTICUT RIVER NEAR DALTON, NH (LAT 44 24 36 LONG 071 43 16)									
OCT 1990 03...	1230	2170	10.0	58	MAY 1991 09...	1404	4710	9.0	45
NOV 09...	1305	2890	2.0	--					
01134500 MOOSE RIVER AT VICTORY, VT (LAT 44 30 42 LONG 071 50 13)									
NOV 1990 01...	0900	166	4.0	35	JUN 1991 06...	1040	64	13.5	39
FEB 1991 05...	1330	66	0.0	39	SEP 18...	1015	68	17.0	39
APR 03...	1000	179	1.0	32					
01135500 PASSUMPSIC RIVER AT PASSUMPSIC, VT (LAT 44 21 56 LONG 072 02 23)									
JUN 1991 13...	1500	208	15.5	86	SEP 1991 18...	1325	291	20.0	178
AUG 01...	0825	92	21.0	260					
01137500 AMMONOOSUC RIVER AT BETHLEHEM JUNCTION, NH (LAT 44 16 08 LONG 071 37 52)									
OCT 1990 04...	0910	88	6.0	40	MAR 1991 26...	1420	101	4.0	--
NOV 09...	1005	160	9.0	46	27...	1420	103	4.0	50
DEC 20...	1215	174	0.0	15	MAY 10...	0940	254	7.0	32
FEB 1991 12...	1200	45	0.0	--	JUN 19...	1012	92	17.0	43

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

01138500 CONNECTICUT RIVER AT WELLS RIVER, VT (LAT 44 09 13 LONG 072 02 34)

NOV 1990					AUG 1991				
08...	1430	7040	9.0	--	05...	0800	1520	20.0	87
APR 1991					SEP				
05...	0900	7760	4.0	82	16...	0945	--	18.0	84
JUN									
07...	0715	4700	14.0	102					

01139000 WELLS RIVER AT WELLS RIVER, VT (LAT 44 09 03 LONG 072 03 55)

APR 1991					AUG 1991				
05...	1245	266	4.5	94	05...	1245	84	18.5	152
JUN					SEP				
13...	1240	91	16.0	141	16...	1220	78	18.0	183

01139800 EAST ORANGE BRANCH AT EAST ORANGE, VT (LAT 44 05 34 LONG 072 20 10)

OCT 1990					APR 1991				
03...	1000	6.1	8.0	230	25...	0900	32.4	7.5	166
NOV 1990					AUG 1991				
16...	1130	26	4.0	180	12...	1200	3.82	18.0	250
MAR 1991									
12...	1010	22.5	0.0	177					

01141500 OMPOMPANOOSUC RIVER AT UNION VILLAGE, VT (LAT 43 47 23 LONG 072 15 19)

NOV 1990					MAY 1991				
20...	1600	284	3.0	150	03...	0730	0.33	8.5	147
JAN 1991					JUL				
16...	1230	151	0.5	93	08...	1015	37	19.0	240
MAR					AUG				
14...	0800	153	1.0	160	15...	0921	17	19.5	290

01141800 MINK BROOK NEAR ETNA, NH (LAT 43 42 08 LONG 072 11 15)

OCT 1990					APR 1991				
17...	1215	5.1	9.5	81	16...	0815	18	5.0	63
JAN 1991					JUN				
18...	1100	5.9	0.0	39	18...	0915	2.8	14.0	84
MAR					JUL				
05...	0900	19	0.5	55	25...	1100	0.19	18.0	77

01142500 AYERS BROOK AT RANDOLPH, VT (LAT 43 56 04 LONG 072 39 30)

OCT 1990					APR 1991				
04...	1245	21	11.0	--	29...	0830	73	7.0	185
NOV					JUL				
20...	1030	84	2.0	180	01...	1340	5.3	21.5	252
JAN 1991					29...	0745	3.5	17.0	245
16...	1430	53	0.0	94					
MAR									
13...	0900	84	0.5	188					

01144000 WHITE RIVER AT WEST HARTFORD, VT (LAT 43 42 51 LONG 072 25 07)

OCT 1990					AUG 1991				
10...	0915	693	13.5	167	15...	1445	160	23.0	200
JUL 1991									
03...	0910	148	21.0	216					
26...	1100	118	19.0	--					

