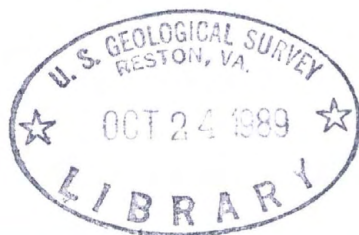


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Water Resources Data Massachusetts and Rhode Island Water Year 1987



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT MA-RI-87-1
Prepared in cooperation with the States of Massachusetts
and Rhode Island and with other agencies

1986

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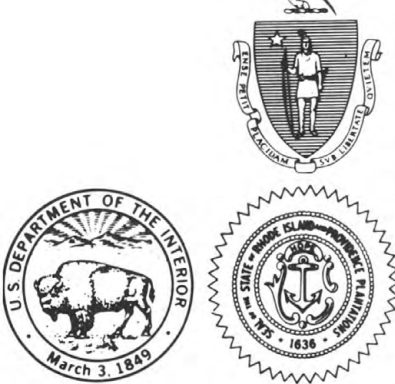
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Water Resources Data Massachusetts and Rhode Island Water Year 1987

by R.A. Gadoury, R.S. Socolow, D.J. Kent, and J.P. Russell



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT MA-RI-87-1
Prepared in cooperation with the States of Massachusetts and
Rhode Island and with other agencies

DEPARTMENT OF THE INTERIOR

MANUEL LUJAN, JR., *Secretary*

U.S. GEOLOGICAL SURVEY

Dallas L. Peck, *Director*

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Water Resources Division
10 Causeway Street, Suite 926
Boston, MA 02222-1040

1989

PREFACE

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

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: T. J. Calderini, M. A. Dufva, G. G. Girouard, L. A. Rowse, J. P. Russell, R. S. Socolow, and N. C. Suurballe.

Marianne Orlando, Kathleen Cerutti, and Cassandra Jones were responsible for the word processing and publishing phases of the report.

This report was prepared in cooperation with the States of Massachusetts and Rhode Island and with other agencies under the general supervision of I. C. James, II, Chief, New England District, M. H. Frimpter, Chief, Massachusetts Office, and H. E. Johnston, Chief, Rhode Island Office.

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16. Abstract (Limit: 200 words) Water-resources data for the 1987 water year for Massachusetts and Rhode Island consists of records of stage, discharge, and water quality of streams; contents of lakes and reservoirs; and ground-water levels. This report contains discharge records for 96 gaging stations, monthend contents for 30 lakes and reservoirs, water quality for 9 gaging stations, and water levels for 109 observation wells. Also included are data for one crest-stage partial-record station. Additional water data were collected at various sites, not part of the systematic data-collection program, and are published as miscellaneous measurements. A few pertinent stations in bordering states 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 cooperating State and Federal agencies in Massachusetts and Rhode Island.			
17. Document Analysis a. Descriptors *Massachusetts, *Rhode Island, *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.			
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(Letters after station name designate type of data: (d), discharge; (l), lake; (c) chemical; (b), biological; (m) microbiological; (s) sediment; (t), water temperature)

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Water Resources Data for Massachusetts and Rhode Island, 1987

By R.A. Gadoury, D.J. Kent, K.G. Ries, III, and H.L. White

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 Massachusetts and Rhode Island 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, Massachusetts and Rhode Island."

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 and water quality of ground-water wells. This volume contains records for water discharge at 96 gaging stations; monthend contents at 30 lakes and reservoirs; water quality at nine gaging stations; and water levels at 109 observation wells. Also included are supplemental water quality data for most of the 96 gaging stations. Locations of these sites are shown in figures 1 and 2. Additional water data were collected at various sites, not involved in the systematic data-collection program, and are published as miscellaneous discharge measurements. A few pertinent stations (not included above) in

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

Prior to introduction of this series and for several water years concurrent with it, water-resources data for Massachusetts and Rhode Island 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 1A and 1B." 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

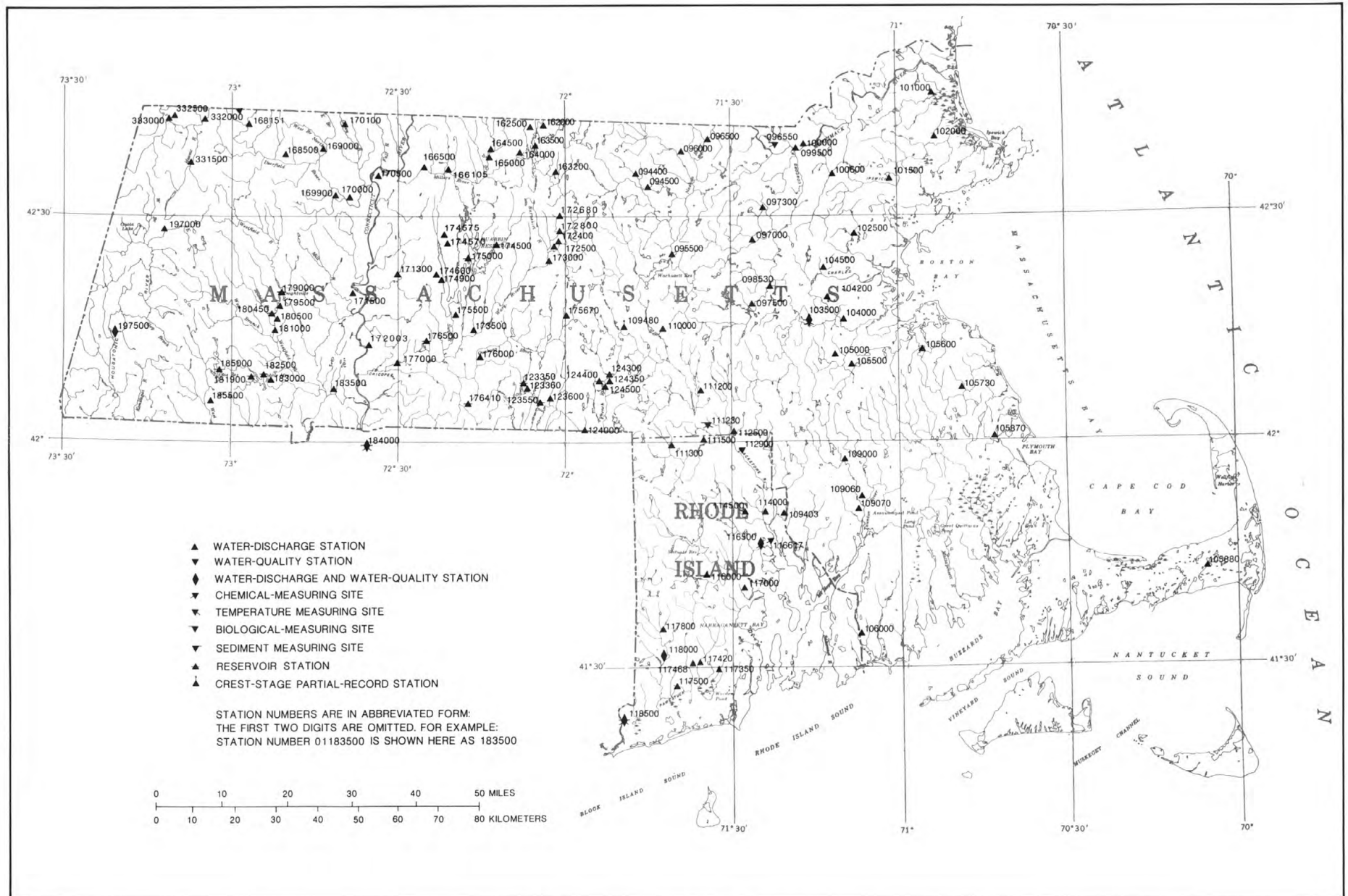


Figure 1.--Location of gaging stations

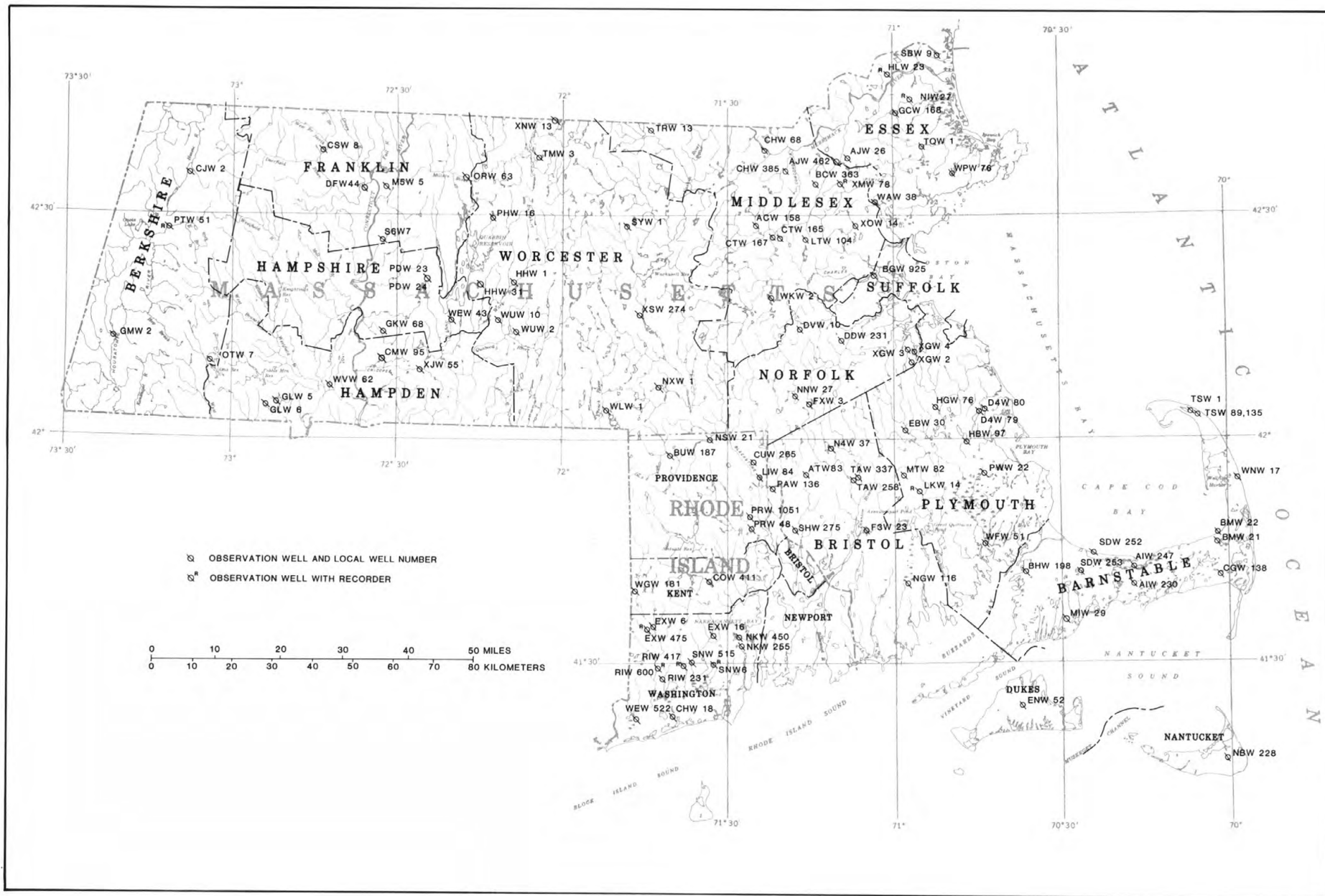


Figure 2.—Location of observation wells

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, Federal Center, Bldg. 41, Box 25425, Denver, CO 80225.

Publications similar to this report are published annually by the Geological Survey for all States. These official Survey reports have an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this volume is identified as "U.S. Geological Survey Water-Data Report MA-RI-87-1." For archiving and general distribution, the reports for 1971-74 water years also are identified as water-data reports. These water-data reports are for sale in paper copy or in microfiche by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161. Additional information, including current prices, for ordering specific reports may be obtained from the Office Chief at the address given on the back of the title page or by telephone (617) 565-6860.

COOPERATION

The U.S. Geological Survey and agencies of the States of Massachusetts and Rhode Island have had cooperative agreements for the collection of streamflow records since 1909 and 1941, respectively, and for water-quality records since 1954. Organizations that assisted in collecting the data in this report through cooperative agreement with the Survey are:

Massachusetts: Department of Environmental Management, James Gutensohn, Commissioner, Division of Water Resources, C. F. Kennedy, Director and Chief Engineer; Department of Environmental Quality Engineering, S. R. Sylva, Commissioner, Division of Water Pollution Control, T. C. McMahon, Director; Metropolitan District Commission, W. J. Geary, Commissioner, Watershed Management Division, M. I. Bhatti, Director, Parks Engineering and Construction Division, R. R. Signore, Director; Department of Fisheries, Wildlife and Environmental Law Enforcement, Walter E. Bickford, Commissioner, Division of Fisheries and Wildlife, Richard Cronin, Director.

Rhode Island: State Water Resources Board, W. M. Stetson, Chairman, P. P. Calise, Acting

General Manager; Department of Environmental Management, R. L. Bendick Jr., Director, Division of Water Resources, Michael Annarummo, Chief; Narragansett Bay Water Quality Commission, E. R. Jankel, Executive Director.

Assistance in the form of funds or services was given by the Corps of Engineers, U.S. Army, in collecting records for 14 gaging stations published in this report.

Organizations supplying data are acknowledged in the station descriptions.

SUMMARY OF HYDROLOGIC CONDITIONS

Runoff for the 1987 water year was in the above-normal range (upper quartile of record) in Rhode Island and eastern Massachusetts and was in the normal range in central and western Massachusetts. Runoff at gaging stations in Massachusetts ranged from about 22 to 43 inches; runoff at Rhode Island gages ranged from about 32 to 37 inches. Rain from two storms that occurred Mar. 30 to Apr. 2 and Apr. 4 to 8 produced substantial flooding, primarily in the northern half of Massachusetts. Annual peaks at most streams in Massachusetts occurred during one of those two storms; in Rhode Island, however, most annual peaks occurred about Dec. 3.

October runoff was above normal in western and north central Massachusetts and was in the normal range elsewhere in the two States. In November runoff was above median throughout both States and was above normal in northwestern and north central Massachusetts. December runoff was above normal everywhere; a new high monthly mean for December was recorded at the index station Pawcatuck River at Wood River Junction, R.I., and second or third highest means for the month were recorded at several other stations in Rhode Island and eastern Massachusetts. Streamflow declined in January and ranged from above normal in southern Rhode Island and southeastern Massachusetts to below median in central and western Massachusetts. Streamflow continued to decline in February and was in the below-normal range (lower quartile of record) in all areas except southern Rhode Island, where it remained in the normal range. Runoff in March increased seasonally and was in the normal range throughout both States. Cumulative runoff for the first six months of the year ranged from 88 to

117 percent of median in Massachusetts and from 118 to 128 percent of median in Rhode Island.

The storms of late March and early April produced above-normal runoff throughout both States in April. New high means for the month were recorded at index stations Parker River at Byfield, Mass., Wading River near Norton, Mass., and Branch River at Forestdale, R.I. Streamflow declined rapidly thereafter; runoff in May remained above median in Rhode Island and eastern Massachusetts, was in the normal range in central Massachusetts, and was below normal in western Massachusetts. Runoff was below median for the next three months: in June runoff was below normal throughout most areas of both States; in July and August runoff was below normal in southern Rhode Island and southeastern Massachusetts. Streamflow increased in September; runoff was generally above normal in Massachusetts and in the normal range in Rhode Island. Cumulative runoff for the last six months of the water year was above median in Rhode Island and eastern Massachusetts, about median in central Massachusetts, and below median in western Massachusetts. Monthly mean discharges for three index gaging stations and median discharges for the reference period 1951-80 are compared in figure 3.

One to four inches of rain fell in Massachusetts during the storm of March 30 to April 2 and four to nine inches fell during the storm of April 4 to 8. Flooding from the first storm was the result of a combination of rain, prior reductions in the snow cover with concomitant increases in streamflow, and snowmelt in the higher elevations during the storm, and was most significant in central and western parts of the State. The antecedent conditions of saturated soil and, on some streams, flood-control and other reservoirs already partially filled from the first storm, combined with heavy rain from the second storm to produce record peak discharges at six long-term gaging stations: Squannacook River near West Groton; Parker River at Byfield; Ipswich River at South Middleton; Ipswich River near Ipswich; North River at Shattuckville; and Deerfield River near West Deerfield. Flooding in northeastern Massachusetts was most pronounced along those streams with considerable natural storage, where the effect of total rainfall is more significant than that of rainfall intensity. The peak discharge at Merrimack River below Concord River at Lowell was exceeded only by the floods of 1852, 1936,

and 1938. The peak discharge at Nashua River at East Pepperell was the greatest since the flood of 1936. At Concord River below River Meadow Brook at Lowell the previous high peak stage was equalled, but the peak discharge of this year's flood was slightly less. This difference occurred because of an increase in riparian vegetation which affected the stage-discharge relation. The peak discharges at the gages on the Parker River at Byfield and Ipswich River near Ipswich had estimated recurrence intervals greater than 100 years. (The recurrence interval is the average interval of time within which a flood of given magnitude will be exceeded once, and is the reciprocal of the probability of occurrence of this event. For example, with a recurrence interval of 40 years a flood has a 1 in 40 chance of being exceeded in a given year.) Peak discharges and their estimated recurrence intervals for selected stations in Massachusetts and Rhode Island are given in table 1. Recurrence intervals were estimated for most stations regardless of the extent to which the peak discharges could be controlled by reservoirs or lakes upstream. More detailed information on previous floods can be found in the data tables for the specific stations.

Storage in Quabbin Reservoir in central Massachusetts was 78 percent full at the beginning of the year, declined to 76 percent full by the end of November, was 90 percent full at the end of May, and declined to 81 percent by the end of the year. The combined storage of Borden Brook and Cobble Mountain Reservoirs in western Massachusetts increased from 69 percent full at the end of October to 96 percent full at the end of April (but Cobble Mountain Reservoir was full and overflowing April 6-9) and declined to 76 percent full by the end of September. The storage of Scituate Reservoir in Rhode Island increased from 76 percent full at the end of October to 105 percent full at the end of April, to 74 percent full at the end of the year.

Ground-water levels at the beginning of the water year and in October and November were in the normal range throughout Massachusetts and Rhode Island. Levels in most wells declined in October and increased seasonally in November. Precipitation was unusually high in both States during December, causing ground-water levels to increase in most wells. December levels were in the normal range in western and southeastern Massachusetts (including Cape Cod) and were above normal elsewhere in Massachusetts and in

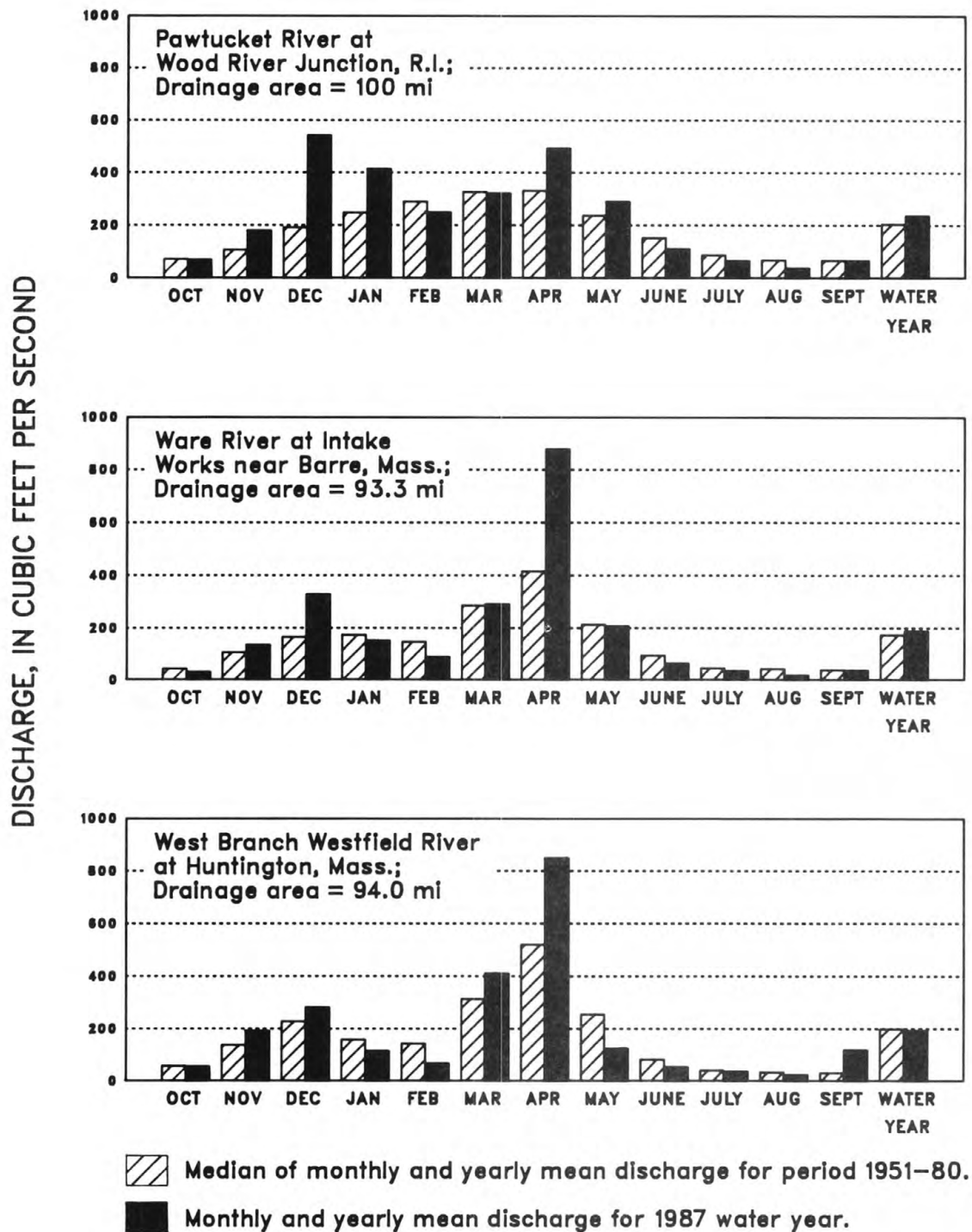


Figure 3.—Comparison of discharge at three long-term index gaging stations during 1987 water year with median discharge for period 1951-80.

Table 1.--Peak stages, discharges, and recurrence intervals of selected gaging stations in Massachusetts and Rhode Island.

Station Number	Station name	Drainage Area (mi ²)	Date	Gage height (ft)	Discharge (ft ³ /s)	Estimated recurrence interval, (in years)
01094400	North Nashua River at Fitchburg, Mass.	63.4	4-05-87	7.78	3,510	--
01094500	North Nashua River near Leominster, Mass.	110	4-05-87	9.97	7,400	22
01096000	Squannacook River near West Groton, Mass.	63.7	4-06-87	8.16	4,220	55
01096500	Nashua River at East Pepperill, Mass.	316	4-07-87	16.19	11,700	45
01097000	Assabet River at Maynard, Mass.	116	4-07-87	7.17	2,580	19
01099500	Concord River below River Meadow Brook at Lowell, Mass.	307	4-10-87	9.60	5,120	40
01100000	Merrimack River below Concord River at Lowell, Mass.	4,425	4-07-87	57.16	84,700	35
01101000	Parker River at Byfield, Mass.	21.3	4-07-87	7.35	790	>100
01101500	Ipswich River at South Middleton, Mass.	44.5	4-07-87	7.51	1,010	60
01102000	Ipswich River near Ipswich, Mass.	125	4-08-87	9.43	3,550	>100
01102500	Aberjona River at Winchester, Mass.	24.1	4-07-87	14.20	877	27
01103500	Charles River at Dover, Mass.	183	4-08-87	8.05	2,770	24
01105000	Neponset River at Norwood, Mass.	34.7	4-07-87	9.38	691	10
01105730	Indian Head River at Hanover, Mass.	30.2	4-07-87	5.47	716	2
01109000	Wading River near Norton, Mass.	43.3	4-05-87	10.10	828	10
011100009	Quinsigimond River at North Grafton, Mass.	25.6	4-07-87	3.96	488	17
01111500	Branch River at Forestdale, R.I.	91.2	4-05-87	9.99	3,770	13
01112500	Blackstone River at Woonsocket, R.I.	416	4-05-87	11.65	10,300	9
01162500	Priest Brook near Winchendon, Mass.	19.4	4-01-87	6.55	871	14
01168500	Deerfield River at Charlemont, Mass.	361	4-04-87	16.25	36,200	25
01169000	North River at Shattuckville, Mass.	89.0	4-05-87	11.19	14,200	48
01170000	Deerfield River near West Deerfield, Mass.	557	4-05-87	17.71	61,700	--
01170500	Connecticut River at Montague City, Mass.	7,860	4-01-87	35.89	126,000	8
01171500	Mill River at Northampton, Mass.	54.0	3-31-87	7.22	2,650	3
01174500	East Branch Swift River near Hardwick, Mass.	43.7	4-01-87	21.17	1,200	6
01176000	Quaboag river at West Brimfield, Mass.	150	4-07-87	7.78	2,170	9
01181000	West Branch Westfield River at Huntington, Mass.	94.0	4-05-87	11.08	13,900	11
01183500	Westfield River near Westfield, Mass.	497	4-05-87	17.81	21,200	6
01185500	West Branch Farmington River near New Boston, Mass.	91.7	4-04-87	9.51	8,630	23
01197000	East Branch Housatonic River at Coltsville, Mass.	57.6	4-05-87	--	5,000	33
01197500	Housatonic River near Great Barrington, Mass.	282	4-06-87	9.15	6,050	8
01332000	North Branch Hoosic River at North Adams, Mass.	40.9	4-05-87	11.61	6,720	27
01332500	Hoosic River near Williamstown, Mass.	126	4-05-87	12.44	9,350	18
01333000	Green River at Williamstown, Mass.	42.6	3-31-87	4.96	2,050	4

Rhode Island. New high water levels for December were recorded at 16 wells in Massachusetts and four wells in Rhode Island. January levels showed mixed trends, and were above normal in Rhode Island and eastern Massachusetts. Levels generally declined to the normal range in February, with a small area of below-normal levels in southern Worcester County in Massachusetts. Water levels generally increased seasonally in March, with above-normal levels on Cape Cod, but below-normal levels persisted in southern Worcester County.

The storms in late March and early April caused ground-water levels to increase sharply in many wells. April water levels were above normal throughout Rhode Island, east of Worcester, and in the southeastern part of the Connecticut River valley in Massachusetts. New highs for periods of record were recorded at 10 wells in Massachusetts and 10 other wells set new highs for the month. May water levels declined seasonally except on Cape Cod and a few deep wells elsewhere, which continued to rise following the April storms. May levels remained in the above-normal range in southeastern Massachusetts and Rhode Island, with new all-time highs set at three wells and new monthly highs set at 13 wells in Massachusetts.

The seasonal decline continued from June through August. In June, ground-water levels remained in the above-normal range on Cape Cod, with six out of the seven new monthly highs recorded in Massachusetts being set on Cape Cod, Martha's Vineyard, and Nantucket. June levels fell to the below-normal range west of the Connecticut River valley in Massachusetts, and remained in the normal range elsewhere. The area of below-normal water levels expanded in July to include the entire western half of Massachusetts, except for the northeastern Connecticut River valley. July levels remained in the above-normal range on Cape Cod, and were in the normal range elsewhere. Water levels remained in the below-normal range in western Massachusetts in August, and were normal elsewhere except in northeast coastal Massachusetts, where levels declined to the below-normal range. Levels in about two-thirds of the wells in the two States increased in September, setting eleven new monthly highs. September levels were in the above-normal range on Cape Cod, in eastern Rhode Island, and in bordering areas of Massachusetts. Well 1051, in the city of Providence, R.I., set a new all-time high water level in August, and a new monthly high in

September, because of a decrease in industrial pumpage in the area. Monthly water levels and average, maximum, and minimum monthly levels for the periods of record for three observation wells in western and eastern Massachusetts and northern Rhode Island are shown in figure 4.

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

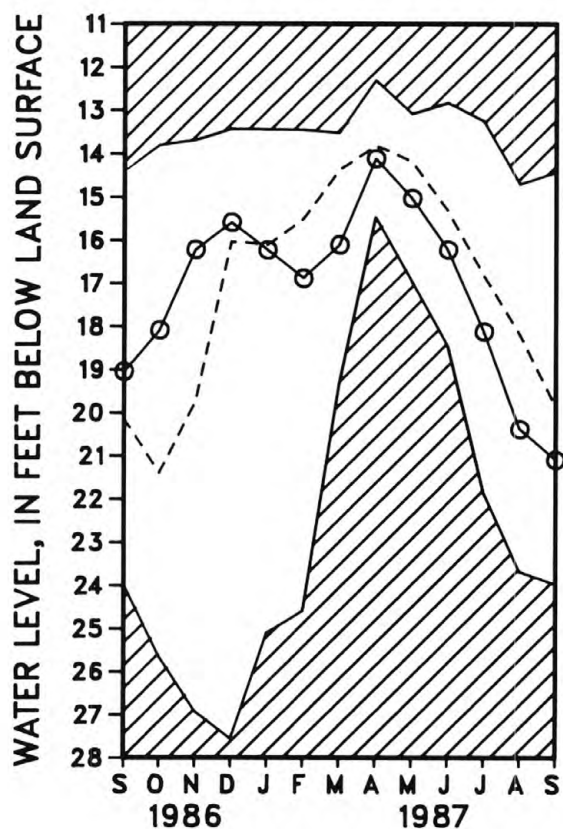
The surface-water and ground-water records published in this report are for the 1987 water year that began October 1, 1986, and ended September 30, 1987. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and content data for lakes and reservoirs, water-quality data for surface water, and ground-water-level data.

The locations of the stations and wells where the data were collected are shown in figures 1 and 2. The following sections of the introductory text are presented to provide users with a more de-

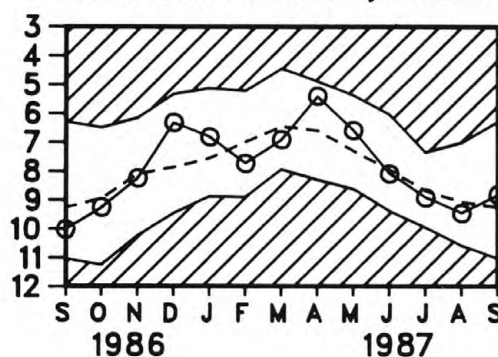
UNSHADED AREA SHOWS RANGE BETWEEN
HIGHEST AND LOWEST MONTHEND WATER LEVEL

CURRENT —○— MEDIAN - - - - -

A. PITTSFIELD 51, MASS.



B. WILMINGTON 78, MASS.



C. COVENTRY 411, RI.

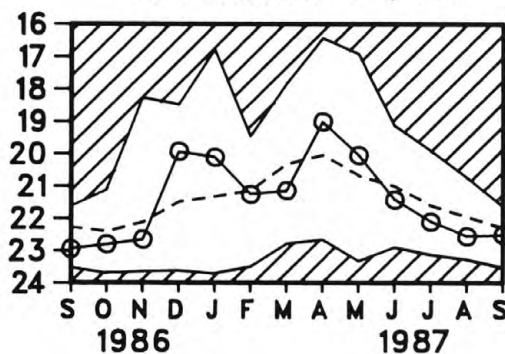


Figure 4.—Comparison of monthly water levels in selected observation wells during 1987 water year with median, maximum, and minimum levels for period of record.

tailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

Station-Identification Numbers

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

Downstream Order System

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a mainstream station are listed before that station. A station on a tributary that enters between two mainstream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary with respect to the stream to which it is immediately tributary is indicated by an indentation in the "List of Stations" in the front of this report. Each indentation represents one rank. This downstream order and system of identification 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 station number (usually eight digits, but sometimes nine or more if needed) appears just to the left of the station name. The first two digits indicate the Part num-

ber (formerly used in Water-Supply Papers to designate major river systems) and the last six or more digits indicate the downstream order within the Part. For example, in the station number 01094400, "01" is the Part number for "North Atlantic Slope Basins" and "094400" is the downstream order number.

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 below.)

A local well-numbering system is also used in this report. The local well number consists of a 2-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 2.

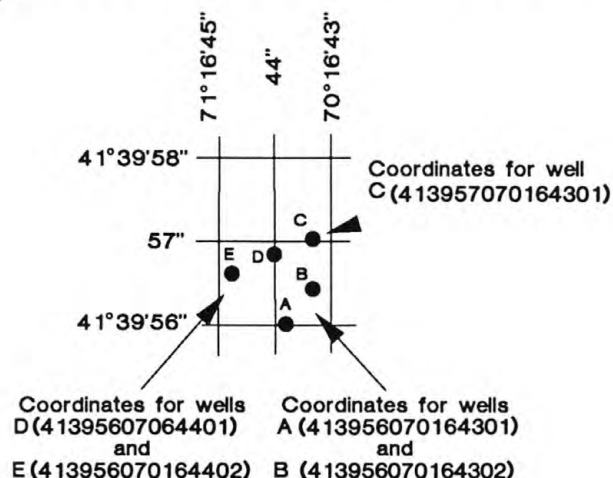


Figure 5.--System for numbering wells (latitude and longitude)

Records of Stage and Water Discharge

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

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

Data Collection and Computation

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

Continuous records of stage are obtained with analog recorders that trace continuous graphs of stage or with digital recorders that punch stage

values on paper tapes at selected time intervals. Measurements of discharge are made with current meters using methods adopted by the Geological Survey as a result of experience accumulated since 1880. These methods are described in standard textbooks; in U.S. Geological Survey Techniques of Water-Resources Investigations, Book 3, Chapter A6; and in U.S. Geological Survey Water-Supply Paper 2175, "Measurement and Computation of Stream-flow: 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 ships 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 co-operating 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 other-

wise 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 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 appears below the table of peak data.

REVISIONS.--If a critical error in published records is discovered, a revision is included in the first report published following discovery of the error. Although rare, occasionally the records of a discontinued gaging station may need revision. Because, for these stations, there would be no current or, possibly, future station manuscript published to document the revision in a "Revised Records" entry, users of data for these stations who obtained the record from previously published data reports may wish to contact the 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 Massachusetts or Rhode Island offices of the New England District. Also, most of the daily mean discharges are in computer-readable form and have been analyzed statistically. Information on the availability of the unpublished information or on the results of statistical analyses of the published records may be obtained from the office

whose address is given on the back of the title page of this report.

Records of Surface-Water Quality

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

Classification of records

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

A careful distinction needs to be made between "continuing records", as used in this report, and "continuous recordings," which refers to a continuous graph or a series of discrete values punched at short intervals on a paper tape. Some records of water quality, such as temperature and specific conductance, may be obtained through continuous recordings; however, because of costs, most data are obtained only monthly or less frequently. Locations of stations for which records on the quality of surface water appear in this report are shown in figure 1.

Arrangement of Records

Water-quality records collected at a surface-water daily record station are published immediately following that record, regardless of the frequency of sample collection. Station number and name are the same for both records. Where a surface-water daily record station is not available or where the water quality differs significantly from

that at the nearby surface-water station, the continuing water-quality record is published with its own station number and name in the regular downstream-order sequence. Water-quality data for partial-record stations and for miscellaneous sampling sites appear in separate tables following the table of discharge measurements at miscellaneous sites.

On-site Measurements and Sample Collection

In obtaining water-quality data, a major concern needs to be assuring that the data obtained represent the in situ quality of the water. To assure this, certain measurements, such as water temperature, pH, and dissolved oxygen, need to be made onsite when the samples are taken. To assure that measurements made in the laboratory also represent the in situ water, carefully prescribed procedures need to be followed in collecting the samples, in treating the samples to prevent changes in quality pending analysis, and in shipping the samples to the laboratory.

Procedures for onsite measurements and for collecting, treating, and shipping samples are given in publications on "Techniques of Water-Resources Investigations," Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4. All of these references are listed under "Publication 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 New England District Office whose address is given on the back of the title page of this report.

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.

Water temperature

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

At stations where recording instruments are used, either mean temperatures or maximum and minimum temperatures for each day are published.

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 (BOD), samples for indicator bacteria, and daily samples for specific conductance are analyzed locally. All other samples are analyzed in the Geological Survey laboratories in Arvada, Colorado and Doraville, Georgia. Methods used in analyzing sediment samples and computing sediment records are given in TWRI, Book 5, Chap. C1.

Methods used by the Geological Survey laboratory are given in TWRI, Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4.

Data Presentation

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

conductance, pH, water temperature, dissolved oxygen, and suspended sediment then follow in sequence.

In the descriptive headings, if the location is identical to that of the discharge, 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 individ-

ual changes in the State data-report series or elsewhere, potential users of U.S. Geological Survey water-quality data are encouraged to obtain all required data from the appropriate computer file to insure the most recent updates.

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

Remark Codes

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

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

Records of Ground-Water Levels

Only water-level data from a national network of observation wells are given in this report. These data are intended to provide a sampling and historical record of water-level

changes in the Nation's most important aquifers. Locations of the observation wells in this network in Massachusetts and Rhode Island are shown in figure 2.

Data Collection and Computation

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

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

Water-level records are obtained from direct measurements with a steel tape or from the graph or punched tape of a water-stage recorder. The water-level measurements in this report are given in feet with reference to land-surface datum (lsd). Land-surface datum is a datum plane that is approximately at land surface at each well. If known, the elevation of the land-surface datum is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well description. Water levels in wells equipped with recording gages are reported daily or for every fifth day and the end of each month (eom).

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

Data Presentation

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

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

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

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

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

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

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

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

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

A table of water levels follows the station description for each well. Water levels are reported in feet below land-surface datum. For most wells all taped measurements of water level are published. For wells equipped with digital recorders, tables of daily mean water levels and the means, highs, and lows for each month are published. Abbreviated tables are published for wells equipped with analog recorders; water level highs are shown for every fifth day and the end of each month (eom). The highest and lowest water levels of the water year and their dates of occurrence are shown on a line below the daily or abbreviated table. Because all values are not published for wells with recorders, the extremes may be values that are not listed in the table.

Missing records are indicated by dashes in place of the water level.

ACCESS TO WATSTORE DATA

The National **WATER** Data **STOR**age and **RE**trieval 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 ¹acre to a depth of 1 foot and is equivalent to 43,560 ft³ or about 326,000 gallons or 1,233 m³.

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

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

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

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

Artesian means confined and is used to describe a well in which the water level stands above the top of the aquifer tapped by the well.

A flowing artesian well is one in which the water level is above the land surface.

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

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

Fecal coliform bacteria are bacteria that are present in the intestine or feces of warm-blooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms that produce blue colonies within 24 hours when incubated at 44.5° plus or minus 0.2° on M-F° 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° plus or minus 1.0° on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

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

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

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

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

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

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

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

Bottom material: See "Bed material."

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

Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water and furnishes an approximation of the amount of organic and reducing material

present. The determined value may correlate with natural water color or with carbonaceous organic pollution from sewage or industrial wastes.

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

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

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

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

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

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

Cubic feet per second per square mile [$(\text{ft}^3/\text{s})/\text{mi}^2$] is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

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

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

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

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

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

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

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

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

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

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce

lather. It is computed as the sum of equivalents of polyvalent cations and is expressed as the equivalent concentration of calcium carbonate (CaCO_3).

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

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

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

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

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

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

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

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

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

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

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

useful for water-quality assessment and hydrologic research.

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

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

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

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

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

Particle size is the diameter, in millimeters, of a particle determined by either sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

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

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

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

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

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

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

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

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

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

quality of the water. They are the primary food producers in the aquatic environment and are commonly known as algae.

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

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

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

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

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

Milligrams of carbon per area or volume per unit time [$\text{mg C}/(\text{m}^2 \cdot \text{time})$] for periphyton and macrophytes and [$\text{mg C}/(\text{m}^3 \cdot \text{time})$] for phytoplankton are units for expressing primary productivity. They define the amount of carbon dioxide consumed as measured by radioactive carbon (carbon 14). The carbon 14 method is of greater sensitivity than the oxygen light and dark bottle method and is preferred for use in unenriched waters. Unit

time may be either the hour or day, depending on the incubation period.

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

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

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

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

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

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from

water; it includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

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

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

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

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

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 ($7Q_{10}$) 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°. 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 "" is more general than "runoff" as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Substrate is the physical surface upon which an organism lives.

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

Artificial substrate is a device which is purposely placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is taken. Examples of artificial substrates are basket samplers (made of wire

cages filled with clean streamside rocks) and multiplate samplers (made of hardboard) for benthic organism collection, and plexiglass strips for periphyton collection.

Surface area of a lake is that area outlined on the latest Survey topographic map as the boundary of the lake and measured by a planimeter in acres. In localities not covered by topographic maps, the areas are computed from the best maps available at the time 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.

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

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

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

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

Tons per acre-foot indicates the dry mass of dissolved solids in 1 acre-ft of water. It is

computed by multiplying the concentration of the constituent, in milligrams per liter, by 0.00136.

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

Total is the total amount of a given constituent in a representative water-suspended sediment sample, regardless of the constituent's physical or chemical form. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent present in both the dissolved and suspended phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total." (Note that the word "total" does double duty here, indicating both that the sample consists of a water-iment 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, 1987, is called the "1987 water year."

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

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

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

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

Forty-eight manuals by the U.S. Geological Survey have been published to date in the series on techniques describing procedures for planning and executing specialized work in water-resources investigations. Material is grouped under major subject headings called books and further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) is on surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits

flexibility in revision and publication as the need arises. Reports listed below are sold by the Books and Open-File Reports Section, U.S. Geological Survey, Box 25425, Federal Center, Denver, CO 80225 (authorized agent of the Superintendent of Documents, Government Printing Office). Prepayment is required. Check or money order is payable to the U.S. Geological Survey. Prices, effective December 1987, are subject to change. When ordering, please give the series (U.S. Geological Survey Techniques of Water-Resources Investigations), title, book number, and chapter number.

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

- 5-A3 Methods for analysis of organic substances in water, by D. F. Goerlitz and Eugene Brown: Book 5, Chap. A3. 1972. 40 p. \$2.50.
- 5-A4 Methods for collection and analysis of aquatic biological and microbiological samples, edited by P. E. Greeson, T. A. Ehlke, G. A. Irwin, B. W. Lium, and K. V. Slack: Book 5, Chap. A4. 1977. 332 p. \$10.00.
- 5-A5 Methods for determination of radioactive substances in water and fluvial sediments, by L. L. Thatcher, V. J. Janzer, and K. W. Edwards: Book 5, Chap. A5. 1977. 95 p. \$6.50.
- 5-A6 Quality assurance practices for the chemical and biological analyses of water and fluvial sediments, by L. C. Friedman and D. E. Erdmann: Book 5, Chap. A6. 1982. 181 p. \$6.50.
- 5-C1 Laboratory theory and methods for sediment analysis, by H. P. Guy: Book 5, Chap. C1. 1969. 58 p. \$3.25.
- 7-C1 Finite difference model for aquifer simulation in two dimensions with results of numerical experiments, by P. C. Trescott, G. F. Pinder, and S. P. Larson: Book 7, Chap. C1. 1976. 116 p. \$4.75.
- 7-C2 Computer model of two-dimensional solute transport and dispersion in ground water by L. F. Konikow and J. D. Bredehoeft: Book 7, Chap. C2. 1978. 90 p. \$3.25.
- 7-C3 A model for simulation of flow in singular and interconnected channels by R. W. Schaffranek, R. A. Baltzer, and D. E. Goldberg: Book 7, Chap. C3. 1981. 110 p. \$7.50.
- 8-A1 Methods of measuring water levels in deep wells, by M. S. Garber and F. C. Koopman: Book 8, Chap. A1. 1968. 23 p. \$2.00.
- 8-A2 Installation and service manual for U.S. Geological Survey manometers, by J. D. Craig: Book 8, Chap. A2. 1983. 57 p. \$6.00.
- 8-B2 Calibration and maintenance of vertical-axis type current meters, by G. F. Smoot and C. E. Novak: Book 8, Chap. B2. 1968. 15 p. \$1.75.

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

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

MERRIMACK RIVER BASIN

31

01094400 NORTH NASHUA RIVER AT FITCHBURG, MASS.

LOCATION.--Lat 42°34'34", long 71°47'19", Worcester County, Hydrologic Unit 01070004, on right bank 400 ft upstream from Fifth Street Bridge at Fitchburg and 1.8 mi upstream from Baker Brook.

DRAINAGE AREA.--63.4 mi².

PERIOD OF RECORD.--October 1972 to current year.

REVISED RECORDS.--WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 400 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Doubtful gage height record Apr. 10 to May 13. Flow regulated by mills and reservoirs upstream. Flow affected by diversions for municipal use. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--15 years, 126 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,510 ft³/s Apr. 5, 1987, gage height, 7.78 ft; maximum gage height, 9.25 ft Apr. 5, 1987, backwater from landslide; minimum discharge, 6.7 ft³/s Oct. 19, 1980, Sept. 10 and Oct. 1, 1984, but may have been slightly lower about Sept. 8, 1980; minimum daily, 9.0 ft³/s Sept. 8, 15, 1980.

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)
Dec 3	1000	1,060	4.63	Apr. 5	0345	*3,510	7.78
Dec. 19	0700	1,660	5.48	Apr. 5	1630	a	*9.25
Mar. 31	2215	2,400	6.45				

a Backwater from landslide.

Minimum discharge, 7.0 ft³/s Aug. 5; minimum daily, 9.3 ft³/s Aug. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	39	148	126	e80	101	1620	451	73	32	14	16
2	37	38	137	132	79	141	754	413	61	47	12	14
3	40	37	760	153	80	109	458	328	57	77	32	13
4	56	34	502	132	80	93	545	279	100	56	18	13
5	72	33	304	123	74	86	2830	250	125	42	9.3	12
6	64	60	226	112	73	82	1830	251	83	33	15	10
7	48	60	191	110	73	97	1630	229	61	30	15	12
8	41	81	168	108	71	177	1030	195	56	27	13	21
9	41	119	144	97	72	240	720	175	58	31	13	29
10	39	93	158	100	e68	191	542	160	65	27	35	17
11	34	76	164	115	e66	159	433	143	52	27	20	15
12	31	77	146	106	e64	136	363	129	36	28	16	31
13	31	74	123	100	e58	124	442	118	35	27	14	68
14	38	63	99	93	e52	116	432	110	29	25	14	86
15	40	63	102	94	e53	111	351	105	31	28	13	46
16	35	61	100	104	e56	106	290	99	34	22	13	39
17	32	60	98	95	e60	100	293	93	24	21	13	37
18	31	61	122	87	e58	97	392	87	18	20	13	82
19	30	75	1170	96	e56	97	363	82	16	19	13	163
20	29	68	620	99	e54	101	311	77	15	19	13	135
21	29	464	350	86	55	111	284	72	13	20	17	94
22	28	311	244	83	55	124	253	74	16	21	13	79
23	28	193	205	108	55	188	220	73	31	21	11	67
24	28	197	173	88	58	283	210	83	29	21	11	48
25	26	221	449	e82	58	374	200	81	25	25	12	39
26	40	255	409	e76	58	444	179	77	31	28	12	32
27	92	496	284	e80	58	422	162	72	133	26	15	26
28	73	300	217	e78	59	405	181	74	102	22	18	24
29	61	221	181	e76	---	373	277	81	57	20	31	23
30	54	179	163	e74	---	365	394	123	43	19	18	72
31	45	---	148	e80	---	1290	---	91	---	19	15	---
TOTAL	1314	4109	8305	3093	1783	6843	17989	4675	1509	880	491.3	1363
MEAN	42.4	137	268	99.8	63.7	221	600	151	50.3	28.4	15.8	45.4
MAX	92	496	1170	153	80	1290	2830	451	133	77	35	163
MIN	26	33	98	74	52	82	162	72	13	19	9.3	10

CAL YR 1986 TOTAL 49363 MEAN 135 MAX 1610 MIN 26
WTR YR 1987 TOTAL 52354.3 MEAN 143 MAX 2830 MIN 9.3

e Estimated

MERRIMACK RIVER BASIN

01094500 NORTH NASHUA RIVER NEAR LEOMINSTER, MASS.

LOCATION.--Lat 42°30'06", long 71°43'23", Worcester County, Hydrologic Unit 01070004, on right bank 1.3 mi upstream from Wekepeke Brook, 2.5 mi southeast of Leominster, and 6.1 mi upstream from confluence with Nashua River.

DRAINAGE AREA.--110 mi², includes 2.1 mi² above outlet of Ashby (Fitchburg) Reservoir.

PERIOD OF RECORD.--Discharge: September 1935 to current year.

Water-quality records: Water years 1955, 1958.

REVISED RECORDS.--WDR MA-NH-RI-VT-73-1: Drainage area. WDR MA-RI-82-1: 1981.

GAGE.--Water-stage recorder. Datum of gage is 270.04 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Regulation at low flow by mills upstream. Flow includes diversion to basin for municipal supplies: for Fitchburg, from Mare Meadow Reservoir since 1955; for Leominster, from Wachusett Reservoir since 1966 and from the Southeast Well Field since 1958. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--52 years, 196 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,300 ft³/s Mar. 18, 1936, gage height, 20.53 ft, from floodmarks, by computation of peak flow over dam; minimum, 11 ft³/s Aug. 29, 1948; minimum daily, 22 ft³/s Sept. 27, 1936, Sept. 2, 1957.

Maximum discharge since at least 1850, that of Mar. 18, 1936.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	1100	1,280	3.93	Apr. 1	0245	4,860	7.86
Dec. 3	1215	2,040	4.94	Apr. 5	0930	*7,400	*9.97
Dec. 19	1115	3,530	6.58	Apr. 7	0715	4,320	7.36
Dec. 25	0915	1,220	3.84				

Minimum discharge, 24 ft³/s Aug. 26; minimum daily, 30 ft³/s Aug. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66	73	257	249	141	218	3380	804	114	71	39	47
2	62	68	234	265	139	297	1320	714	102	87	34	43
3	64	66	1450	295	141	221	818	551	98	152	68	41
4	107	65	885	254	137	184	799	468	165	105	51	40
5	136	68	529	233	129	166	5810	440	207	84	38	39
6	108	125	401	214	124	162	4260	444	139	72	40	35
7	85	118	338	214	129	201	3460	396	105	64	41	40
8	74	163	300	204	125	380	1790	335	105	61	40	51
9	71	220	266	184	127	524	1190	293	99	63	39	104
10	69	172	303	189	119	418	895	270	104	94	122	53
11	62	139	306	224	120	326	697	242	91	68	57	46
12	58	143	272	200	110	271	570	223	76	60	47	56
13	58	134	240	183	107	243	755	203	80	60	44	125
14	74	117	200	171	90	224	754	184	71	57	41	155
15	75	108	205	184	93	213	586	177	70	61	39	86
16	65	106	196	214	97	200	487	167	71	53	38	73
17	60	110	192	186	108	186	489	154	60	50	37	68
18	59	108	237	165	103	180	723	147	52	49	38	155
19	56	124	2470	196	98	189	597	140	50	45	36	299
20	56	119	1230	188	96	199	485	132	47	45	37	269
21	57	881	703	165	95	219	445	127	44	47	40	179
22	56	558	487	157	97	251	401	126	46	47	35	140
23	56	353	405	208	98	346	351	122	84	47	35	124
24	56	350	341	e180	96	500	333	136	69	46	31	99
25	53	390	920	e150	96	630	325	132	62	46	33	84
26	67	430	808	141	97	757	285	127	63	56	30	73
27	210	848	555	147	100	696	261	119	259	51	41	68
28	133	512	428	141	104	654	291	125	182	47	56	66
29	105	381	357	139	---	588	510	123	104	44	108	60
30	94	311	318	131	---	560	714	170	85	43	56	161
31	85	---	288	146	---	1910	---	132	---	43	47	---
TOTAL	2437	7360	16121	5917	3116	12113	33781	7923	2904	1918	1438	2879
MEAN	78.6	245	520	191	111	391	1126	256	96.8	61.9	46.4	96.0
MAX	210	881	2470	295	141	1910	5810	804	259	152	122	299
MIN	53	65	192	131	90	162	261	119	44	43	30	35

CAL YR 1986 TOTAL 87134 MEAN 239 MAX 2850 MIN 50
WTR YR 1987 TOTAL 97907 MEAN 268 MAX 5810 MIN 30

e Estimated

MERRIMACK RIVER BASIN

33

01095500 NASHUA RIVER AT CLINTON, MASS.

LOCATION.--Lat 42°24'12", long 71°41'19", Worcester County, Hydrologic Unit 01070004, at Wachusett Dam 1 mi south of Clinton.

DRAINAGE AREA.--107.69 mi², since July 1937.

PERIOD OF RECORD.--Discharge: July 1896 to current year. Prior to October 1978, published as South Branch Nashua River.

Water-quality records: Water year 1957.

REVISED RECORDS.--WSP 1051: 1928. WDR MA-RI-78-1: 1977.

REMARKS.--Flow regulated by Wachusett Reservoir and several ponds. Records adjusted for change in contents in Wachusett Reservoir and diversions from Ware River and Quabbin Reservoir on Swift River. Entire flow, except required releases to the Nashua River, diverted for use of Boston metropolitan district and other municipalities.

COOPERATION.--Records provided by Water Division of Metropolitan District Commission.

AVERAGE DISCHARGE.--91 years, 190 ft³/s, 23.96 in/yr, adjusted to present drainage area.

MONTHLY DISCHARGE, IN CUBIC FEET PER SECOND, AND RAINFALL, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

	Mean	Per square mile	Runoff, in inches	Rainfall, in inches
October.....	32.0	0.30	0.34	2.46
November.....	148	1.37	1.53	6.67
December.....	463	4.30	4.95	6.75
Calendar year 1986.....	196	1.82	24.71	49.24
January.....	249	2.31	2.67	5.89
February.....	118	1.10	1.14	.36
March.....	426	3.96	4.56	5.59
April.....	1008	9.36	10.44	10.67
May.....	275	2.55	2.95	1.36
June.....	107	.99	1.11	3.82
July.....	39.9	.37	.43	.32
August.....	-18.9	-.18	-.20	3.63
September.....	66.9	.62	.69	5.34
Water year 1987.....	243	2.26	30.61	52.86

Note.--Negative figures indicate that evaporation, seepage, and other water transfer losses exceeded inflow.

MERRIMACK RIVER BASIN

01096000 SQUANNACOOK RIVER NEAR WEST GROTON, MASS.

LOCATION.--Lat 42°38'03", long 71°39'30", Middlesex County, Hydrologic Unit 01070004, on left bank 0.7 mi downstream from Trout Brook and 2.7 mi northwest of West Groton.

DRAINAGE AREA.--63.7 mi², excludes 2.16 mi², above outlet of Ashby Reservoir.

PERIOD OF RECORD.--Discharge: October 1949 to current year.
Water-quality records: Water year 1957.

REVISED RECORDS.--WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 244.27 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Occasional regulation at low flow by mill upstream; regulation greater prior to 1961. Entire flow from 2.16 mi² upstream from outlet of Ashby Reservoir diverted for municipal supply of Fitchburg except for occasional periods of spill. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--38 years, 112 ft³/s, 23.88 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,220 ft³/s Apr. 6, 1987, gage height, 8.16 ft; minimum daily, 2.0 ft³/s Sept. 7, 1965.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 4	0430	1,170	5.65	Apr. 1	1200	2,870	7.30
Dec. 19	2300	1,520	6.09	Apr. 6	0430	*4,220	*8.16

Minimum daily discharge, 13 ft³/s Aug. 24-27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	39	166	158	84	72	2180	437	55	49	18	17
2	27	42	145	149	82	126	912	440	51	42	17	15
3	25	38	441	148	83	149	470	348	57	71	21	15
4	38	36	909	e155	83	124	355	275	68	101	23	14
5	67	34	e410	e145	81	106	2120	233	110	74	20	14
6	76	41	e330	e135	77	100	3420	246	101	56	19	14
7	56	65	e250	134	79	103	2210	244	71	43	18	15
8	47	72	e210	133	78	153	1250	209	59	36	22	14
9	40	114	e180	122	78	254	694	183	56	33	21	23
10	36	118	e160	120	e73	237	491	165	50	30	27	20
11	35	91	e190	126	75	204	383	150	44	29	27	18
12	34	80	e180	128	72	158	322	139	41	29	24	17
13	32	77	e160	119	70	142	303	130	42	29	21	21
14	35	70	e130	111	e67	129	388	120	42	34	19	46
15	37	63	e120	111	66	124	321	112	40	33	18	47
16	38	61	e115	125	61	118	267	114	36	30	17	31
17	36	62	e105	121	61	113	247	103	32	27	17	24
18	35	63	e115	110	62	108	321	97	29	25	17	25
19	33	68	764	109	61	113	454	80	28	24	16	60
20	32	66	1010	e110	60	122	335	78	26	24	15	101
21	31	235	450	e105	60	131	271	80	25	23	14	116
22	29	551	285	100	60	153	240	77	25	22	14	82
23	29	279	233	102	61	192	214	77	41	21	14	63
24	28	199	203	e105	60	284	196	81	54	21	13	54
25	27	222	305	99	59	358	188	85	47	20	13	42
26	29	207	560	91	59	439	174	79	39	20	13	33
27	50	402	367	86	59	420	161	71	55	22	13	30
28	75	415	263	82	60	376	158	73	149	20	15	28
29	63	261	215	80	---	332	234	72	109	20	22	26
30	51	202	192	79	---	300	341	71	67	19	22	29
31	43	---	177	82	---	423	---	64	---	19	18	---
TOTAL	1242	4273	9340	3580	1931	6163	19620	4733	1649	1046	568	1054
MEAN	40.1	142	301	115	69.0	199	654	153	55.0	33.7	18.3	35.1
MAX	76	551	1010	158	84	439	3420	440	149	101	27	116
MIN	25	34	105	79	59	72	158	64	25	19	13	14
CFSM	.63	2.24	4.73	1.81	1.08	3.12	10.3	2.40	.86	.53	.29	.55
IN.	.73	2.50	5.45	2.09	1.13	3.60	11.46	2.76	.96	.61	.33	.62

CAL YR 1986 TOTAL 48365 MEAN 133 MAX 1200 MIN 22 CFSM 2.08 IN. 28.24
WTR YR 1987 TOTAL 55199 MEAN 151 MAX 3420 MIN 13 CFSM 2.37 IN. 32.24

e Estimated

MERRIMACK RIVER BASIN

35

01096500 NASHUA RIVER AT EAST PEPPERELL, MASS.

LOCATION.--Lat 42°40'03", long 71°34'32", Middlesex County, Hydrologic Unit 01070004, on right bank 200 ft downstream from powerplant of James River-Pepperell Co. at East Pepperell and 0.8 mi upstream from Nissitissit River.

DRAINAGE AREA.--Total above gage, 435 mi², net above gage, 316 mi², flow diverted from 119 mi², for use of Boston metropolitan district and city of Worcester.

PERIOD OF RECORD.--Discharge: October 1935 to current year.
Water-quality records: Water years 1952-53, 1973-74.

REVISED RECORDS.--WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 169.04 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Extremes and daily discharge include water released while diverting flow of Nashua River for use of Boston metropolitan district and water diverted into basin from Ware River basin since 1955 for municipal use of Fitchburg. Prior to October 1981, water diverted around station through plant of James River-Pepperell Co. was added to daily figures. Flow regulated by powerplant immediately upstream. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--52 years, 576 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,900 ft³/s Mar. 20, 1936, gage height, 19.1 ft, from floodmarks, from rating curve extended above 12,000 ft³/s on basis of velocity-area studies; minimum daily, 1.1 ft³/s Aug. 13, 1939.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,700 ft³/s Apr. 7, gage height, 16.19 ft, from high-water mark in well; minimum daily, 49 ft³/s Sept. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	280	264	925	1010	311	314	3550	e2300	386	369	111	200
2	148	120	873	965	498	771	5070	e2600	358	385	110	196
3	90	191	1290	954	550	891	4510	e2300	289	210	208	190
4	93	293	2760	929	413	744	2940	e2000	323	160	243	123
5	209	223	2780	882	418	686	3980	e1800	390	302	235	49
6	281	233	1860	841	419	664	7820	e1700	527	372	226	52
7	276	242	1370	796	419	654	e11000	e1600	474	304	126	55
8	265	234	1150	714	420	566	e9000	e1400	404	312	88	59
9	239	583	1040	712	421	1200	e7300	e1200	673	210	88	153
10	220	478	970	718	422	1360	e5900	e1100	584	167	91	199
11	198	446	987	708	421	1150	4710	e1000	395	85	98	195
12	121	405	960	776	420	999	3830	e960	293	90	101	192
13	87	391	855	783	419	881	3290	e910	289	203	110	189
14	218	370	661	769	414	814	3200	880	297	191	120	191
15	173	359	568	516	411	720	3360	843	297	161	117	195
16	138	301	608	466	411	761	3120	823	255	217	111	207
17	212	226	594	776	389	721	2810	554	226	195	64	213
18	210	209	584	677	385	678	2710	651	154	91	81	209
19	209	319	1840	633	375	675	2880	810	102	93	170	259
20	197	388	3690	600	351	676	e2700	650	88	209	182	590
21	234	606	3890	612	298	679	2210	453	90	229	163	624
22	255	1730	2720	617	276	718	1930	360	90	161	89	506
23	248	1600	1770	590	346	938	e1750	369	91	91	59	391
24	141	1070	1410	591	365	1200	e1600	420	93	90	58	217
25	172	999	1490	424	338	1470	e1500	452	99	90	58	226
26	224	942	2220	540	324	1670	e1400	582	238	94	59	206
27	244	1260	2250	552	330	1820	e1300	655	324	96	60	179
28	334	1640	1760	506	297	1720	e1300	422	657	99	149	249
29	290	1340	1400	495	---	1340	e1600	376	611	101	195	244
30	270	1050	1190	452	---	1340	e2000	391	265	104	133	182
31	309	---	1130	364	---	1570	---	390	---	108	145	---
TOTAL	6585	18512	47595	20968	10861	30390	110270	30951	9362	5589	3848	6740
MEAN	212	617	1535	676	388	980	3676	998	312	180	124	225
MAX	334	1730	3890	1010	550	1820	11000	2600	673	385	243	624
MIN	87	120	568	364	276	314	1300	360	88	85	58	49

CAL YR 1986 TOTAL 242732 MEAN 665 MAX 4320 MIN 57
WTR YR 1987 TOTAL 301671 MEAN 826 MAX 11000 MIN 49

e Estimated

MERRIMACK RIVER BASIN

01096550 MERRIMACK RIVER ABOVE LOWELL, MASS.
(National stream-quality accounting network station)

LOCATION.--Lat 42°38'20", long 71°22'17", Middlesex County, Hydrologic Unit 01070002, on downstream side of Tyngsboro bridge on State Highway 113, 6.2 mi upstream from Pawtucket Dam, and 2 mi downstream from Massachusetts-New Hampshire State line.

PERIOD OF RECORD.--Water years 1969 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: January to September 1973.

WATER TEMPERATURE: January to September 1973.

REMARKS.--Discharge computed on basis of records for gaging station below Concord River (station 01100000) and gaging station on Concord River (station 01099500).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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, (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, UM-MF (COLS./ 100 ML)
OCT 07...	1100	3900	62	7.00	13.0	14.5	1.0	769	8.0	78	5700
DEC 18...	1400	7680	58	6.11	5.0	0.5	0.80	763	13.7	95	8200
MAR 11...	1100	5270	161	7.40	--	1.5	1.5	779	12.8	89	1100
MAY 20...	1200	2860	123	7.29	--	16.5	1.2	763	9.2	94	130
JUN 16...	1300	3290	115	7.19	--	22.5	1.4	753	8.3	97	180
AUG 25...	1200	1500	144	6.47	--	22.5	0.40	761	6.2	72	330

DATE	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS NONCARB WH WAT TOT FLD (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED PERCENT AS NA	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	CAR- BONATE IT-FLD (MG/L AS CO3)	BICAR- BONATE IT-FLD (MG/L AS HCO3)
OCT 07...	500	17	7	5.2	0.90	10	54	1	1.3	0	12
DEC 18...	2700	15	8	4.6	0.90	10	57	1	1.0	0	8.0
MAR 11...	630	21	10	6.4	1.3	17	62	2	1.3	0	13
MAY 20...	5	20	6	6.0	1.1	13	57	1	1.2	0	16
JUN 16...	12	18	7	5.8	0.90	12	57	1	1.1	0	13
AUG 25...	44	21	5	6.5	1.2	17	61	2	1.9	0	19

DATE	ALKA- LITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA, DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)
OCT 07...	10	11	14	0.10	5.2	75	54	0.290	0.170	0.70	<0.200
DEC 18...	8	11	14	0.10	6.4	55	53	0.200	0.180	0.60	0.060
MAR 11...	12	11	25	0.10	8.3	80	81	0.350	0.320	1.1	0.070
MAY 20...	13	6.0	20	<0.10	4.6	58	60	0.240	0.170	1.0	0.070
JUN 16...	14	12	18	0.20	5.4	71	62	0.330	0.120	0.70	0.100
AUG 25...	16	14	20	0.20	4.0	79	75	0.430	0.250	1.2	--

MERRIMACK RIVER BASIN

37

01096550 MERRIMACK RIVER ABOVE LOWELL, MASS.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	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)	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)
OCT 07...	<0.200	0.030	--	--	--	--	--	--	--	--	--
DEC 18...	0.030	0.030	60	<1	15	<0.5	2	<1	<3	5	110
MAR 11...	0.070	0.050	2600	<1	13	<0.5	<1	<1	<3	5	400
MAY 20...	0.040	0.020	--	--	--	--	--	--	--	--	--
JUN 16...	0.050	0.020	--	--	--	--	--	--	--	--	--
AUG 25...	--	0.130	20	<1	8	<0.5	<1	<1	<3	20	120

DATE	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)	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)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDEED (MG/L)
OCT 07...	--	--	--	--	--	--	--	--	--	--	--
DEC 18...	<5	<4	49	<0.1	<10	2	<1	<1	<6	5	--
MAR 11...	10	<4	81	<0.1	<10	1	<1	<1	<6	20	10
MAY 20...	--	--	--	--	--	--	--	--	--	--	5
JUN 16...	--	--	--	0.5	--	--	--	--	--	--	5
AUG 25...	<5	<4	5	0.2	<10	2	<1	<1	<6	15	4

MERRIMACK RIVER BASIN

01097000 ASSABET RIVER AT MAYNARD, MASS.

LOCATION.--Lat 42°25'55", long 71°27'01", Middlesex County, Hydrologic Unit 01070005, on right bank at Maynard, 150 ft upstream from bridge on State Highway 27, 1.7 mi downstream from Assabet Brook, and 7.1 mi upstream from confluence with Sudbury River.

DRAINAGE AREA.--116 mi².

PERIOD OF RECORD.--Discharge: July 1941 to current year.
Water-quality records: Water years 1954, 1967-74.

REVISED RECORDS.--WSP 1231: 1945-46.

GAGE.--Water-stage recorder. Datum of gage is 142.12 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good October to March, fair thereafter. Occasional diurnal fluctuation at low flow by mills upstream; greater regulation prior to 1969. Since 1962, high flow affected by retarding reservoirs and, since 1970, occasional release at low flow by these reservoirs. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--46 years, 188 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,250 ft³/s Aug. 20, 1955, gage height, 8.94 ft; maximum gage height, 8.96 ft Aug. 20, 1955 (backwater from debris); minimum daily discharge, 0.20 ft³/s Feb. 7, 1965.
Maximum discharge since at least 1886, that of Aug. 20, 1955.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,580 ft³/s Apr. 7, gage height, 7.17 ft; minimum daily, 12 ft³/s Aug. 2, 27, 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	48	262	349	e190	170	951	784	143	109	13	41
2	28	50	231	333	e190	330	1250	730	131	71	12	23
3	30	53	365	316	194	385	1120	629	127	74	14	19
4	52	46	583	314	198	349	886	574	122	81	18	22
5	66	39	665	319	194	308	1390	551	130	78	28	20
6	65	64	536	284	185	291	2180	537	133	71	23	18
7	50	75	451	284	182	289	2490	508	123	62	18	18
8	47	90	404	284	179	354	2360	473	112	55	17	29
9	42	129	327	269	177	476	2050	425	105	51	19	48
10	39	141	310	257	173	521	1750	385	96	47	66	55
11	37	131	299	272	167	480	1500	353	89	44	52	53
12	36	117	300	280	161	430	1230	318	85	42	49	45
13	35	105	283	271	e155	378	1070	293	82	40	44	51
14	45	95	254	253	e130	352	1040	279	85	34	37	84
15	46	82	243	244	e125	335	933	240	96	34	40	89
16	45	79	220	252	e135	321	799	243	106	32	36	84
17	43	81	191	262	119	306	726	230	114	31	20	75
18	42	74	213	247	123	294	745	219	69	30	14	75
19	40	84	597	251	123	290	856	201	60	28	15	148
20	36	81	1030	241	121	304	801	188	53	26	15	180
21	37	253	1090	254	120	319	701	183	48	25	13	205
22	38	404	855	244	120	340	623	173	46	25	14	175
23	39	455	683	e230	122	374	561	163	67	25	14	144
24	32	401	564	e225	124	407	515	165	72	20	16	124
25	22	338	588	e220	122	438	500	167	69	16	16	108
26	33	285	684	e215	123	443	481	162	66	16	14	96
27	79	324	674	e210	125	433	435	150	73	15	12	88
28	80	352	567	e205	127	412	409	155	105	14	12	84
29	76	347	481	e200	---	385	515	148	128	14	24	75
30	67	300	437	e190	---	361	708	139	133	14	34	86
31	52	---	374	e190	---	441	---	157	---	13	42	---
TOTAL	1406	5123	14761	7965	4204	11316	31575	9922	2868	1237	761	2362
MEAN	45.4	171	476	257	150	365	1052	320	95.6	39.9	24.5	78.7
MAX	80	455	1090	349	198	521	2490	784	143	109	66	205
MIN	22	39	191	190	119	170	409	139	46	13	12	18

CAL YR 1986 TOTAL 74605 MEAN 204 MAX 1330 MIN 22
WTR YR 1987 TOTAL 93500 MEAN 256 MAX 2490 MIN 12

e Estimated

MERRIMACK RIVER BASIN

39

01097300 NASHOBA BROOK NEAR ACTON, MASS.

LOCATION.--Lat 42°30'39", long 71°24'25", Middlesex County, Hydrologic Unit 01070005, on right bank 1,500 ft downstream from dam at North Acton, 2.2 mi northeast of Acton, and 5 mi upstream from mouth.

DRAINAGE AREA.--12.8 mi².

PERIOD OF RECORD.--Discharge: Occasional low-flow measurements, water years 1962-63. July 1963 to current year. Water quality records: Water years 1972-74, 1976-78.

REVISED RECORDS.--WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 155 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good. Occasional regulation since 1967 by pond upstream. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--24 years, 21.2 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 679 ft³/s Jan. 26, 1979, gage height, 5.57 ft; maximum gage height, 5.73 ft, Jan. 26, 1979 (ice jam); minimum discharge, 0.02 ft³/s Sept. 6, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 337 ft³/s Apr. 7, gage height, 4.91 ft; minimum, 0.05 ft³/s Aug. 23, 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.9	5.3	22	32	23	19	160	82	8.9	4.8	.93	1.4
2	2.8	5.1	19	31	23	37	123	65	8.4	4.3	.88	1.3
3	2.7	5.0	55	28	24	49	76	53	10	5.4	1.0	1.2
4	4.1	4.9	116	30	24	48	61	47	9.7	6.9	1.6	.96
5	7.3	4.6	82	32	24	42	178	44	14	6.1	1.4	.82
6	7.9	6.3	54	30	23	35	311	44	14	5.0	1.1	.84
7	5.9	12	42	27	21	33	331	44	10	4.2	.84	.70
8	4.8	11	36	28	21	44	267	39	7.8	4.1	.86	.79
9	4.5	18	31	27	21	65	140	33	7.3	4.0	1.2	2.1
10	4.3	19	29	24	20	65	93	30	6.2	3.7	3.4	2.6
11	3.9	13	33	27	19	51	78	27	5.6	3.4	4.5	2.1
12	3.6	11	32	32	17	40	68	24	5.3	3.2	3.2	1.5
13	3.6	11	29	33	17	35	64	23	5.9	3.2	2.1	2.1
14	3.7	10	26	30	16	31	73	20	10	3.2	1.6	5.5
15	4.2	8.5	20	26	14	30	64	19	8.7	3.1	1.2	5.4
16	4.3	8.1	20	27	14	29	54	19	6.5	2.7	1.0	3.5
17	4.1	8.1	20	e28	13	28	50	17	5.5	2.2	.91	2.6
18	3.8	8.1	21	e24	13	26	53	16	4.8	2.0	.73	2.6
19	3.5	7.7	134	22	13	28	66	15	4.6	1.8	.67	9.6
20	3.5	7.9	217	23	13	31	59	14	4.3	1.6	.52	18
21	3.5	40	110	23	14	34	51	13	3.7	1.4	.33	24
22	3.5	105	69	23	14	38	46	13	3.6	1.5	.34	16
23	3.2	73	55	24	14	44	41	12	5.6	1.6	.27	9.5
24	2.9	46	47	25	14	53	37	13	7.9	1.6	.23	7.0
25	2.9	35	58	26	14	55	36	14	6.3	1.4	.50	5.3
26	3.0	30	94	26	13	54	36	13	5.5	1.2	.41	4.6
27	8.1	39	72	25	13	49	31	11	5.4	1.2	.46	4.2
28	15	47	53	23	13	42	29	14	9.9	1.1	.63	4.1
29	10	36	43	21	---	37	49	14	8.6	1.1	1.3	3.8
30	7.1	28	38	20	---	33	84	13	5.8	.89	1.8	3.8
31	5.8	---	35	21	---	48	---	11	---	.89	1.8	---
TOTAL	150.4	663.6	1712	818	482	1253	2809	816	219.8	88.78	37.71	147.91
MEAN	4.85	22.1	55.2	26.4	17.2	40.4	93.6	26.3	7.33	2.86	1.22	4.93
MAX	15	105	217	33	24	65	331	82	14	6.9	4.5	24
MIN	2.7	4.6	19	20	13	19	29	11	3.6	.89	.23	.70

CAL YR 1986 TOTAL 8106.45 MEAN 22.2 MAX 217 MIN 1.8
WTR YR 1987 TOTAL 9198.11 MEAN 25.2 MAX 331 MIN .23

e Estimated

MERRIMACK RIVER BASIN

01097500 SUDBURY RIVER AT FRAMINGHAM CENTER, MASS.

LOCATION.--Lat 42°17'29", long 71°26'35", Middlesex County, Hydrologic Unit 01070005, at dam of Framingham Reservoir No. 1, 0.5 mi upstream from outlet of Farm Pond, and 0.8 mi southwest of Framingham Center.

DRAINAGE AREA.--75.2 mi², since January 1881.

PERIOD OF RECORD.--Discharge: January 1875 to September 1987 (discontinued).
Water-quality records: Water year 1957.

REVISED RECORDS.--WSP 1051: 1937. WDR MA-RI-77-1: 1976.

REMARKS.--Records adjusted for change in reservoir contents, diversions, and wastage. Flow diverted as needed for use of Boston metropolitan district. Part of flow from Wachusett Reservoir on Nashua River is diverted into Sudbury Reservoir en route to Boston metropolitan district.

COOPERATION.--Records provided by Water Division of Metropolitan District Commission.

AVERAGE DISCHARGE.--112 years, 118 ft³/s, 21.31 in/yr, adjusted to present drainage area.

MONTHLY DISCHARGE, IN CUBIC FEET PER SECOND, AND RAINFALL, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

Month	Mean	Per square mile	Runoff in inches	Rainfall in inches
October.....	22.7	0.30	0.35	2.70
November.....	169	2.25	2.50	5.72
December.....	395	5.25	6.06	7.04
Calendar year 1986.....	157	2.09	28.29	47.01
January.....	232	3.09	3.56	4.57
February.....	139	1.85	1.92	.59
March.....	322	4.28	4.93	4.23
April.....	784	10.4	11.63	11.58
May.....	117	1.56	1.80	.98
June.....	53.8	.72	.80	2.32
July.....	-1.88	-.02	-.03	.75
August.....	16.8	.22	.26	4.04
September.....	61.9	.82	.92	5.46
Water year 1987.....	187	2.49	34.69	49.98

Note.--Negative figures indicate that evaporation, seepage, and other water transfer losses exceeded inflow.

MERRIMACK RIVER BASIN

41

01098530 SUDBURY RIVER AT SAXONVILLE, MASS.

LOCATION.--Lat 42°19'31", long 71°23'53", Middlesex County, Hydrologic Unit 01070005, on left bank at downstream side of new Danforth Street Bridge, at Saxonville, 600 ft east of Elm Street, 700 ft downstream from confluence with Lake Cochituate Outlet, and 0.7 mi downstream from Saxonville Dam.

DRAINAGE AREA.--106 mi².

PERIOD OF RECORD.--November 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage is 110.55 ft above National Geodetic Vertical Datum of 1929 (Massachusetts Department of Public Works benchmark).

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated by reservoirs upstream and affected by diversions and spill. Flow diverted as needed for use of Boston metropolitan district. Part of flow from Wachusett Reservoir on Nashua River is diverted into Sudbury Reservoir en route to Boston metropolitan district. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--7 years (water years 1981-87), 193 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,420 ft³/s June 7, 1982, gage height, 13.30 ft; maximum gage height, 13.47 ft Apr. 8, 1987; minimum daily discharge, 9.5 ft³/s Aug. 25, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,240 ft³/s Apr. 8, gage height, 13.47 ft; minimum daily, 19 ft³/s Oct. 2, 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e20	70	250	427	243	193	e470	547	121	e45	27	84
2	e19	70	234	443	235	236	e560	529	117	e43	26	76
3	e19	69	526	431	232	291	e650	497	113	e50	49	71
4	e20	65	550	383	228	296	e900	512	110	e48	42	66
5	e21	65	554	335	224	284	e1300	494	119	e45	32	45
6	e22	131	493	337	219	285	e1800	493	97	e43	30	31
7	e23	112	467	347	217	294	e2050	473	76	e41	28	29
8	e24	140	448	342	216	336	e2200	447	73	40	27	35
9	24	159	425	329	215	386	2040	423	74	39	34	80
10	22	128	412	325	213	397	1700	406	70	39	103	48
11	23	123	345	386	205	352	1350	363	64	39	63	36
12	23	132	333	363	179	334	1170	342	61	39	48	33
13	23	124	328	345	123	320	1090	344	67	36	43	61
14	39	105	305	308	117	306	1020	313	82	36	40	85
15	36	102	271	294	115	293	901	284	70	36	37	56
16	27	99	179	276	112	283	793	261	67	34	35	45
17	26	95	213	255	112	265	716	243	53	35	32	40
18	36	92	262	263	110	255	696	232	53	33	31	68
19	45	117	755	293	107	253	676	211	55	32	28	179
20	46	115	764	289	104	253	626	199	50	31	27	192
21	46	364	720	272	102	264	588	185	47	31	27	166
22	45	345	659	272	101	274	552	203	56	32	28	144
23	51	287	616	293	100	278	513	202	e51	37	29	133
24	52	265	564	276	101	283	481	211	e49	34	27	118
25	52	240	620	267	106	283	477	210	e47	39	26	105
26	57	269	615	263	110	283	435	203	e45	34	26	92
27	117	398	572	256	114	281	410	195	e44	29	29	84
28	82	330	533	250	118	273	408	195	e50	27	59	78
29	77	302	496	244	---	267	497	119	e52	27	142	74
30	85	275	468	240	---	255	539	121	e48	27	93	71
31	83	---	447	250	---	350	---	128	---	27	80	---
TOTAL	1285	5188	14424	9654	4378	9003	27608	9585	2081	1128	1348	2425
MEAN	41.5	173	465	311	156	290	920	309	69.4	36.4	43.5	80.8
MAX	117	398	764	443	243	397	2200	547	121	50	142	192
MIN	19	65	179	240	100	193	408	119	44	27	26	29

CAL YR 1986 TOTAL 70734 MEAN 194 MAX 850 MIN 11
WTR YR 1987 TOTAL 88107 MEAN 241 MAX 2200 MIN 19

e Estimated

MERRIMACK RIVER BASIN

01099500 CONCORD RIVER BELOW RIVER MEADOW BROOK AT LOWELL, MASS.

LOCATION.--Lat 42°38'12", long 71°18'09", Middlesex County, Hydrologic Unit 01070005, on right bank 300 ft downstream from Rogers Street Bridge at Lowell, 0.3 mi downstream from River Meadow Brook, and 0.8 mi upstream from mouth.

DRAINAGE AREA.--Total above gage, 400 mi²; net above gage, 307 mi² - diversion as needed from 92.6 mi² for use of Boston metropolitan district.

PERIOD OF RECORD.--Discharge: October 1936 to current year. October, November 1936 monthly discharge only, published in WSP 1301.
Water-quality records: Water years 1953, 1967-74.