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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CONNECTICUT RIVER BASIN--Continued

01144500 CONNECTICUT RIVER AT WEST LEBANON, NH (LAT 43 38 47 LONG 072 18 46)

OCT 1990					JUL 1991				
04...	0935	8250	15.5	115	12...	1140	5360	21.0	97
NOV					AUG				
21...	1145	12600	4.0	80	16...	1000	1300	23.5	125
MAY 1991									
02...	0845	12200	10.0	77					

01145000 MASCOMA RIVER AT WEST CANAAN, NH (LAT 43 39 00 LONG 072 04 50)

OCT 1990					JUN 1991				
10...	1015	307	13.0	47	19...	1115	41	23.0	170
APR 1991					JUL				
17...	1240	210	6.5	52	25...	1000	6.2	21.0	106

01150500 MASCOMA RIVER AT MASCOMA, NH (LAT 43 39 01 LONG 072 11 05)

OCT 1990					APR 1991				
10...	1230	311	15.0	67	17...	0905	313	6.0	57
17...	0830	656	9.5	53	JUN				
JAN 1991					18...	1200	88	21.0	57
18...	0905	266	1.0	20	JUL				
MAR					26...	0830	41	25.0	60
05...	1410	474	2.0	62					

01150900 OTTAUQUECHEE RIVER NEAR WEST BRIDGEWATER, VT (LAT 43 37 20 LONG 072 45 34)

OCT 1990					MAY 1991				
09...	0900	24	13.0	148	06...	0850	61	9.0	115
NOV					JUL				
27...	1000	40	2.0	120	26...	1345	61	--	128
JAN 1991					AUG				
17...	1250	71	0.0	140	20...	1400	23	16.0	180
MAR									
13...	1200	45	1.5	118					

01151500 OTTAUQUECHEE RIVER AT NORTH HARTLAND, VT (LAT 43 36 09 LONG 072 21 17)

JAN 1991					AUG 1991				
16...	1500	41	0.5	78	20...	0925	21	24.0	245
JUL									
09...	1300	22	22.0	219					

01152500 SUGAR RIVER AT WEST CLAREMONT, NH (LAT 43 23 15 LONG 072 21 45)

JAN 1991					JUN 1991				
31...	1000	296	0.0	35	14...	0900	111	18.0	126
MAY									
06...	1150	462	12.5	80					

01153000 BLACK RIVER AT NORTH SPRINGFIELD, VT (LAT 43 20 00 LONG 072 30 55)

NOV 1990					JUN 1991				
05...	1245	126	9.0	104	13...	0830	66	20.5	124
JAN 1991					AUG				
30...	1505	135	3.0	40	14...	0730	29	24.0	153
MAY									
03...	1215	464	12.0	76					

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 1990					AUG 1991				
07...	1115	169	5.0	80	14...	0950	22	--	134
JUN 1991									
18...	1020	127	19.0	94					

01154500 CONNECTICUT RIVER AT NORTH WALPOLE, NH (LAT 43 07 34 LONG 072 26 14)

NOV 1990					JUN 1991				
29...	1200	13000	5.0	98	20...	1300	7540	22.0	115
MAR 1991					SEP				
28...	1030	14000	5.0	112	26...	0930	12300	16.0	112
MAY									
07...	1240	20000	11.5	100					

01155500 WEST RIVER AT JAMAICA, VT (LAT 43 06 32 LONG 072 46 33)

MAR 1991					MAY 1991				
27...	1155	358	2.5	83	13...	0745	151	15.5	38

01156000 WEST RIVER AT NEWFANE, VT (LAT 42 59 43 LONG 072 38 13)

NOV 1990					MAY 1991				
05...	0900	305	5.5	60	13...	1510	354	--	62
MAR 1991					JUL				
27...	0910	585	3.0	--	17...	1000	73	--	69

01158000 ASHUELOT RIVER BL SURRY MT DAM, NR KEENE, NH (LAT 42 59 40 LONG 072 18 40)

NOV 1990					MAR 1991				
01...	1045	185	6.0	40	15...	1030	285	2.0	40
JAN 1991					JUN				
25...	1040	81	1.0	38	19...	0740	124	21.0	40

01158600 OTTER BROOK BELOW OTTER BROOK DAM, NR KEENE, NH (LAT 42 56 45N LONG 072 14 14)

NOV 1990					MAY 1991				
01...	0830	53	6.0	42	16...	1210	55	17.0	43
JAN 1991					AUG				
23...	1150	52	0.0	--	09...	1300	4.4	--	55

01161000 ASHUELOT RIVER AT HINSDALE, NH (LAT 42 47 07 LONG 072 29 12)

NOV 1990					JUN 1991				
08...	1030	633	6.0	--	17...	1250	737	21.0	90
MAY 1991									
03...	0915	1360	14.0	53					

HUDSON RIVER BASIN

01334000 WALLOOMSAC RIVER NEAR NORTH BENNINGTON, VT (LAT 42 54 47 LONG 073 15 25)

NOV 1990					MAY 1991				
06...	0930	219	8.0	--	14...	0800	184	15.0	177
DEC					JUL				
10...	1115	171	3.0	85	01...	1540	104	--	210
JAN 1991									
22...	1140	111	0.0	40					

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									
04280000 POULTNEY RIVER BELOW FAIR HAVEN, VT (LAT 43 37 40 LONG 073 18 50)									
NOV 1990					JUL 1991				
28...	0850	317	5.0	--	16...	1615	28	25.0	287
MAY 1991					AUG				
06...	1315	306	12.5	180	27...	1100	7.3	24.0	180
04280350 METTAWEE RIVER NEAR PAWLET, VT (LAT 43 22 18 LONG 073 12 59)									
NOV 1990					MAR 1991				
06...	1245	165	7.5	185	28...	0905	300	8.0	136
DEC					MAY				
05...	1330	132	4.5	60	13...	1245	112	17.5	183
JAN 1991					JUL				
29...	1020	94	0.0	90	12...	0630	26	--	210
04282000 OTTER CREEK AT CENTER RUTLAND, VT (LAT 43 36 13 LONG 073 00 49)									
OCT 1990					JUL 1991				
16...	0800	542	12.5	148	17...	0750	98	20.0	210
NOV					AUG				
27...	1330	434	4.0	190	28...	0850	120	21.0	200
MAY 1991									
07...	1500	1100	10.5	167					
04284000 JAIL BRANCH AT EAST BARRE, VT (LAT 44 09 30 LONG 072 26 44)									
OCT 1990					APR 1991				
02...	1020	21	10.5	210	29...	1215	54	11.5	181
NOV					JUN				
16...	0850	127	2.0	170	18...	1400	35	14.5	196
JAN 1991					JUL				
15...	1135	41	0.0	95	25...	1405	2.3	24.0	300
04285500 NORTH BRANCH WINOOSKI RIVER AT WRIGHTSVILLE, VT (LAT 44 17 58 LONG 072 34 45)									
NOV 1990					MAY 1991				
02...	1345	66	7.0	37	29...	1040	23	21.0	45
DEC					JUL				
10...	1045	62	2.0	38	23...	1240	4.6	27.0	64
MAR 1991					SEP				
29...	0915	752	2.0	--	09...	1120	13	20.0	60
04286000 WINOOSKI RIVER AT MONTPELIER, VT (LAT 44 15 23 LONG 072 35 36)									
OCT 1990					MAY 1991				
19...	0845	1480	11.5	164	09...	0810	809	9.0	135
MAR 1991									
18...	0830	723	1.0	180					
04287000 DOG RIVER AT NORTHFIELD FALLS, VT (LAT 44 10 58 LONG 072 38 27)									
FEB 1991					JUN 1991				
28...	0900	103	0.0	108	26...	0930	21	15.5	175
APR					JUL				
29...	1030	156	--	74	31...	0950	11	18.0	198
MAY					SEP				
31...	--	86	15.0	129	30...	0830	41	6.0	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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ST. LAWRENCE RIVER BASIN--Continued