REVISED RECORDS.--WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 67.41 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records excellent except those for estimated daily discharges, which are fair. Low flow regulated by mills upstream. Daily discharge includes undiverted water from 92.6 mi² in basins of Sudbury River and Lake Cochituate. Prior to December 1961, diversion upstream for use of city of Lowell. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--51 years, 640 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,410 ft³/s Jan. 28, 1979, gage height, 9.60 ft; maximum gage height of 9.60 ft also occurred Apr. 10, 1987; minimum daily discharge, 4.0 ft³/s Sept. 29, 1957.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,120 ft³/s Apr. 10, gage height, 9.60 ft; minimum daily, 54 ft³/s Aug. 24, 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	101	238	1030	1630	759	552	1870	2010	523	278	57	163
2	101	219	988	1550	754	771	2030	2050	502	272	56	162
3	103	209	1280	1490	751	875	2240	2040	553	275	67	148
4	143	200	1430	1420	751	948	2330	1970	536	269	72	136
5	181	185	1480	1350	e730	995	3050	1910	541	252	84	128
6	188	211	1570	1280	743	1020	3500	1900	514	240	83	118
7	182	254	1560	1240	718	1050	4390	1860	493	221	82	109
8	177	302	1500	1180	712	1120	4860	1790	470	201	133	108
9	160	388	1440	1140	699	1250	5050	1720	435	188	91	184
10	144	415	1410	1110	e680	1310	5080	1640	384	169	137	161
11	141	440	1370	1130	695	1380	4950	1540	355	155	166	154
12	128	450	1310	1140	676	1380	4700	1470	326	152	172	147
13	124	439	1230	1120	e670	1350	4410	1370	305	145	165	186
14	141	416	1170	1100	e600	1300	4180	1280	326	141	147	253
15	144	390	1120	1090	e570	1260	3940	1210	307	131	129	254
16	138	360	1060	1080	e540	1220	3670	1130	283	124	115	249
17	131	341	990	1040	e530	1170	3410	1070	262	117	107	227
18	128	322	952	1010	503	1140	3190	997	263	112	93	219
19	132	323	1530	992	464	1120	3030	930	234	103	77	314
20	137	335	1760	900	454	1110	2910	869	207	103	67	467
21	137	725	1970	e940	447	1120	2780	835	190	95	61	534
22	134	871	2140	914	438	1140	2620	786	183	97	58	548
23	136	946	2170	844	431	1170	2440	725	215	95	55	541
24	129	1010	2100	e860	427	1210	2270	693	225	93	54	507
25	127	1030	2160	e850	427	1260	2130	677	227	82	54	464
26	130	1040	2170	e840	431	1290	2000	664	231	78	55	424
27	203	1110	2130	e830	444	1310	1880	642	236	81	56	378
28	246	1100	2080	e820	462	1290	1790	622	257	78	60	343
29	266	1090	1980	e810	---	1270	1850	604	270	67	93	315
30	252	1070	1850	792	---	1260	1930	584	284	64	119	299
31	245	---	1730	758	---	1420	---	554	---	60	147	---
TOTAL	4829	16429	48660	33250	16506	36061	94480	38142	10137	4538	2912	8240
MEAN	156	548	1570	1073	589	1163	3149	1230	338	146	93.9	275
MAX	266	1110	2170	1630	759	1420	5080	2050	553	278	172	548
MIN	101	185	952	758	427	552	1790	554	183	60	54	108

CAL YR 1986 TOTAL 249785 MEAN 684 MAX 2540 MIN 97
WTR YR 1987 TOTAL 314184 MEAN 861 MAX 5080 MIN 54

e Estimated

MERRIMACK RIVER BASIN

43

01100000 MERRIMACK RIVER BELOW CONCORD RIVER, AT LOWELL, MASS.

LOCATION.--Lat 42°38'45", long 71°17'56", Middlesex County, Hydrologic Unit 01070002, on right bank at Lowell, 1,100 ft downstream from Concord River.

DRAINAGE AREA.--Total above gage, 4,635 mi²; net above gage, 4,425 mi² - diversions as needed from 210 mi² for use of Boston metropolitan district and city of Worcester.

PERIOD OF RECORD.--Discharge: June 1923 to current year.
Water-quality records: Water years 1954, 1966-74.

GAGE.--Water-stage recorder. Datum of gage is 5.18 ft above National Geodetic Vertical Datum of 1929. Prior to Mar. 7, 1934, at Boott Mills, 1,800 ft upstream and 700 ft above mouth of Concord River, in same gage pool and at same datum; gage-height record (provided by Proprietors of the Locks and Canals on Merrimack River) was indicative of flow including that of Concord River.

REMARKS.--No estimated daily discharges. Records excellent except those below 1,500 ft³/s, which are fair. Daily discharge includes water released from 210 mi² in basins of Sudbury and Nashua Rivers and Lake Cochituate. Flow regulated by powerplants, by Franklin Falls Reservoir since 1942, and by Squam, Newfound, Winnepesaukee, Winnisquam, and other lakes and reservoirs upstream. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--64 years, 7,604 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 173,000 ft³/s Mar. 20, 1936, gage height, 68.4 ft, from floodmarks; minimum daily, 199 ft³/s Sept. 23, 1923.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since 1735, that of Mar. 20, 1936.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 84,700 ft³/s Apr. 7, gage height, 57.16 ft; minimum daily, 1,160 ft³/s Aug. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3430	2850	13600	11000	6220	4200	46200	17600	4770	11100	1660	1770
2	2650	3650	12000	10000	6950	5280	52900	18600	4110	9430	1320	1710
3	2750	3190	13000	9170	5920	5450	44500	18300	4670	9320	2530	1700
4	4160	3540	22500	8750	5750	5170	41600	17200	4790	9650	2240	1650
5	4390	3350	26100	9310	5900	4860	47400	16200	5830	9280	2790	1730
6	5180	3970	21900	8070	6060	5230	71300	16100	6630	8830	3200	1650
7	4750	3720	18000	8750	5230	5020	82800	17000	6760	7440	2440	1520
8	4350	3270	16400	7990	6080	5940	76400	17200	6650	5590	2640	1510
9	4470	5820	15200	8970	6650	7340	62500	15700	5160	5060	1770	2030
10	4750	7220	13900	7150	4440	8140	54400	14100	5430	4720	1900	2820
11	4220	7630	13600	7560	6240	8240	49200	12600	6570	4500	2710	2690
12	3970	8040	12500	7570	5300	8030	45100	11900	5580	5160	1840	4800
13	3770	7160	11400	7310	4840	7640	42500	10000	4650	4640	1880	4130
14	4370	6700	9310	8150	5830	7260	41100	8760	4740	3730	1780	4000
15	4280	5430	9830	6660	5190	6860	40000	8710	4970	5120	1750	6230
16	3310	5770	8900	7920	5460	6880	37400	8000	4360	5110	1410	8150
17	3750	5310	6910	7610	4640	6310	33200	7580	2710	2390	1810	6380
18	3430	5700	8700	7100	4500	6280	29600	7240	3570	4410	1800	5160
19	3920	4880	13300	5850	4350	6390	28500	4710	4650	3620	2000	4610
20	4280	4570	18700	7350	4320	6810	27200	6710	3240	3080	2250	5860
21	2410	7620	18600	7130	4430	6290	24800	4930	1830	2370	1530	5650
22	3420	10100	15300	6920	3600	7170	21800	5520	1720	3140	1570	6460
23	2790	11000	13900	6770	3830	8550	19400	4130	3700	3610	1510	5970
24	2630	10800	12000	7760	3230	10200	17300	4780	9370	3340	1390	5630
25	2430	9780	13300	7380	3660	13000	15500	5400	11700	3180	1440	4560
26	3270	9710	15100	6930	3630	16200	14700	6130	9460	2380	1440	4350
27	3850	11200	16700	7220	3740	19800	13400	6480	7150	1420	1430	3700
28	3420	18500	15200	6990	3460	21800	13000	4820	9370	2360	1160	3250
29	4460	19600	12500	6500	---	22100	13900	4500	16400	1790	1730	3180
30	2520	16300	11800	6120	---	22000	15700	4760	15400	2520	1760	3020
31	4170	---	11300	5270	---	25600	---	5000	---	1660	1430	---
TOTAL	115550	226380	441450	237230	139450	300040	1123300	310660	185940	149950	58110	115870
MEAN	3727	7546	14240	7653	4980	9679	37440	10020	6198	4837	1875	3862
MAX	5180	19600	26100	11000	6950	25600	82800	18600	16400	11100	3200	8150
MIN	2410	2850	6910	5270	3230	4200	13000	4130	1720	1420	1160	1510

CAL YR 1986 TOTAL 3214250 MEAN 8806 MAX 40700 MIN 1370
WTR YR 1987 TOTAL 3403930 MEAN 9326 MAX 82800 MIN 1160

MERRIMACK RIVER BASIN

01100600 SHAWSHEEN RIVER NEAR WILMINGTON, MASS.

LOCATION.--Lat 42°34'05", long 71°12'55", Middlesex County, Hydrologic Unit 01070002, on right bank at downstream side of bridge on State Highway 129, 1 mi upstream from Content Brook, and 2.5 mi northwest of Wilmington.

DRAINAGE AREA.--36.5 mi².

PERIOD OF RECORD.--Discharge: November 1963 to current year.
Water-quality records: Water year 1973.

REVISED RECORDS.--WDR MA-NH-RI-VT-74-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 80.44 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Diversion upstream at times each year since 1973 for municipal supply of Burlington; see table below for figures of diversion. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--23 years (water years 1965-87), 61.6 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,660 ft³/s Jan. 26, 1979, gage height: 9.85 ft, mean of recorded surge; 10.00 ft, maximum recorded surge; and about 10.4 ft in river, based on outside gage readings at slightly lower stages. Minimum discharge, 0.70 ft³/s Aug. 19, 1983.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 22	1330	343	5.56	Apr. 1	1915	602	6.92
Dec. 4	1530	409	5.95	Apr. 6	unknown	*1,200	*unknown
Dec. 20	0500	655	7.14	or 7			

Minimum discharge, 1.6 ft³/s Oct. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	24	56	65	52	46	464	210	28	e15	5.6	16
2	16	12	53	61	54	127	495	151	28	e20	5.3	17
3	17	11	114	76	58	185	e300	113	45	e35	7.2	11
4	30	9.1	378	81	62	164	e200	96	41	e24	13	9.5
5	44	14	299	68	62	139	e500	94	44	e18	9.0	8.2
6	46	27	189	59	59	117	e900	101	43	e16	6.8	7.4
7	41	42	125	56	57	92	e1100	103	35	e15	5.6	7.2
8	30	43	88	55	57	112	e700	92	26	e15	17	8.4
9	27	50	72	55	55	179	e400	81	19	14	19	35
10	25	56	67	52	49	187	e270	71	16	14	31	48
11	25	50	70	62	54	165	e210	64	13	14	46	45
12	23	38	76	96	49	114	e180	58	11	14	45	23
13	22	36	74	126	47	85	e170	55	13	14	27	23
14	19	37	73	130	41	74	e220	51	38	13	16	57
15	20	26	59	93	43	69	193	44	32	13	13	70
16	22	32	51	84	38	68	156	42	16	13	11	58
17	12	30	48	90	38	67	136	40	12	12	9.9	28
18	8.4	25	49	102	38	64	132	37	8.4	11	8.8	16
19	19	25	278	82	37	63	140	34	6.3	9.7	7.8	40
20	16	27	603	74	33	64	139	32	6.2	9.5	7.1	63
21	2.4	83	399	81	34	72	124	30	15	9.0	6.3	125
22	3.8	311	237	71	37	97	110	31	16	9.0	6.1	119
23	13	257	158	69	36	120	99	35	24	8.9	7.3	77
24	6.0	155	117	74	35	128	91	37	e35	8.0	7.4	52
25	5.1	89	131	75	35	127	86	40	e20	7.8	6.9	36
26	5.4	63	243	69	31	117	84	37	e15	7.2	6.9	20
27	26	69	219	63	31	106	79	34	e20	8.0	7.3	16
28	39	116	157	59	33	96	74	35	e17	8.5	9.9	14
29	33	105	114	55	---	87	95	39	e16	6.9	16	11
30	23	73	83	51	---	78	219	37	e15	5.8	25	10
31	22	---	72	50	---	94	---	33	---	5.7	15	---
TOTAL	657.1	1935.1	4752	2284	1255	3303	8066	1957	673.9	394.0	425.2	1070.7
MEAN	21.2	64.5	153	73.7	44.8	107	269	63.1	22.5	12.7	13.7	35.7
MAX	46	311	603	130	62	187	1100	210	45	35	46	125
MIN	2.4	9.1	48	50	31	46	74	30	6.2	5.7	5.3	7.2
(+)	3.93	5.47	0	2.77	4.37	5.88	0	2.64	4.08	0	0	4.03

CAL YR 1986 TOTAL 22693.1 MEAN 62.2 MAX 618 MIN 2.4
WTR YR 1987 TOTAL 26773.0 MEAN 73.4 MAX 1100 MIN 2.4

e Estimated

+ Diversion, in cubic feet per second, for municipal supply of Burlington; records furnished by town of Burlington.

PARKER RIVER BASIN

45

01101000 PARKER RIVER AT BYFIELD, MASS.

LOCATION.--Lat 42°45'10", long 70°56'46", Essex County, Hydrologic Unit 01090001, on left bank 1,400 ft downstream from dam, 0.5 mi south of Byfield, 0.7 mi upstream from Wheeler Brook, and 5.5 mi southwest of Newburyport.

DRAINAGE AREA.--21.3 mi².

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

REVISED RECORDS.--WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 23.46 ft above National Geodetic Vertical Datum of 1929 (levels by Massachusetts Department of Public Works).

REMARKS.--Records good. Occasional regulation by mill and ponds upstream. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--42 years, 37.4 ft³/s, 23.84 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 790 ft³/s Apr. 7, 1987, gage height, 7.35 ft; minimum daily, 0.09 ft³/s Sept. 25-30, Oct. 3-6, 1957.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 790 ft³/s Apr. 7, gage height, 7.35 ft; minimum daily, 0.26 ft³/s Aug. 30, Sept. 2-8, 11, 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.0	8.4	57	95	38	25	150	95	17	5.1	.96	.27
2	3.3	10	51	79	38	34	194	93	15	5.6	.95	.26
3	3.5	8.1	75	70	38	37	199	87	12	11	1.1	.26
4	7.6	6.4	97	72	38	39	189	80	12	12	.99	.26
5	10	5.3	115	69	37	42	364	78	16	11	.94	.26
6	11	8.3	113	65	35	43	703	87	18	11	.87	.26
7	10	10	106	61	35	47	779	93	17	8.8	.80	.26
8	10	12	96	58	34	56	678	93	18	6.2	.78	.26
9	9.0	16	85	54	33	72	555	88	20	4.4	.74	.36
10	9.1	17	80	53	33	89	451	82	19	4.3	.83	.29
11	6.9	17	74	63	32	e90	375	75	17	4.2	.75	.26
12	6.2	17	69	66	31	e87	317	69	15	4.0	.78	.26
13	6.3	17	65	68	30	82	277	62	14	3.6	.66	.82
14	7.1	15	64	67	26	76	251	57	14	3.6	.64	1.9
15	7.0	13	51	68	23	73	221	54	13	3.8	.58	4.8
16	6.4	13	47	70	23	71	194	49	10	3.5	.53	6.0
17	5.7	12	43	e67	25	67	174	45	9.1	3.2	.51	4.2
18	5.3	12	43	e61	25	65	161	41	8.0	2.9	.51	3.4
19	5.2	13	92	60	23	65	150	38	6.4	2.6	.53	6.9
20	5.2	13	149	58	21	65	139	35	4.9	2.3	.62	22
21	4.9	42	170	58	20	69	130	33	5.1	2.0	.57	34
22	4.1	63	163	52	20	77	119	31	4.2	1.8	.54	41
23	3.8	82	152	54	20	88	108	29	9.1	1.6	.49	43
24	4.0	84	139	55	19	99	99	30	11	1.6	.42	41
25	3.8	78	150	54	19	109	91	29	10	1.5	.40	37
26	3.6	74	159	51	19	113	83	28	9.4	1.3	.37	32
27	7.5	76	158	49	19	113	77	26	9.3	1.6	.34	27
28	8.6	74	146	44	20	108	72	25	9.9	1.2	.34	23
29	8.1	70	132	41	---	102	80	23	9.6	1.1	.37	19
30	7.5	65	119	39	---	95	88	21	7.0	1.0	.30	15
31	6.9	---	107	39	---	101	---	20	---	1.0	.26	---
TOTAL	201.6	951.5	3167	1860	774	2299	7468	1696	360.0	128.8	19.47	365.28
MEAN	6.50	31.7	102	60.0	27.6	74.2	249	54.7	12.0	4.15	.63	12.2
MAX	11	84	170	95	38	113	779	95	20	12	1.1	43
MIN	3.3	5.3	43	39	19	25	72	20	4.2	1.0	.26	.26
CFSM	.31	1.49	4.80	2.82	1.30	3.48	11.7	2.57	.56	.20	.03	.57
IN.	.35	1.66	5.53	3.25	1.35	4.02	13.04	2.96	.63	.22	.03	.64

CAL YR 1986 TOTAL 14961.54 MEAN 41.0 MAX 220 MIN 1.3 CFSM 1.92 IN. 26.13
WTR YR 1987 TOTAL 19290.48 MEAN 52.9 MAX 779 MIN .26 CFSM 2.48 IN. 33.69

e Estimated

IPSWICH RIVER BASIN

01101500 IPSWICH RIVER AT SOUTH MIDDLETON, MASS.

LOCATION.--Lat 42°34'10", long 71°01'39", Essex County, Hydrologic Unit 01090001, on right bank in Peabody, 700 ft downstream from Boston Street Bridge at South Middleton, 1.3 mi downstream from Wills Brook, and 2 mi south of Middleton.

DRAINAGE AREA.--44.5 mi².

PERIOD OF RECORD.--Discharge: June 1938 to current year.
Water-quality records: Water years 1957, 1959.

REVISED RECORDS.--WSP 1301: 1942(M). WSP 1621: 1938-58 (monthly runoff). WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 44.97 ft above National Geodetic Vertical Datum of 1929 (Massachusetts Geodetic Survey benchmark.)

REMARKS.--No estimated daily discharges. Records good above 100 ft³/s, fair below. Diversions upstream for municipal supply of Reading, Lynn, and Peabody. Occasional regulation by mill upstream. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--49 years, 63.2 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,010 ft³/s Apr. 7, 1987, gage height, 7.51 ft; minimum, 0.1 ft³/s Sept. 24, Oct. 1, 1957.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,010 ft³/s Apr. 7, gage height, 7.51 ft, minimum, 0.81 ft³/s Aug. 24, 25-27, 28, 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.9	20	81	153	76	60	337	178	27	8.2	1.6	2.0
2	8.8	19	73	144	74	97	392	169	24	8.4	1.5	1.9
3	9.5	18	188	128	73	101	379	159	22	13	1.9	1.9
4	22	18	279	132	73	103	350	151	21	13	2.1	1.6
5	30	18	245	129	73	113	616	156	29	10	2.1	1.2
6	26	26	226	111	70	131	869	171	28	9.2	1.6	.96
7	22	34	203	114	69	142	995	149	23	8.4	1.5	1.0
8	20	34	175	113	68	166	980	137	22	7.7	1.5	1.7
9	19	46	146	107	68	203	889	126	21	7.4	1.5	6.8
10	18	42	145	103	68	193	779	116	18	7.0	4.5	7.7
11	17	39	145	140	66	182	647	107	16	6.5	4.9	4.9
12	15	40	132	148	65	162	504	97	15	6.3	3.9	4.0
13	14	42	118	141	63	149	417	89	15	6.2	3.3	15
14	14	39	105	135	61	136	393	81	17	6.1	3.3	52
15	15	36	98	134	56	127	341	75	15	5.6	2.9	26
16	13	34	82	139	52	123	292	67	13	4.9	2.6	16
17	13	33	81	127	49	116	262	60	13	4.6	2.2	14
18	13	32	82	114	46	109	247	58	12	4.0	1.8	15
19	12	35	350	113	44	109	242	56	11	4.3	1.6	35
20	12	35	467	107	42	109	218	53	9.7	4.6	1.3	81
21	12	131	430	102	40	117	193	51	9.1	4.1	1.1	99
22	11	177	397	100	39	135	180	49	9.0	3.9	1.0	86
23	11	156	357	101	40	147	163	46	12	3.6	1.0	79
24	10	155	294	105	40	152	147	51	12	3.3	.90	75
25	9.6	147	322	102	40	155	140	51	10	3.0	.91	67
26	10	129	352	96	41	150	129	47	9.9	2.7	.81	56
27	22	135	303	92	42	147	117	43	11	2.5	.84	46
28	27	123	261	89	44	139	112	43	12	2.1	.90	36
29	23	106	226	84	---	130	150	41	10	2.0	1.3	30
30	22	94	198	79	---	120	189	36	9.1	1.8	1.2	27
31	22	---	176	78	---	156	---	31	---	1.8	1.5	---
TOTAL	501.8	1993	6737	3560	1582	4179	11669	2744	475.8	176.2	59.06	890.66
MEAN	16.2	66.4	217	115	56.5	135	389	88.5	15.9	5.68	1.91	29.7
MAX	30	177	467	153	76	203	995	178	29	13	4.9	99
MIN	8.8	18	73	78	39	60	112	31	9.0	1.8	.81	.96

CAL YR 1986 TOTAL 25597.78 MEAN 70.1 MAX 467 MIN 5.5
WTR YR 1987 TOTAL 34567.28 MEAN 94.7 MAX 995 MIN .81

IPSWICH RIVER BASIN

47

01102000 IPSWICH RIVER NEAR IPSWICH, MASS.

LOCATION.--Lat 42°39'35", long 70°53'39", Essex County, Hydrologic Unit 01090001, on left bank 200 ft downstream from Willowdale Dam, 1.5 mi downstream from Howlett Brook, and 4 mi upstream from Ipswich.

DRAINAGE AREA.--125 mi².

PERIOD OF RECORD.--Discharge: June 1930 to current year.
Water-quality records: Water years 1954, 1976-79.

REVISED RECORDS.--WSP 1621: 1930-58 (monthly runoff). WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 20.63 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Diversions upstream for municipal supply of Reading, Lynn, Peabody, Danvers, Salem, and Beverly. Some regulation by reservoirs upstream. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--57 years, 189 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,550 ft³/s Apr. 8, 1987, gage height, 9.43 ft; minimum, 0.34 ft³/s Sept. 20, 1978.
Maximum discharge since 1886, that of April 8, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,550 ft³/s Apr. 8, gage height, 9.43 ft, minimum, 2.3 ft³/s Aug. 27-29; minimum daily, 2.3 ft³/s Aug. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	53	303	493	233	140	641	463	99	25	5.9	6.6
2	26	50	273	433	228	173	930	486	84	24	6.1	6.1
3	24	48	319	394	227	195	1050	468	77	33	7.1	5.4
4	32	50	399	469	227	258	1010	441	72	42	7.8	4.8
5	46	45	526	423	224	317	1420	429	76	46	7.9	4.4
6	55	48	611	400	218	333	2410	477	80	42	7.6	4.3
7	60	58	585	346	211	348	3250	513	79	36	7.0	4.1
8	58	67	527	355	205	397	3520	514	77	31	6.6	4.4
9	54	81	472	346	201	457	3250	477	73	27	6.5	17
10	50	91	447	327	195	426	2790	438	65	25	10	20
11	49	97	416	356	191	515	2310	402	58	23	13	20
12	43	100	388	424	189	498	1850	369	53	22	16	19
13	39	101	380	417	186	462	1520	343	52	21	15	26
14	39	99	354	449	181	418	1320	315	51	20	12	59
15	40	94	289	411	173	392	1130	289	48	22	9.7	78
16	39	93	268	407	163	370	972	273	45	30	8.3	83
17	37	89	245	423	157	347	852	259	30	24	7.1	83
18	37	84	229	382	148	335	786	244	31	18	6.3	73
19	35	83	345	347	143	333	725	226	35	15	5.3	72
20	33	81	612	328	136	330	666	208	32	14	4.3	123
21	31	137	971	351	132	334	620	191	30	13	3.9	170
22	30	180	1050	316	129	367	569	177	29	12	3.7	214
23	29	260	961	304	126	407	520	168	36	12	3.3	241
24	28	353	850	325	124	437	478	163	39	11	2.8	248
25	27	375	836	319	123	458	442	156	38	10	2.5	237
26	26	369	873	302	121	468	409	150	39	12	2.4	216
27	37	372	870	292	122	470	383	144	37	13	2.4	188
28	46	360	806	279	124	456	363	138	35	11	2.3	165
29	52	343	714	263	---	433	387	131	31	9.7	2.4	145
30	56	326	622	247	---	409	418	123	28	8.8	4.2	128
31	55	---	549	239	---	429	---	113	---	7.3	6.0	---
TOTAL	1242	4587	17090	11167	4837	11712	36991	9288	1559	659.8	205.4	2665.1
MEAN	40.1	153	551	360	173	378	1233	300	52.0	21.3	6.63	88.8
MAX	60	375	1050	493	233	515	3520	514	99	46	16	248
MIN	24	45	229	239	121	140	363	113	28	7.3	2.3	4.1

CAL YR 1986 TOTAL 71325.0 MEAN 195 MAX 1090 MIN 15
WTR YR 1987 TOTAL 102003.1 MEAN 279 MAX 3520 MIN 2.3

MYSTIC RIVER BASIN

01102500 ABERJONA RIVER AT WINCHESTER, MASS.

LOCATION.--Lat 42°26'50", long 71°08'22", Middlesex County, Hydrologic Unit 01090001, on left bank at Winchester, 0.5 mi upstream from head of Mystic Lakes.

DRAINAGE AREA.--24.1 mi², excludes 0.6 mi² drained by Winchester North Reservoir.

PERIOD OF RECORD.--Discharge: April 1939 to current year.
Water-quality records: Water year 1958-59, 1973.

REVISED RECORDS.--WDR MA-RI-79-1: 1955. WDR MA-RI-84-1: Drainage area.

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

REMARKS.--No estimated daily discharges. Records excellent above 10 ft³/s and good below. Flow affected by diversions for industrial use and for municipal supply of Woburn and Winchester, and by wastage and leakage from Winchester North Reservoir. Some regulation by Winchester at dam 1,800 ft upstream. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--48 years, 28.8 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,330 ft³/s Jan. 25, 1979, gage height, 15.46 ft, from rating curve extended above 400 ft³/s on basis of slope-area measurement of peak flow; no flow for part of Oct. 10, 12, 1950, caused by pumpage from gage pool; minimum daily discharge, 0.25 ft³/s Oct. 10, 1950. Maximum discharge since 1886, that of Jan. 25, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 877 ft³/s Apr. 7, gage height, 14.20 ft, minimum, 0.77 ft³/s Aug. 12, 13; minimum daily, 2.3 ft³/s Oct. 24, Aug. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	3.9	21	49	35	89	252	78	14	6.5	2.4	3.6
2	3.1	3.4	22	82	35	134	177	62	23	11	2.4	6.2
3	5.4	4.0	205	61	38	83	115	55	19	28	7.9	3.9
4	30	3.7	178	58	39	59	99	67	16	14	5.4	2.8
5	21	3.0	96	50	33	47	513	69	24	8.9	3.5	3.0
6	11	30	63	46	31	43	686	71	18	7.2	2.9	3.0
7	5.9	17	50	44	31	48	780	60	13	6.3	2.8	3.1
8	4.8	23	52	44	32	65	442	52	12	5.9	18	8.8
9	4.1	27	71	40	32	79	269	47	12	5.9	9.4	81
10	4.6	14	69	50	30	72	188	43	11	5.6	77	28
11	3.8	9.7	60	116	29	60	149	40	9.9	5.2	41	12
12	3.7	12	50	85	27	53	120	37	11	5.1	7.0	7.2
13	4.1	11	42	63	26	49	136	35	11	5.1	3.9	82
14	10	7.9	34	54	22	46	136	33	13	5.1	5.6	101
15	7.1	6.8	30	51	21	44	106	33	9.3	4.7	4.7	36
16	4.8	6.4	29	51	19	43	89	32	8.1	4.0	4.2	18
17	4.2	6.2	27	49	20	41	84	30	12	4.2	4.0	12
18	3.3	5.9	49	48	20	39	87	28	8.0	4.0	3.7	19
19	3.1	13	408	63	20	38	87	29	7.4	3.7	3.0	56
20	2.7	10	285	54	19	38	75	27	6.8	3.9	3.2	126
21	3.4	187	164	47	19	44	68	25	6.7	3.4	2.5	70
22	2.9	98	105	48	20	53	63	23	8.2	3.6	2.7	36
23	3.1	49	84	60	20	50	57	21	23	3.5	2.6	25
24	2.3	23	77	56	19	46	52	24	13	3.3	2.3	19
25	2.6	21	150	46	19	43	54	23	9.0	3.0	3.1	16
26	4.3	33	139	40	20	41	47	21	8.0	4.2	2.6	14
27	30	69	96	37	21	40	46	20	9.7	4.2	13	12
28	13	41	74	34	22	38	54	24	11	3.1	6.8	11
29	6.9	29	63	32	---	36	104	20	7.9	2.6	25	11
30	5.2	25	58	31	---	33	115	20	6.8	2.7	12	15
31	4.4	---	54	36	---	113	---	16	---	2.5	3.8	---
TOTAL	217.6	792.9	2905	1625	719	1707	5250	1165	361.8	180.4	288.4	841.6
MEAN	7.02	26.4	93.7	52.4	25.7	55.1	175	37.6	12.1	5.82	9.30	28.1
MAX	30	187	408	116	39	134	780	78	24	28	77	126
MIN	2.3	3.0	21	31	19	33	46	16	6.7	2.5	2.3	2.8

CAL YR 1986 TOTAL 11690.3 MEAN 32.0 MAX 408 MIN 2.3
WTR YR 1987 TOTAL 16053.6 MEAN 44.0 MAX 780 MIN 2.3

CHARLES RIVER BASIN

49

01103500 CHARLES RIVER AT DOVER, MASS.
(National stream-quality accounting network station)

LOCATION.--Lat 42°15'22", long 71°15'38", Norfolk County, Hydrologic Unit 01090001, on right bank 0.3 mi downstream from highway bridge, 0.8 mi downstream from Noanet Brook, and 1.3 mi northeast of intersection of Centre and Walpole Streets in Dover.

DRAINAGE AREA.--183 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1937 to current year. Prior to October 1977, published as "at Charles River Village."

REVISED RECORDS.--WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 89.76 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow affected by diversions to and from basin for municipal supplies.

AVERAGE DISCHARGE.--50 years, 304 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,220 ft³/s Aug. 23, 1955, gage height, 9.24 ft and Mar. 22, 1968, gage height, 8.72 ft; minimum, 0.5 ft³/s Oct. 24, 1952 (caused by unusual regulation); minimum daily, 0.9 ft³/s Oct. 24, 1952.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since flood in 1886, that of August 1955 and March 1968. Flood in March 1936 reached a discharge of 3,170 ft³/s, by computation of flow over dam at site 0.2 mi upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,770 ft³/s Apr. 8, gage height, 8.03 ft; minimum, 26 ft³/s Aug. 26, 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	99	519	781	389	290	894	899	189	79	34	57
2	46	88	487	788	378	445	1060	943	181	83	32	53
3	48	80	661	768	373	509	1290	955	184	91	46	51
4	91	76	705	714	372	545	1420	984	187	93	43	47
5	86	71	743	685	371	563	1840	972	203	91	37	44
6	89	104	795	653	366	558	2120	970	197	88	35	39
7	86	121	816	626	354	552	2540	955	185	81	34	39
8	83	153	791	597	345	584	2720	914	172	77	35	41
9	77	199	753	565	336	641	2740	869	164	72	37	75
10	69	214	730	548	e320	674	2640	816	148	67	71	62
11	67	218	681	599	323	699	2430	756	134	65	56	63
12	64	213	646	590	313	708	2190	698	122	64	57	62
13	63	200	604	593	303	689	2000	632	118	63	59	84
14	73	184	559	591	e280	652	1820	591	133	63	58	114
15	73	165	522	586	e260	615	1640	553	129	61	54	129
16	76	151	480	585	243	578	1490	512	123	59	48	137
17	78	143	445	569	233	541	1340	479	113	58	43	126
18	78	140	428	552	229	515	1240	446	103	56	39	122
19	76	160	791	553	224	495	1180	413	94	53	35	174
20	71	162	899	468	218	475	1120	377	85	52	35	263
21	70	335	1070	e490	215	477	1070	340	80	51	35	314
22	66	421	1210	497	213	484	975	312	79	48	37	351
23	64	477	1230	514	214	491	907	290	88	45	36	356
24	61	520	1160	e520	214	491	855	297	82	44	33	327
25	61	531	1180	e510	217	490	821	293	79	43	30	282
26	64	521	1150	e500	219	495	773	285	77	40	28	229
27	102	575	1100	e480	222	493	736	274	78	43	29	190
28	112	547	1060	e470	227	490	724	274	80	42	35	146
29	125	549	993	e440	---	482	796	252	78	39	60	119
30	122	545	923	416	---	473	852	233	78	37	50	109
31	110	---	849	402	---	573	---	211	---	36	51	---
TOTAL	2397	7962	24980	17650	7971	16767	44223	17795	3763	1884	1312	4205
MEAN	77.3	265	806	569	285	541	1474	574	125	60.8	42.3	140
MAX	125	575	1230	788	389	708	2740	984	203	93	71	356
MIN	46	71	428	402	213	290	724	211	77	36	28	39

CAL YR 1986 TOTAL 112847 MEAN 309 MAX 1230 MIN 46
WTR YR 1987 TOTAL 150909 MEAN 413 MAX 2740 MIN 28

e Estimated

CHARLES RIVER BASIN

01103500 CHARLES RIVER AT DOVER, MASS.--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1974 to September 1981.

WATER TEMPERATURES: November 1974 to September 1981.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE AIR (DEG C)	TEMPER- ATURE WATER (DEG C)	TUR- BID- ITY (NTU)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT										
22...	1315	68	260	--	--	11.0	--	--	--	--
23...	1000	80	217	7.10	6.0	11.0	--	761	9.9	90
NOV										
28...	1145	505	160	--	--	5.5	--	--	--	--
DEC										
17...	1200	414	119	5.70	5.0	1.0	0.90	763	12.9	90
JAN										
20...	1155	401	75	--	--	0.0	--	--	--	--
MAR										
09...	1430	591	180	--	--	3.5	--	--	--	--
10...	0900	615	190	6.79	-11.0	2.0	0.80	776	11.6	82
MAY										
26...	1243	281	200	--	--	17.0	--	--	--	--
JUN										
17...	1000	119	202	7.14	--	24.0	2.3	758	8.4	100
JUL										
06...	1355	87	250	--	--	25.0	--	--	--	--
AUG										
18...	0936	42	282	--	--	27.0	--	--	--	--
26...	0900	29	305	8.53	--	20.5	6.0	763	8.0	89

DATE	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	CAR- BONATE IT-FLD (MG/L AS CO3)	BICAR- BONATE IT-FLD (MG/L AS HCO3)
OCT											
23...	>530	--	--	--	--	--	--	--	--	0	30
DEC											
17...	1800	34	19	9.8	2.4	22	57	2	1.9	0	18
MAR											
10...	330	31	17	8.8	2.1	19	56	2	1.5	0	17
JUN											
17...	45	41	17	12	2.7	22	52	2	1.9	0	29
AUG											
26...	370	59	24	18	3.4	33	53	2	3.6	5.0	33

CHARLES RIVER BASIN

51

01103500 CHARLES RIVER AT DOVER, MASS.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	ALKA- LINITY WH WAT TOTAL FIELD MG/L AS CAO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)
OCT 23...	26	--	--	--	--	--	--	--	--	--	--
DEC 17...	15	19	36	<0.10	8.6	118	110	0.520	0.250	0.70	0.090
MAR 10...	14	13	32	<0.10	6.4	95	95	0.570	0.140	0.90	0.040
JUN 17...	24	14	38	0.10	5.5	131	110	0.510	0.020	0.90	0.090
AUG 26...	36	22	52	0.10	6.2	173	170	--	--	1.3	0.200
DATE	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)	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)
OCT 23...	--	--	--	--	--	--	--	--	--	--	--
DEC 17...	0.060	0.050	70	<1	26	<0.5	<1	<1	<3	7	150
MAR 10...	0.030	0.020	3600	<1	24	<0.5	1	<1	<3	6	120
JUN 17...	0.090	0.050	10	<1	19	<0.5	<1	<1	<3	4	270
AUG 26...	0.110	--	120	<1	16	<0.5	<1	<1	<3	4	90
DATE	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)	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)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)
OCT 23...	--	--	--	--	--	--	--	--	--	--	--
DEC 17...	<5	<4	28	<0.1	<10	<1	<1	<1	<6	<3	--
MAR 10...	8	<4	75	0.2	<10	1	<1	<1	<6	21	3
JUN 17...	<5	5	22	0.3	<10	<1	<1	<1	<6	33	--
AUG 26...	<5	<4	29	0.2	<10	3	<1	<1	<6	7	17

CHARLES RIVER BASIN

01104000 MOTHER BROOK AT DEDHAM, MASS.

LOCATION.--Lat 42°15'18", long 71°09'53", Norfolk County, Hydrologic Unit 01090001, on right bank 100 ft upstream from Washington Street Bridge at Dedham and 0.4 mi downstream from point of diversion from Charles River.

PERIOD OF RECORD.--Discharge: October 1931 to current year.

Water-quality records: Water years 1959, 1969-70.

REVISED RECORDS.--WSP 1301: 1932(M).

GAGE.--Water-stage recorder. Concrete control since June 10, 1960. Datum of gage is 0.03 ft below National Geodetic Vertical Datum of 1929. Dec. 9, 1931, to June 9, 1960, nonrecording gage at site 200 ft upstream at same datum.

REMARKS.--No estimated daily discharges. Records good. Mother Brook is a diversion from Charles River to Neponset River through Dedham and Hyde Park. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--56 years, 78.8 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,040 ft³/s Mar. 21, 1968, gage height, 87.18 ft; maximum gage height, 92.90 ft Aug. 24, 1955, from graph based on gage readings; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 867 ft³/s Apr. 8, gage height, 86.54 ft; minimum, 0.41 ft³/s Aug. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	7.5	130	262	83	113	321	222	4.3	6.6	.85	2.8
2	20	5.0	121	294	79	181	346	228	11	9.3	.62	1.9
3	13	3.4	195	290	78	187	371	234	40	13	2.4	5.4
4	28	2.4	226	262	77	193	413	249	36	9.0	5.7	5.6
5	22	2.3	205	236	89	195	544	250	39	6.4	5.4	3.8
6	18	19	202	215	128	192	681	244	34	6.9	3.4	2.3
7	11	19	206	197	131	189	804	237	23	11	2.5	1.6
8	12	23	198	186	126	180	855	247	21	9.9	1.5	2.0
9	10	34	184	170	125	195	860	310	33	10	3.4	20
10	8.6	33	182	162	120	203	814	308	28	8.2	7.6	17
11	5.6	29	162	199	114	197	746	284	17	8.3	2.5	13
12	3.6	31	147	183	109	197	680	261	11	6.0	.86	5.1
13	2.3	28	134	175	104	193	638	231	11	4.8	1.1	21
14	4.1	21	116	164	97	183	578	203	12	6.0	1.3	22
15	3.0	14	114	160	85	168	509	194	11	6.6	1.1	15
16	1.9	9.5	102	160	73	156	446	204	18	6.1	1.1	15
17	1.6	6.9	85	153	68	146	393	187	17	4.3	.94	22
18	1.3	5.3	79	147	58	133	356	146	11	2.6	.89	18
19	1.0	11	264	154	59	123	326	115	6.7	1.4	.66	25
20	1.2	12	354	150	61	125	297	97	3.9	1.5	.78	53
21	4.8	109	364	129	58	162	279	78	2.0	3.2	.65	53
22	5.3	141	383	131	56	171	264	64	2.4	3.6	.69	47
23	7.0	134	380	141	63	168	237	53	11	2.4	.60	44
24	8.4	139	361	145	79	165	217	54	7.8	2.6	.55	45
25	8.8	144	372	128	81	158	206	48	5.9	1.6	.61	65
26	9.5	141	369	125	80	156	183	39	7.4	.66	.54	51
27	25	171	342	109	80	155	164	33	6.4	1.2	.90	32
28	23	147	317	101	80	151	162	33	5.5	1.4	.56	16
29	26	134	294	93	---	145	201	25	3.6	1.5	8.9	9.4
30	17	129	270	85	---	135	219	15	3.0	1.2	5.6	13
31	12	---	257	86	---	181	---	8.3	---	.92	1.9	---
TOTAL	318.0	1705.3	7115	5192	2441	5196	13110	4901.3	442.9	158.18	66.10	646.9
MEAN	10.3	56.8	230	167	87.2	168	437	158	14.8	5.10	2.13	21.6
MAX	28	171	383	294	131	203	860	310	40	13	8.9	65
MIN	1.0	2.3	79	85	56	113	162	8.3	2.0	.66	.54	1.6

CAL YR 1986 TOTAL 28691.20 MEAN 78.6 MAX 383 MIN 1.0
WTR YR 1987 TOTAL 41292.42 MEAN 113 MAX 860 MIN .54

CHARLES RIVER BASIN

53

01104200 CHARLES RIVER AT WELLESLEY, MASS.

LOCATION.--Lat 42°18'59", long 71°13'42", Norfolk County, Hydrologic Unit 01090001, on left bank at east limits of Wellesley, 30 ft upstream from a horseshoe-shaped dam and 50 ft upstream from bridge on State Highway 9.

DRAINAGE AREA.--211 mi².

PERIOD OF RECORD.--Discharge: August 1959 to current year.

Water-quality records: Water year 1968.

GAGE.--Water-stage recorder and masonry dam. Datum of gage is 67.92 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Flow affected by diversion to Mother Brook (station 01104000), and by diversions to and from basin for municipal supplies. Occasional regulation at dam 0.2 mi upstream and by other ponds upstream. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--28 years, 280 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,410 ft³/s Mar. 21, 1968, gage height, 6.20 ft; no flow Sept. 15, Oct. 6, 1959 (caused by closing of gates at dam at gage); minimum daily discharge, 1.0 ft³/s Aug. 24, 31, Sept. 8, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,190 ft³/s Apr. 10, gage height, 5.94 ft; minimum, 8.4 ft³/s Oct. 20; minimum daily, 24 ft³/s Aug. 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	117	481	600	369	234	776	801	233	68	25	79
2	41	103	453	646	361	352	847	830	161	79	28	62
3	29	97	641	647	363	370	907	839	170	105	28	52
4	96	89	696	597	369	399	1010	879	177	108	26	59
5	105	57	663	563	281	418	1300	888	204	109	32	56
6	89	100	669	533	274	424	1630	885	200	84	31	50
7	73	131	687	522	287	437	1890	873	196	87	28	48
8	68	159	677	503	281	479	1990	672	159	77	29	38
9	69	212	676	481	277	522	2060	618	153	95	34	73
10	69	217	683	480	266	549	2100	634	151	79	99	57
11	66	229	640	557	267	572	1980	618	155	73	77	47
12	65	238	609	538	261	581	1830	583	147	73	70	63
13	66	219	569	515	258	579	1720	543	143	57	63	125
14	81	211	531	516	235	560	1590	514	166	58	61	148
15	82	198	508	512	245	537	1460	423	129	54	58	121
16	80	183	468	512	246	509	1310	387	120	57	54	143
17	78	174	438	495	224	480	1200	376	127	61	36	152
18	85	168	430	488	213	463	1120	362	128	59	29	154
19	85	197	661	503	212	446	1060	365	114	57	36	254
20	48	150	692	400	203	357	1010	355	97	42	36	345
21	44	311	727	431	198	348	938	336	92	33	39	360
22	63	387	799	427	197	373	889	322	64	41	41	369
23	66	404	860	464	167	387	836	310	83	45	37	370
24	51	428	906	464	166	389	797	311	97	43	31	282
25	53	445	974	427	169	392	776	303	76	41	24	251
26	61	467	972	422	169	395	727	298	75	41	27	249
27	106	525	934	403	175	397	689	289	81	32	32	220
28	102	511	894	401	180	401	683	298	88	26	31	183
29	113	500	860	390	---	404	765	289	91	27	69	125
30	119	491	821	381	---	403	795	268	67	27	76	117
31	122	---	676	371	---	538	---	251	---	26	66	---
TOTAL	2325	7718	21295	15189	6913	13695	36685	15720	3944	1864	1353	4652
MEAN	75.0	257	687	490	247	442	1223	507	131	60.1	43.6	155
MAX	122	525	974	647	369	581	2100	888	233	109	99	370
MIN	29	57	430	371	166	234	683	251	64	26	24	38

CAL YR 1986 TOTAL 99329 MEAN 272 MAX 974 MIN 27
WTR YR 1987 TOTAL 131353 MEAN 360 MAX 2100 MIN 24

CHARLES RIVER BASIN

01104500 CHARLES RIVER AT WALTHAM, MASS.

LOCATION.--Lat 42°22'20", long 71°14'03", Middlesex County, Hydrologic Unit 01090001, on right bank 800 ft downstream from Moody Street Bridge in Waltham and 0.3 mi upstream from Beaver Brook.

DRAINAGE AREA.--227 mi², excludes 23.6 mi² drained by Stony Brook, from which flow is diverted for municipal supply of Cambridge.

PERIOD OF RECORD.--Discharge: October 1903 to October 1909 (figures of average weekly discharge, equivalent to records of unadjusted discharge at present site), August 1931 to current year.

Water-quality records: Water years 1953, 1959, 1968-70.

REVISED RECORDS.--WSP 781: 1933(M). WSP 851: Drainage area. WSP 971: 1942.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 20.02 ft above National Geodetic Vertical Datum of 1929. Prior to July 10, 1904, at dam 700 ft upstream and July 10, 1904, to Oct. 2, 1909, at dam 0.7 mi downstream at different datums; discharge computed from flow over dam and through wheels and gates of Boston Manufacturing Co. and Waltham Bleachery, respectively.

REMARKS.--No estimated daily discharges. Records good. Flow affected by diversion to Mother Brook (station 01104000, diversions to and from basin for municipal supplies, and at times by water released from Stony Brook Reservoir. Prior to 1960, some regulation by mills upstream. Low flow completely regulated by Boston Edison Co. powerplant prior to 1954. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--56 years (water years 1932-87), 304 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,150 ft³/s Feb. 3, 1976, gage height, 6.54 ft, caused by release of water stored behind ice jam upstream; minimum, 0.1 ft³/s Oct. 1, 12, 1943; minimum daily, 0.2 ft³/s Oct. 4, 1943. Maximum discharge since 1886, that of Feb. 3, 1976.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,710 ft³/s Apr. 7, gage height, 5.51 ft; minimum, 31 ft³/s July 27, 28; minimum daily, 33 ft³/s July 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	128	468	609	408	322	1030	879	252	83	36	83
2	48	120	474	684	399	498	1080	874	273	98	37	74
3	44	111	689	682	399	487	1070	876	219	124	50	48
4	93	103	721	624	400	483	1130	940	200	129	43	49
5	116	88	708	592	356	485	1740	959	238	126	40	53
6	97	115	681	563	300	478	2250	947	239	119	40	55
7	85	138	676	550	320	493	2650	917	225	94	38	55
8	76	173	674	531	320	540	2580	794	202	88	40	61
9	76	227	668	509	321	600	2460	630	167	86	45	117
10	76	234	683	509	306	618	2420	648	166	89	115	87
11	77	242	647	615	306	622	2270	628	166	82	103	60
12	76	252	622	592	299	627	2060	594	163	86	86	65
13	77	246	580	562	295	621	1990	559	158	84	80	140
14	91	224	535	551	273	606	1850	519	175	72	76	215
15	85	210	517	546	263	585	1650	477	156	74	73	144
16	83	196	497	545	250	561	1470	411	129	67	70	160
17	87	186	454	533	245	535	1350	402	133	64	61	165
18	89	178	449	524	240	517	1290	384	137	68	44	185
19	91	209	947	550	240	508	1210	384	136	69	44	301
20	81	194	896	474	227	468	1140	370	126	67	45	392
21	51	360	847	475	222	416	1040	353	120	49	44	397
22	57	397	849	475	222	450	962	333	112	51	47	386
23	69	404	883	519	208	465	900	314	110	56	46	388
24	67	433	891	508	181	466	860	318	118	64	44	332
25	58	438	1030	478	194	474	839	324	109	64	38	269
26	67	465	1000	470	199	473	801	316	95	58	36	276
27	129	540	940	446	203	474	753	306	105	43	40	253
28	117	508	878	441	219	473	757	288	111	33	46	222
29	122	490	833	428	---	468	855	298	110	34	105	182
30	127	480	793	416	---	461	913	284	104	37	96	149
31	130	---	713	420	---	642	---	270	---	36	80	---
TOTAL	2588	8089	22243	16421	7815	15916	43370	16596	4754	2294	1788	5363
MEAN	83.5	270	718	530	279	513	1446	535	158	74.0	57.7	179
MAX	130	540	1030	684	408	642	2650	959	273	129	115	397
MIN	44	88	449	416	181	322	753	270	95	33	36	48

CAL YR 1986 TOTAL 106796 MEAN 293 MAX 1080 MIN 40
WTR YR 1987 TOTAL 147237 MEAN 403 MAX 2650 MIN 33

NEPONSET RIVER BASIN

55

01105000 NEPONSET RIVER AT NORWOOD, MASS.

LOCATION.--Lat 42°10'39", long 71°12'05", Norfolk County, Hydrologic Unit 01090001, on left bank 200 ft upstream from Pleasant Street Bridge, 200 ft downstream from railroad bridge, 0.45 mi downstream from Hawes Brook, and 0.5 mi south of Norwood.

DRAINAGE AREA.--34.7 mi².

PERIOD OF RECORD.--Discharge: October 1939 to current year. October 1939 monthly discharge only, published in WSP 1301.

Water-quality records: Water years 1958-59, 1966-68.

REVISED RECORDS.--WDR MA-RI-78-1: 1976(M). WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 44.04 ft above National Geodetic Vertical Datum of 1929. Since Oct. 1, 1960, recording orifice at upstream side of railroad bridge, at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated by mills and reservoirs upstream. Flow affected by several diversions upstream for municipal and industrial use. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--48 years, 55.0 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,490 ft³/s Aug. 19, 1955, gage height, 14.65 ft, from floodmarks; minimum daily, 1.4 ft³/s Oct. 20, 1963.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since 1886, that of Aug. 19, 1955. Flood of July 24, 1938, reached a stage of 11.05 ft, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 691 ft³/s Apr. 7, gage height, 9.38 ft, minimum daily, 4.5 ft³/s Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.5	e11	e100	e140	89	90	454	193	39	24	22	17
2	4.6	e10	e150	e210	88	153	402	162	33	18	7.6	14
3	6.1	e9.6	e320	e280	91	137	299	145	36	29	15	18
4	22	e8.8	e270	e240	93	115	258	168	33	26	9.6	9.8
5	25	e13	e210	e190	87	103	533	182	38	22	6.0	8.3
6	16	e24	e180	e160	80	95	635	174	40	16	7.6	10
7	11	e26	e150	e150	77	98	655	162	36	12	8.5	12
8	8.4	e29	e125	e140	76	133	562	148	35	11	9.8	15
9	7.8	e33	e107	e130	76	159	433	137	29	11	17	22
10	7.9	e27	e170	e145	74	153	346	128	25	14	27	24
11	7.4	e22	e160	e205	75	130	293	113	22	52	20	17
12	8.6	e25	e150	e200	71	113	256	109	19	33	19	13
13	8.9	e24	e130	e150	66	107	258	102	22	24	14	50
14	18	e21	e120	e130	74	104	259	94	30	18	9.2	76
15	18	e19	e110	127	58	101	243	91	30	17	6.2	53
16	15	e17	e100	130	53	97	218	89	22	14	9.8	30
17	12	e19	e99	114	51	91	203	80	17	13	11	18
18	11	e23	e120	116	51	87	210	70	12	11	10	21
19	10	e38	e280	128	51	86	218	67	5.2	8.6	9.1	43
20	9.1	e60	e400	121	49	86	203	65	7.7	8.6	8.4	100
21	8.0	e250	e340	116	48	89	179	63	8.9	8.2	5.9	79
22	7.7	e200	e280	110	48	98	162	60	10	7.7	5.7	62
23	7.0	e160	e220	130	50	102	150	55	13	7.3	5.2	48
24	6.4	e150	e210	113	49	102	145	66	12	7.0	6.2	35
25	6.4	e150	e240	115	49	98	145	62	11	6.6	5.9	27
26	9.6	e180	e230	107	49	91	138	59	11	6.8	6.0	22
27	27	e160	e200	100	49	97	128	51	13	7.3	7.9	15
28	23	e130	e180	93	49	98	130	54	15	7.3	7.1	17
29	e16	e120	e160	86	---	99	189	52	13	6.9	15	17
30	e15	e110	e150	84	---	93	217	47	22	6.3	15	21
31	e13	---	e140	89	---	218	---	42	---	5.9	15	---
TOTAL	370.4	2069.4	5801	4349	1821	3423	8521	3090	659.8	459.5	341.7	914.1
MEAN	11.9	69.0	187	140	65.0	110	284	99.7	22.0	14.8	11.0	30.5
MAX	27	250	400	280	93	218	655	193	40	52	27	100
MIN	4.5	8.8	99	84	48	86	128	42	5.2	5.9	5.2	8.3

CAL YR 1986 TOTAL 21778.9 MEAN 59.7 MAX 400 MIN 4.5
WTR YR 1987 TOTAL 31819.9 MEAN 87.2 MAX 655 MIN 4.5

e Estimated

NEPONSET RIVER BASIN

01105500 EAST BRANCH NEPONSET RIVER AT CANTON, MASS.

LOCATION. --Lat 42°09'16", long 71°08'47", Norfolk County, Hydrologic Unit 01090001, on right bank 100 ft downstream from Washington Street Bridge at Canton, 200 ft downstream from Forge Pond Dam, and 900 ft downstream from Massapoag Brook.

DRAINAGE AREA.--27.2 mi².

PERIOD OF RECORD.--Discharge: October 1952 to current year.
Water-quality records: Water years 1959, 1967-68.

REVISED RECORDS.--WSP 1901: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 80.18 ft above National Geodetic Vertical Datum of 1929 (Massachusetts Department of Public Works benchmark).

REMARKS.--Records good. Flow regulated by Forge, Bolivar, Massapoag, and Reservoir Ponds, and other ponds upstream. Flow affected by diversions for municipal supply of Canton and Stoughton. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--35 years, 51.4 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,790 ft³/s Aug. 19, 1955, gage height, 8.18 ft, from rating curve extended above 690 ft³/s; minimum daily, 0.60 ft³/s July 7, Sept. 1, 1957.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 557 ft³/s Apr. 5, gage height, 4.30 ft; minimum daily, 5.2 ft³/s Aug. 23, 26-28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e9.3	15	70	93	67	53	367	95	28	15	6.3	12
2	e9.3	15	66	172	64	106	248	81	28	13	6.3	12
3	e9.7	13	238	170	66	67	206	76	35	17	6.3	9.6
4	24	12	212	132	66	51	210	108	34	20	6.6	8.2
5	29	11	141	117	60	45	465	131	40	18	8.5	7.5
6	21	30	124	109	56	46	516	131	36	15	8.5	6.6
7	15	36	115	107	54	58	489	113	29	14	7.8	6.3
8	13	35	110	102	54	83	395	101	27	14	6.9	6.3
9	14	51	110	90	54	95	322	93	26	13	5.7	26
10	13	39	130	91	55	83	261	84	24	13	25	27
11	12	29	112	151	52	60	224	63	22	14	23	16
12	11	36	105	124	49	72	196	70	21	16	15	12
13	11	31	96	106	47	73	221	69	22	16	11	50
14	24	27	83	94	44	74	223	60	30	15	8.9	137
15	27	26	76	91	39	70	189	47	26	14	7.5	62
16	18	26	72	94	37	65	169	47	22	13	7.2	30
17	16	26	69	86	37	61	159	44	19	12	6.9	31
18	16	26	72	81	37	58	162	41	17	11	6.6	38
19	14	53	324	105	36	45	159	38	15	11	6.0	70
20	13	57	243	89	35	44	139	36	15	9.6	5.7	118
21	14	181	168	83	34	49	130	30	14	8.2	5.7	108
22	20	154	145	77	34	56	113	38	14	8.9	5.7	89
23	20	102	134	102	35	57	94	36	15	8.2	5.2	102
24	18	95	125	94	33	56	94	38	15	7.8	5.5	79
25	16	99	173	79	30	52	87	38	14	7.8	5.7	64
26	17	96	171	72	29	52	81	36	14	7.2	5.2	61
27	39	150	138	69	28	54	72	34	14	7.2	5.2	59
28	31	109	122	65	29	54	70	37	15	7.2	5.2	54
29	22	83	112	61	---	54	119	36	14	7.2	6.6	52
30	19	78	104	59	---	50	121	33	14	6.9	12	51
31	19	---	100	66	---	177	---	31	---	6.6	10	---
TOTAL	554.3	1741	4060	3031	1261	2020	6301	1915	659	366.8	257.7	1404.5
MEAN	17.9	58.0	131	97.8	45.0	65.2	210	61.8	22.0	11.8	8.31	46.8
MAX	39	181	324	172	67	177	516	131	40	20	25	137
MIN	9.3	11	66	59	28	44	70	30	14	6.6	5.2	6.3

CAL YR 1986 TOTAL 16869.8 MEAN 46.2 MAX 324 MIN 6.2
WTR YR 1987 TOTAL 23571.2 MEAN 64.6 MAX 516 MIN 5.2

e Estimated

WEYMOUTH BACK RIVER BASIN

57

01105600 OLD SWAMP RIVER NEAR SOUTH WEYMOUTH, MASS.

LOCATION.--Lat 42°11'25", long 70°56'43", Norfolk County, Hydrologic Unit 01090001, on left bank between divided lanes of State Highways 3 and 128, 100 ft downstream from unnamed tributary entering from left, 0.4 mi upstream from Whitmans Pond, and 1.2 mi north of South Weymouth.

DRAINAGE AREA.--4.29 mi².

PERIOD OF RECORD.--Discharge: May 1966 to current year.
Water-quality records: Water years 1967-68.

GAGE.--Water-stage recorder. Elevation of gage is 70 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.--21 years, 9.29 ft³/s, 28.04 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 590 ft³/s May 31, 1984, gage height, 5.02 ft; maximum gage height, 5.35 ft Feb. 15, 1971 (ice jam); minimum discharge, 0.11 ft³/s Sept. 5, 6, 9, 10, 1971.

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)
Dec. 3	2030	106	4.11	Apr. 1	0745	149	4.31
Dec. 19	1630	125	4.28	Apr. 5	unknown	*150	*4.32

Minimum discharge, 0.17 ft³/s Aug. 26, 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.60	2.6	7.5	7.6	9.4	18	130	16	3.1	2.2	.39	5.2
2	.54	2.6	6.6	45	8.8	38	66	11	5.4	2.6	.34	2.0
3	.61	2.6	73	50	8.4	29	33	9.3	6.4	4.5	2.0	1.2
4	6.2	2.6	64	26	8.4	18	27	28	4.7	2.5	1.2	.82
5	5.6	2.6	26	16	8.0	12	e118	43	9.0	1.7	.64	.48
6	3.2	12	16	11	e6.7	9.5	e126	38	6.1	1.2	.49	.46
7	2.3	8.7	12	10	6.7	13	e111	22	4.2	.93	.46	.46
8	1.8	9.2	9.9	10	6.7	24	62	14	3.7	.83	.80	.50
9	1.6	13	13	7.8	7.0	30	40	11	3.5	.83	3.5	8.3
10	1.8	9.2	22	11	e8.0	21	29	9.3	3.0	.83	17	2.7
11	1.9	6.7	15	34	7.4	e12	22	8.0	2.5	.80	4.6	1.5
12	1.8	8.5	12	25	6.8	9.6	18	7.4	2.4	.72	2.4	1.1
13	1.6	6.1	11	14	e5.8	9.5	40	6.9	2.4	.72	1.7	11
14	8.5	4.7	7.7	10	e5.4	9.5	e52	6.4	2.6	.72	1.3	30
15	5.2	4.2	6.7	9.3	e5.1	8.5	28	7.1	2.4	.72	.99	8.4
16	3.5	4.1	6.7	9.6	e4.8	8.6	19	6.7	1.8	.69	.76	3.4
17	3.8	3.8	6.7	7.4	e4.8	7.9	18	5.5	1.6	.62	.58	2.4
18	4.2	3.5	9.4	8.7	e4.7	7.4	18	4.9	1.5	.59	.50	4.3
19	3.2	10	99	17	e4.6	7.7	16	4.5	1.4	.52	.40	20
20	2.7	8.6	64	12	e4.6	8.4	14	4.1	1.2	.46	.39	53
21	2.5	43	27	9.3	e4.3	12	13	3.9	1.1	.46	.29	38
22	2.4	38	17	7.8	4.3	15	11	3.8	1.1	.46	.31	17
23	2.2	19	12	17	4.3	14	9.3	3.6	2.2	.46	.43	13
24	2.0	14	10	e16	4.5	11	9.0	8.9	1.7	.46	2.2	7.1
25	1.9	10	24	e11	4.2	9.4	11	6.2	1.4	1.1	.23	5.1
26	2.5	13	25	8.0	4.1	8.9	8.6	4.8	1.4	2.9	.19	4.0
27	14	41	14	7.7	4.1	9.3	7.6	4.2	1.3	.79	.34	3.4
28	6.8	26	10	7.0	4.2	9.7	16	7.0	1.2	.56	.84	2.9
29	4.2	14	8.2	6.6	---	9.1	55	5.1	1.0	.45	5.4	2.7
30	3.4	9.9	7.6	6.4	---	7.6	32	4.2	2.3	.40	1.9	3.9
31	2.9	---	9.1	11	---	51	---	3.5	---	.40	.94	---
TOTAL	105.45	353.2	652.1	449.2	166.1	458.6	1159.5	318.3	83.6	33.12	53.51	254.32
MEAN	3.40	11.8	21.0	14.5	5.93	14.8	38.6	10.3	2.79	1.07	1.73	8.48
MAX	14	43	99	50	9.4	51	130	43	9.0	4.5	17	53
MIN	.54	2.6	6.6	6.4	4.1	7.4	7.6	3.5	1.0	.40	.19	.46
CFSM	.76	2.62	4.67	3.22	1.32	3.29	8.59	2.28	.62	.24	.38	1.88
IN.	.87	2.92	5.39	3.71	1.37	3.79	9.59	2.63	.69	.27	.44	2.10

CAL YR 1986 TOTAL 3226.97 MEAN 8.84 MAX 99 MIN .54 CFSM 1.96 IN. 26.68
WTR YR 1987 TOTAL 4087.00 MEAN 11.2 MAX 130 MIN .19 CFSM 2.49 IN. 33.79

e Estimated

NORTH RIVER BASIN

01105730 INDIAN HEAD RIVER AT HANOVER, MASS.

LOCATION.--Lat 42°06'02", long 70°49'23", Plymouth County, Hydrologic Unit 01090002, on right bank at downstream side of Elm Street Bridge, 0.3 mi upstream from Iron Mine Brook, and 1 mi southwest of Hanover.

DRAINAGE AREA.--30.3 mi².

PERIOD OF RECORD.--Discharge: July 1966 to current year.

Water-quality records: Water years 1970-71.

GAGE.--Water-stage recorder. Datum of gage is 3.16 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Some regulation by mills and by Wampatuck, Indian Head, Maquan, and other ponds upstream. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--21 years, 62.3 ft³/s 28.01 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,390 ft³/s Mar. 18, 1968, gage height, 7.13 ft; minimum, 0.14 ft³/s Sept. 26, 27, 1980; minimum daily, 0.18 ft³/s Sept. 27, 29, 1980.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 310 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 4	0600	412	4.46	Apr. 1	2200	556	4.97
Dec. 20	0345	535	4.90	Apr. 7	0030	*716	*5.47
Jan. 3	0630	410	4.45	Apr. 14	0415	322	4.07

Minimum discharge not determined; minimum daily, 1.0 ft³/s Aug 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.3	18	69	84	89	85	476	135	27	11	2.9	e23
2	7.0	18	59	268	81	233	444	103	32	11	2.5	e11
3	7.0	19	232	368	78	173	261	88	50	21	2.8	e9.3
4	19	18	372	239	77	124	183	152	36	20	4.1	e8.6
5	27	16	234	155	72	93	441	223	53	15	2.3	e8.1
6	20	40	148	125	66	89	655	218	49	13	1.7	e7.6
7	13	54	107	109	62	105	644	162	35	11	2.0	e7.2
8	12	48	89	104	62	151	457	124	32	9.6	2.2	e7.0
9	11	77	88	89	72	174	299	103	30	9.3	3.6	e45
10	12	64	134	88	75	145	206	91	25	9.6	26	e25
11	14	54	113	188	69	107	167	80	22	9.4	22	e15
12	13	68	95	176	62	89	140	72	20	8.7	19	e10
13	12	55	89	133	59	83	205	66	21	8.6	11	e100
14	28	41	70	106	52	81	304	61	20	8.5	8.3	e160
15	45	35	63	97	47	76	216	61	18	8.9	6.0	e80
16	27	33	61	96	44	75	162	61	16	7.9	2.7	e31
17	21	31	59	83	44	70	143	54	13	6.6	8.2	e22
18	24	29	63	77	44	67	136	49	12	5.8	6.8	e45
19	22	55	389	131	42	70	125	45	12	4.6	4.1	e180
20	18	60	477	103	41	74	112	43	10	4.3	4.1	e280
21	17	187	283	93	40	90	105	41	11	4.9	4.0	e260
22	16	227	167	87	41	108	96	40	12	4.5	3.1	e160
23	15	143	131	131	42	107	87	38	12	4.5	11	e110
24	14	107	109	122	41	95	84	50	13	4.3	6.2	e65
25	13	93	151	101	40	86	90	46	13	3.9	e1.5	e45
26	13	79	173	81	39	83	80	40	13	4.9	e1.0	e38
27	38	175	131	78	40	82	72	36	13	4.9	e1.3	e32
28	38	158	104	72	42	83	88	43	13	5.0	e4.4	e27
29	30	108	88	67	---	81	239	40	12	4.1	e3.5	e25
30	25	85	82	64	---	70	196	34	10	3.4	e6.4	e35
31	20	---	93	85	---	162	---	30	---	3.1	e14	---
TOTAL	598.3	2195	4523	3800	1563	3211	6913	2429	655	251.3	198.7	1871.8
MEAN	19.3	73.2	146	123	55.8	104	230	78.4	21.8	8.11	6.41	62.4
MAX	45	227	477	368	89	233	655	223	53	21	26	280
MIN	7.0	16	59	64	39	67	72	30	10	3.1	1.0	7.0
CFSM	.64	2.42	4.83	4.06	1.85	3.43	7.63	2.59	.72	.27	.21	2.07
IN.	.74	2.70	5.57	4.68	1.93	3.96	8.52	2.99	.81	.31	.24	2.31

CAL YR 1986 TOTAL 22352.9 MEAN 61.2 MAX 477 MIN 6.0 CFSM 2.03 IN. 27.53
WTR YR 1987 TOTAL 28209.1 MEAN 77.3 MAX 655 MIN 1.0 CFSM 2.56 IN. 34.75

e Estimated

JONES RIVER BASIN

59

01105870 JONES RIVER AT KINGSTON, MASS.

LOCATION.--Lat 41°59'27", long 70°44'03", Plymouth County, Hydrologic Unit 01090002, on left bank 100 ft downstream from Elm Street Bridge at Kingston and 2.8 mi upstream from mouth.

DRAINAGE AREA.--15.7 mi², excludes 4.09 mi² above outlet of Silver Lake, from which flow is diverted for municipal supply of Brockton, Whitman, and Hanson.

PERIOD OF RECORD.--Discharge: August 1966 to current year.
Water-quality records: Water years 1970-71.

REVISED RECORDS.--WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 4.76 ft above National Geodetic Vertical Datum of 1929 (levels by Massachusetts Department of Public Works).

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Flow regulated by pond upstream. Flow affected at times during 1968-76, 1978-79, 1982-84 by wastage from Silver Lake. Surface flow may be affected by ground water that enters from or moves into adjacent basins. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--21 years, 32.0 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 575 ft³/s Mar. 19, 1968, gage height, 4.60 ft; maximum gage height, 5.88 ft Feb. 7, 1978, from peak-stage indicator (backwater from tide); minimum daily discharge, 0.59 ft³/s Aug. 11, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 267 ft³/s Apr. 6, gage height, 4.57 ft, from peak-stage indicator; minimum daily, 7.4 ft³/s Aug. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.0	17	31	46	e48	e40	165	78	29	17	e9.5	18
2	7.9	14	28	115	e45	e74	168	66	28	18	e9.0	21
3	8.3	13	62	134	e43	62	e135	58	30	21	e10	20
4	8.6	14	74	107	e42	54	e120	65	32	21	e11	17
5	11	13	63	86	e41	46	e180	106	34	20	e11	14
6	12	18	50	68	e39	42	e260	117	35	17	e10	13
7	12	21	43	61	e38	42	e240	99	33	16	e9.6	14
8	11	23	37	54	e36	51	e190	83	31	15	e9.0	14
9	10	31	34	44	e38	62	e150	69	29	15	e11	14
10	10	29	38	42	e40	60	123	57	27	19	e14	15
11	10	24	40	55	e38	53	103	48	26	18	e13	14
12	9.5	28	40	60	e36	45	92	45	26	18	e12	13
13	9.1	32	38	54	e34	41	108	44	25	17	e11	14
14	11	31	29	49	e33	41	150	38	24	e16	e10	31
15	12	25	26	46	e31	41	129	39	23	e12	e10	33
16	12	22	24	46	e30	39	107	40	22	e16	e10	25
17	12	20	22	43	e29	37	94	40	22	e14	e9.8	21
18	12	18	24	41	e28	37	86	38	21	e14	e9.5	18
19	13	22	93	49	e27	38	78	37	20	e13	e9.0	24
20	13	28	128	53	e26	39	71	37	20	e11	e8.0	59
21	15	62	101	57	e26	39	67	36	19	e13	7.6	71
22	16	78	84	61	e26	46	63	37	19	e13	7.4	59
23	15	62	58	78	e25	49	58	37	21	e12	7.9	50
24	14	50	49	64	e25	52	52	41	22	e12	7.6	37
25	12	43	56	54	e25	49	51	47	21	e12	7.7	31
26	12	37	66	51	e24	46	51	42	20	e13	7.5	27
27	15	47	60	49	e24	44	47	39	19	e11	7.9	26
28	19	47	48	57	e24	42	53	39	19	e10	8.8	23
29	20	39	44	67	---	41	99	37	17	e10	21	21
30	19	35	37	60	---	42	94	33	16	e10	25	18
31	18	---	49	e55	---	69	---	31	---	e9.5	16	---
TOTAL	387.4	943	1576	1906	921	1463	3384	1623	730	453.5	330.8	775
MEAN	12.5	31.4	50.8	61.5	32.9	47.2	113	52.4	24.3	14.6	10.7	25.8
MAX	20	78	128	134	48	74	260	117	35	21	25	71
MIN	7.9	13	22	41	24	37	47	31	16	9.5	7.4	13

CAL YR 1986 TOTAL 9493.9 MEAN 26.0 MAX 128 MIN 6.1
WTR YR 1987 TOTAL 14492.7 MEAN 39.7 MAX 260 MIN 7.4

e Estimated

HERRING RIVER BASIN

01105880 HERRING RIVER AT NORTH HARWICH, MASS.

LOCATION.--Lat 41°42'00", long 70°06'27", Barnstable County, Hydrologic Unit 01090002, on left bank 30 ft upstream from bridge on U.S. Route 6, 0.8 mi northeast of North Harwich, 1.1 mi downstream from Hinckleys Pond, and 2 mi northwest of Harwich.

DRAINAGE AREA.--About 9.4 mi².

PERIOD OF RECORD.--June 1966 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 10 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records poor. Flow regulated by many ponds (some with no outlets) upstream. Surface flow may be affected by ground water that enters from or moves into adjacent basins. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--21 years, 10.1 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 75 ft³/s Feb. 12, 1983, gage height, 3.71 ft, from rating curve extended above 34 ft³/s; maximum gage height, 4.88 ft June 6, 1967; minimum discharge, 0.32 ft³/s Sept. 13-15, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 29 ft³/s Feb. 9, gage height, 3.81 ft; minimum, 0.79 ft³/s Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	1.8	6.5	13	17	19	21	22	20	15	7.0	11
2	1.6	2.0	6.1	17	16	22	20	22	20	15	7.0	9.8
3	1.8	1.8	8.6	17	15	21	19	21	20	17	7.3	9.0
4	2.9	1.8	8.5	16	15	20	19	22	20	16	7.3	8.3
5	3.2	3.2	7.9	16	14	19	22	25	21	e15	7.5	7.4
6	3.2	4.6	7.4	16	14	19	23	25	21	e14	7.4	7.0
7	2.9	4.6	7.2	16	13	18	25	25	20	e14	7.0	6.8
8	1.8	4.7	7.1	15	13	18	26	24	20	e13	7.0	6.8
9	1.8	5.6	7.3	15	16	18	25	23	20	e13	7.2	8.0
10	1.5	5.5	9.0	15	26	16	24	23	20	13	12	8.0
11	1.4	5.5	8.8	16	25	16	23	22	20	13	11	7.7
12	1.4	6.3	9.6	16	24	15	22	22	20	12	10	7.1
13	3.9	5.9	8.9	15	23	15	24	22	20	12	9.7	6.6
14	8.1	5.1	9.6	15	22	16	25	21	20	12	9.5	9.5
15	5.9	4.7	9.4	15	22	16	24	21	20	12	9.3	12
16	5.0	4.6	8.8	14	21	16	23	21	19	12	8.9	13
17	3.7	4.4	8.8	15	20	16	23	21	19	11	8.2	12
18	1.8	4.4	9.0	16	20	17	23	21	18	10	7.9	11
19	1.7	7.2	15	17	19	17	23	21	18	9.9	8.0	13
20	1.9	5.9	14	19	19	17	23	21	18	9.6	8.1	21
21	1.9	7.5	12	18	18	17	23	21	18	9.0	8.0	19
22	2.0	6.8	12	17	18	17	22	21	18	9.1	7.6	17
23	2.2	6.1	11	17	19	17	22	21	19	8.6	7.8	15
24	2.1	6.5	11	14	20	17	22	22	18	8.8	7.3	13
25	1.9	6.4	12	12	19	17	22	22	17	8.8	7.2	12
26	1.9	6.3	12	18	19	16	22	21	17	9.0	6.8	11
27	3.8	7.5	11	18	18	16	21	21	17	8.9	6.7	11
28	4.1	7.4	11	17	18	17	21	21	17	8.6	6.5	11
29	3.9	7.2	11	17	---	17	22	21	16	8.4	10	12
30	3.9	6.9	9.5	18	---	16	23	21	16	7.9	10	12
31	3.0	---	13	17	---	18	---	21	---	7.5	9.2	---
TOTAL	87.3	158.2	303.0	497	523	536	677	678	567	353.1	254.4	328.0
MEAN	2.82	5.27	9.77	16.0	18.7	17.3	22.6	21.9	18.9	11.4	8.21	10.9
MAX	8.1	7.5	15	19	26	22	26	25	21	17	12	21
MIN	1.1	1.8	6.1	12	13	15	19	21	16	7.5	6.5	6.6

CAL YR 1986 TOTAL 2832.3 MEAN 7.76 MAX 16 MIN .85
WTR YR 1987 TOTAL 4962.0 MEAN 13.6 MAX 26 MIN 1.1

e Estimated

WEST BRANCH WESTPORT RIVER BASIN

61

01106000 ADAMSVILLE BROOK AT ADAMSVILLE, R.I.

LOCATION.--Lat 41°33'30", long 71°07'47", Newport County, Hydrologic Unit 01090002, on right bank 0.2 mi upstream from milldam at Adamsville and 0.7 mi upstream from mouth.

DRAINAGE AREA.--8.01 mi² (revised).

PERIOD OF RECORD.--Discharge: October 1940 to September 1978, February to September 1987 (discontinued). Several miscellaneous measurements made in water years 1986 and 1987.
Water-quality records: Water years 1973-74.

REVISED RECORDS.--WSP 1701: 1955-59. WDR MA-NH-RI-VT-71-1: Drainage area

GAGE.--Water-stage recorder. Concrete control since Sept. 16, 1942. Elevation of gage is 15 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those above 50 ft³/s, which are fair. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--38 years (water years 1941-78), 14.3 ft³/s, 24.24 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 316 ft³/s Dec. 27, 1969, gage height, 7.65 ft; maximum gage height, 7.70 ft Mar. 18, 1968; minimum discharge, 0.03 ft³/s Sept. 23, 24, Oct. 3, 4, 1950, Sept. 24, 25, 29, 1971, Aug. 21, 1974.

EXTREMES FOR PERIOD FEBRUARY TO SEPTEMBER 1987.--Peak discharges greater than base discharge of 120 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 2	0830	123	5.06	Apr. 5	1330	138	5.29
Apr. 1	1330	*163	*5.71				

Minimum discharge, 0.09 ft³/s Aug. 14, 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	26	137	43	4.6	1.5	.12	1.4
2	---	---	---	---	---	106	109	30	4.1	1.4	.12	1.4
3	---	---	---	---	---	82	67	23	3.8	3.2	.15	1.1
4	---	---	---	---	---	61	51	40	3.6	3.4	.15	.79
5	---	---	---	---	---	45	118	68	6.6	3.3	.15	.58
6	---	---	---	---	---	35	108	65	7.3	2.6	.15	.45
7	---	---	---	---	---	35	96	48	6.3	2.0	.13	.37
8	---	---	---	---	---	44	77	35	14	1.6	.12	.41
9	---	---	---	---	---	46	60	28	17	1.5	.15	.56
10	---	---	---	---	---	39	48	23	12	1.3	.18	.75
11	---	---	---	---	---	28	39	20	7.5	1.2	.13	.67
12	---	---	---	---	---	23	32	17	5.2	1.1	.15	.51
13	---	---	---	---	---	21	39	16	4.7	1.1	.13	1.0
14	---	---	---	---	---	20	62	14	4.1	1.1	.11	7.4
15	---	---	---	---	---	19	55	13	3.6	1.2	.12	6.0
16	---	---	---	---	---	19	43	13	3.1	1.0	.12	6.7
17	---	---	---	---	11	18	36	12	2.5	.86	.15	5.8
18	---	---	---	---	11	16	45	11	2.1	.70	.15	4.2
19	---	---	---	---	10	15	49	12	1.8	.56	.15	3.8
20	---	---	---	---	10	14	41	11	1.6	.43	.18	14
21	---	---	---	---	9.8	15	33	10	1.4	.41	.20	19
22	---	---	---	---	9.9	15	28	9.2	1.5	.39	.28	18
23	---	---	---	---	10	15	24	8.3	2.0	.32	.30	12
24	---	---	---	---	10	14	24	7.7	2.2	.29	.27	7.7
25	---	---	---	---	10	13	34	7.1	2.1	.25	.27	5.6
26	---	---	---	---	10	14	33	6.5	1.9	.21	.27	4.0
27	---	---	---	---	10	16	26	6.1	1.7	.17	.34	2.7
28	---	---	---	---	11	22	29	5.9	1.9	.14	.35	1.9
29	---	---	---	---	---	29	65	5.8	1.7	.12	.93	1.6
30	---	---	---	---	---	25	59	5.4	1.6	.12	1.3	1.5
31	---	---	---	---	---	41	---	5.0	---	.12	.78	---
TOTAL	---	---	---	---	---	931	1667	619.0	133.5	33.59	8.10	131.89
MEAN	---	---	---	---	---	30.0	55.6	20.0	4.45	1.08	.26	4.40
MAX	---	---	---	---	---	106	137	68	17	3.4	1.3	19
MIN	---	---	---	---	---	13	24	5.0	1.4	.12	.11	.37
CFSM	---	---	---	---	---	3.75	6.94	2.49	.56	.14	.03	.55
IN.	---	---	---	---	---	4.32	7.74	2.87	.62	.16	.03	.61

TAUNTON RIVER BASIN

01108000 TAUNTON RIVER NEAR BRIDGEWATER, MASS.

LOCATION.--Lat 41°56'05", long 70°57'18", Plymouth County, Hydrologic Unit 01090004, on right bank 0.1 mi upstream from bridge on Titicut Road, 1 mi upstream from Sawmill Brook, 3.5 mi northwest of Middleboro, and 4 mi southeast of Bridgewater.

DRAINAGE AREA.--258 mi², revised.

PERIOD OF RECORD.--Discharge: October 1929 to April 1976, April 1985 to current year. Published as "at State Farm" October 1929 to September 1969, and as "at State Farm near Bridgewater" October 1969 to April 1976.
Water-quality records: Water years 1953, 1967-74.

REVISED RECORDS.--WSP 756: Drainage area. WSP 781: 1934. WSP 1051: 1933. WSP 1201: 1931. WSP 1301: 1930(M), 1933(M), 1935(M).