04290500 WINOOSKI RIVER NEAR ESSEX JUNCTION, VT (LAT 44 28 44 LONG 073 08 21)

DEC 1990					JUL 1991				
13...	0945	1500	1.0	145	30...	1225	250	23.0	215
JUN 1991									
03...	1130	298	23.0	158					

04290580 INDIAN BROOK NEAR COLCHESTER, VT (LAT 44 32 53 LONG 073 09 57)

JUN 1991					AUG				
11...	1245	2.7	22.0	209	08...	0830	2.7	21.0	265

04290610 MALLETT'S CREEK NEAR COLCHESTER, VT (LAT 44 34 49 LONG 073 07 34)

JUN 1991					AUG 1991				
11...	1145	1.7	22.0	132	08...	0925	0.79	20.5	310

04292000 LAMOILLE RIVER AT JOHNSON, VT (LAT 44 37 22 LONG 072 40 50)

NOV 1990					APR 1991				
02...	0900	618	5.5	137	04...	0900	728	5.5	112

04292500 LAMOILLE RIVER AT EAST GEORGIA, VT (LAT 44 40 45 LONG 073 04 23)

JUN 1991					AUG 1991				
14...	1100	379	22.0	136	09...	0745	103	22.0	192
JUL					SEP				
26...	1140	131	23.5	174	12...	0925	449	17.0	182

04292700 STONE BRIDGE BROOK NEAR GEORGIA PLAINS, VT (LAT 44 42 13 LONG 073 10 54)

APR 1991					JUL 1991				
10...	0800	63	8.0	200	29...	1400	0.39	20.5	270
MAY					SEP				
30...	1200	3.1	21.0	260	12...	1330	1.3	16.0	245

04293000 MISSISQUOI RIVER NEAR NORTH TROY, VT (LAT 44 58 22 LONG 072 23 15)

APR 1991					JUL 1991				
02...	0800	312	2.0	72	25...	1435	59	28.5	152
JUN									
05...	0900	108	14.5	99					

04293500 MISSISQUOI RIVER NEAR EAST BERKSHIRE, VT (LAT 44 57 30 LONG 072 41 55)

APR 1991					AUG 1991				
02...	1230	1340	4.0	75	05...	0850	61	23.0	162
JUN					SEP				
05...	1430	334	16.5	95	19...	0745	1850	10.5	101

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

04294000 MISSISQUOI RIVER AT SWANTON, VT (LAT 44 54 00 LONG 073 06 00)

APR 1991					SEP 1991				
09...	0745	7890	9.0	62	17...	1110	209	20.0	122
AUG									
07...	1250	887	20.5	116					

04296000 BLACK RIVER AT COVENTRY, VT (LAT 44 52 08 LONG 072 16 14)

OCT 1990					MAY 1991				
30...	1315	318	5.5	168	30...	1400	92	18.5	192
NOV					JUN				
30...	1015	408	3.0	120	04...	0745	87	15.0	171
JAN 1991					JUL				
31...	1445	102	0.0	182	25...	0740	25	19.0	220
MAR					28...	1315	25	21.5	249
27...	1215	194	3.5	172	SEP				
APR					11...	1420	136	18.0	223
01...	0830	311	1.0	137	25...	1215	108	10.5	186

04296500 CLYDE RIVER AT NEWPORT, VT (LAT 44 56 22 LONG 072 11 23)

APR 1991					SEP 1991				
01...	1330	13	4.0	153	10...	0705	20	20.0	183
JUL									
24...	0900	22	22.5	165					

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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	2.74	JAN 20	3.29	APR 23	2.58	JUL 23	5.29
NOV 23	2.80	FEB 21	3.15	MAY 22	3.99	AUG 22	2.30
DEC 22	2.18	MAR 20	2.53	JUN 20	4.38	SEP 23	3.37

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, Jan. 22, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	12.5	JAN 24	12.9	APR 20	11.5	JUL 22	12.8
NOV 23	12.3	FEB 23	13.4	MAY 23	11.8	AUG 21	13.0
DEC 22	12.6	MAR 21	13.5	JUL 03	12.6	SEP 23	13.0

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. 27, 1987; lowest measured, 2.67 ft below land-surface datum, Sept. 24, 1972.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	.06	JAN 25	1.24	APR 23	+0.12	JUL 22	2.43
NOV 26	1.14	FEB 22	1.08	MAY 23	1.72	AUG 21	.75
DEC 27	.68	MAR 22	1.04	JUN 25	2.16	SEP 26	1.46