GAGE.--Water-stage recorder. Datum of gage is 9.61 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1931, inverted nonrecording gage at site 40 ft downstream with zero of gage at 10.02 ft. Oct. 1, 1931, to June 8, 1934, nonrecording gage, and June 9, 1934, to Oct. 12, 1939, water-stage recorder, at site 40 ft downstream at present datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow affected by diversions to and from basin upstream of station for municipal supplies. Flow regulated by reservoirs and, prior to about 1975, by powerplants upstream. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--48 years (water years 1930-75, 1986-87), 466 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,980 ft³/s Mar. 20, 1968, gage height, 14.48 ft; minimum, 8 ft³/s Sept. 10, 1944; minimum daily, 9 ft³/s Sept. 9-12, 1944.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,530 ft³/s Apr. 8; gage height, 12.54 ft; minimum, 49 ft³/s Aug. 25-27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	78	140	e640	805	762	500	1630	1280	374	e90	67	100
2	78	130	e620	1180	760	990	2490	1100	346	e100	64	118
3	81	125	e1200	1910	755	1100	2640	963	363	e140	63	96
4	113	124	e1900	1990	750	1010	2410	1000	353	e160	78	84
5	149	121	e2000	1740	740	910	2310	1350	382	e150	74	76
6	140	167	e1500	1480	701	833	e3000	1590	408	e140	70	69
7	123	318	e1300	1190	676	834	e3400	1530	361	e120	65	64
8	107	316	e1100	1060	658	993	e3500	1310	337	e110	64	68
9	96	e500	e960	934	654	1140	3350	1130	322	e110	63	93
10	92	e520	e960	849	662	1130	3030	987	292	e150	112	123
11	93	e420	e940	1000	680	1000	2640	872	258	192	117	92
12	87	e450	e900	1120	666	873	2280	801	237	182	86	79
13	88	e500	e840	1060	648	809	2040	749	227	153	77	77
14	111	e430	e760	958	591	766	2250	701	224	137	75	e550
15	204	e360	e670	893	574	734	2230	668	212	127	72	e500
16	173	e310	e630	855	543	702	1970	654	197	116	67	e430
17	156	e280	e580	797	524	676	1680	625	183	104	64	e310
18	163	e260	e580	729	507	648	1500	594	167	97	64	e280
19	153	356	e1400	850	495	630	1390	569	154	93	63	e380
20	140	479	e2400	839	484	629	1260	546	141	88	61	e600
21	124	817	e2400	837	470	635	1140	527	120	87	56	e700
22	114	1200	e2000	821	460	687	1040	505	110	84	54	e740
23	109	1090	1600	947	458	705	943	490	110	81	57	e740
24	105	901	1280	1030	456	699	881	505	112	80	53	e660
25	104	800	1220	995	452	670	859	524	106	78	49	e560
26	99	735	1370	879	444	651	819	497	103	82	49	e450
27	160	961	1300	853	437	649	770	476	103	86	50	e360
28	206	1080	1140	887	437	641	764	467	e100	76	61	e300
29	196	917	988	791	---	662	1230	453	e92	72	92	e270
30	182	697	884	724	---	654	1390	431	e86	70	118	e250
31	159	---	844	723	---	689	---	407	---	69	83	---
TOTAL	3983	15504	36906	31726	16444	24249	56836	24301	6580	3424	2188	9219
MEAN	128	517	1191	1023	587	782	1895	784	219	110	70.6	307
MAX	206	1200	2400	1990	762	1140	3500	1590	408	192	118	740
MIN	78	121	580	723	437	500	764	407	86	69	49	64

CAL YR 1986 TOTAL 169548 MEAN 465 MAX 2400 MIN 78
WTR YR 1987 TOTAL 231360 MEAN 634 MAX 3500 MIN 49

e Estimated

TAUNTON RIVER BASIN

63

01109000 WADING RIVER NEAR NORTON, MASS.

LOCATION.--Lat 41°56'51", long 71°10'38", Bristol County, Hydrologic Unit 01090004, on left bank 200 ft downstream from bridge on State Highway 140, 0.9 mi upstream from confluence with Rumford River, and 1.5 mi southeast of Norton.

DRAINAGE AREA.--43.3 mi².

PERIOD OF RECORD.--Discharge: June 1925 to current year.
Water-quality records: Water year 1967-68.

REVISED RECORDS.--WSP 871: 1938. WSP 1301: 1929-33(M). WSP 1621: 1925-58 (monthly runoff). WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 55.14 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1930, nonrecording gage at same site at datum 0.62 ft higher and Oct. 1, 1930, to May 5, 1933, at same site at present datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated to some extent by Lake Mirimichi and other lakes and reservoirs upstream. Diversion upstream for municipal supply of Attleboro and small diversions to and from basin for other municipal supplies. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--62 years, 73.5 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,460 ft³/s Mar. 19, 1968, gage height, 11.47 ft; minimum, 0.3 ft³/s Sept. 10, 1926.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 280 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 4	0700	514	9.05	Jan. 3	0500	331	8.20
Dec. 20	0200	687	9.66	Apr. 1	1700	643	9.50
Dec. 26	0500	333	8.23	Apr. 5	2400	*828	*10.10

Minimum discharge, 1.9 ft³/s Aug. 24, 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.0	e20	121	151	99	68	562	185	36	7.6	6.0	7.7
2	9.1	e19	108	220	97	139	511	162	32	8.6	5.7	8.2
3	9.2	e18	273	315	95	146	366	147	30	13	5.9	8.2
4	14	e17	466	255	96	131	329	179	29	18	7.4	5.9
5	21	e17	324	211	e92	119	703	207	36	14	6.9	4.4
6	22	e30	253	180	e82	110	768	198	35	12	3.1	3.9
7	20	e40	215	170	79	121	722	178	32	10	2.5	4.1
8	18	e47	190	158	77	150	659	158	40	9.5	2.8	4.8
9	16	e64	174	139	81	168	554	143	38	10	4.3	14
10	15	e60	187	136	e81	156	446	131	30	17	9.0	23
11	14	e48	177	172	e79	130	363	119	25	17	7.5	15
12	14	e70	165	183	e76	122	292	109	22	14	6.7	9.2
13	13	e64	154	164	e69	113	278	100	21	13	5.5	27
14	19	e56	130	147	e61	112	298	91	19	12	4.8	94
15	28	e49	122	139	e58	108	247	88	18	11	4.3	87
16	e28	e45	114	137	e56	101	205	86	16	8.8	4.0	48
17	e26	e40	107	125	e54	93	194	81	15	7.7	3.7	33
18	e23	e35	105	107	e52	87	215	75	14	6.8	3.5	32
19	e21	e40	421	135	e51	85	231	68	13	5.9	3.1	63
20	e19	e47	595	127	e50	83	199	62	12	5.8	2.5	133
21	e18	e110	398	e135	e49	83	179	59	11	5.8	2.2	147
22	e17	e210	315	129	e48	87	157	56	10	5.5	2.2	107
23	e16	e200	266	131	50	89	155	53	11	5.5	2.3	96
24	e16	e170	227	e130	e49	85	143	59	10	5.3	2.1	80
25	e15	e140	260	e130	e48	79	143	59	13	5.2	2.5	61
26	e15	116	318	e125	e48	77	133	55	9.8	6.5	2.1	50
27	e25	205	261	e125	49	77	122	51	9.2	7.5	2.4	40
28	e27	208	217	e120	50	79	124	50	9.3	6.4	3.3	35
29	e25	166	192	e115	---	83	186	47	8.1	6.0	8.9	31
30	e24	139	175	e105	---	78	213	44	7.2	5.9	10	31
31	e22	---	165	e98	---	156	---	40	---	5.1	8.6	---
TOTAL	578.3	2490	7195	4714	1876	3315	9697	3140	611.6	286.4	145.8	1303.4
MEAN	18.7	83.0	232	152	67.0	107	323	101	20.4	9.24	4.70	43.4
MAX	28	210	595	315	99	168	768	207	40	18	10	147
MIN	9.0	17	105	98	48	68	122	40	7.2	5.1	2.1	3.9

CAL YR 1986 TOTAL 27236.8 MEAN 74.6 MAX 595 MIN 9.0
WTR YR 1987 TOTAL 35352.3 MEAN 96.9 MAX 768 MIN 2.1

e Estimated

TAUNTON RIVER BASIN

01109060 THREEMILE RIVER AT NORTH DIGHTON, MASS.

LOCATION.--Lat 41°51'58", long 71°07'24", Bristol County, Hydrologic Unit 01090004, on right bank 800 ft downstream from Warner Boulevard at North Dighton and 1.4 mi upstream from mouth.

DRAINAGE AREA.--84.3 mi².

REVISED RECORDS.--WDR MA-RI-84-1: Drainage area.

PERIOD OF RECORD.--Discharge: July 1966 to current year.
Water-quality records: Water years 1967-68.

GAGE.--Water-stage recorder. Datum of gage is 11.38 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Lake Mirimichi and other lakes and reservoirs upstream. Diversions to and from basin upstream for municipal supplies may be compensating. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--21 years, 172 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,490 ft³/s Mar. 19, 1968, gage height, 8.30 ft; minimum, 5.1 ft³/s Sept. 8, 1980.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 4	2315	884	5.38	Apr. 2	1600	1,210	6.08
Dec. 20	2015	1,090	5.84	Apr. 6	2000	*1,610	*6.83
Jan. 3	1700	622	4.78				

Minimum discharge, 8.6 ft³/s Aug. 20, 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	48	298	327	212	154	795	466	87	30	13	37
2	32	46	260	415	212	287	1160	403	79	29	14	29
3	32	46	452	577	212	324	998	352	73	42	17	23
4	40	45	769	592	212	322	808	387	67	42	19	21
5	46	44	812	512	207	291	1150	487	74	39	18	18
6	47	55	631	432	189	267	1520	502	80	33	17	16
7	47	82	517	385	187	268	1510	458	71	29	12	17
8	45	93	443	352	179	310	1390	399	91	27	10	18
9	44	124	397	318	179	361	1220	351	91	27	11	36
10	42	133	391	293	172	371	1000	315	77	45	22	43
11	40	110	387	326	188	334	829	281	62	68	23	42
12	39	123	375	361	180	292	690	254	55	43	19	31
13	39	137	348	366	169	270	642	231	54	37	18	73
14	50	133	313	333	136	255	665	209	49	35	16	228
15	64	110	280	306	158	245	617	196	46	36	15	195
16	62	97	261	288	150	235	522	190	41	28	13	138
17	60	89	242	272	131	220	460	182	37	24	12	87
18	55	74	235	252	124	206	467	169	34	22	12	77
19	50	93	548	267	121	196	508	157	32	20	11	120
20	47	106	982	270	118	191	493	144	31	18	9.5	224
21	46	201	983	270	116	186	437	132	29	19	9.6	270
22	45	298	755	281	113	189	393	123	29	18	11	276
23	45	400	611	299	114	194	349	119	32	17	13	246
24	44	359	522	268	114	195	337	124	30	17	11	210
25	41	317	510	286	113	188	331	136	28	17	9.2	172
26	41	300	573	288	112	180	312	125	31	22	10	136
27	54	342	577	249	112	179	288	118	30	22	11	112
28	59	411	494	265	112	180	287	113	30	19	16	94
29	57	404	429	247	---	183	391	108	26	17	42	83
30	56	345	382	207	---	181	471	103	26	15	40	83
31	53	---	353	205	---	298	---	95	---	16	28	---
TOTAL	1455	5165	15130	10109	4342	7552	21040	7429	1522	873	502.3	3155
MEAN	46.9	172	488	326	155	244	701	240	50.7	28.2	16.2	105
MAX	64	411	983	592	212	371	1520	502	91	68	42	276
MIN	32	44	235	205	112	154	287	95	26	15	9.2	16

CAL YR 1986 TOTAL 59733.0 MEAN 164 MAX 983 MIN 32
WTR YR 1987 TOTAL 78274.3 MEAN 214 MAX 1520 MIN 9.2

TAUNTON RIVER BASIN

65

01109070 SEGREGANSET RIVER NEAR DIGHTON, MASS.

LOCATION.--Lat 41°50'25", long 71°08'36", Bristol County, Hydrologic Unit 01090004, on left bank 50 ft upstream from twin culverts on Center Street and 1.8 mi northwest of Dighton.

DRAINAGE AREA.--10.6 mi².

PERIOD OF RECORD.--Discharge: July 1966 to current year.
Water-quality records: Water years 1967-68.

GAGE.--Water-stage recorder. Elevation of gage is 30 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those below 2 ft³/s, which are poor. Occasional regulation by ponds upstream. Diversion upstream for Dighton Water District. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--21 years, 22.9 ft³/s, 29.34 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 867 ft³/s Mar. 18, 1968, gage height, 7.51 ft; no flow at times in water years 1966, 1969, 1974, 1980, 1981, 1983, and 1987.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 3	1830	358	5.11	Apr. 1	1300	409	5.35
Dec. 19	2245	405	5.33	Apr. 5	1800	*441	*5.51

No flow Aug. 3-29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.66	2.9	26	31	27	34	368	57	4.8	.60	.03	1.8
2	.63	2.7	22	96	27	115	254	39	4.4	.74	.01	2.5
3	.17	2.6	173	152	27	102	108	30	3.4	1.5	.01	1.2
4	.47	2.4	281	93	28	73	73	55	2.0	1.8	.0	.61
5	.67	2.2	118	58	27	58	365	106	3.2	1.6	.00	.45
6	.86	6.7	57	42	23	46	338	97	4.6	1.3	.00	.36
7	1.3	10	46	35	22	52	235	61	3.9	.93	.00	.34
8	1.2	12	36	35	21	86	163	43	8.6	.75	.00	.34
9	1.2	25	34	31	22	99	112	34	10	.73	.00	1.5
10	1.1	25	48	30	25	73	74	28	5.9	.72	.00	2.9
11	1.0	21	50	58	26	48	54	24	3.8	.67	.00	1.6
12	.97	28	42	66	24	38	43	21	2.6	.56	.00	.86
13	.97	26	37	49	22	34	60	19	2.2	.47	.00	9.9
14	2.4	18	31	38	19	31	100	17	2.2	.57	.00	72
15	5.3	13	26	34	16	31	73	16	1.8	1.1	.00	43
16	4.1	11	24	33	14	29	50	17	1.7	1.2	.00	20
17	3.2	9.8	23	30	14	27	43	14	1.5	1.0	.00	11
18	2.7	9.4	26	26	14	25	59	13	1.1	.79	.00	9.8
19	2.4	14	273	41	14	23	74	12	.85	.56	.00	33
20	2.0	19	306	39	13	23	56	11	.63	.36	.00	115
21	1.6	65	124	39	13	23	43	9.8	.50	.25	.00	116
22	1.5	97	73	33	13	24	37	8.6	.41	.22	.00	60
23	1.3	57	48	40	13	24	33	8.0	.39	.18	.00	41
24	1.2	40	38	e45	13	22	31	9.8	.48	.16	.00	26
25	.95	37	60	e40	14	20	36	11	.53	.15	.00	21
26	.83	33	90	32	13	20	36	9.9	.50	.14	.00	15
27	3.4	69	63	29	14	21	26	7.8	.47	.16	.00	12
28	5.6	70	42	26	15	24	31	7.7	.47	.16	.00	9.3
29	5.7	45	36	24	---	27	113	7.1	.45	.13	.00	8.0
30	4.6	33	33	23	---	24	100	6.6	.35	.10	1.5	7.4
31	3.5	---	31	23	---	94	---	5.5	---	.06	1.4	---
TOTAL	63.48	806.7	2317	1371	533	1370	3188	805.8	73.73	19.66	2.95	643.86
MEAN	2.05	26.9	74.7	44.2	19.0	44.2	106	26.0	2.46	.63	.10	21.5
MAX	5.7	97	306	152	28	115	368	106	10	1.8	1.5	116
MIN	.17	2.2	22	23	13	20	26	5.5	.35	.06	.00	.34
CFSM	.19	2.54	7.05	4.17	1.80	4.17	10.0	2.45	.23	.06	.0	2.02
IN.	.22	2.83	8.13	4.81	1.87	4.81	11.19	2.83	.26	.07	.0	2.26

CAL YR 1986 TOTAL 7864.93 MEAN 21.5 MAX 306 MIN .00 CFSM 2.03 IN. 27.60
WTR YR 1987 TOTAL 11195.10 MEAN 30.7 MAX 368 MIN .00 CFSM 2.89 IN. 39.29

e Estimated

TEN MILE RIVER BASIN

01109403 TEN MILE RIVER AT PAWTUCKET AVENUE AT EAST PROVIDENCE, R.I.

LOCATION.--Lat 41°49'51", long 71°21'06", Providence County, Hydrologic Unit 01090004, on right bank on upstream side of bridge on State Highways 1A and 114, 0.3 mi south of junction with State Highway 114A, and 0.7 mi upstream from mouth.

DRAINAGE AREA.--53.1 mi².

PERIOD OF RECORD.--October 1986 to September 1987.

GAGE.--Water-stage recorder. Elevation of gage is 5 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 CURRENT PERIOD.--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)
Dec. 4	1230	737	6.63	Apr. 1	2200	861	7.07
Dec. 20	0945	882	7.14	Apr. 6	0230	*1,090	*7.78

Minimum discharge, 18 ft³/s Aug. 22, 24-27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e32	41	151	198	134	120	695	255	57	37	24	42
2	e35	41	139	307	130	241	741	220	53	35	23	36
3	e34	38	384	434	129	246	472	202	51	48	26	30
4	e72	35	681	363	130	200	389	266	50	42	27	26
5	e110	36	476	285	128	170	777	318	58	37	25	24
6	e95	54	348	240	121	153	1040	296	56	32	24	24
7	e60	59	290	215	117	154	897	258	45	30	22	27
8	e43	74	246	209	114	195	772	222	93	30	22	32
9	e37	115	220	192	125	233	622	194	83	30	24	96
10	e39	98	238	182	130	218	498	176	60	33	35	106
11	e39	87	231	225	124	180	405	159	47	33	28	48
12	e38	100	213	248	116	157	345	149	44	32	25	32
13	e40	85	194	222	110	149	317	137	46	33	23	93
14	e72	68	166	187	102	144	310	125	44	31	20	239
15	e72	60	147	173	94	135	278	125	42	33	19	147
16	e58	56	141	167	86	129	260	124	39	29	19	89
17	e49	52	135	158	85	124	250	118	38	27	20	65
18	e46	51	138	153	85	117	287	110	35	27	21	83
19	e50	85	486	192	84	113	324	104	35	35	20	149
20	e47	75	819	192	83	109	294	97	35	26	20	250
21	e80	208	551	166	82	109	268	90	33	25	19	274
22	e68	314	391	163	78	112	237	87	33	21	19	185
23	e42	258	310	190	81	108	211	87	37	22	21	146
24	e50	240	265	185	82	102	204	90	31	22	19	126
25	45	202	317	165	77	95	210	96	33	24	18	102
26	46	171	416	153	76	102	191	86	31	40	18	85
27	66	271	352	145	75	98	162	80	32	34	22	73
28	61	293	280	134	75	103	165	79	35	29	27	65
29	53	224	244	127	---	104	271	75	31	26	82	63
30	50	175	225	127	---	97	305	70	33	24	62	76
31	45	---	213	136	---	233	---	63	---	26	35	---
TOTAL	1674	3666	9407	6233	2853	4550	12197	4558	1340	953	809	2833
MEAN	54.0	122	303	201	102	147	407	147	44.7	30.7	26.1	94.4
MAX	110	314	819	434	134	246	1040	318	93	48	82	274
MIN	32	35	135	127	75	95	162	63	31	21	18	24
CFSM	1.02	2.30	5.71	3.79	1.92	2.76	7.66	2.77	.84	.58	.49	1.78
IN.	1.17	2.57	6.59	4.37	2.00	3.19	8.54	3.19	.94	.67	.57	1.98

WTR YR 1987 TOTAL 51073 MEAN 140 MAX 1040 MIN 18 CFSM 2.64 IN. 35.78

e Estimated

BLACKSTONE RIVER BASIN

67

01110000 QUINSIGAMOND RIVER AT NORTH GRAFTON, MASS.

LOCATION.--Lat 42°13'49", long 71°42'41", Worcester County, Hydrologic Unit 01090003, on right bank 800 ft downstream from dam at outlet of Hovey Pond at North Grafton and 0.3 mi upstream from Bummett Brook.

DRAINAGE AREA.--25.6 mi².

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

REVISED RECORDS.--WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 335 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Dec. 7, 1939, staff gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good above 10 ft³/s, fair below. Some regulation by Lake Quinsigamond 2.3 mi upstream and by ponds upstream. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--48 years, 41.4 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 820 ft³/s Aug. 20, 1955, gage height, 5.15 ft; no flow Aug. 6-9, 22, 1966 (caused by unusual regulation), Sept. 13-17, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 488 ft³/s Apr. 7, gage height, 3.96 ft; minimum daily, 0.75 ft³/s June 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.4	7.7	49	64	37	33	225	135	38	35	2.6	13
2	5.8	7.5	44	71	35	55	206	126	35	30	2.5	11
3	5.8	6.8	89	75	35	56	176	116	34	37	9.5	9.3
4	15	6.5	111	66	35	54	163	120	33	33	14	8.0
5	18	5.8	98	60	34	52	319	115	35	28	12	6.7
6	16	11	84	55	32	50	405	111	34	23	9.4	5.8
7	13	12	72	53	31	52	475	107	30	20	7.7	5.7
8	9.9	16	65	52	31	60	462	98	29	18	6.4	6.2
9	9.2	25	58	48	32	72	409	91	29	17	6.8	11
10	8.6	23	58	47	32	78	338	84	25	17	27	10
11	7.0	20	55	52	31	75	276	76	6.1	16	24	9.0
12	6.6	21	52	50	29	71	225	72	3.8	15	19	8.1
13	6.1	21	50	47	29	69	209	68	3.9	14	15	12
14	8.0	18	44	43	27	66	204	64	4.4	12	13	24
15	9.0	15	41	43	26	64	180	61	2.5	13	11	21
16	7.5	15	39	45	25	61	161	59	1.6	11	9.4	17
17	7.1	14	37	43	24	59	148	56	1.5	9.4	8.1	15
18	6.4	13	38	44	24	56	151	53	1.2	8.6	7.4	20
19	5.9	17	145	49	24	55	144	50	1.4	7.8	6.1	57
20	5.5	17	195	51	23	54	134	47	1.5	6.5	5.3	65
21	5.2	52	168	48	23	55	124	45	.75	6.4	4.5	60
22	5.0	65	140	48	22	57	113	43	1.5	6.0	4.2	47
23	5.0	57	118	55	23	57	104	41	7.9	5.6	4.1	39
24	4.8	54	101	51	23	58	99	47	10	5.3	3.8	32
25	4.0	49	119	46	22	58	100	44	10	5.4	3.7	27
26	4.5	48	126	43	22	58	92	42	10	5.3	3.6	21
27	12	76	111	41	22	59	84	39	35	3.6	4.4	18
28	12	70	97	38	22	59	86	38	63	2.5	5.0	16
29	10	63	86	36	---	58	115	38	52	3.0	15	14
30	10	56	77	36	---	55	132	40	41	2.7	15	16
31	8.6	---	72	39	---	99	---	38	---	2.6	13	---
TOTAL	257.9	882.3	2639	1539	775	1865	6059	2164	581.05	419.7	292.5	624.8
MEAN	8.32	29.4	85.1	49.6	27.7	60.2	202	69.8	19.4	13.5	9.44	20.8
MAX	18	76	195	75	37	99	475	135	63	37	27	65
MIN	4.0	5.8	37	36	22	33	84	38	.75	2.5	2.5	5.7

CAL YR 1986 TOTAL 14564.56 MEAN 39.9 MAX 224 MIN 4.0
WTR YR 1987 TOTAL 18099.17 MEAN 49.6 MAX 475 MIN .75

BLACKSTONE RIVER BASIN

01111200 WEST RIVER BELOW WEST HILL DAM, NEAR UXBRIDGE, MASS.

LOCATION.--Lat 42°06'17", long 71°36'28", Worcester County, Hydrologic Unit 01090003, on right bank 250 ft downstream from West Hill Dam, 2.2 mi northeast of Uxbridge, and 3.5 mi upstream from mouth.

DRAINAGE AREA.--27.9 mi².

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

REVISED RECORDS.--WDR MA-RI-83-1: 1982(M).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 234.35 ft above National Geodetic Vertical datum of 1929 (U.S. Army Corps of Engineers benchmark).

REMARKS.--Records fair. Doubtful gage-height record Nov. 22-29, Dec. 3-5, 21-23, 25-27, Apr. 2-4, 8-24. Flow regulated by West Hill Reservoir, usable capacity, 542,000,000 ft³. See table below for figures of monthend contents. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--25 years, 48.9 ft³/s, 23.80 in/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 607 ft³/s June 6, 1984, gage height, about 4.27 ft (mean of surge); no flow for part of Aug. 17, 1967, caused by unusual regulation; minimum daily discharge, 1.1 ft³/s Sept. 12, 1963, Aug. 12, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 422 ft³/s Apr. 15, gage height, 3.64 ft; minimum, 2.7 ft³/s Aug. 26, 27; minimum daily, 2.9 ft³/s Aug. 26, 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.8	8.3	59	84	44	40	14	183	27	25	4.0	6.9
2	4.0	9.1	36	75	44	75	103	186	26	20	3.8	6.3
3	4.1	11	53	65	44	85	241	180	26	19	4.3	5.3
4	5.8	9.4	186	72	44	87	166	172	26	19	5.4	4.7
5	9.1	8.3	245	70	44	80	25	173	29	15	5.9	4.0
6	10	12	200	62	41	70	26	165	30	14	5.5	3.8
7	8.9	21	131	57	40	66	27	157	27	12	5.0	3.6
8	8.2	20	97	61	40	76	100	138	25	11	4.7	3.7
9	7.1	32	74	56	40	99	268	109	23	11	3.8	4.9
10	6.7	38	78	53	39	114	411	98	22	9.7	9.7	6.0
11	6.4	35	82	59	39	117	414	88	19	9.5	11	5.8
12	5.5	30	72	70	36	117	404	77	18	11	9.4	5.1
13	9.0	28	69	72	36	114	404	71	18	11	7.4	5.6
14	8.9	23	63	63	32	108	411	65	19	10	5.9	10
15	8.8	20	57	58	32	100	416	60	17	10	5.2	11
16	8.4	18	51	59	29	92	375	58	15	9.1	4.7	8.8
17	7.9	17	48	63	29	83	351	54	13	8.5	4.5	6.8
18	6.9	16	48	56	29	74	359	50	11	7.8	3.9	6.7
19	6.6	16	38	63	29	68	343	46	11	6.7	3.3	19
20	6.2	17	69	62	29	67	388	40	9.7	6.7	3.9	32
21	5.5	43	149	64	28	71	422	37	9.2	6.7	3.8	37
22	5.4	82	248	59	28	77	409	35	9.2	6.6	3.2	34
23	5.4	98	328	54	28	84	386	34	11	6.6	3.1	32
24	5.1	100	249	68	29	90	328	34	14	5.9	3.1	31
25	4.8	93	144	63	29	97	249	42	14	5.4	3.0	26
26	5.1	77	146	53	29	103	157	43	13	5.2	2.9	20
27	11	93	146	50	29	106	91	40	16	4.8	2.9	16
28	15	131	145	47	30	105	90	36	31	4.5	3.8	13
29	14	109	199	44	---	103	135	34	30	4.1	6.9	11
30	11	78	199	42	---	102	171	33	26	4.1	9.0	10
31	9.3	---	130	41	---	52	---	31	---	4.1	8.3	---
TOTAL	234.9	1293.1	3839	1865	970	2722	7684	2569	585.1	304.0	161.3	390.0
MEAN	7.58	43.1	124	60.2	34.6	87.8	256	82.9	19.5	9.81	5.20	13.0
MAX	15	131	328	84	44	117	422	186	31	25	11	37
MIN	4.0	8.3	36	41	28	40	14	31	9.2	4.1	2.9	3.6
(+)	1.1	4.8	13.3	4.1	2.8	43.6	22.6	2.6	2.2	.8	1.1	1.3
MEAN++	7.69	44.5	127	56.7	34.1	103	248	75.4	19.4	9.28	5.32	13.1
CFSM++	.28	1.59	4.55	2.03	1.22	3.69	8.89	2.70	.70	.33	.19	.47
IN.++	.32	1.78	5.25	2.35	1.27	4.26	9.92	3.12	.77	.38	.22	.52

CAL YR 1986 TOTAL 20252.5 MEAN 55.5 MAX 462 MIN 4.0 MEAN++ 55.8 CFSM++ 1.99 IN.++ 27.15
WTR YR 1987 TOTAL 22617.4 MEAN 62.0 MAX 422 MIN 2.9 MEAN++ 62.0 CFSM++ 2.22 IN.++ 30.16

+ Monthend contents, in millions of cubic feet, in West Hill Reservoir; records provided by U.S. Army Corps of Engineers.

++ Adjusted for change in contents in West Hill Reservoir.

BLACKSTONE RIVER BASIN

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01111230 BLACKSTONE RIVER AT MILLVILLE, MASS.
(National stream-quality accounting network station)

LOCATION.--Lat 42°01'16", long 71°34'04", Worcester County, Hydrologic Unit 01090003, on left bank 400 ft above railroad bridge, 0.8 mi southeast of Millville, and 1.4 mi upstream from Branch River.

DRAINAGE AREA.--277 mi².

PERIOD OF RECORD.--Water years 1969 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1969 to December 1980.

pH: July to December 1980.

WATER TEMPERATURES: July 1969 to December 1980.

DISSOLVED OXYGEN: July 1969 to December 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)
OCT												
08...	1150	152	280	6.40	20.0	11.5	--	--	760	10.2	94	--
NOV												
05...	1150	160	340	6.20	5.0	7.5	--	--	765	10.8	90	--
DEC												
10...	1125	810	220	6.80	5.0	3.0	--	2.1	750	13.1	99	14
JAN												
07...	1115	709	250	7.10	4.5	2.0	--	--	745	13.2	98	--
FEB												
11...	1230	430	500	6.80	3.0	1.0	--	--	755	13.8	98	--
MAR												
11...	1140	1090	270	7.00	7.0	2.0	21	1.2	770	13.4	96	97
APR												
08...	1045	4960	153	6.90	7.0	6.5	--	--	750	11.4	94	--
MAY												
06...	1130	1390	192	6.90	--	9.0	--	2.0	755	10.8	94	--
JUN												
10...	1350	308	300	7.00	24.0	20.5	--	3.5	755	8.9	100	13
JUL												
08...	1240	190	295	7.30	--	21.0	--	--	760	7.5	84	--
AUG												
12...	1335	257	275	6.30	29.0	22.0	--	--	760	7.4	85	--
SEP												
02...	1000	111	315	6.80	21.5	19.0	4	2.1	755	3.2	35	23

DATE	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML)	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)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
OCT												
08...	--	6700	440	77	--	0	--	--	--	--	--	--
NOV												
05...	1.0	20000	860	180	--	0	--	--	--	--	--	--
DEC												
10...	--	21000	1700	1000	32	23	10	1.8	23	59	2	2.4
JAN												
07...	1.0	19000	830	400	--	0	--	--	--	--	--	--
FEB												
11...	--	30000	3000	1700	--	0	--	--	--	--	--	--
MAR												
11...	2.0	14000	710	280	36	22	11	2.0	30	63	2	2.4
APR												
08...	--	27000	2000	1600	--	0	--	--	--	--	--	--
MAY												
06...	1.0	K2800	K150	K30	30	15	9.3	1.6	21	59	2	1.9
JUN												
10...	--	K1400	K180	K130	--	0	--	--	--	--	--	--
JUL												
08...	--	1100	K180	440	--	0	--	--	--	--	--	--
AUG												
12...	--	1900	K80	K28	--	0	--	--	--	--	--	--
SEP												
02...	2.0	300	K72	44	47	29	15	2.4	33	57	2	4.8

BLACKSTONE RIVER BASIN

01111230 BLACKSTONE RIVER AT MILLVILLE, MASS.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	CAR- BONATE IT-FLD (MG/L AS CO3)	BICAR- BONATE IT-FLD (MG/L AS HCO3)	ALKA- LINITY, CARBON- ATE IT-FLD (MG/L - CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)
OCT 08...	0	31	25	--	--	--	--	--	--	--	--	1.88
NOV 05...	0	31	25	--	--	--	--	--	--	--	--	2.38
DEC 10...	0	12	10	18	38	0.10	7.2	127	111	6	126	0.590
JAN 07...	0	28	23	--	--	--	--	--	--	--	--	0.590
FEB 11...	0	31	25	--	--	--	--	--	--	--	--	0.580
MAR 11...	0	17	14	17	48	0.10	7.4	125	131	<1	143	--
APR 08...	0	12	10	--	--	--	--	--	--	--	--	--
MAY 06...	0	18	15	16	33	0.20	4.8	102	100	--	--	0.470
JUN 10...	0	24	20	--	52	--	--	--	--	2	183	2.44
JUL 08...	0	23	19	--	--	--	--	--	--	--	--	1.57
AUG 12...	--	--	--	--	--	--	--	--	--	--	--	1.86
SEP 02...	0	23	19	21	52	0.20	4.9	166	159	5	182	2.86

DATE	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (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, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHOROUS TOTAL (MG/L AS P)
OCT 08...	0.020	--	1.90	--	0.050	--	--	0.65	0.70	2.6	12	0.510
NOV 05...	0.120	--	2.50	--	1.00	--	--	1.2	2.2	4.7	21	0.540
DEC 10...	0.010	0.010	0.600	0.570	0.740	0.740	0.95	0.36	1.1	1.7	7.5	0.170
JAN 07...	0.010	--	0.600	--	1.00	--	--	0.80	1.8	2.4	11	0.090
FEB 11...	0.020	--	0.600	--	2.10	--	--	0.30	2.4	3.0	13	0.360
MAR 11...	<0.010	<0.010	0.700	0.710	0.640	0.620	0.80	0.36	1.0	1.7	7.5	0.150
APR 08...	<0.010	--	0.500	--	0.110	--	--	0.89	1.0	1.5	6.6	0.080
MAY 06...	0.030	0.030	0.500	0.520	0.430	0.410	0.53	0.67	1.1	1.6	7.1	0.110
JUN 10...	0.060	--	2.50	--	0.100	--	--	0.80	0.90	3.4	15	0.420
JUL 08...	0.030	--	1.60	--	0.020	--	--	1.2	1.2	2.8	12	0.270
AUG 12...	0.140	--	2.00	--	0.240	--	--	1.2	1.4	3.4	15	0.360
SEP 02...	0.140	0.140	3.00	2.90	0.240	0.220	0.28	0.26	0.50	3.5	15	0.410

BLACKSTONE RIVER BASIN

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01111230 BLACKSTONE RIVER AT MILLVILLE, MASS.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	PHOS- PHORUS TOTAL (MG/L AS PO4)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, TOTAL (MG/L AS P)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, TOTAL RECOV- ERABLE (UG/L AS AL)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)
OCT												
08...	1.6	--	0.350	--	--	--	--	--	--	--	--	--
NOV												
05...	1.7	--	0.480	--	--	--	--	--	--	--	--	--
DEC												
10...	--	0.090	0.090	0.070	--	50	--	1	19	<0.5	--	--
JAN												
07...	--	--	0.100	--	--	--	--	--	--	--	--	--
FEB												
11...	--	--	0.190	--	--	--	--	--	--	--	--	--
MAR												
11...	--	0.080	0.070	0.050	190	40	1	<1	20	<0.5	70	1
APR												
08...	--	--	0.020	--	--	--	--	--	--	--	--	--
MAY												
06...	--	0.070	0.070	0.050	--	80	--	1	18	<0.5	--	--
JUN												
10...	--	--	0.280	--	--	--	--	--	--	--	--	--
JUL												
08...	--	--	0.190	--	--	--	--	--	--	--	--	--
AUG												
12...	--	--	0.220	--	--	--	--	--	--	--	--	--
SEP												
02...	--	0.280	0.320	0.260	110	<10	<1	3	14	<0.5	100	1

DATE	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)
OCT												
08...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
05...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
10...	1	--	<1	<3	--	6	--	210	--	<5	4	--
JAN												
07...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
11...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
11...	1	10	<1	<3	16	7	580	190	6	<5	4	110
APR												
08...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
06...	<1	--	<1	<3	--	6	--	210	--	<5	6	--
JUN												
10...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
08...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
12...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
02...	3	20	<1	<3	20	8	770	25	15	<5	<4	150

BLACKSTONE RIVER BASIN

01111230 BLACKSTONE RIVER AT MILLVILLE, MASS.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	MANGANESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO)	MOLYBDENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, DIS-SOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, DIS-SOLVED (UG/L AS AG)	STRONTIUM, DIS-SOLVED (UG/L AS SR)
OCT												
08...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
05...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
10...	80	--	0.1	--	<10	--	19	--	<1	--	<1.0	60
JAN												
07...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
11...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
11...	110	0.20	<0.1	1	<10	14	13	<1	<1	<1	<1.0	67
APR												
08...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
06...	68	--	<0.1	--	<10	--	10	--	<1	--	<1.0	59
JUN												
10...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
08...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
12...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
02...	120	0.10	<0.1	4	<10	24	23	<1	<1	<1	<1.0	81

DATE	VANADIUM, DIS-SOLVED (UG/L AS V)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)	PHENOLS TOTAL (UG/L)	OIL AND GREASE, TOTAL RECOVERABLE GRAVIMETRIC (MG/L)	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG)
OCT												
08...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
05...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
10...	<6	--	62	--	--	--	--	--	--	--	--	--
JAN												
07...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
11...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
11...	<6	70	69	3	<1	<0.1	--	<0.010	<0.1	--	<0.010	--
APR												
08...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
06...	<6	--	45	--	--	--	--	--	--	--	--	--
JUN												
10...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
08...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
12...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
02...	<6	50	38	2	<1	<0.1	40	<0.010	<0.1	13	<0.010	0.1

BLACKSTONE RIVER BASIN

73

01111230 BLACKSTONE RIVER AT MILLVILLE, MASS.-Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- ELDRIN TOTAL (UG/L)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDO- SULFAN, TOTAL (UG/L)	ENDO- SULFAN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	HEPTA- CHLOR TOT. IN BOTTOM MATL. (UG/KG)
OCT											
08...	--	--	--	--	--	--	--	--	--	--	--
NOV											
05...	--	--	--	--	--	--	--	--	--	--	--
DEC											
10...	--	--	--	--	--	--	--	--	--	--	--
JAN											
07...	--	--	--	--	--	--	--	--	--	--	--
FEB											
11...	--	--	--	--	--	--	--	--	--	--	--
MAR											
11...	<0.010	<0.010	<0.010	--	<0.010	--	<0.010	--	<0.010	<0.010	--
APR											
08...	--	--	--	--	--	--	--	--	--	--	--
MAY											
06...	--	--	--	--	--	--	--	--	--	--	--
JUN											
10...	--	--	--	--	--	--	--	--	--	--	--
JUL											
08...	--	--	--	--	--	--	--	--	--	--	--
AUG											
12...	--	--	--	--	--	--	--	--	--	--	--
SEP											
02...	<0.010	<0.010	<0.010	3.3	<0.010	<0.1	<0.010	<0.1	<0.010	<0.010	<0.1

DATE	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	METH- OXY- CHLOR, TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	MIREX, TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	PCN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	PER- THANE TOTAL (UG/L)	PER- THANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	TOX- APHENE, TOTAL (UG/L)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
OCT											
08...	--	--	--	--	--	--	--	--	--	--	--
NOV											
05...	--	--	--	--	--	--	--	--	--	--	--
DEC											
10...	--	--	--	--	--	--	--	--	--	--	--
JAN											
07...	--	--	--	--	--	--	--	--	--	--	--
FEB											
11...	--	--	--	--	--	--	--	--	--	--	--
MAR											
11...	<0.010	--	<0.01	--	<0.01	<0.10	--	<0.1	--	<1	--
APR											
08...	--	--	--	--	--	--	--	--	--	--	--
MAY											
06...	--	--	--	--	--	--	--	--	--	--	--
JUN											
10...	--	--	--	--	--	--	--	--	--	--	--
JUL											
08...	--	--	--	--	--	--	--	--	--	--	--
AUG											
12...	--	--	--	--	--	--	--	--	--	--	--
SEP											
02...	0.010	<0.1	<0.01	<0.1	<0.01	<0.10	<1.0	<0.1	<1.00	<1	220

BLACKSTONE RIVER BASIN

01111300 NIPMUC RIVER NEAR HARRISVILLE, R.I.

LOCATION.--Lat 41°58'52", long 71°41'11", Providence County, Hydrologic Unit 01090003, on left bank 1.0 mi upstream from mouth and 1.2 mi northwest of Harrisville.

DRAINAGE AREA.--16.0 mi².

PERIOD OF RECORD.--Discharge: March 1964 to current year.

Water-quality records: Water year 1968.

GAGE.--Water-stage recorder. Elevation of gage is 340 ft above National Geodetic Vertical Datum of 1929, from topographic map.*

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

AVERAGE DISCHARGE.--23 years, 30.7 ft³/s, 26.06 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,840 ft³/s Jan. 25, 1979, gage height, 8.53 ft, from rating curve extended above 530 ft³/s; minimum, 0.09 ft³/s Sept. 10, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 270 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 3	1630	336	5.59	Apr. 1	0100	838	6.75
Dec. 19	1330	425	5.91	Apr. 5	0500	*1,150	*7.11

Minimum discharge, 0.86 ft³/s Aug. 25-27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.1	5.7	32	41	e35	44	489	144	24	16	2.0	2.8
2	3.1	5.4	28	51	e34	106	179	103	18	11	1.8	2.8
3	6.2	5.6	220	52	e34	60	122	76	16	12	2.0	2.3
4	10	5.6	179	e46	e33	45	146	142	15	11	2.2	2.0
5	8.9	5.4	92	e41	e32	e43	751	118	16	9.1	2.2	1.8
6	6.0	15	63	e38	e30	e40	382	96	15	7.4	2.1	1.5
7	4.5	17	53	36	e30	47	340	78	12	6.1	1.7	1.5
8	3.8	19	48	36	e29	92	243	63	39	5.0	1.7	1.6
9	3.5	39	43	e32	e29	e110	173	55	26	5.3	1.6	2.6
10	3.3	22	60	31	e28	e89	130	50	15	5.3	5.9	2.7
11	3.1	15	55	51	e28	e64	107	46	12	4.9	5.2	2.4
12	3.3	17	49	46	e27	49	89	42	10	4.7	3.7	2.2
13	3.3	17	42	38	e25	45	125	37	10	4.7	2.9	3.5
14	5.4	13	e34	32	e24	42	129	34	9.7	4.6	2.5	9.6
15	8.0	11	30	32	e23	38	91	32	8.6	4.1	2.0	6.0
16	5.9	11	29	43	e23	38	74	32	7.4	3.8	1.8	4.2
17	4.0	10	29	e38	e22	37	72	29	6.8	3.4	1.4	3.5
18	3.8	9.9	32	e32	e22	35	112	26	5.9	3.0	1.3	4.3
19	3.8	12	312	e35	e22	38	98	24	5.6	2.9	1.2	17
20	3.8	11	189	e35	e22	44	74	21	5.2	2.6	1.1	18
21	3.8	125	103	e36	e22	50	64	21	4.7	2.6	1.1	16
22	3.8	95	73	e38	e21	53	58	20	4.7	2.6	1.1	11
23	4.1	48	60	e43	e21	60	52	19	4.7	2.4	1.1	8.0
24	4.3	52	53	e41	e21	71	55	23	5.0	2.3	1.2	6.2
25	4.1	50	119	e39	e21	70	91	22	5.0	2.0	.94	5.1
26	4.1	45	118	e37	e20	66	65	19	5.0	5.5	.86	4.2
27	8.9	147	76	e36	e20	58	53	17	22	4.4	.99	3.6
28	11	76	59	e34	e20	55	57	17	34	3.3	2.0	3.3
29	8.7	51	51	e33	---	52	102	20	15	2.7	4.5	3.1
30	7.4	40	48	e32	---	45	143	86	11	2.4	4.1	3.1
31	6.3	---	46	e35	---	262	---	40	---	2.2	2.8	---
TOTAL	163.3	995.6	2425	1190	718	1948	4666	1552	388.3	159.3	66.99	155.9
MEAN	5.27	33.2	78.2	38.4	25.6	62.8	156	50.1	12.9	5.14	2.16	5.20
MAX	11	147	312	52	35	262	751	144	39	16	5.9	18
MIN	3.1	5.4	28	31	20	35	52	17	4.7	2.0	.86	1.5
CFSM	.33	2.07	4.89	2.40	1.60	3.93	9.72	3.13	.81	.32	.14	.32
IN.	.38	2.31	5.64	2.77	1.67	4.53	10.85	3.61	.90	.37	.16	.36

CAL YR 1986 TOTAL 10657.04 MEAN 29.2 MAX 382 MIN 2.3 CFSM 1.82 IN. 24.78
WTR YR 1987 TOTAL 14428.32 MEAN 39.5 MAX 751 MIN .86 CFSM 2.47 IN. 33.55

e Estimated

BLACKSTONE RIVER BASIN

75

01111500 BRANCH RIVER AT FORESTDALE, R.I.

LOCATION.--Lat 41°59'47", long 71°33'47", Providence County, Hydrologic Unit 01090003, on left bank 20 ft upstream from abandoned bridge site, 400 ft downstream from milldam at Forestdale, 1 mi east of Slatersville, and 1.6 mi upstream from mouth.

DRAINAGE AREA.--91.2 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September to December 1909 and January 1912 to July 1913 (gage heights only; published as "at Branch Village"), January 1940 to current year.

REVISED RECORDS.--WSP 2101: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 180 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to July 28, 1913, nonrecording gage at site 1 mi downstream at different datum.

REMARKS.--Records excellent except those for estimated daily discharges, which are fair. Occasional regulation by pond upstream. Prior to 1957, greater regulation by mills and reservoirs upstream.

AVERAGE DISCHARGE.--47 years, 173 ft³/s, 25.76 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,470 ft³/s Jan. 25, 1979, gage height, 11.80 ft; maximum gage height, 11.90 ft Mar. 18, 1968; minimum daily discharge, 5.2 ft³/s Oct. 7, 1948.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1886, about 5,800 ft³/s Mar. 19, 1936, by computation of flow over dam 1 mi upstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 880 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 3	2130	1,550	6.52	Apr. 1	0800	3,230	9.33
Dec. 19	1900	1,650	6.73	Apr. 5	1215	*3,770	*9.99

Minimum daily discharge, 12 ft³/s Aug. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	70	287	e290	181	164	2650	699	135	69	22	39
2	30	56	261	e350	176	380	1310	560	110	70	21	33
3	32	52	964	e350	178	321	878	444	97	78	26	28
4	48	48	1180	e320	180	256	804	596	90	76	29	25
5	56	45	699	e290	175	225	3170	621	96	64	28	23
6	49	76	485	e270	166	211	2700	515	98	55	26	21
7	41	101	380	e260	164	239	2310	457	97	50	23	25
8	38	106	319	e247	163	395	1370	404	176	47	24	25
9	33	179	292	230	167	557	1040	354	172	47	25	32
10	32	170	340	232	161	521	844	320	124	46	39	26
11	39	146	337	322	157	371	727	258	101	46	30	25
12	38	156	319	315	149	307	533	210	92	45	29	24
13	38	147	290	270	145	283	595	202	94	43	26	37
14	74	129	285	242	132	272	661	197	84	44	22	55
15	106	113	276	236	129	257	510	193	67	42	20	52
16	107	107	271	271	124	236	428	198	61	42	21	52
17	94	109	241	261	126	220	384	184	53	38	20	63
18	85	107	229	224	125	210	507	172	50	35	19	78
19	79	127	1190	253	124	219	536	164	47	32	17	133
20	102	177	e1000	249	122	233	460	157	46	31	18	166
21	114	524	e700	229	120	258	396	150	46	27	17	146
22	111	597	e600	228	120	280	371	146	45	29	19	113
23	107	345	e500	262	123	287	357	136	44	30	16	88
24	103	317	e450	256	121	312	354	143	45	30	14	73
25	99	337	e650	227	119	313	435	153	43	31	13	63
26	73	308	e700	217	119	300	349	138	42	44	12	59
27	79	694	e500	198	116	286	258	124	65	32	14	52
28	80	585	e420	187	113	273	278	123	135	28	23	48
29	77	430	e380	181	---	289	458	127	102	26	42	46
30	74	338	e350	180	---	261	651	208	77	27	40	49
31	74	---	e320	189	---	802	---	191	---	23	38	---
TOTAL	2140	6696	15215	7836	3995	9538	26324	8544	2534	1327	733	1699
MEAN	69.0	223	491	253	143	308	877	276	84.5	42.8	23.6	56.6
MAX	114	694	1190	350	181	802	3170	699	176	78	42	166
MIN	28	45	229	180	113	164	258	123	42	23	12	21
CFSM	.76	2.45	5.38	2.77	1.56	3.37	9.62	3.02	.93	.47	.26	.62
IN.	.87	2.73	6.21	3.20	1.63	3.89	10.74	3.49	1.03	.54	.30	.69

CAL YR 1986 TOTAL 66719 MEAN 183 MAX 1380 MIN 28 CFSM 2.00 IN. 27.21
WTR YR 1987 TOTAL 86581 MEAN 237 MAX 3170 MIN 12 CFSM 2.60 IN. 35.32

e Estimated

BLACKSTONE RIVER BASIN

01111500 BRANCH RIVER AT FORESTDALE, R.I.--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1954, 1968, 1979 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (FTU)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)
OCT												
08...	1315	40	118	6.20	19.0	14.5	--	--	760	10.6	104	--
NOV												
05...	1305	43	89	6.50	6.5	8.5	--	--	765	11.8	100	--
DEC												
10...	1330	349	73	6.80	7.0	3.0	--	0.90	750	13.8	104	14
JAN												
07...	1250	247	84	6.80	6.0	2.0	--	--	745	14.0	104	--
FEB												
11...	1400	155	108	6.90	3.0	1.5	--	--	754	14.8	107	--
MAR												
11...	1445	336	86	7.00	2.5	3.0	27	--	770	14.4	106	17
APR												
08...	1405	1330	59	5.90	9.5	7.0	--	--	750	13.0	109	--
MAY												
06...	1355	501	72	6.80	12.0	10.0	--	--	755	12.0	107	--
JUN												
10...	1125	123	97	7.00	20.0	21.0	--	2.0	755	9.3	105	12
JUL												
08...	1445	46	114	7.05	24.0	22.5	--	--	760	8.8	102	--
AUG												
12...	1115	47	124	6.40	28.0	23.0	--	--	760	8.4	98	--
SEP												
02...	1330	34	131	7.10	21.5	21.0	7	0.80	755	9.6	109	10
DATE		OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML)	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)	HARD- NESS NONCARB TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO SODIUM PERCENT	POTAS- SIUM DIS- SOLVED (MG/L AS K)
OCT												
08...	--	3400	--	K10	--	0	--	--	--	--	--	--
NOV												
05...	1.0	60000	290	65	--	0	--	--	--	--	--	--
DEC												
10...	--	1400	140	100	--	0	--	--	--	--	--	--
JAN												
07...	<1.0	850	74	K14	--	0	--	--	--	--	--	--
FEB												
11...	--	1000	40	58	--	0	--	--	--	--	--	--
MAR												
11...	1.0	690	K22	K6	13	10	3.8	0.80	9.4	59	1	1.0
APR												
08...	--	1900	170	64	--	0	--	--	--	--	--	--
MAY												
06...	1.0	1000	50	K11	--	0	--	--	--	--	--	--
JUN												
10...	--	2400	86	28	--	0	--	--	--	--	--	--
JUL												
08...	--	2200	380	84	--	0	--	--	--	--	--	--
AUG												
12...	--	9000	220	60	--	0	--	--	--	--	--	--
SEP												
02...	2.0	5100	350	360	19	1	5.9	1.1	15	60	2	1.8

BLACKSTONE RIVER BASIN

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01111500 BRANCH RIVER AT FORESTDALE, R.I.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	CAR- BONATE IT-FLD (MG/L AS CO3)	BICAR- BONATE IT-FLD (MG/L AS HCO3)	ALKA- LINITY, CARBON- ATE IT-FLD (MG/L CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDEED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)
OCT												
08...	--	--	--	--	--	--	--	--	0.390	0.010	0.400	0.190
NOV												
05...	0	7.0	6.0	--	--	--	--	--	--	<0.010	0.300	0.110
DEC												
10...	0	5.0	4.0	--	11	--	4	47	0.190	0.010	0.200	0.120
JAN												
07...	0	5.0	4.0	--	--	--	--	--	0.270	0.030	0.300	0.150
FEB												
11...	0	7.0	6.0	--	--	--	--	--	--	<0.010	0.500	0.140
MAR												
11...	0	3.0	2.0	12	13	41	1	53	--	<0.010	0.300	0.120
APR												
08...	0	2.0	2.0	--	--	--	--	--	--	<0.010	0.200	0.020
MAY												
06...	0	3.0	3.0	--	--	--	--	--	--	<0.010	0.100	0.060
JUN												
10...	0	9.0	7.0	--	20	--	2	66	--	<0.010	0.200	0.090
JUL												
08...	0	11	9.0	--	--	--	--	--	0.280	0.020	0.300	0.200
AUG												
12...	--	--	--	--	--	--	--	--	0.190	0.010	0.200	0.170
SEP												
02...	0	22	18	12	25	72	3	79	0.190	0.010	0.200	0.220

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHORUS TOTAL (MG/L AS PO4)	PHOS- PHORUS, ORTHO, TOTAL (MG/L AS P)	ALUM- INUM, TOTAL RECOV- ERABLE (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)
OCT												
08...	1.0	1.2	1.6	7.1	0.020	0.06	<0.010	--	--	--	--	--
NOV												
05...	1.7	1.8	2.1	9.3	0.020	0.06	<0.010	--	--	--	--	--
DEC												
10...	0.38	0.50	0.70	3.1	0.010	--	<0.010	--	--	--	--	--
JAN												
07...	0.35	0.50	0.80	3.5	<0.010	--	<0.010	--	--	--	--	--
FEB												
11...	--	<0.20	--	--	0.010	--	0.010	--	--	--	--	--
MAR												
11...	0.18	0.30	0.60	2.7	0.020	--	0.010	310	<1	40	<1	30
APR												
08...	0.88	0.90	1.1	4.9	0.020	--	<0.010	--	--	--	--	--
MAY												
06...	2.2	2.3	2.4	11	0.020	--	<0.010	--	--	--	--	--
JUN												
10...	1.1	1.2	1.4	6.2	0.020	--	<0.010	--	--	--	--	--
JUL												
08...	0.60	0.80	1.1	4.9	0.030	--	<0.010	--	--	--	--	--
AUG												
12...	1.2	1.4	1.6	7.1	0.020	--	0.010	--	--	--	--	--
SEP												
02...	0.18	0.40	0.60	2.7	0.020	--	<0.010	30	3	10	<1	30

BLACKSTONE RIVER BASIN

01111500 BRANCH RIVER AT FORESTDALE, R.I.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	PHENOLS TOTAL (UG/L)	OIL AND GREASE, TOTAL RECOV. GRAVI- METRIC (MG/L)
OCT												
08...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
05...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
10...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
07...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
11...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
11...	10	230	<5	80	0.20	<1	5	<1	1	20	1	<1
APR												
08...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
06...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
10...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
08...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
12...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
02...	3	380	<5	70	<0.10	<1	<1	<1	<1	10	3	<1

DATE	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	CHLOR- DANE, TOTAL (UG/L)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
OCT												
08...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
05...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
10...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
07...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
11...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
11...	<0.1	--	<0.010	--	<0.1	--	<0.010	--	<0.010	--	<0.010	--
APR												
08...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
06...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
10...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
08...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
12...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
02...	<0.1	30	<0.010	<0.1	<0.1	10	<0.010	4.4	<0.010	6.3	<0.010	0.7

BLACKSTONE RIVER BASIN

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01111500 BRANCH RIVER AT FORESTDALE, R.I.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	DI- ELDRIN TOTAL (UG/L)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDO- SULFAN, TOTAL IN BOT- TOM MA- TERIAL (UG/L)	ENDO- SULFAN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/L)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/L)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)
OCT											
08...	--	--	--	--	--	--	--	--	--	--	--
NOV											
05...	--	--	--	--	--	--	--	--	--	--	--
DEC											
10...	--	--	--	--	--	--	--	--	--	--	--
JAN											
07...	--	--	--	--	--	--	--	--	--	--	--
FEB											
11...	--	--	--	--	--	--	--	--	--	--	--
MAR											
11...	<0.010	--	<0.010	--	<0.010	--	<0.010	--	<0.010	--	<0.010
APR											
08...	--	--	--	--	--	--	--	--	--	--	--
MAY											
06...	--	--	--	--	--	--	--	--	--	--	--
JUN											
10...	--	--	--	--	--	--	--	--	--	--	--
JUL											
08...	--	--	--	--	--	--	--	--	--	--	--
AUG											
12...	--	--	--	--	--	--	--	--	--	--	--
SEP											
02...	<0.010	<0.1	<0.010	<0.1	<0.010	<0.1	<0.010	<0.1	<0.010	0.3	<0.010

DATE	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	METH- OXY- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/L)	METH- OXY- CHLOR, TOT. IN BOTTOM MATL. (UG/KG)	MIREX, TOTAL IN BOT- TOM MA- TERIAL (UG/L)	MIREX, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	PCN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	PER- THANE TOTAL (UG/L)	PER- THANE TOTAL (UG/KG)	TOX- APHENE, TOTAL (UG/L)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
OCT											
08...	--	--	--	--	--	--	--	--	--	--	--
NOV											
05...	--	--	--	--	--	--	--	--	--	--	--
DEC											
10...	--	--	--	--	--	--	--	--	--	--	--
JAN											
07...	--	--	--	--	--	--	--	--	--	--	--
FEB											
11...	--	--	--	--	--	--	--	--	--	--	--
MAR											
11...	--	<0.01	--	<0.01	--	<0.10	--	<0.1	--	<1	--
APR											
08...	--	--	--	--	--	--	--	--	--	--	--
MAY											
06...	--	--	--	--	--	--	--	--	--	--	--
JUN											
10...	--	--	--	--	--	--	--	--	--	--	--
JUL											
08...	--	--	--	--	--	--	--	--	--	--	--
AUG											
12...	--	--	--	--	--	--	--	--	--	--	--
SEP											
02...	<0.1	<0.01	32	<0.01	58	<0.10	<1.0	<0.1	<1.00	<1	<10

BLACKSTONE RIVER BASIN

01112500 BLACKSTONE RIVER AT WOONSOCKET, R.I.

LOCATION.--Lat 42°00'22", long 71°30'13", Providence County, Hydrologic Unit 01090003, on right bank 50 ft upstream from Peters River pressure conduit at Woonsocket. Records include flow of Peters River.

DRAINAGE AREA.--416 mi².

PERIOD OF RECORD.--Discharge: February 1929 to current year.

Water-quality records: Water years 1952-53, 1957-58, 1962-67.

REVISED RECORDS.--WSP 756: Drainage area. WSP 781: 1931(M). WSP 871: 1938. WSP 1051: 1931.

GAGE.--Water-stage recorder. Datum of gage is 107.42 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records excellent except those below 200 ft³/s, which are fair. Flow regulated by powerplants, by West Hill Reservoir since May 1961, and by other reservoirs upstream. Extremes and figures of daily discharge include flow diverted from Nashua River basin and, at times since January 1966, from Quabbin Reservoir for supply of Worcester, MA, and, prior to July 1964, flow diverted around station in Hamlet Trench. See table with station 01111200 for monthend contents of West Hill Reservoir.

AVERAGE DISCHARGE.--58 years, 770 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,900 ft³/s Aug. 19, 1955, gage height, 21.8 ft, from floodmarks, from rating curve extended above 15,000 ft³/s on basis of slope-area measurement of peak flow (affected by failure of Horseshoe Dam on Mill River); minimum daily, 21 ft³/s Aug. 11, 1934 (flow diverted around station in Hamlet Trench not included).

Maximum discharge since at least 1645, that of Aug. 19, 1955.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,300 ft³/s Apr. 5, gage height, 11.65 ft; minimum daily, 89 ft³/s Aug. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	173	248	1090	1360	804	758	7790	2940	598	508	124	233
2	191	227	969	1490	799	1630	5340	2500	535	465	106	170
3	184	217	2540	1520	805	1540	3430	2130	561	454	159	171
4	310	205	3770	1440	815	1290	3150	2410	541	460	276	137
5	436	260	2560	1340	781	1130	8130	2440	535	378	178	132
6	308	373	2000	1220	732	1020	8960	2220	540	338	163	107
7	216	495	1660	1170	726	1080	8150	2060	491	266	161	153
8	215	468	1440	1160	725	1570	7010	1860	611	244	116	141
9	198	775	1310	1100	732	2160	5430	1650	478	275	158	173
10	174	746	1370	1090	713	2160	4290	1500	474	274	298	238
11	143	628	1410	1340	693	1770	3670	1310	395	298	404	134
12	170	606	1350	1370	667	1530	3070	1180	369	301	277	160
13	174	589	1250	1230	651	1390	3050	1120	340	273	186	205
14	280	513	1140	1110	585	1310	3360	1030	357	284	169	386
15	301	442	1070	1060	579	1220	2840	968	385	273	153	343
16	292	363	1030	1150	581	1160	2490	917	336	260	150	230
17	253	373	989	1140	554	1090	2290	912	266	245	133	265
18	212	373	982	1030	564	1030	2530	847	236	224	133	271
19	217	431	3680	1140	563	1040	2640	772	231	202	115	643
20	226	498	4920	1160	518	1070	2340	745	230	298	132	946
21	254	1420	3060	1070	532	1130	2160	675	200	193	120	854
22	254	2110	2350	1020	534	1210	2030	702	247	176	115	679
23	248	1480	2140	1120	549	1270	1920	613	257	128	113	557
24	252	1270	1940	1150	527	1360	1830	670	316	112	89	465
25	219	1210	2280	1060	531	1400	1970	738	223	128	116	414
26	211	1130	2710	980	520	1400	1750	688	233	212	111	329
27	328	2020	2200	966	523	1380	1470	633	281	166	114	347
28	359	1940	1870	925	533	1330	1430	591	934	156	135	259
29	294	1570	1680	871	---	1300	2010	562	684	139	247	308
30	292	1310	1620	815	---	1200	2770	815	481	127	347	302
31	266	---	1520	826	---	2370	---	803	---	114	230	---
TOTAL	7650	24290	59900	35423	17836	42298	109300	39001	12365	7971	5328	9752
MEAN	247	810	1932	1143	637	1364	3643	1258	412	257	172	325
MAX	436	2110	4920	1520	815	2370	8960	2940	934	508	404	946
MIN	143	205	969	815	518	758	1430	562	200	112	89	107

CAL YR 1986 TOTAL 302157 MEAN 828 MAX 4920 MIN 143

WTR YR 1987 TOTAL 371114 MEAN 1017 MAX 8960 MIN 89

BLACKSTONE RIVER BASIN

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01112900 BLACKSTONE RIVER AT MANVILLE, R.I.

LOCATION.--Lat 41°58'18", long 71°28'14", Providence County, Hydrologic Unit 01090003, at Manville Road Bridge, 400 ft downstream from milldam at Manville, and 2.5 mi downstream from Woonsocket Sewage Treatment Plant.

PERIOD OF RECORD.--Water years 1970, 1979 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (FTU)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)
OCT												
08...	0915	239	285	6.70	13.0	14.0	--	--	765	10.4	101	--
NOV												
05...	1420	277	285	6.50	6.0	8.5	--	--	765	11.7	100	--
DEC												
10...	1450	1410	173	7.00	8.0	3.5	--	1.7	755	13.5	103	16
JAN												
07...	1355	1180	220	7.00	6.0	2.0	--	--	745	14.0	104	--
FEB												
11...	1510	733	295	7.00	3.0	1.5	--	--	755	13.7	99	--
MAR												
11...	1630	1680	198	6.80	0.0	2.5	24	--	770	13.1	95	12
APR												
08...	1540	6720	130	7.00	11.0	7.0	--	--	750	12.4	104	--
MAY												
06...	1540	2220	157	7.00	10.5	10.0	--	--	755	11.8	106	--
JUN												
10...	0930	500	230	7.10	18.0	20.0	--	3.1	760	9.0	99	11
JUL												
08...	1000	258	280	7.20	20.0	22.5	--	--	760	8.5	99	--
AUG												
12...	0930	300	360	7.00	22.0	21.0	--	--	760	8.4	95	--
SEP												
02...	1425	170	290	7.00	20.0	20.0	9	13.0	760	8.5	94	72

DATE	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
OCT												
08...	--	2900	18	37	--	0	--	--	--	--	--	--
NOV												
05...	2.0	1700	40	K12	--	0	--	--	--	--	--	--
DEC												
10...	--	21000	1000	260	--	0	--	--	--	--	--	--
JAN												
07...	1.0	13000	130	130	--	0	--	--	--	--	--	--
FEB												
11...	--	34000	450	190	--	0	--	--	--	--	--	--
MAR												
11...	1.0	4000	160	160	27	13	8.5	1.5	23	63	2	2.0
APR												
08...	--	6600	740	400	--	0	--	--	--	--	--	--
MAY												
06...	1.0	1800	120	K55	--	0	--	--	--	--	--	--
JUN												
10...	--	3900	230	130	--	0	--	--	--	--	--	--
JUL												
08...	--	2000	100	K80	--	0	--	--	--	--	--	--
AUG												
12...	--	8000	230	170	--	0	--	--	--	--	--	--
SEP												
02...	3.0	5400	170	K28	--	0	12.0	2.0	33	--	--	4.1

BLACKSTONE RIVER BASIN

01112900 BLACKSTONE RIVER AT MANVILLE, R.I.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	CAR- BONATE IT-FLD (MG/L AS CO3)	BICAR- BONATE IT-FLD (MG/L AS HCO3)	ALKA- LINITY, CARBON- ATE IT-FLD (MG/L - CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SUS- SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)
OCT												
08...	0	45	37	--	--	--	--	--	1.37	0.030	1.40	0.780
NOV												
05...	--	--	--	--	--	--	--	--	1.75	0.050	1.80	0.620
DEC												
10...	0	24	20	--	30	--	4	103	0.490	0.010	0.500	0.540
JAN												
07...	0	21	17	--	--	--	--	--	0.490	0.010	0.500	0.740
FEB												
11...	0	29	24	--	--	--	--	--	0.590	0.010	0.600	1.00
MAR												
11...	--	--	--	16	38	97	5	122	--	<0.010	0.600	0.410
APR												
08...	0	9.0	7.0	--	--	--	--	--	--	<0.010	0.400	0.140
MAY												
06...	0	15	12	--	--	--	--	--	0.380	0.020	0.400	0.320
JUN												
10...	0	20	16	--	36	--	7	139	1.17	0.030	1.20	0.310
JUL												
08...	0	29	24	--	--	--	--	--	1.16	0.040	1.20	0.520
AUG												
12...	0	50	41	--	--	--	--	--	2.58	0.220	2.80	1.30
SEP												
02...	0	27	22	25	45	--	54	162	--	0.070	1.70	0.630

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHORUS TOTAL (MG/L AS PO4)	PHOS- PHORUS, ORTHO, TOTAL (MG/L AS P)	ALUM- INUM, TOTAL RECOV- ERABLE (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)
OCT												
08...	0.02	0.80	2.2	9.7	0.630	1.9	0.450	--	--	--	--	--
NOV												
05...	1.5	2.1	3.9	17	0.570	1.7	0.480	--	--	--	--	--
DEC												
10...	0.56	1.1	1.6	7.1	0.120	--	0.090	--	--	--	--	--
JAN												
07...	0.46	1.2	1.7	7.5	0.100	--	0.120	--	--	--	--	--
FEB												
11...	0.40	1.4	2.0	8.9	0.240	--	0.190	--	--	--	--	--
MAR												
11...	0.49	0.90	1.5	6.6	0.090	--	0.070	230	<1	80	<1	<10
APR												
08...	1.3	1.4	1.8	8.0	0.070	--	0.010	--	--	--	--	--
MAY												
06...	0.88	1.2	1.6	7.1	0.090	--	0.050	--	--	--	--	--
JUN												
10...	0.99	1.3	2.5	11	0.510	--	0.380	--	--	--	--	--
JUL												
08...	0.88	1.4	2.6	12	0.210	--	0.120	--	--	--	--	--
AUG												
12...	1.0	2.3	5.1	23	0.790	--	0.640	--	--	--	--	--
SEP												
02...	--	1.7	--	--	0.650	--	0.520	50	2	70	<1	30

BLACKSTONE RIVER BASIN

83

01112900 BLACKSTONE RIVER AT MANVILLE, R.I.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	PHENOLS TOTAL (UG/L)	OIL AND GREASE, TOTAL RECOV- GRAVI- METRIC (MG/L)
OCT												
08...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
05...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
10...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
07...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
11...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
11... 19		930	22	120	0.20	<1	12	<1	1	40	3	<1
APR												
08...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
06...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
10...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
08...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
12...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
02... 12		370	<5	80	0.10	2	12	<1	<1	40	7	<1

DATE	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	CHLOR- DANE, TOTAL (UG/L)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	CHLOR- DANE, TOTAL (UG/L)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
OCT														
08...	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV														
05...	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC														
10...	--	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN														
07...	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB														
11...	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR														
11...	<0.1	--	<0.010	--	<0.1	--	<0.010	--	<0.010	--	<0.010	--	<0.010	--
APR														
08...	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY														
06...	--	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN														
10...	--	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL														
08...	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG														
12...	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP														
02...	<0.1	480	<0.010	<0.1	<0.1	120	<0.010	46	<0.010	99	<0.010	<0.1	<0.1	<0.1

BLACKSTONE RIVER BASIN

01112900 BLACKSTONE RIVER AT MANVILLE, R.I.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	DI- ELDRIN TOTAL (UG/L)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDO- SULFAN, TOTAL (UG/L)	ENDO- SULFAN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)
OCT											
08...	--	--	--	--	--	--	--	--	--	--	--
NOV											
05...	--	--	--	--	--	--	--	--	--	--	--
DEC											
10...	--	--	--	--	--	--	--	--	--	--	--
JAN											
07...	--	--	--	--	--	--	--	--	--	--	--
FEB											
11...	--	--	--	--	--	--	--	--	--	--	--
MAR											
11...	<0.010	--	<0.010	--	<0.010	--	<0.010	--	<0.010	--	<0.010
APR											
08...	--	--	--	--	--	--	--	--	--	--	--
MAY											
06...	--	--	--	--	--	--	--	--	--	--	--
JUN											
10...	--	--	--	--	--	--	--	--	--	--	--
JUL											
08...	--	--	--	--	--	--	--	--	--	--	--
AUG											
12...	--	--	--	--	--	--	--	--	--	--	--
SEP											
02...	<0.010	8.2	<0.010	<0.1	<0.010	<0.1	<0.010	<0.1	<0.010	2.8	<0.010

DATE	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	METH- OXY- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/L)	METH- OXY- CHLOR, TOT. IN BOTTOM MATL. (UG/KG)	MIREX, TOTAL (UG/L)	MIREX, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	PCN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	PER- THANE TOTAL (UG/L)	PER- THANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	TOX- APHENE, TOTAL (UG/L)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
OCT											
08...	--	--	--	--	--	--	--	--	--	--	--
NOV											
05...	--	--	--	--	--	--	--	--	--	--	--
DEC											
10...	--	--	--	--	--	--	--	--	--	--	--
JAN											
07...	--	--	--	--	--	--	--	--	--	--	--
FEB											
11...	--	--	--	--	--	--	--	--	--	--	--
MAR											
11...	--	<0.01	--	<0.01	--	<0.10	--	<0.1	--	<1	--
APR											
08...	--	--	--	--	--	--	--	--	--	--	--
MAY											
06...	--	--	--	--	--	--	--	--	--	--	--
JUN											
10...	--	--	--	--	--	--	--	--	--	--	--
JUL											
08...	--	--	--	--	--	--	--	--	--	--	--
AUG											
12...	--	--	--	--	--	--	--	--	--	--	--
SEP											
02...	<0.1	<0.01	240	<0.01	<0.1	<0.10	<1.0	<0.1	<1.00	<1	<10

MOSHASSUCK RIVER BASIN

85

01114000 MOSHASSUCK RIVER AT PROVIDENCE, R.I.

LOCATION.--Lat 41°50'02", long 71°24'42", Providence County, Hydrologic Unit 01090004, on left bank 800 ft upstream from bridge on U.S. Highway 44 at Providence and 0.5 mi above mouth.

DRAINAGE AREA.--23.1 mi².

PERIOD OF RECORD.--Discharge: June 1963 to current year.
Water-quality records: Water year 1971.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 8.19 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 7, 1973, at datum 0.88 ft lower. Mar. 10, 1972, to Nov. 7, 1973, stage record obtained at site 200 ft upstream.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Occasional regulation at low flow.

AVERAGE DISCHARGE.--24 years, 41.3 ft³/s, 24.28 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,390 ft³/s Mar. 18, 1968, gage height, 3.46 ft, present datum, from rating curve extended above 460 ft³/s; maximum gage height, 5.81 ft July 30, 1976; minimum discharge, 1.3 ft³/s Aug. 23, 1970; minimum daily, 1.7 ft³/s Aug. 10, 1970.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	0545	744	4.39	Dec. 19	0230	749	4.40
Dec. 3	0715	*1,000	*4.87	Apr. 4	2345	805	4.51

Minimum discharge, 7.3 ft³/s Aug. 1-3; minimum daily, 7.3 ft³/s Aug. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	9.9	36	57	40	115	387	92	29	14	9.6	34
2	14	8.1	39	189	39	110	158	76	27	27	7.3	13
3	18	11	e600	122	41	65	108	68	27	22	14	11
4	28	11	e250	83	40	52	176	147	21	20	11	10
5	20	11	e140	69	38	49	540	107	30	17	11	9.3
6	11	34	e110	61	35	48	353	88	30	17	12	8.4
7	12	18	e95	58	36	56	290	77	25	14	8.7	16
8	9.3	66	e85	57	37	73	203	67	88	14	9.1	45
9	11	48	e80	51	47	75	151	60	36	38	15	60
10	13	30	e130	68	40	65	121	58	28	25	24	17
11	9.2	44	e150	88	37	52	102	54	24	21	13	14
12	8.7	32	e82	71	34	50	89	53	20	13	9.9	12
13	14	27	58	58	34	50	129	50	22	16	9.2	144
14	58	21	47	52	30	48	107	49	18	16	9.1	66
15	20	15	47	51	28	46	84	53	21	15	8.5	26
16	19	14	46	51	26	42	76	52	19	14	8.0	15
17	12	18	44	48	26	42	81	48	18	12	8.1	15
18	11	15	77	60	29	41	150	43	18	15	9.1	83
19	8.9	37	508	66	28	40	106	45	16	10	8.2	70
20	11	28	204	56	28	39	84	45	15	12	9.4	139
21	12	280	118	48	26	38	74	45	12	8.8	11	49
22	11	99	94	48	25	40	66	44	17	11	11	37
23	12	56	86	81	29	38	59	43	19	9.1	9.6	28
24	10	55	74	58	29	37	64	57	19	8.7	8.6	20
25	9.1	45	307	46	28	36	74	51	16	30	8.4	16
26	14	97	175	45	24	37	61	48	15	42	8.4	14
27	20	150	106	42	28	37	54	48	16	14	21	12
28	14	71	85	39	27	43	109	50	11	10	14	13
29	13	52	75	38	---	39	146	36	16	10	90	19
30	13	44	68	38	---	35	125	37	25	10	15	28
31	12	---	67	45	---	299	---	29	---	10	17	---
TOTAL	460.2	1447.0	4083	1944	909	1837	4327	1820	698	515.6	428.2	1043.7
MEAN	14.8	48.2	132	62.7	32.5	59.3	144	58.7	23.3	16.6	13.8	34.8
MAX	58	280	600	189	47	299	540	147	88	42	90	144
MIN	8.7	8.1	36	38	24	35	54	29	11	8.7	7.3	8.4
CFSM	.64	2.09	5.70	2.71	1.41	2.57	6.24	2.54	1.01	.72	.60	1.51
IN.	.74	2.33	6.58	3.13	1.46	2.96	6.97	2.93	1.12	.83	.69	1.68

CAL YR 1986 TOTAL 16312.0 MEAN 44.7 MAX 600 MIN 8.1 CFSM 1.93 IN. 26.27
WTR YR 1987 TOTAL 19512.7 MEAN 53.5 MAX 600 MIN 7.3 CFSM 2.31 IN. 31.42

e Estimated

WOONASQUATUCKET RIVER BASIN

01114500 WOONASQUATUCKET RIVER AT CENTERDALE, R.I.

LOCATION.--Lat 41°51'32", long 71°29'16", Providence County, Hydrologic Unit 01090004, on right bank 75 ft downstream from bridge on U.S. Highway 44 at Centerdale and 6.5 mi upstream from mouth.

DRAINAGE AREA.--38.3 mi².

PERIOD OF RECORD.--Discharge: July 1941 to current year.
Water-quality records: Water years 1955-56.

GAGE.--Water-stage recorder. Elevation of gage is 95 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records poor. Some regulation by reservoirs upstream; regulation greater prior to 1956. Discharge figures prior to 1966 included leakage around station through bypass canal; leakage negligible subsequently.

AVERAGE DISCHARGE.--46 years, 73.7 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,440 ft³/s Mar. 18, 1968, gage height, 7.75 ft, from floodmarks; minimum daily, 2.1 ft³/s Aug. 26, 1963.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge during March 1936, 1,000 ft³/s, by computation of flow over dam 0.7 mi downstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,300 ft³/s Apr. 5, gage height, 6.95 ft; minimum daily, 7.3 ft³/s Aug. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	e24	e99	155	90	63	747	198	45	21	17	15
2	23	e23	e98	188	86	97	481	171	44	24	17	12
3	24	e23	575	170	86	101	321	154	42	28	19	11
4	26	e22	323	143	87	92	335	216	41	24	18	9.8
5	26	e25	187	128	86	84	1080	204	41	22	17	9.9
6	24	e35	155	117	82	78	932	189	40	21	16	9.9
7	23	e40	146	114	81	91	797	172	27	20	16	12
8	23	e70	150	110	80	116	577	152	51	20	17	14
9	e23	e70	157	104	87	128	415	139	49	33	17	19
10	e22	e50	171	107	87	121	329	127	41	30	21	15
11	e22	e70	157	137	81	110	278	118	35	25	17	13
12	e21	e65	152	128	76	102	213	109	33	22	16	13
13	e21	e53	143	115	73	97	216	95	34	21	16	30
14	e35	e45	131	107	68	92	214	88	32	21	15	41
15	e28	e39	124	105	65	87	187	86	30	20	13	22
16	e25	e36	120	109	62	84	171	85	27	19	12	18
17	e24	e45	118	105	61	83	167	81	25	19	10	17
18	e23	e71	125	103	58	81	222	71	23	19	11	32
19	e22	e82	656	113	56	80	217	69	22	18	10	45
20	e22	e120	365	108	54	78	201	67	22	18	9.9	62
21	e22	e270	222	99	54	81	184	63	22	18	9.5	40
22	e21	e160	187	103	54	84	166	61	23	18	9.7	30
23	e21	e125	175	122	45	82	149	58	23	19	8.7	26
24	e21	e120	162	112	37	77	141	65	22	19	8.0	22
25	e21	e105	351	105	36	70	148	60	22	21	7.5	21
26	e25	e96	256	102	36	75	135	56	22	25	7.3	19
27	e30	e180	198	98	36	78	123	54	25	19	9.6	18
28	e28	e160	179	94	38	89	147	57	25	18	8.9	17
29	e26	e120	167	91	---	93	228	52	22	17	27	16
30	e25	e105	161	90	---	89	236	44	21	17	15	19
31	e24	---	157	95	---	326	---	39	---	18	12	---
TOTAL	743	2449	6367	3577	1842	3009	9757	3200	931	654	428.1	648.6
MEAN	24.0	81.6	205	115	65.8	97.1	325	103	31.0	21.1	13.8	21.6
MAX	35	270	656	188	90	326	1080	216	51	33	27	62
MIN	21	22	98	90	36	63	123	39	21	17	7.3	9.8

CAL YR 1986 TOTAL 25432.0 MEAN 69.7 MAX 656 MIN 20
WTR YR 1987 TOTAL 33605.7 MEAN 92.1 MAX 1080 MIN 7.3

e Estimated

PAWTUXET RIVER BASIN

87

01116000 SOUTH BRANCH PAWTUXET RIVER AT WASHINGTON, R.I.

LOCATION.--Lat 41°41'24", long 71°33'59", Kent County, Hydrologic Unit 01090004, on right bank 150 ft downstream from highway bridge at Washington and 0.9 mi upstream from outlet of Tiogue Lake.

DRAINAGE AREA.--63.8 mi².

PERIOD OF RECORD.--Discharge: October 1940 to current year.

Water-quality records: Water years 1955-1956, 1963.

GAGE.--Water-stage recorder. Datum of gage is 217.76 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records poor. Flow regulated by Flat River Reservoir 2 mi upstream (see table below), usable capacity, 250,000,000 ft³, and smaller reservoirs. Prior to May 1972, diversion from Carr Pond for municipal supply of Coventry, Warwick, and West Warwick.