Readings above land surface indicated by "+"

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, 5.50 ft below land-surface datum, Dec. 24, 1990; lowest measured, 12.30 ft below land-surface datum, Nov. 18, 1978.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 20	7.13	JAN 21	6.79	APR 23	5.97	AUG 21	6.10
NOV 21	6.78	FEB 21	6.42	MAY 21	6.89	SEP 23	7.03
DEC 24	5.50	MAR 21	6.58	JUN 21	7.20		

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 Basic-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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	32.89	JAN 28	34.34	APR 23	29.63	JUL 29	30.74
NOV 27	33.04	FEB 22	34.31	MAY 23	29.33	AUG 26	30.03
DEC 28	33.58	MAR 26	33.84	JUN 26	29.68	SEP 27	30.10

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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	30.69	JAN 28	31.87	APR 23	27.53	JUL 29	28.63
NOV 27	30.77	FEB 22	31.90	MAY 23	27.12	AUG 26	27.86
DEC 28	31.23	MAR 26	30.68	JUN 26	27.51	SEP 27	27.93

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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	42.25	JAN 28	41.86	APR 23	41.78	JUL 29	42.21
NOV 27	42.12	FEB 22	41.71	MAY 23	42.00	AUG 26	42.18
DEC 28	42.04	MAR 26	41.68	JUN 30	42.09	SEP 27	42.22

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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	17.51	JAN 28	16.69	APR 23	16.16	JUL 29	18.29
NOV 27	16.78	FEB 22	16.74	MAY 23	16.49	AUG 26	18.11
DEC 28	16.29	MAR 26	16.44	JUN 26	17.48	SEP 27	18.24

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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	10.28	JAN 28	9.32	APR 23	9.79	JUL 29	12.05
NOV 27	9.78	FEB 22	9.62	MAY 23	9.68	AUG 26	12.81
DEC 27	9.27	MAR 26	9.43	JUN 26	10.87	SEP 27	13.56

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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	48.64	JAN 28	47.44	APR 23	48.26	JUL 29	48.71
NOV 27	47.10	FEB 22	47.81	MAY 23	48.26	AUG 26	48.62
DEC 28	47.16	MAR 26	47.86	JUN 26	49.00	SEP 27	47.53

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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	6.40	JAN 28	8.57	APR 23	4.84	JUL 29	13.26
NOV 27	6.95	FEB 22	9.23	MAY 23	7.60	AUG 26	13.99
DEC 27	4.72	MAR 26	8.63	JUN 26	11.15	SEP 27	14.09

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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	30.55	JAN 28	29.47	APR 23	29.03	JUL 29	30.57
NOV 27	30.05	FEB 22	29.67	MAY 23	28.70	AUG 26	31.11
DEC 27	29.77	MAR 26	29.33	JUN 26	29.54	SEP 27	31.53

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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	30.68	JAN 28	30.97	APR 23	30.73	JUL 29	31.51
NOV 27	30.82	FEB 22	30.72	MAY 23	30.72	AUG 26	30.49
DEC 28	30.58	MAR 26	30.73	JUN 26	31.16	SEP 27	30.44

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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	13.84	FEB 02	13.39	APR 25	13.45	JUL 25	14.00
NOV 26	13.41	28	13.60	MAY 28	13.75	AUG 26	13.70
DEC 22	13.39	MAR 25	13.21	JUN 24	13.80	SEP 25	14.17

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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	34.18	JAN 29	28.72	APR 23	27.26	JUL 12	27.63	AUG 26	29.72
NOV 28	30.80	FEB 26	29.56	MAY 24	26.20	24	28.16	SEP 24	31.22
DEC 26	31.15	MAR 20	29.64	JUN 20	26.80	31	28.49		

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, 1.89 ft low land-surface datum, Mar. 20, 1990; lowest measured, 4.95 ft below land-surface datum, Aug. 21, 1984.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	2.87	JAN 26	3.63	APR 24	2.88	JUL 12	4.21	AUG 29	3.60
NOV 26	3.15	FEB 25	3.88	MAY 25	3.72	23	4.26	SEP 23	3.38
DEC 27	2.59	MAR 21	3.69	JUN 25	4.16	31	4.38		