AVERAGE DISCHARGE.--47 years, 130 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,980 ft³/s June 6, 1982, gage height, 5.30 ft; minimum daily, 2.8 ft³/s Aug. 27, 1944.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1936 reached a discharge of 1,810 ft³/s, by computation of flow over dam just upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,000 ft³/s Dec. 4, gage height, 3.79 ft; minimum daily, 22 ft³/s Sept. 7, 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	64	206	396	177	127	209	319	61	68	28	26
2	57	64	202	425	102	143	477	259	59	68	28	27
3	61	65	451	420	87	143	504	224	71	68	35	26
4	64	67	931	402	86	182	443	262	58	68	44	26
5	62	68	733	315	84	184	742	324	66	68	44	25
6	47	68	540	216	84	183	865	321	70	68	47	23
7	45	69	484	214	83	186	710	284	71	68	42	22
8	43	69	470	214	101	194	582	238	82	70	32	22
9	41	75	467	212	141	216	489	209	79	70	31	23
10	41	74	464	245	141	227	389	189	78	69	33	23
11	40	76	451	296	139	229	310	174	77	68	35	24
12	41	78	353	92	136	227	300	163	72	68	36	25
13	40	78	239	87	126	221	324	153	72	68	38	29
14	41	78	184	117	114	214	369	159	70	68	39	61
15	42	78	172	386	114	209	335	152	72	67	36	50
16	42	78	422	389	109	163	279	166	70	68	33	41
17	43	80	411	372	101	162	255	151	70	68	32	38
18	42	81	273	326	101	156	312	150	70	64	33	39
19	43	83	180	213	101	135	357	145	69	57	33	60
20	76	83	429	208	101	133	324	89	68	55	33	70
21	84	141	489	206	101	137	286	151	68	55	33	67
22	84	117	474	206	100	151	252	109	68	56	29	67
23	85	122	460	216	98	155	230	100	68	60	27	65
24	72	151	447	210	87	161	211	77	68	41	25	64
25	58	186	492	211	86	161	213	91	68	29	26	63
26	58	186	480	210	105	161	210	129	68	29	26	62
27	59	268	463	207	106	149	194	161	68	38	26	61
28	66	282	450	211	106	134	215	70	68	43	26	45
29	68	253	436	208	---	132	334	58	67	43	26	43
30	67	228	424	203	---	130	366	84	67	44	26	44
31	64	---	412	191	---	176	---	112	---	37	25	---
TOTAL	1709	3410	13089	7824	3017	5281	11086	5273	2083	1811	1007	1261
MEAN	55.1	114	422	252	108	170	370	170	69.4	58.4	32.5	42.0
MAX	85	282	931	425	177	229	865	324	82	70	47	70
MIN	33	64	172	87	83	127	194	58	58	29	25	22
(+)	197.5	257.5	139	77	124	200.5	291	253.5	246.5	226	223	206.5

CAL YR 1986 TOTAL 49815 MEAN 136 MAX 931 MIN 32
WTR YR 1987 TOTAL 56851 MEAN 156 MAX 931 MIN 22

† Monthend contents, in millions of cubic feet, in Flat River Reservoir; records provided by Quidnick Reservoir Co.

PAWTUXET RIVER BASIN

01116500 PAWTUXET RIVER AT CRANSTON, R.I.

LOCATION.--Lat 41°45'03", long 71°26'44", Providence County, Hydrologic Unit 01090004, on left bank at Cranston, and 0.7 mi upstream from Pocasset River.

DRAINAGE AREA.--200 mi².

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 971: 1940-42. WSP 1381: 1940-41(M). WDR-MA-NH-RI-VT-73-1: 1972 (adjusted monthly and yearly figures only).

GAG.--Water-stage recorder. Datum of gage is 8.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by powerplants and by Scituate Reservoir 13 mi upstream, Flat River Reservoir, and other reservoirs, combined usable capacity, about 6,000,000,000 ft³. Diversion from Scituate Reservoir for municipal supply of Providence, East Providence, North Providence, Cranston, Greenville, Johnston, East Smithfield, Smithfield, Warwick, West Warwick, Coventry, East Greenwich, and West Greenwich. See table below for figures of diversion and monthend contents in Scituate Reservoir and five smaller reservoirs, and see table with station 01116000 for monthend contents in Flat River Reservoir.

AVERAGE DISCHARGE.--47 years (water years 1941-87), 346 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,440 ft³/s June 7, 1982, gage height, 14.5 ft, from floodmark; minimum daily, 22 ft³/s Sept. 4, 1944.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,890 ft³/s Dec. 3, gage height, 10.61 ft, minimum daily, 61 ft³/s Oct. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66	99	417	1010	657	620	1570	1070	186	156	93	152
2	119	97	398	1340	573	826	1110	914	143	142	87	129
3	154	124	2110	1390	500	565	1070	798	187	164	101	121
4	196	148	2040	1260	477	555	1020	1030	174	149	111	114
5	175	138	1550	1150	467	543	1780	1150	184	140	109	101
6	195	171	1150	920	455	526	2110	1110	178	135	109	93
7	114	145	966	861	452	574	2620	1010	170	131	106	104
8	86	196	898	926	450	676	2370	843	258	136	97	113
9	84	222	894	873	548	699	1850	688	201	174	102	215
10	92	169	968	839	578	660	1510	596	185	154	146	131
11	61	190	881	1050	554	611	1360	522	179	134	109	120
12	63	240	848	782	535	595	1210	493	167	133	100	116
13	82	172	593	601	511	583	1300	511	158	134	106	397
14	172	151	508	569	465	561	1450	479	150	135	106	488
15	121	147	318	856	447	547	1350	471	149	137	99	185
16	108	144	666	985	432	491	1270	483	145	129	95	155
17	105	150	733	953	410	466	1200	464	141	126	94	148
18	103	160	724	942	403	458	1260	444	139	123	98	188
19	101	224	1600	891	395	429	1210	468	141	102	103	317
20	125	185	1280	795	385	420	1130	390	135	98	105	428
21	167	1080	1200	756	368	421	1110	428	138	114	104	255
22	168	663	1100	757	366	433	962	411	140	119	106	198
23	169	351	928	904	392	435	821	352	150	119	108	184
24	173	375	981	800	355	439	751	325	141	121	98	167
25	118	437	1550	745	317	438	750	312	136	107	101	156
26	107	486	1390	735	345	453	647	351	134	112	104	148
27	139	903	1250	719	329	440	577	339	144	103	129	146
28	137	699	1220	695	363	439	697	287	150	109	135	135
29	141	595	1170	684	---	423	1040	209	135	109	181	115
30	136	497	1100	679	---	407	1110	211	139	108	128	128
31	124	---	1100	685	---	1030	---	253	---	105	107	---
TOTAL	3901	9358	32531	27152	12529	16763	38215	17412	4777	3958	3377	5447
MEAN	126	312	1049	876	447	541	1274	562	159	128	109	182
MAX	196	1080	2110	1390	657	1030	2620	1150	258	174	181	488
MIN	61	97	318	569	317	407	577	209	134	98	87	93
(+)	4064	4536	5563	5344	4884	5296	5595	5343	4964	4527	4112	3906
(++)	96.9	92.6	93.8	98.2	98.0	94.6	93.5	109	143	147	147	110

CAL YR 1986 TOTAL 108547 MEAN 297 MAX 2110 MIN 61
WTR YR 1987 TOTAL 175420 MEAN 481 MAX 2620 MIN 61

+ Monthend contents, in millions of cubic feet, of Scituate Reservoir and five smaller reservoirs.

+ Diversion, in cubic feet per second, from Scituate Reservoir for municipal supply of Providence, East Providence, North Providence, Cranston, Greenville, Johnston, East Smithfield, Smithfield, Warwick, West Warwick, Coventry, East Greenwich, and West Greenwich. Figures of diversion and monthend contents provided by Providence Water Supply Board.

PAWTUXET RIVER BASIN

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01116500 PAWTUXET RIVER AT CRANSTON, R.I.--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1961 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: June 1969 to September 1981.

WATER TEMPERATURES: November 1961 to September 1981.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (FTU)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)
OCT												
07...	0845	109	315	5.80	6.0	14.0	--	--	765	6.0	58	--
NOV												
04...	1245	146	420	6.50	14.0	11.0	--	--	760	7.4	67	--
DEC												
09...	1140	859	147	6.60	1.0	4.0	--	1.9	770	13.2	100	21
JAN												
06...	1135	926	153	6.90	3.0	2.0	--	--	665	13.6	113	--
FEB												
10...	1040	565	270	6.90	0.0	1.0	--	--	760	14.7	104	--
MAR												
10...	1045	667	177	6.70	-3.0	3.5	25	--	770	13.0	97	17
APR												
07...	1125	2650	101	6.60	6.5	7.0	--	--	750	12.2	102	--
MAY												
05...	1050	1160	140	6.70	7.5	9.0	--	--	765	11.4	98	--
JUN												
09...	1120	201	350	6.00	23.5	20.0	--	2.9	755	6.4	71	18
JUL												
07...	1015	130	335	6.60	22.0	20.0	--	--	765	4.3	47	--
AUG												
11...	1320	109	250	6.50	29.5	22.0	--	--	760	3.4	39	--
SEP												
01...	1400	174	470	6.80	23.0	20.0	35	15	760	2.8	31	<10

DATE	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
OCT												
07...	--	400	49	20	--	0	--	--	--	--	--	--
NOV												
04...	5.0	1600	K13	21	--	0	--	--	--	--	--	--
DEC												
09...	--	2900	140	41	--	0	--	--	--	--	--	--
JAN												
06...	1.0	2600	33	K9	--	0	--	--	--	--	--	--
FEB												
10...	--	700	86	18	--	0	--	--	--	--	--	--
MAR												
10...	2.0	250	K4	K5	21	7	6.7	1.1	22	67	2	2.0
APR												
07...	--	38000	1100	1200	--	0	--	--	--	--	--	--
MAY												
05...	1.0	5500	92	68	--	0	--	--	--	--	--	--
JUN												
09...	--	45000	460	180	--	0	--	--	--	--	--	--
JUL												
07...	4.0	1300	100	K44	--	0	--	--	--	--	--	--
AUG												
11...	--	640	K32	K20	--	0	--	--	--	--	--	--
SEP												
01...	4.0	930	42	34	57	28	20	1.7	58	67	4	4.8

PAWTUXET RIVER BASIN

01116500 PAWTUXET RIVER AT CRANSTON, R.I.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	CAR- BONATE IT-FLD (MG/L AS CO3)	BICAR- BONATE IT-FLD (MG/L AS HCO3)	ALKA- LINITY, CARBON- ATE IT-FLD (MG/L - CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)
OCT												
07...	0	18	15	--	--	--	--	--	0.830	0.070	0.900	0.430
NOV												
04...	0	49	40	--	--	--	--	--	0.820	0.080	0.900	1.50
DEC												
09...	0	20	16	--	24	--	4	96	0.470	0.030	0.500	0.460
JAN												
06...	0	12	10	--	--	--	--	--	--	<0.010	0.500	0.310
FEB												
10...	0	21	17	--	--	--	--	--	--	<0.010	0.500	0.440
MAR												
10...	0	17	14	22	27	89	5	102	--	<0.010	0.500	0.470
APR												
07...	0	5.0	4.0	--	--	--	--	--	--	<0.010	0.300	0.070
MAY												
05...	0	9.0	8.0	--	--	--	--	--	--	<0.010	0.300	0.210
JUN												
09...	0	37	31	--	54	--	4	197	0.650	0.050	0.700	1.30
JUL												
07...	--	--	--	--	--	--	--	--	0.850	0.250	1.10	0.800
AUG												
11...	0	20	16	--	--	--	--	--	1.74	0.160	1.90	0.490
SEP												
01...	0	36	29	56	75	233	1	254	1.48	0.220	1.70	1.00

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHORUS TOTAL (MG/L AS PO4)	PHOS- PHORUS, ORTHO, TOTAL (MG/L AS P)	ALUM- INUM, TOTAL RECOV- ERABLE (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)
OCT												
07...	1.9	2.3	3.2	14	0.540	1.7	0.250	--	--	--	--	--
NOV												
04...	3.2	4.7	5.6	25	0.600	1.8	0.490	--	--	--	--	--
DEC												
09...	--	<0.20	--	--	0.100	--	0.090	--	--	--	--	--
JAN												
06...	0.49	0.80	1.3	5.8	0.090	--	0.100	--	--	--	--	--
FEB												
10...	0.66	1.1	1.6	7.1	0.160	--	0.120	--	--	--	--	--
MAR												
10...	0.33	0.80	1.3	5.8	0.300	--	0.230	160	<1	150	<1	<10
APR												
07...	0.93	1.0	1.3	5.8	0.170	--	0.050	--	--	--	--	--
MAY												
05...	2.0	2.2	2.5	11	0.100	--	0.070	--	--	--	--	--
JUN												
09...	1.6	2.9	3.6	16	0.540	--	0.370	--	--	--	--	--
JUL												
07...	1.3	2.1	3.2	14	0.360	--	0.260	--	--	--	--	--
AUG												
11...	0.71	1.2	3.1	14	0.560	--	0.500	--	--	--	--	--
SEP												
01...	3.5	4.5	6.2	27	0.450	--	0.360	50	<1	130	2	<10

PAWTUXET RIVER BASIN

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01116500 PAWTUXET RIVER AT CRANSTON, R.I.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	PHENOLS TOTAL (UG/L)
OCT											
07...	--	--	--	--	--	--	--	--	--	--	--
NOV											
04...	--	--	--	--	--	--	--	--	--	--	--
DEC											
09...	--	--	--	--	--	--	--	--	--	--	--
JAN											
06...	--	--	--	--	--	--	--	--	--	--	--
FEB											
10...	--	--	--	--	--	--	--	--	--	--	--
MAR											
10...	12	380	<5	100	0.20	<1	7	1	<1	20	7
APR											
07...	--	--	--	--	--	--	--	--	--	--	--
MAY											
05...	--	--	--	--	--	--	--	--	--	--	--
JUN											
09...	--	--	--	--	--	--	--	--	--	--	--
JUL											
07...	--	--	--	--	--	--	--	--	--	--	--
AUG											
11...	--	--	--	--	--	--	--	--	--	--	--
SEP											
01...	16	400	<5	180	<0.10	2	7	1	<1	50	19

DATE	OIL AND GREASE, TOTAL RECOV. GRAVI- METRIC (MG/L)	PCB, TOTAL PCB, TOTAL (UG/L)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ALDRIN, TOTAL ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	CHLOR- DANE, TOTAL CHLOR- DANE, TOTAL (UG/L)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDD, TOTAL DDD, TOTAL (UG/L)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDE, TOTAL DDE, TOTAL (UG/L)	DDT, TOTAL DDT, TOTAL (UG/L)
OCT											
07...	--	--	--	--	--	--	--	--	--	--	--
NOV											
04...	--	--	--	--	--	--	--	--	--	--	--
DEC											
09...	--	--	--	--	--	--	--	--	--	--	--
JAN											
06...	--	--	--	--	--	--	--	--	--	--	--
FEB											
10...	--	--	--	--	--	--	--	--	--	--	--
MAR											
10...	<1	<0.1	--	<0.010	--	<0.1	--	<0.010	--	<0.010	<0.010
APR											
07...	--	--	--	--	--	--	--	--	--	--	--
MAY											
05...	--	--	--	--	--	--	--	--	--	--	--
JUN											
09...	--	--	--	--	--	--	--	--	--	--	--
JUL											
07...	--	--	--	--	--	--	--	--	--	--	--
AUG											
11...	--	--	--	--	--	--	--	--	--	--	--
SEP											
01...	<1	<0.1	190	<0.010	10	<0.1	41	<0.010	<0.1	<0.010	<0.010

PAWTUXET RIVER BASIN

01116500 PAWTUXET RIVER AT CRANSTON, R.I.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	DI- ELDRIN TOTAL (UG/L)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDO- SULFAN, TOTAL (UG/L)	ENDO- SULFAN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)
OCT											
07...	--	--	--	--	--	--	--	--	--	--	--
NOV											
04...	--	--	--	--	--	--	--	--	--	--	--
DEC											
09...	--	--	--	--	--	--	--	--	--	--	--
JAN											
06...	--	--	--	--	--	--	--	--	--	--	--
FEB											
10...	--	--	--	--	--	--	--	--	--	--	--
MAR											
10...	<0.010	--	<0.010	--	<0.010	--	<0.010	--	<0.010	--	<0.010
APR											
07...	--	--	--	--	--	--	--	--	--	--	--
MAY											
05...	--	--	--	--	--	--	--	--	--	--	--
JUN											
09...	--	--	--	--	--	--	--	--	--	--	--
JUL											
07...	--	--	--	--	--	--	--	--	--	--	--
AUG											
11...	--	--	--	--	--	--	--	--	--	--	--
SEP											
01...	<0.010	0.1	<0.010	<0.1	<0.010	<0.1	<0.010	<0.1	<0.010	<0.1	<0.010

DATE	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	METH- OXY- CHLOR, TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	METH- OXY- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	MIREX, TOTAL (UG/L)	MIREX, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	PCN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	PER- THANE TOTAL (UG/L)	PER- THANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	TOX- APHENE, TOTAL (UG/L)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
OCT												
07...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
04...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
09...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
06...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
10...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
10...	--	<0.01	--	<0.01	--	<0.10	--	<0.1	--	<1	--	--
APR												
07...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
05...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
09...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
07...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
11...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
01...	<0.1	<0.01	<0.1	<0.01	<0.1	<0.10	<1.0	<0.1	<1.00	<1	<10	<10

PAWTUXET RIVER BASIN

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01116617 PAWTUXET RIVER AT PAWTUXET, R.I.

WATER-QUALITY RECORDS

LOCATION.--Lat 41°45'51", long 71°23'45", Providence County, Hydrologic Unit 01090004, at Warwick Ave Road Bridge at Pawtuxet, and 3.2 mi downstream from Cranston Sewage Treatment Plant.

PERIOD OF RECORD.--Water years 1979 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS	SPE- CIFIC CON- DUCT- ANCE (CFS)	PH (STAND- ARD (US/CM)	TEMPER- ATURE AIR (UNITS)	TEMPER- ATURE WATER (DEG C)	COLOR (PLAT- INUM- COBALT (DEG C)	TUR- BID- ITY (UNITS)	BARO- METRIC PRES- SURE (MM OF (FTU)	OXYGEN, DIS- SOLVED HG	OXYGEN, DIS- SOLVED (PER- CENT SATUR- (MG/L)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) ATION)
(MG/L)												
OCT												
07...	1010	126	325	6.40	10.0	14.0	--	--	765	3.4	33	--
NOV												
04...	1325	169	335	6.30	14.0	11.0	--	--	760	5.0	45	--
DEC												
09...	0950	992	172	6.90	2.0	4.0	--	2.6	770	12.9	97	23
JAN												
06...	0955	1070	172	6.40	2.0	2.0	--	--	768	13.3	95	--
FEB												
10...	1205	653	310	7.10	2.5	1.0	--	--	760	13.0	92	--
MAR												
10...	1330	770	225	7.20	-2.0	4.0	28	--	770	12.3	93	19
APR												
07...	0955	3060	117	6.80	6.5	7.5	--	--	750	11.8	100	--
MAY												
05...	1145	1340	156	7.10	7.5	9.0	--	--	765	11.0	95	--
JUN												
09...	1225	232	350	6.40	25.0	20.0	--	3.5	755	6.4	71	15
JUL												
07...	1150	150	350	7.30	22.0	22.0	--	--	765	2.9	33	--
AUG												
11...	1150	126	330	7.00	27.0	21.0	--	--	760	2.2	25	--
SEP												
01...	1030	201	440	6.90	22.0	19.0	37	0.90	760	1.9	21	22

DATE	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
OCT												
07...	--	1200	120	460	--	0	--	--	--	--	--	--
NOV												
04...	4.0	890	52	27	--	0	--	--	--	--	--	--
DEC												
09...	--	710	K10	17	--	0	--	--	--	--	--	--
JAN												
06...	1.0	8200	34	150	--	0	--	--	--	--	--	--
FEB												
10...	--	K160	K3	K7	--	0	--	--	--	--	--	--
MAR												
10...	2.0	K50	K2	K2	29	9	9.2	1.4	24	62	2	2.4
APR												
07...	--	K30000	K1400	920	--	0	--	--	--	--	--	--
MAY												
05...	1.0	3400	84	K56	--	0	--	--	--	--	--	--
JUN												
09...	--	4300	170	170	--	0	--	--	--	--	--	--
JUL												
07...	6.0	800	220	100	--	0	--	--	--	--	--	--
AUG												
11...	--	380	150	K52	--	0	--	--	--	--	--	--
SEP												
01...	3.0	3600	660	760	58	16	20	2.0	49	62	3	4.9

PAWTUXET RIVER BASIN

01116617 BLACKSTONE RIVER AT MILLVILLE, R.I.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	CAR- BONATE IT-FLD (MG/L AS CO3)	BICAR- BONATE IT-FLD (MG/L AS HCO3)	ALKA- LINITY, CARBON- ATE IT-FLD (MG/L - CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)
OCT												
07...	0	37	30	--	--	--	--	--	1.29	0.110	1.40	1.20
NOV												
04...	0	37	30	--	--	--	--	--	1.29	0.110	1.40	1.20
DEC												
09...	--	--	--	--	28	--	10	115	0.480	0.020	0.500	0.610
JAN												
06...	0	7.0	6.0	--	--	--	--	--	--	<0.010	0.600	0.530
FEB												
10...	0	24	20	--	--	--	--	--	--	<0.010	0.600	0.960
MAR												
10...	0	24	20	22	32	103	4	119	--	<0.010	0.600	1.10
APR												
07...	0	9.0	7.0	--	--	--	--	--	--	<0.010	0.300	0.250
MAY												
05...	0	13	11	--	--	--	--	--	--	<0.010	0.400	0.380
JUN												
09...	--	36	30	--	54	--	15	200	0.800	0.100	0.900	1.30
JUL												
07...	0	34	28	--	--	--	--	--	1.24	0.360	1.60	1.30
AUG												
11...	0	44	36	--	--	--	--	--	1.79	0.110	1.90	2.80
SEP												
01...	0	51	42	42	66	209	3	230	1.48	0.120	1.60	2.70

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHORUS TOTAL (MG/L AS PO4)	PHOS- PHORUS, ORTHO, TOTAL (MG/L AS P)	ALUM- INUM, TOTAL RECOV- ERABLE (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)
OCT												
07...	0.10	1.3	2.7	12	0.680	2.1	0.560	--	--	--	--	--
NOV												
04...	1.0	2.2	3.6	16	0.590	1.8	0.480	--	--	--	--	--
DEC												
09...	0.79	1.4	1.9	8.4	0.130	--	0.090	--	--	--	--	--
JAN												
06...	0.17	0.70	1.3	5.8	0.120	--	0.120	--	--	--	--	--
FEB												
10...	0.74	1.7	2.3	10	0.220	--	0.180	--	--	--	--	--
MAR												
10...	0.70	1.8	2.4	11	0.300	--	0.250	180	<1	140	<1	<10
APR												
07...	0.35	0.60	0.90	4.0	0.140	--	0.030	--	--	--	--	--
MAY												
05...	0.82	1.2	1.6	7.1	0.140	--	0.100	--	--	--	--	--
JUN												
09...	1.3	2.6	3.5	15	0.490	--	0.330	--	--	--	--	--
JUL												
07...	1.2	2.5	4.1	18	0.610	--	0.510	--	--	--	--	--
AUG												
11...	0.50	3.3	5.2	23	0.730	--	0.660	--	--	--	--	--
SEP												
01...	0.80	3.5	5.1	23	0.590	--	0.570	50	1	110	1	<10

PAWTUXET RIVER BASIN

95

01116617 PAWTUXET RIVER AT PAWTUXET, R.I.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGA- NESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MOLYB- DENUM, TOTAL RECOVERABLE (UG/L AS MO)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	SELE- NIUM, TOTAL RECOVERABLE (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	PHENOLS TOTAL (UG/L)
OCT											
07...	--	--	--	--	--	--	--	--	--	--	--
NOV											
04...	--	--	--	--	--	--	--	--	--	--	--
DEC											
09...	--	--	--	--	--	--	--	--	--	--	--
JAN											
06...	--	--	--	--	--	--	--	--	--	--	--
FEB											
10...	--	--	--	--	--	--	--	--	--	--	--
MAR											
10...	14	510	11	120	0.10	<1	13	1	<1	20	5
APR											
07...	--	--	--	--	--	--	--	--	--	--	--
MAY											
05...	--	--	--	--	--	--	--	--	--	--	--
JUN											
09...	--	--	--	--	--	--	--	--	--	--	--
JUL											
07...	--	--	--	--	--	--	--	--	--	--	--
AUG											
11...	--	--	--	--	--	--	--	--	--	--	--
SEP											
01...	15	410	5	210	<0.10	2	18	<1	<1	10	16

DATE	OIL AND GREASE, TOTAL RECOVERABLE GRAVIMETRIC (MG/L)	PCB, TOTAL RECOVERABLE (UG/L)	PCB, TOTAL IN BOT- TOM MATERIAL (UG/KG)	ALDRIN, TOTAL RECOVERABLE (UG/L)	ALDRIN, TOTAL IN BOT- TOM MATERIAL (UG/KG)	CHLOR- DANE, TOTAL RECOVERABLE (UG/L)	CHLOR- DANE, TOTAL IN BOT- TOM MATERIAL (UG/KG)	DDD, TOTAL RECOVERABLE (UG/L)	DDD, TOTAL IN BOT- TOM MATERIAL (UG/KG)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)
OCT											
07...	--	--	--	--	--	--	--	--	--	--	--
NOV											
04...	--	--	--	--	--	--	--	--	--	--	--
DEC											
09...	--	--	--	--	--	--	--	--	--	--	--
JAN											
06...	--	--	--	--	--	--	--	--	--	--	--
FEB											
10...	--	--	--	--	--	--	--	--	--	--	--
MAR											
10...	<1	<0.1	--	<0.010	--	<0.1	--	<0.010	--	<0.010	<0.010
APR											
07...	--	--	--	--	--	--	--	--	--	--	--
MAY											
05...	--	--	--	--	--	--	--	--	--	--	--
JUN											
09...	--	--	--	--	--	--	--	--	--	--	--
JUL											
07...	--	--	--	--	--	--	--	--	--	--	--
AUG											
11...	--	--	--	--	--	--	--	--	--	--	--
SEP											
01...	<1	<0.1	190	<0.010	10	<0.1	41	<0.010	<0.1	<0.010	<0.010

PAWTUXET RIVER BASIN

01116617 PAWTUXET RIVER AT PAWTUXET, R.I.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	DI-ELDRIN TOTAL (UG/L)	DI-ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDO-SULFAN, TOTAL (UG/L)	ENDO-SULFAN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)
OCT											
07...	--	--	--	--	--	--	--	--	--	--	--
NOV											
04...	--	--	--	--	--	--	--	--	--	--	--
DEC											
09...	--	--	--	--	--	--	--	--	--	--	--
JAN											
06...	--	--	--	--	--	--	--	--	--	--	--
FEB											
10...	--	--	--	--	--	--	--	--	--	--	--
MAR											
10...	<0.010	--	<0.010	--	<0.010	--	<0.010	--	<0.010	--	<0.010
APR											
07...	--	--	--	--	--	--	--	--	--	--	--
MAY											
05...	--	--	--	--	--	--	--	--	--	--	--
JUN											
09...	--	--	--	--	--	--	--	--	--	--	--
JUL											
07...	--	--	--	--	--	--	--	--	--	--	--
AUG											
11...	--	--	--	--	--	--	--	--	--	--	--
SEP											
01...	<0.010	0.5	<0.010	<0.1	<0.010	<0.1	<0.010	<0.1	<0.010	<0.1	<0.010

DATE	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	METH- OXY- CHLOR, TOTAL (UG/L)	METH- OXY- CHLOR, TOT. IN BOTTOM MATL. (UG/KG)	MIREX, TOTAL (UG/L)	MIREX, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	PCN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	PER- THANE TOTAL (UG/L)	PER- THANE IN BOT- TOM MA- TERIAL (UG/KG)	TOX- APHENE, TOTAL (UG/L)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
OCT											
07...	--	--	--	--	--	--	--	--	--	--	--
NOV											
04...	--	--	--	--	--	--	--	--	--	--	--
DEC											
09...	--	--	--	--	--	--	--	--	--	--	--
JAN											
06...	--	--	--	--	--	--	--	--	--	--	--
FEB											
10...	--	--	--	--	--	--	--	--	--	--	--
MAR											
10...	--	<0.01	--	<0.01	--	<0.10	--	<0.1	--	<1	--
APR											
07...	--	--	--	--	--	--	--	--	--	--	--
MAY											
05...	--	--	--	--	--	--	--	--	--	--	--
JUN											
09...	--	--	--	--	--	--	--	--	--	--	--
JUL											
07...	--	--	--	--	--	--	--	--	--	--	--
AUG											
11...	--	--	--	--	--	--	--	--	--	--	--
SEP											
01...	0.5	<0.01	<0.1	<0.01	<0.1	<0.10	<1.0	<0.1	<1.00	<1	<10

POTOWOMUT RIVER BASIN

97

01117000 HUNT RIVER NEAR EAST GREENWICH, R.I.

LOCATION.--Lat 41°38'28", long 71°26'45", Washington County, Hydrologic Unit 01090004, on right bank 45 ft upstream from Old Forge Dam in North Kingstown, 1.5 mi south of East Greenwich, and 2.5 mi upstream from mouth.

DRAINAGE AREA.--23.0 mi².

PERIOD OF RECORD.--Discharge: August 1940 to current year. Prior to October 1977, published as "Potowomut River." Water-quality records: Water years 1977-81.

REVISED RECORDS.--WSP 1621: 1957-58.

GAGE.--Water-stage recorder. Datum of gage is 5.42 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair except those for July and August, which are poor. Flow affected by diversions for supply of East Greenwich, North Kingstown, Warwick, and Quonset Point (formerly U.S. Naval establishments).

AVERAGE DISCHARGE.--47 years 46.4 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,020 ft³/s June 6, 1982, gage height, 3.73 ft, from rating curve extended above 440 ft³/s; maximum gage height, 6.78 ft Aug. 31, 1954 (backwater from hurricane tidal wave); no flow at times in water years 1948, 1960, 1971, 1975-77, 1983, 1986-87, due to closing of gate at Old Forge Dam.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1915, about 8.5 ft Sept. 21, 1938 (backwater from hurricane tidal wave).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 230 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	1500	266	2.26	Mar. 2	0030	340	2.46
Dec. 3	1500	*731	*3.29	Apr. 1	0630	401	2.61
Dec. 19	1230	381	2.56	Apr. 5	0700	323	2.40
Dec. 25	1530	280	2.30				

No flow part of Aug. 22, 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.4	11	61	96	e80	121	356	110	34	20	6.0	19
2	9.6	13	55	167	e77	263	230	94	31	16	6.0	13
3	10	11	449	194	74	158	163	88	31	26	6.1	8.6
4	18	9.6	407	143	73	113	142	126	31	22	6.0	6.5
5	19	9.6	226	115	72	93	299	138	36	17	6.3	5.5
6	13	20	156	101	69	84	239	122	36	e14	6.2	5.6
7	12	22	127	97	64	91	199	105	31	e12	5.9	6.2
8	10	32	111	95	64	113	169	96	38	e11	5.8	7.2
9	9.6	60	108	87	75	116	145	89	30	e12	5.9	21
10	9.1	47	141	89	78	102	127	83	24	e11	e12	16
11	7.0	41	122	130	68	86	116	77	21	e11	e12	11
12	7.6	58	112	120	63	78	107	72	21	e11	e9.0	8.5
13	8.5	41	103	102	59	76	130	68	23	e10	e7.2	37
14	18	31	87	90	e57	76	152	66	22	e10	6.4	119
15	20	26	81	86	e56	74	123	67	19	e9.6	6.2	37
16	15	26	79	84	e55	69	107	68	15	e9.2	5.8	11
17	12	23	76	79	e55	67	105	63	15	e8.8	5.9	11
18	11	21	79	81	e54	65	153	58	13	e8.4	5.8	9.6
19	11	34	307	123	e54	61	142	63	12	e8.0	5.6	9.6
20	9.9	34	258	105	e53	60	117	60	12	e7.7	5.3	9.6
21	9.1	172	168	91	e53	61	104	55	12	e7.4	4.9	10
22	9.3	167	132	86	52	61	97	52	13	e7.2	5.1	10
23	9.0	113	114	138	51	58	89	52	15	e7.0	5.6	9.6
24	8.8	87	104	124	50	55	86	56	14	e8.2	5.8	11
25	8.5	74	204	115	48	54	96	54	12	e8.8	e5.4	10
26	11	68	218	e110	47	59	90	48	11	e7.4	e5.0	8.9
27	19	169	154	e100	47	63	81	45	13	7.0	e5.4	8.8
28	19	123	125	e93	49	73	101	53	16	6.7	6.5	8.5
29	16	88	112	e88	---	78	179	47	14	6.4	20	8.2
30	13	70	105	e84	---	65	143	40	11	6.2	23	7.9
31	11	---	104	e84	---	176	---	39	---	6.0	15	---
TOTAL	372.4	1701.2	4685	3297	1697	2769	4387	2254	626	333.0	237.1	464.8
MEAN	12.0	56.7	151	106	60.6	89.3	146	72.7	20.9	10.7	7.65	15.5
MAX	20	172	449	194	80	263	356	138	38	26	23	119
MIN	7.0	9.6	55	79	47	54	81	39	11	6.0	4.9	5.5

CAL YR 1986 TOTAL 18598.0 MEAN 51.0 MAX 449 MIN 7.0
WTR YR 1987 TOTAL 22823.4 MEAN 62.5 MAX 449 MIN 4.9

e Estimated

PAWCATUCK RIVER BASIN

01117350 CHIPUXET RIVER AT WEST KINGSTON, R.I.

LOCATION.--Lat 41°28'56", long 71°33'06", Washington County, Hydrologic Unit 01090005, on right bank at West Kingston, at downstream side of bridge on State Highway 138, 1.5 mi west of Kingston, and 3.1 mi upstream from Worden Pond.

DRAINAGE AREA.--9.99 mi².

PERIOD OF RECORD.--Discharge: February 1958 to July 1960 in Rhode Island Water Resources Board Geologic Bulletin 13. September 1973 to current year. Water-quality records: Water years 1974-83.

GAGE.--Water-stage recorder. Datum of gage is 89.80 ft above National Geodetic Vertical Datum of 1929 (Rhode Island State Board of Public Roads benchmark).

REMARKS.--No estimated daily discharges. Records good. Diversion upstream for supply of University of Rhode Island.

AVERAGE DISCHARGE.--15 years (water years 1959, 1974-87), 21.9 ft³/s.

EXTREMES FOR PERIOD OF RECORD (SINCE 1973).--Maximum discharge, about 250 ft³/s June 6, 1982; minimum, 2.1 ft³/s Aug. 27-31, Sept. 2, 1981. Instantaneous maximum and minimum discharges not available prior to Sept. 14, 1973.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 150 ft³/s Dec. 4, gage height, 6.92 ft; minimum, 4.5 ft³/s Aug. 21, 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.8	7.9	32	45	37	28	58	51	20	9.5	5.2	7.3
2	8.0	7.8	29	52	35	81	71	46	18	9.6	5.3	7.1
3	8.0	7.8	64	65	34	86	62	42	18	10	5.3	6.8
4	9.5	7.8	143	66	34	69	53	45	17	11	5.5	6.6
5	9.7	7.6	112	59	33	58	61	51	17	11	5.7	6.6
6	9.9	8.3	82	53	32	49	70	52	17	10	5.4	6.4
7	9.4	8.5	66	49	31	45	68	49	17	9.7	5.4	6.4
8	8.8	10	58	46	30	45	63	46	18	9.5	5.2	6.4
9	8.5	15	53	44	32	46	57	43	17	9.1	5.2	7.6
10	8.2	20	55	43	34	44	52	40	16	8.8	6.1	7.6
11	7.9	21	56	48	34	41	47	38	15	8.6	6.2	7.6
12	7.5	21	55	52	32	37	44	36	15	8.2	6.1	7.4
13	7.4	21	52	50	30	35	45	35	15	8.1	5.8	9.0
14	8.5	19	48	46	29	33	50	33	15	8.1	5.6	13
15	8.8	17	44	43	27	32	51	32	14	8.0	5.4	16
16	9.0	15	41	41	25	30	47	31	14	7.8	5.3	16
17	9.1	14	39	39	24	29	45	30	13	7.6	5.3	13
18	8.9	13	39	38	23	28	48	29	13	7.3	5.1	11
19	8.5	15	58	47	23	26	51	29	12	7.2	4.8	11
20	8.0	15	78	53	22	25	50	28	11	6.9	4.7	11
21	7.7	26	73	50	21	25	46	27	10	6.7	4.6	11
22	7.7	49	63	47	21	25	43	26	11	6.7	4.6	10
23	7.5	49	55	51	21	24	40	26	11	6.5	4.8	9.6
24	7.4	43	50	55	21	23	40	25	11	6.2	4.7	9.0
25	7.3	38	55	51	21	22	43	24	11	6.0	4.7	8.3
26	7.2	35	66	47	20	22	43	23	10	5.9	4.7	7.6
27	7.8	39	65	44	20	23	41	23	10	6.0	5.0	7.3
28	7.8	43	59	41	19	25	40	22	10	5.7	5.6	6.9
29	7.9	41	53	38	---	26	49	22	10	5.6	6.4	6.6
30	8.0	36	49	36	---	26	55	22	9.8	5.5	6.7	6.6
31	7.9	---	48	37	---	32	---	21	---	5.4	6.7	---
TOTAL	255.6	670.7	1840	1476	765	1140	1533	1047	415.8	242.2	167.1	266.7
MEAN	8.25	22.4	59.4	47.6	27.3	36.8	51.1	33.8	13.9	7.81	5.39	8.89
MAX	9.9	49	143	66	37	86	71	52	20	11	6.7	16
MIN	7.2	7.6	29	36	19	22	40	21	9.8	5.4	4.6	6.4

CAL YR 1986 TOTAL 8191.6 MEAN 22.4 MAX 143 MIN 7.2
WTR YR 1987 TOTAL 9819.0 MEAN 26.9 MAX 143 MIN 4.6

PAWCATUCK RIVER BASIN

99

01117420 USQUEPAUG RIVER NEAR USQUEPAUG, R.I.

LOCATION.--Lat 41°28'36", long 71°36'19", Washington County, Hydrologic Unit 01090005, on left bank at upstream side of Heaton Orchard Bridge on State Highway 2 in South Kingstown, 1.2 mi upstream from Chickasheen Brook, 1.8 mi south of Usquepaug, and 2.6 mi west of West Kingston.

DRAINAGE AREA.--36.1 mi².

PERIOD OF RECORD.--Discharge: February 1958 to July 1960 in Rhode Island Water Resources Board Geologic Bulletin 13. December 1974 to current year.
Water-quality records: Water years 1975-83.

GAGE.--Water-stage recorder. Datum of gage is 81.28 ft above National Geodetic Vertical Datum of 1929 (State of Rhode Island benchmark).

REMARKS.--No estimated daily discharges. Records good. Flow affected at times by irrigation upstream.

AVERAGE DISCHARGE.--13 years, (water years 1959, 1976-87), 79.7 ft³/s, 29.98 in/yr.