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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	12.42	JAN 29	13.19	APR 23	12.08	JUL 12	15.58	AUG 26	15.68
NOV 28	13.04	FEB 26	12.77	MAY 24	14.48	24	15.91	SEP 24	14.74
DEC 26	11.10	MAR 20	13.40	JUN 20	14.66	31	16.10		

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.--November 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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	16.15	JAN 29	17.94	APR 23	17.43	JUL 12	19.77	AUG 26	20.30
NOV 28	17.75	FEB 26	18.61	MAY 24	18.50	24	20.00	SEP 24	20.26
DEC 26	17.44	MAR 20	18.47	JUN 20	19.08	31	20.16		

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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	3.57	JAN 28	3.51	APR 25	2.43	JUL 12	4.64	SEP 27	4.52
NOV 26	2.90	FEB 22	3.81	MAY 22	3.38	26	4.91		
DEC 21	3.20	MAR 21	2.80	JUN 25	4.30	AUG 23	4.62		

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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	14.54	JAN 29	14.34	APR 23	14.55	JUL 12	16.52	AUG 26	17.32
NOV 28	14.45	FEB 26	15.17	MAY 24	15.15	24	16.80	SEP 24	17.32
DEC 26	14.35	MAR 20	15.28	JUN 20	15.89	31	16.98		

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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	35.28	JAN 28	34.60	APR 25	34.89	JUL 12	35.52	SEP 27	36.11
NOV 26	34.92	FEB 22	34.50	MAY 22	35.04	30	35.75		
DEC 21	34.80	MAR 21	34.77	JUN 25	35.32	AUG 23	35.91		

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.--November 1966 to Aug. 26, 1991. Prior to October 1977, published as Middlesex 3. Destroyed Sept. 12, 1991.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.99 ft below land-surface datum, Feb. 24, 1976; lowest measured, 23.86 ft below land-surface datum, July 31, 1991.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	17.24	JAN 29	21.33	APR 23	19.62	JUL 12	23.46	AUG 26	23.50
NOV 28	21.20	FEB 26	21.97	MAY 24	22.80	24	23.80		
DEC 26	18.24	MAR 20	21.61	JUN 20	22.92	31	23.86		

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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	14.16	JAN 29	15.09	APR 25	13.73	JUL 12	16.40	AUG 26	16.54
NOV 28	13.93	FEB 26	15.82	MAY 24	15.15	24	16.57	SEP 24	16.15
DEC 26	14.08	MAR 20	14.98	JUN 27	16.18	31	16.68		

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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	6.02	JAN 28	6.21	APR 25	5.51	JUL 12	7.20	SEP 27	6.38
NOV 26	5.94	FEB 22	6.20	MAY 22	6.54	30	7.44		
DEC 21	6.15	MAR 21	6.21	JUN 25	6.93	AUG 23	7.07		

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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	5.87	JAN 28	6.36	APR 25	5.23	JUL 12	7.27	SEP 27	6.54
NOV 26	5.68	FEB 27	6.45	MAY 22	6.29	30	7.72		
DEC 21	6.00	MAR 21	6.22	JUN 25	7.11	AUG 23	7.35		

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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	5.03	DEC 24	2.86	MAR 20	4.17	JUN 20	5.04	SEP 23	5.72
NOV 21	4.66	JAN 25	4.99	APR 23	2.98	JUL 26	5.99		
26	4.89	FEB 21	4.70	MAY 21	5.06	AUG 23	4.92		

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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	9.07	JAN 28	8.36	APR 25	8.15	JUL 12	9.50	SEP 27	9.63
NOV 26	8.82	FEB 22	8.84	MAY 22	8.67	26	9.63		
DEC 21	8.79	MAR 21	8.55	JUN 25	9.24	AUG 23	9.57		

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.--November 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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	10.53	JAN 28	10.69	APR 25	9.13	JUL 12	12.20	SEP 27	11.62
NOV 26	9.70	FEB 22	10.99	MAY 22	10.61	30	12.52		
DEC 21	10.60	MAR 21	10.49	JUN 25	11.96	AUG 23	12.15		

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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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