EXTREMES FOR PERIOD OF RECORD (SINCE 1974).--Maximum discharge, 1,060 ft³/s June 6, 1982, gage height, 9.23 ft; minimum, 3.9 ft³/s Sept. 10, 1977, Sept. 30, 1980. Instantaneous maximum and minimum discharges not available prior to Dec. 5, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 549 ft³/s Dec. 4, gage height, 7.32 ft; minimum, 3.1 ft³/s Aug. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	27	111	152	110	100	286	186	54	26	9.2	24
2	21	27	98	175	105	244	338	161	51	26	10	22
3	23	26	256	247	102	237	258	146	50	32	13	18
4	32	26	532	233	100	179	201	156	49	32	16	15
5	33	25	446	192	97	146	266	185	52	30	11	14
6	27	30	288	168	92	128	335	180	52	26	8.3	12
7	24	35	221	156	88	121	310	164	47	25	7.7	14
8	23	39	196	150	87	131	262	150	51	25	7.7	15
9	23	74	184	142	91	145	227	138	46	26	11	21
10	23	72	200	138	103	146	205	129	42	25	19	23
11	22	54	202	154	99	134	187	122	40	24	18	19
12	21	66	186	171	88	122	173	115	38	23	15	17
13	21	59	174	160	83	114	176	109	40	23	13	25
14	28	47	157	145	75	109	217	103	39	23	9.3	68
15	35	42	143	136	69	106	209	99	36	23	9.9	65
16	31	40	135	130	65	101	183	98	34	21	9.1	37
17	28	39	130	124	67	96	167	94	31	19	8.2	28
18	26	38	128	121	66	92	189	90	30	19	4.9	25
19	26	46	227	148	66	89	211	89	28	18	6.0	28
20	26	51	334	164	64	86	190	88	28	17	5.9	36
21	25	103	297	149	62	85	169	82	28	17	7.4	39
22	24	188	221	135	62	86	157	78	32	15	9.9	34
23	24	174	187	149	63	84	147	76	32	14	15	29
24	25	137	172	171	62	80	143	73	31	15	12	26
25	24	123	193	166	61	78	160	71	29	15	11	24
26	24	112	250	135	60	78	164	68	26	16	9.3	21
27	32	138	230	134	60	87	147	66	29	15	12	20
28	33	177	197	124	61	89	141	67	33	13	19	20
29	31	156	172	115	---	102	197	68	29	11	24	19
30	29	129	162	111	---	96	214	62	26	13	27	22
31	28	---	151	112	---	118	---	57	---	11	23	---
TOTAL	812	2300	6580	4707	2208	3609	6229	3370	1133	638	381.8	780
MEAN	26.2	76.7	212	152	78.9	116	208	109	37.8	20.6	12.3	26.0
MAX	35	188	532	247	110	244	338	186	54	32	27	68
MIN	20	25	98	111	60	78	141	57	26	11	4.9	12
CFSM	.73	2.12	5.88	4.21	2.18	3.22	5.75	3.01	1.05	.57	.34	.72
IN.	.84	2.37	6.78	4.85	2.28	3.72	6.42	3.47	1.17	.66	.39	.80

CAL YR 1986 TOTAL 27743.0 MEAN 76.0 MAX 532 MIN 20 CFSM 2.11 IN. 28.59
WTR YR 1987 TOTAL 32747.8 MEAN 89.7 MAX 532 MIN 4.9 CFSM 2.49 IN. 33.75

PAWCATUCK RIVER BASIN

01117468 BEAVER RIVER NEAR USQUEPAUG, R.I.

LOCATION.--Lat 41°29'33", long 71°37'43", Washington County, Hydrologic Unit 01090005, on right bank 10 ft downstream from Beaver River Bridge on State Highway 138 in Richmond, 1.2 mi southwest of Usquepaug, 3.3 mi north of Kenyon, and 3.6 mi upstream from mouth.

DRAINAGE AREA.--8.87 mi².

PERIOD OF RECORD.--Discharge: December 1974 to current year.
Water-quality records: Water years 1979-83.

REVISED RECORDS.--WDR MA-RI-79-1: 1978. WDR MA-RI-81-1: 1978-80 (P).

GAGE.--Water-stage recorder. Datum of gage is 107.68 ft above National Geodetic Vertical Datum of 1929.

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

AVERAGE DISCHARGE.--12 years (water years 1976-87), 22.7 ft³/s, 34.75 in/yr.

EXTREMES FOR PERIOD OF RECORD.---Maximum discharge, 370 ft³/s June 6, 1982, gage height, 3.83 ft; minimum, 1.3 ft³/s Aug. 21, 22, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 70 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	1000	71	2.18	Jan. 2	2000	74	2.21
Dec. 3	1600	*210	*3.16	Apr. 1	0745	97	2.43
Dec. 19	1500	110	2.54	Apr. 5	1230	96	2.42
Dec. 25	2215	80	2.27				

Minimum discharge, 1.3 ft³/s Aug. 21, 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.3	7.3	34	41	28	33	91	46	22	8.6	3.2	4.8
2	7.6	7.3	32	59	28	62	72	43	21	9.0	3.1	3.9
3	8.2	7.3	136	68	28	43	58	42	20	11	3.4	2.9
4	12	7.3	131	53	28	36	54	52	20	11	3.5	2.4
5	11	7.3	92	45	27	33	89	53	19	9.3	3.0	2.1
6	9.3	8.8	76	42	26	31	82	48	19	8.2	2.4	1.9
7	8.5	9.3	65	41	25	32	74	44	17	7.1	2.3	2.1
8	8.4	14	58	40	25	37	66	42	19	7.5	2.2	2.2
9	8.3	23	55	37	27	37	59	40	17	7.8	2.3	3.9
10	8.1	19	65	38	28	36	56	38	15	7.8	3.7	3.6
11	8.0	17	58	46	26	33	52	37	13	7.8	3.0	2.7
12	7.8	20	54	43	25	33	50	35	13	7.8	2.5	2.4
13	7.8	16	50	39	24	32	56	34	13	7.5	2.4	6.8
14	11	14	44	36	23	32	64	34	12	7.4	2.2	18
15	12	12	42	35	21	30	54	33	12	7.2	2.2	10
16	10	12	41	35	20	30	48	33	11	6.7	2.0	5.8
17	9.1	12	39	33	21	29	46	31	11	6.3	1.8	4.5
18	8.9	11	39	33	21	28	56	30	10	5.4	1.7	4.0
19	8.3	15	92	43	20	27	54	30	10	5.2	1.5	5.2
20	8.1	16	86	39	20	27	48	30	9.6	5.2	1.4	6.4
21	8.0	56	66	36	20	27	45	28	9.5	5.1	1.4	6.6
22	7.8	57	56	33	20	27	43	28	11	4.6	2.0	5.3
23	7.8	39	51	40	20	26	41	27	11	4.4	2.8	4.6
24	7.8	36	48	38	20	25	40	26	10	4.1	2.1	4.0
25	7.8	35	66	32	20	24	50	26	9.7	3.9	1.8	3.6
26	7.7	33	70	31	19	25	44	25	9.4	3.9	1.7	3.6
27	8.7	59	57	30	19	27	40	24	11	3.8	2.3	3.4
28	8.7	51	50	29	19	28	43	25	12	3.5	3.8	3.2
29	8.4	42	47	28	---	30	65	24	10	3.4	5.3	3.1
30	8.0	36	44	27	---	27	54	23	9.2	3.3	7.2	3.3
31	7.4	---	42	28	---	50	---	23	---	3.3	4.5	---
TOTAL	267.8	699.6	1886	1198	648	997	1694	1054	406.4	197.1	84.7	136.3
MEAN	8.64	23.3	60.8	38.6	23.1	32.2	56.5	34.0	13.5	6.36	2.73	4.54
MAX	12	59	136	68	28	62	91	53	22	11	7.2	18
MIN	7.3	7.3	32	27	19	24	40	23	9.2	3.3	1.4	1.9
CFSM	.97	2.63	6.86	4.36	2.61	3.63	6.37	3.83	1.53	.72	.31	.51
IN.	1.12	2.93	7.91	5.02	2.72	4.18	7.10	4.42	1.70	.83	.36	.57

CAL YR 1986 TOTAL 8239.6 MEAN 22.6 MAX 136 MIN 7.3 CFSM 2.55 IN. 34.56
WTR YR 1987 TOTAL 9268.8 MEAN 25.4 MAX 136 MIN 1.4 CFSM 2.86 IN. 38.87

PAWCATUCK RIVER BASIN

101

01117500 PAWCATUCK RIVER AT WOOD RIVER JUNCTION, R.I.

LOCATION.--Lat 41°26'42", long 71°40'53", Washington County, Hydrologic Unit 01090005, on right bank 10 ft downstream from bridge on Alton-Carolina road, 0.8 mi northeast of

Wood River Junction, 1.5 mi southwest of Carolina, and 2.9 mi upstream from Wood River. Prior to June 19, 1984, at site 10 ft upstream.

DRAINAGE AREA.--100 mi².

PERIOD OF RECORD.--October 1940 to current year. October and November 1940, monthly discharge only, published in WSP 1301. Prior to October 1943, published as Charles River at Wood River Junction.

REVISED RECORDS.--WSP 1051: Drainage area. WSP 1201: 1948.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 43.86 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records fair. Occasional regulation by fish hatchery on White Brook. Prior to 1972, occasional regulation at low flow by powerplant and mills upstream; regulation greater prior to 1969.

AVERAGE DISCHARGE.--47 years, 196 ft³/s, 26.62 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,860 ft³/s June 7, 1982, gage height, 8.75 ft; minimum, 7.4 ft³/s Oct. 10, 1947; minimum daily, 15 ft³/s Oct. 11, 1947.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 890 ft³/s Dec. 5, gage height, 5.76 ft; minimum, 26 ft³/s Aug. 21, 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	57	59	307	422	321	242	466	462	138	86	39	56
2	60	58	283	471	321	487	591	428	133	83	38	53
3	64	58	471	558	317	564	612	390	132	100	43	46
4	91	57	760	593	312	549	563	401	131	102	44	41
5	97	57	883	563	304	483	599	434	136	98	42	38
6	87	75	842	505	288	424	647	441	135	89	39	36
7	74	83	725	462	278	391	681	424	129	80	37	38
8	68	104	612	432	272	380	659	399	141	77	36	40
9	65	161	546	400	280	379	606	375	143	79	37	50
10	62	170	554	392	291	375	548	349	128	77	49	51
11	61	163	543	422	293	358	497	328	117	73	47	47
12	60	164	538	424	284	340	457	313	111	71	44	43
13	60	158	508	422	269	322	449	295	112	72	40	71
14	82	144	459	403	246	309	482	283	110	72	38	141
15	100	129	421	384	237	295	494	273	106	70	35	146
16	94	120	398	366	219	283	475	264	102	66	35	127
17	80	113	380	347	218	272	446	256	95	63	34	90
18	72	108	371	338	216	261	460	248	89	60	31	73
19	67	129	510	403	214	253	482	245	87	57	29	71
20	65	139	620	415	209	246	491	239	85	57	29	83
21	64	224	679	426	204	240	463	234	85	55	28	91
22	62	295	646	406	201	238	420	226	89	52	29	87
23	60	332	576	408	202	236	384	218	100	50	35	76
24	60	333	513	417	199	234	366	211	101	50	32	67
25	58	303	528	412	197	232	384	203	95	48	28	62
26	58	282	570	382	194	237	396	191	92	49	29	57
27	70	332	586	351	192	245	380	183	94	48	34	54
28	74	347	567	343	192	256	376	184	104	45	44	53
29	70	360	515	328	---	271	437	186	104	43	52	53
30	66	341	469	315	---	271	468	167	92	41	56	55
31	62	---	445	318	---	317	---	145	---	41	53	---
TOTAL	2170	5398	16825	12828	6970	9990	14779	8995	3316	2054	1186	1996
MEAN	70.0	180	543	414	249	322	493	290	111	66.3	38.3	66.5
MAX	100	360	883	593	321	564	681	462	143	102	56	146
MIN	57	57	283	315	192	232	366	145	85	41	28	36
CFSM	.70	1.80	5.43	4.14	2.49	3.22	4.93	2.90	1.11	.66	.38	.67
IN.	.81	2.01	6.26	4.77	2.59	3.72	5.50	3.35	1.23	.76	.44	.74
CAL YR 1986	TOTAL 72548	MEAN 199	MAX 883	MIN 57	CFSM 1.99	IN. 26.99						
WTR YR 1987	TOTAL 86507	MEAN 237	MAX 883	MIN 28	CFSM 2.37	IN. 32.18						

PAWCATUCK RIVER BASIN

01117800 WOOD RIVER NEAR ARCADIA, R.I.

LOCATION.--Lat 41°34'26", long 71°43'16", Washington County, Hydrologic Unit 01090005, on left bank at upstream side of bridge on Ten Rod Road, 1.8 mi northwest of Arcadia, and 4.5 mi north of Hope Valley.

DRAINAGE AREA.--35.2 mi².

PERIOD OF RECORD.--Discharge: January 1964 to September 1981, October 1982 to current year.
Water-quality records: Water years 1967-74.

GAGE.--Water-stage recorder. Datum of gage is 118.20 ft (revised) above National Geodetic Vertical Datum of 1929 (Rhode Island State Board of Public Roads benchmark). Prior to Oct. 1, 1985, datum erroneously published as 137.97 ft above NGVD of 1929.

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

AVERAGE DISCHARGE.--22 years (water years 1965-81, 1983-87), 78.0 ft³/s, 30.09 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 896 ft³/s Mar. 18, 1968, gage height, 8.64 ft; minimum, 4.9 ft³/s Sept. 24-26, Sept. 29 to Oct. 1, 1980.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 6, 1982, reached a discharge of 1,010 ft³/s, gage height, 8.97 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 280 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 22	1115	287	5.18	Dec. 25	1600	294	5.23
Dec. 3	1600	548	6.94	Apr. 1	1530	*652	*7.51
Dec. 20	0230	449	6.35	Apr. 5	2000	468	6.47

Minimum discharge, 6.9 ft³/s Aug. 26, 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	21	123	143	92	93	606	181	50	29	11	24
2	22	21	108	217	90	174	482	156	46	29	11	20
3	23	20	387	251	89	157	328	139	45	33	12	17
4	38	20	511	221	89	145	271	173	44	38	13	15
5	33	20	358	191	86	127	441	186	44	31	11	13
6	28	26	261	168	81	114	433	176	43	28	11	e12
7	25	29	212	154	81	117	367	160	41	25	9.9	e13
8	23	40	186	145	79	139	318	144	50	28	11	e16
9	22	68	173	134	84	158	271	131	50	27	19	e18
10	22	67	193	131	86	156	234	121	43	31	25	16
11	21	65	179	154	81	134	211	113	38	35	21	14
12	21	78	173	154	77	118	191	107	35	30	16	13
13	21	68	158	144	73	110	221	103	36	28	14	20
14	39	56	139	132	68	105	241	96	35	26	13	47
15	42	48	130	127	65	98	213	93	33	24	12	31
16	35	43	124	127	62	94	193	91	30	22	11	23
17	32	40	120	125	62	90	181	86	28	21	9.7	19
18	29	37	126	121	61	87	207	82	26	19	8.9	18
19	26	51	365	139	60	84	201	79	25	18	8.3	22
20	25	50	420	137	59	84	182	77	24	18	9.0	25
21	24	204	312	127	57	82	167	75	30	16	8.3	25
22	22	276	239	119	57	82	154	72	28	15	9.9	22
23	22	214	202	136	57	82	141	69	28	14	11	19
24	21	170	178	123	57	80	137	67	27	14	8.8	17
25	20	146	251	112	56	77	145	65	25	13	7.9	15
26	20	136	276	109	55	79	136	62	24	15	7.4	13
27	26	238	235	102	55	83	127	60	29	13	8.7	12
28	26	220	201	97	55	90	147	62	32	12	15	12
29	25	177	177	94	---	93	220	62	28	12	34	11
30	24	145	162	91	---	87	207	58	25	11	32	13
31	23	---	156	92	---	254	---	54	---	11	24	---
TOTAL	802	2794	6835	4317	1974	3473	7373	3200	1042	686	423.8	555
MEAN	25.9	93.1	220	139	70.5	112	246	103	34.7	22.1	13.7	18.5
MAX	42	276	511	251	92	254	606	186	50	38	34	47
MIN	20	20	108	91	55	77	127	54	24	11	7.4	11
CFSM	.73	2.65	6.26	3.96	2.00	3.18	6.98	2.93	.99	.63	.39	.53
IN.	.85	2.95	7.22	4.56	2.09	3.67	7.79	3.38	1.10	.72	.45	.59

CAL YR 1986 TOTAL 30234.0 MEAN 82.8 MAX 511 MIN 20 CFSM 2.35 IN. 31.95
WTR YR 1987 TOTAL 33474.8 MEAN 91.7 MAX 606 MIN 7.4 CFSM 2.61 IN. 35.38

e Estimated

PAWCATUCK RIVER BASIN

103

01118000 WOOD RIVER AT HOPE VALLEY, R.I.

LOCATION.--Lat 41°29'53", long 71°43'01", Washington County, Hydrologic Unit 01090005, on right bank 0.2 mi downstream from highway bridge at Hope Valley and 6.6 mi upstream from mouth.

DRAINAGE AREA.--72.4 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Discharge: August to December 1909 (gage heights only), March 1941 to current year. Records of daily discharge for August to December 1909, published in WSP 261, have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 1201: 1948(P). See also PERIOD OF RECORD.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 61.11 ft above National Geodetic Vertical Datum of 1929. August to December 1909, nonrecording gage at site 1,000 ft upstream at different datum.

REMARKS.--Records good except for those for estimated daily discharges, which are fair. Some seasonal regulation by Locustville Pond on Brushy Brook since 1968. Some regulation at low flow by mills and ponds upstream until 1952; regulation greater prior to 1948.

AVERAGE DISCHARGE.--46 years, 157 ft³/s, 29.45 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,390 ft³/s June 6, 1982, gage height, 10.26 ft; minimum, 4.0 ft³/s Sept. 9, 1987, caused by unusual regulation; minimum daily, 10 ft³/s Oct. 13, 1941.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1711, at least 12.4 ft in February 1886. Flood in November 1927 reached a stage of 11.7 ft, and flood in March 1936 reached a discharge of 1,540 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 580 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	2330	660	4.84	Dec. 26	0200	655	4.82
Nov. 27	1700	582	4.52	Jan. 3	0400	596	4.58
Dec. 3	2330	*1,380	*7.42	Apr. 1	1500	1,210	6.88
Dec. 19	2400	960	6.00	Apr. 5	1730	968	6.03

Minimum discharge, 4.0 ft³/s Sept. 9, caused by unusual regulation.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	46	256	e300	194	195	1140	346	102	58	28	45
2	43	46	230	e440	187	464	1020	302	95	58	27	41
3	48	45	914	562	186	372	693	276	91	69	29	36
4	72	44	1180	e480	183	312	547	331	89	72	31	33
5	80	43	846	e400	178	273	874	372	93	66	29	30
6	63	53	597	e350	167	247	878	335	91	57	28	29
7	53	63	472	e320	164	249	750	304	85	53	27	31
8	49	79	404	e300	161	290	639	279	105	54	27	32
9	47	157	369	e280	177	313	543	258	104	58	29	34
10	46	147	426	e270	185	299	e490	241	89	57	39	35
11	45	129	386	e320	170	262	e430	225	78	73	39	27
12	44	163	362	e320	158	238	e380	213	75	65	34	38
13	44	139	329	e300	151	222	e440	204	77	60	30	38
14	63	113	285	e270	137	212	e480	190	74	57	29	86
15	88	99	264	e260	132	201	e410	187	70	55	27	76
16	73	93	252	e260	125	191	e365	185	65	50	27	54
17	62	87	244	e260	127	182	343	173	61	47	26	44
18	57	82	252	e250	125	174	403	162	58	44	25	41
19	53	109	734	e290	123	169	407	164	55	40	24	45
20	50	112	870	e280	121	164	355	157	54	38	24	51
21	48	448	661	e260	119	162	322	150	57	38	23	52
22	47	568	e500	e245	118	166	300	140	65	35	25	47
23	46	421	e450	289	121	162	279	132	65	36	26	42
24	45	347	e390	269	119	155	276	131	62	37	25	38
25	44	331	e510	231	117	150	302	129	59	33	24	35
26	44	283	613	228	115	158	277	125	57	30	24	32
27	56	530	e500	212	115	172	252	120	62	32	25	30
28	59	476	e430	198	116	185	279	127	72	30	29	29
29	55	371	e380	193	---	200	459	129	65	31	45	29
30	52	302	e350	191	---	180	409	119	58	30	69	30
31	49	---	e330	200	---	454	---	109	---	29	48	---
TOTAL	1666	5926	14786	9028	4091	7173	14742	6315	2233	1492	942	1210
MEAN	53.7	198	477	291	146	231	491	204	74.4	48.1	30.4	40.3
MAX	88	568	1180	562	194	464	1140	372	105	73	69	86
MIN	41	43	230	191	115	150	252	109	54	29	23	27
CFSM	.74	2.73	6.59	4.02	2.02	3.20	6.79	2.81	1.03	.66	.42	.56
IN.	.86	3.04	7.60	4.64	2.10	3.69	7.57	3.24	1.15	.77	.48	.62

CAL YR 1986 TOTAL 60386 MEAN 165 MAX 1180 MIN 41 CFSM 2.29 IN. 31.03
WTR YR 1987 TOTAL 69604 MEAN 191 MAX 1180 MIN 23 CFSM 2.63 IN. 35.76

e Estimated

PAWCATUCK RIVER BASIN

01118000 WOOD RIVER AT HOPE VALLEY, R.I.--Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1977 to current year.

WATER TEMPERATURES: October 1977 to current year.

INSTRUMENTATION.--Water-quality monitor since October 1977.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 244 microsiemens Oct. 13, 1983; minimum recorded, 21 microsiemens Jan. 23, 1979

WATER TEMPERATURES: Maximum recorded, 29.5°C July 24, 1987; minimum recorded, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded, 108 microsiemens Oct. 5; minimum recorded, 43 microsiemens Dec. 4.

WATER TEMPERATURES: Maximum recorded, 29.5°C July 24; minimum recorded, 1.0°C Jan. 24-31, Feb. 15, 16.

SPECIFIC CONDUCTANCE, MICROSIEMENS/CM AT 25 DEG C, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	84	82	83	82	80	81	57	55	56	65	57	58
2	85	83	84	82	81	81	59	56	57	91	64	70
3	88	84	86	82	81	81	57	44	49	64	55	60
4	88	85	87	82	81	81	45	43	44	57	54	56
5	108	83	88	---	---	---	47	45	46	56	53	55
6	97	78	82	---	---	---	---	---	---	59	55	56
7	82	78	80	80	77	78	52	49	50	58	57	57
8	84	82	83	80	75	77	53	51	52	58	57	58
9	84	79	82	76	58	72	63	54	57	60	58	58
10	80	78	79	74	71	73	57	55	56	65	59	61
11	79	78	78	76	73	74	76	55	60	62	59	60
12	79	78	78	---	---	---	60	57	58	59	58	58
13	83	77	80	---	---	---	57	56	57	59	58	59
14	83	76	79	72	71	72	61	57	58	59	58	58
15	78	76	77	73	69	72	---	---	---	60	59	59
16	78	76	77	74	72	73	62	60	61	59	58	59
17	77	75	76	74	73	74	63	60	61	60	59	59
18	77	76	76	75	74	74	---	---	---	75	59	63
19	79	77	77	84	72	77	59	49	54	65	61	63
20	80	77	78	86	72	75	50	46	48	71	60	63
21	78	76	77	83	58	66	49	46	48	63	61	62
22	81	76	78	58	52	55	---	---	---	84	59	62
23	81	79	80	55	52	53	52	50	51	94	65	73
24	81	80	81	55	53	54	54	52	53	65	63	63
25	81	80	81	56	53	54	59	51	54	66	63	64
26	82	80	81	58	55	56	54	49	51	70	62	63
27	84	80	82	56	52	54	54	49	50	77	65	69
28	80	77	78	53	52	53	57	50	54	68	66	67
29	79	78	79	54	52	53	58	52	56	72	65	67
30	80	79	80	55	53	54	58	54	56	85	66	71
31	81	80	80	---	---	---	62	56	59	95	71	81
MONTH	108	75	80	86	52	68	76	43	54	95	53	62

PAWCATUCK RIVER BASIN

01118000 WOOD RIVER AT HOPE VALLEY, R.I.--Continued

WATER-QUALITY RECORDS

WATER TEMPERATURE, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	20.0	17.5	18.5	12.0	10.0	11.0	4.5	3.0	4.0	3.5	3.0	3.0
2	20.0	17.5	18.5	---	---	---	5.0	3.0	3.5	3.5	3.0	3.5
3	18.5	18.0	18.5	---	---	---	8.5	5.5	7.5	3.5	2.5	3.0
4	17.5	17.0	17.5	11.5	9.5	10.5	---	---	---	2.5	1.5	2.0
5	18.5	17.0	17.5	9.5	5.0	9.0	6.0	4.5	5.5	2.5	2.0	2.0
6	18.5	16.5	17.5	---	---	---	4.5	4.0	4.5	2.5	2.0	2.0
7	18.0	15.5	16.5	9.5	8.5	9.0	---	---	---	3.5	2.5	3.0
8	17.0	15.0	15.5	10.5	9.0	10.0	5.0	4.0	4.5	3.5	2.5	3.0
9	17.0	14.5	15.5	12.0	10.0	11.5	5.0	4.0	4.0	3.0	2.5	2.5
10	17.0	15.5	16.5	12.0	10.5	11.5	---	---	---	3.5	3.0	3.5
11	17.5	16.0	17.0	10.5	8.5	9.5	5.5	4.0	5.0	4.5	3.5	4.0
12	17.0	14.5	15.5	8.5	7.5	8.0	---	---	---	3.5	3.0	3.5
13	15.5	15.0	15.0	7.5	5.5	7.0	4.0	2.0	3.0	3.5	3.0	3.5
14	17.0	14.5	15.5	5.5	4.0	5.0	---	---	---	3.5	3.0	3.5
15	16.5	15.5	16.0	5.0	4.0	4.5	3.0	2.0	2.5	5.0	3.5	4.5
16	17.5	16.0	17.0	5.5	4.5	5.0	3.5	3.5	3.5	5.5	4.5	5.0
17	17.0	15.0	16.0	6.5	4.5	5.5	4.5	4.0	4.0	4.5	3.0	4.0
18	16.0	14.0	15.0	7.0	5.5	6.0	---	---	---	3.0	2.5	2.5
19	16.0	14.5	15.5	5.5	4.0	5.0	6.0	5.0	5.5	3.0	2.5	3.0
20	15.5	14.0	15.0	4.5	3.5	4.0	---	---	---	2.5	2.0	2.5
21	15.0	13.0	14.0	5.5	4.5	5.5	---	---	---	3.0	2.5	2.5
22	13.5	11.5	12.5	5.0	4.0	4.5	---	---	---	2.5	1.5	2.0
23	14.0	11.0	12.5	5.0	3.5	4.0	3.5	2.5	3.0	2.5	2.0	2.0
24	13.5	12.0	12.5	7.0	5.0	6.5	3.5	3.0	3.5	2.0	1.0	1.5
25	13.0	10.5	11.5	7.0	6.0	6.5	6.0	3.5	5.0	1.5	1.0	1.5
26	12.0	10.8	11.5	8.0	5.5	6.5	6.0	5.5	5.5	1.5	1.0	1.0
27	12.0	11.5	11.5	9.5	8.0	8.5	5.5	4.5	5.0	1.5	1.0	1.0
28	12.5	11.5	12.0	8.0	7.0	7.5	4.5	4.0	4.0	1.5	1.0	1.0
29	13.0	10.5	11.5	---	---	---	4.0	3.5	3.5	1.5	1.0	1.0
30	13.5	11.5	12.5	6.5	4.5	5.5	4.0	3.0	3.5	1.5	1.0	1.0
31	12.5	10.5	11.5	---	---	---	3.5	3.0	3.5	1.5	1.0	1.5
MONTH	20.0	10.5	15.0	12.0	3.5	7.0	8.5	2.0	4.5	5.5	1.0	2.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	2.5	1.5	2.0	4.5	3.5	4.0	13.5	11.5	13.0	15.0	12.5	14.0
2	3.0	2.0	2.5	3.5	2.0	2.5	12.0	10.5	11.5	16.5	14.5	15.5
3	3.5	2.5	3.0	3.0	1.5	2.5	13.5	11.5	12.5	16.0	15.0	15.5
4	4.0	2.5	3.0	3.0	2.5	3.0	14.0	13.5	14.0	15.0	13.5	14.5
5	3.0	2.0	2.5	3.5	2.5	3.0	14.0	12.5	13.5	13.5	13.0	13.0
6	3.0	1.5	2.0	4.0	2.5	3.5	12.0	11.0	11.5	13.5	12.5	13.0
7	3.5	2.0	2.5	6.0	3.5	5.0	11.0	10.5	11.0	17.0	13.0	15.0
8	3.5	2.5	3.0	7.0	5.5	6.0	12.0	10.5	11.5	18.5	17.0	18.0
9	3.5	2.5	3.0	7.0	5.5	6.5	11.5	11.0	11.5	19.0	16.5	17.5
10	2.5	1.5	2.0	5.5	3.5	4.5	13.0	10.5	12.0	21.5	18.0	20.0
11	3.0	1.5	2.0	4.0	2.5	3.5	14.5	12.5	13.5	22.5	20.5	21.5
12	3.0	2.0	2.5	4.5	3.5	4.0	17.0	14.5	15.5	22.5	20.5	21.5
13	3.0	2.0	2.5	4.5	4.0	4.0	17.0	12.0	15.0	22.0	19.5	20.5
14	2.5	1.5	2.0	4.5	3.5	4.0	13.0	10.5	12.0	20.9	18.5	19.5
15	2.5	1.0	1.5	5.5	4.0	4.5	13.5	12.0	13.0	19.5	18.5	19.0
16	2.5	1.0	2.0	6.0	4.0	5.0	13.0	12.0	13.0	20.0	17.0	18.5
17	3.0	1.5	2.0	5.5	4.0	4.5	12.0	11.5	12.0	21.5	18.0	19.5
18	3.5	2.0	2.5	6.5	4.5	5.5	13.0	11.5	12.0	23.0	20.0	21.0
19	3.5	2.0	2.5	7.0	5.0	6.0	15.5	13.0	14.0	20.8	19.0	20.0
20	3.5	2.0	2.5	6.5	5.5	6.0	16.5	15.5	16.0	19.0	17.5	18.5
21	4.0	2.0	3.0	6.5	5.5	6.0	18.5	16.0	17.0	19.0	17.0	18.0
22	4.5	2.5	3.0	6.5	5.5	6.0	19.5	17.5	18.5	20.0	18.0	19.0
23	3.5	3.0	3.0	8.5	5.5	7.0	17.5	15.5	16.5	22.0	19.5	20.5
24	4.0	2.5	3.0	10.0	7.0	8.5	17.0	15.0	16.0	22.0	19.5	20.5
25	4.5	2.5	3.5	11.0	8.0	9.5	16.0	14.5	15.5	21.0	19.0	20.0
26	5.0	3.0	3.5	10.9	10.0	10.5	16.0	13.5	14.5	20.5	18.5	19.5
27	5.0	3.0	4.0	12.0	9.5	10.5	16.5	14.0	15.0	19.5	18.0	18.5
28	5.0	3.5	4.0	11.5	10.8	11.0	14.5	12.0	13.5	21.0	18.0	19.5
29	---	---	---	12.5	10.0	11.5	12.0	10.8	11.5	24.0	20.0	21.5
30	---	---	---	13.5	11.5	12.5	14.0	12.0	13.0	26.5	22.0	24.0
31	---	---	---	14.0	13.0	13.5	---	---	---	28.0	24.0	25.5
MONTH	5.0	1.0	2.5	14.0	1.5	6.0	19.5	10.5	13.5	28.0	12.5	19.0

PAWCATUCK RIVER BASIN

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01118000 WOOD RIVER AT HOPE VALLEY, R.I.--Continued

WATER-QUALITY RECORDS

WATER TEMPERATURE, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	28.5	25.0	26.5	27.0	23.5	25.0	25.5	21.0	23.5	22.5	18.5	20.5
2	26.5	24.5	26.0	25.0	24.0	24.5	24.0	20.9	22.5	22.0	18.5	20.5
3	25.5	23.0	24.0	24.0	23.0	23.5	23.5	22.0	22.5	22.5	19.5	20.8
4	22.5	21.5	22.0	25.0	22.5	23.5	26.5	22.0	24.0	22.0	18.5	20.5
5	23.5	20.5	21.5	26.5	22.5	24.5	26.5	22.0	24.0	21.5	18.0	20.0
6	23.5	20.0	21.5	26.5	22.5	24.5	26.0	23.0	24.5	21.5	18.0	19.5
7	21.5	19.5	20.5	24.0	22.5	23.5	26.5	22.5	24.5	21.0	19.5	20.5
8	22.5	19.5	20.9	23.5	22.5	23.0	27.0	22.5	24.5	22.5	20.0	20.9
9	23.5	20.8	22.0	25.0	22.0	23.5	25.5	23.0	24.0	23.0	21.5	22.0
10	24.5	21.0	22.5	27.0	22.5	24.5	24.0	23.0	23.5	24.5	21.5	23.0
11	24.0	20.5	22.0	27.5	24.5	25.5	25.5	22.0	23.5	23.5	22.0	22.5
12	21.5	20.5	21.0	26.0	25.0	25.5	25.0	20.9	23.0	23.0	21.5	22.5
13	23.5	20.5	21.5	25.5	25.0	25.0	25.0	20.5	22.5	22.0	21.5	21.5
14	25.0	21.5	23.0	25.5	24.0	24.5	25.5	20.5	23.0	22.5	21.0	21.5
15	---	---	---	27.0	23.5	25.0	26.0	21.5	23.5	23.0	20.0	21.5
16	27.5	23.5	25.5	25.0	23.5	24.0	27.0	22.0	24.5	23.5	20.5	22.0
17	27.0	23.0	25.0	26.5	22.0	24.0	28.5	23.5	25.5	22.0	20.8	21.5
18	26.5	22.5	24.0	27.0	22.0	24.0	28.5	24.5	26.5	21.0	19.0	20.0
19	26.0	22.5	24.0	27.0	23.5	25.0	27.5	23.5	25.5	19.0	18.0	18.5
20	27.0	23.0	24.5	25.0	23.5	24.5	27.5	23.5	25.5	18.0	17.5	18.0
21	24.5	23.5	24.0	27.5	24.0	25.5	27.0	22.5	24.5	18.5	17.0	17.5
22	24.5	23.0	23.5	28.5	24.0	26.0	24.5	22.5	23.5	19.5	17.0	18.0
23	23.0	21.5	22.5	28.5	24.0	26.0	24.5	22.5	23.5	19.5	17.0	18.5
24	25.0	20.0	22.0	29.5	25.0	27.0	23.5	20.0	22.0	20.5	17.5	19.0
25	26.0	21.0	23.0	29.0	25.5	27.0	23.0	18.5	20.9	19.0	17.0	18.0
26	23.0	22.0	22.5	28.0	25.5	26.5	22.5	18.5	20.8	18.5	15.5	17.0
27	22.0	21.5	22.0	28.5	24.5	26.5	21.0	19.5	20.0	18.5	15.5	17.0
28	24.0	20.8	22.0	27.5	23.5	25.5	20.0	19.5	19.5	18.5	15.0	17.0
29	25.0	20.8	22.5	27.0	22.5	25.0	20.0	19.0	19.5	19.5	16.5	18.0
30	26.5	22.0	24.0	25.0	21.5	23.5	20.9	17.5	19.0	19.0	17.5	18.0
31	---	---	---	26.0	22.0	24.0	21.0	17.5	19.0	---	---	---
MONTH	28.5	19.5	23.0	29.5	21.5	25.0	28.5	17.5	23.0	24.5	15.0	20.0
YEAR	MAXIMUM 29.5			MINIMUM 1.0			MEAN 14.0					

PAWCATUCK RIVER BASIN

01118500 PAWCATUCK RIVER AT WESTERLY, R.I.
(National stream-quality accounting network station)

LOCATION.--Lat 41°23'01", long 71°50'01", Washington County, Hydrologic Unit 01090005, on left bank at Westerly, 2.1 mi downstream from Shunock River.

DRAINAGE AREA.--295 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1940 to current year.

REVISED RECORDS.--WSP 1051: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1.76 ft below National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records fair. Diurnal fluctuation at low flow prior to 1962 by mills upstream; regulation much greater prior to 1958. Diversion upstream for municipal supply of Westerly.

AVERAGE DISCHARGE.--46 years (water years 1942-87), 581 ft³/s, 26.75 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,070 ft³/s June 6, 1982, gage height, 12.86 ft; minimum daily, 25 ft³/s Aug. 17, 1941.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1936 reached a discharge of 3,150 ft³/s, by computation of flow over dam 1.5 mi upstream. Maximum discharge since 1886 occurred in November 1927 and was possibly more than twice that in March 1936. Maximum stage since at least 1635, 15.0 ft Sept. 21, 1938, due to hurricane tidal wave.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,450 ft³/s Dec. 3, gage height, 8.64 ft; minimum daily, 75 ft³/s Aug. 22, 26, Sept. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	141	180	1070	1260	866	709	2130	1350	380	178	98	140
2	138	180	965	1380	843	1650	2310	1240	357	175	98	135
3	138	177	2060	1660	843	1680	2240	1120	346	194	102	116
4	194	177	3170	1730	843	1550	2050	1170	335	204	106	97
5	243	173	2920	1620	812	1380	2280	1290	335	197	102	86
6	238	194	2590	1490	775	1220	2380	1300	341	181	100	75
7	214	226	2270	1340	751	1120	2380	1230	330	166	98	78
8	194	266	2000	1250	734	1110	2250	1130	330	161	95	80
9	180	567	1790	1150	767	1120	2050	1030	346	161	98	93
10	177	669	1810	1110	820	1100	1860	965	325	166	118	104
11	170	622	1750	1210	797	1040	1660	907	280	158	118	104
12	170	669	1680	1270	751	974	1490	843	267	166	110	100
13	170	637	1610	1210	717	923	1490	797	271	163	102	93
14	214	536	1470	1150	645	882	1620	751	267	161	98	222
15	270	464	1310	1090	575	843	1610	717	250	158	92	262
16	275	411	1210	1030	536	797	1490	701	237	152	90	234
17	243	369	1150	991	536	751	1360	669	222	145	87	204
18	222	346	1140	965	528	717	1450	637	207	137	84	181
19	206	417	1860	1160	521	693	1490	622	200	133	81	169
20	202	513	2210	1250	506	669	1450	607	194	128	78	172
21	191	990	2190	1190	499	653	1350	575	190	126	77	178
22	187	1370	2050	1130	492	645	1250	544	194	124	75	178
23	184	1370	1850	1210	499	630	1140	513	207	120	78	172
24	180	1300	1620	1180	484	615	1060	477	204	120	80	163
25	177	1230	1780	1070	477	592	1100	477	194	122	78	155
26	177	1140	1930	1070	470	600	1110	464	187	126	75	140
27	194	1400	1880	1010	470	653	1050	443	190	118	78	131
28	214	1490	1740	974	470	685	1040	437	204	114	90	120
29	214	1370	1580	899	---	767	1360	450	204	106	98	116
30	206	1220	1440	882	---	751	1450	437	190	104	108	133
31	191	---	1350	882	---	1030	---	411	---	100	131	---
TOTAL	6114	20673	55445	36813	18027	28549	48950	24304	7784	4564	2923	4231
MEAN	197	689	1789	1188	644	921	1632	784	259	147	94.3	141
MAX	275	1490	3170	1730	866	1680	2380	1350	380	204	131	262
MIN	138	173	965	882	470	592	1040	411	187	100	75	75
CFSM	.67	2.34	6.06	4.03	2.18	3.12	5.53	2.66	.88	.50	.32	.48
IN.	.77	2.61	6.99	4.64	2.27	3.60	6.17	3.06	.98	.58	.37	.53

CAL YR 1986 TOTAL 225633 MEAN 618 MAX 3170 MIN 138 CFSM 2.10 IN. 28.45
WTR YR 1987 TOTAL 258377 MEAN 708 MAX 3170 MIN 75 CFSM 2.40 IN. 32.58

PAWCATUCK RIVER BASIN

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01118500 PAWCATUCK RIVER AT WESTERLY, R.I.--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1953, 1963, 1976 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: June 1978 to current year.

WATER TEMPERATURES: June 1978 to current year.

INSTRUMENTATION.--Water-quality monitor since June 1978.

REMARKS.--Interruptions in the record were due to instrument malfunction. Instantaneous records are representative of the cross section while continuous records are based on point samples. The instantaneous record values will not necessarily fall within the corresponding daily range of the continuous records.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 354 microsiemens June 25, 1985; minimum, 27 microsiemens June 7, 1982.

WATER TEMPERATURES: Maximum, 30.0°C Aug. 9, 1980, Aug. 17, 18, 1987; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 193 microsiemens Aug. 30, 31; minimum, 48 microsiemens Apr. 6.

WATER TEMPERATURES: Maximum, 30.0°C Aug. 17, 18; minimum, 1.0°C Dec. 15, Mar. 3, 4.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

										OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	
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)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)			
OCT 23...	0915	184	132	6.20	10.0	11.0	--	1.6	10.1	92	91	
NOV 18...	1030	346	89	6.10	14.0	5.0	--	1.0	12.2	96	--	
DEC 18...	1030	1120	78	6.80	2.0	2.0	--	1.0	12.8	91	22	
JAN 15...	1045	1080	80	6.30	5.0	2.0	--	1.1	13.3	96	--	
FEB 27...	1100	470	107	7.10	10.0	3.0	--	1.3	13.1	96	--	
MAR 12...	1200	974	73	6.90	3.0	2.5	34	1.1	14.2	102	19	
APR 22...	0930	1240	69	6.20	19.0	16.0	--	1.0	9.4	94	--	
MAY 14...	0915	751	79	7.00	22.0	15.5	--	1.4	10.0	98	--	
JUN 18...	0840	211	102	7.10	26.5	20.5	--	1.4	8.1	89	13	
JUL 14...	0830	161	97	7.00	23.0	22.0	--	0.8	8.0	92	--	
AUG 13...	0730	104	140	7.10	25.0	20.0	--	1.1	7.5	81	--	
SEP 03...	1345	114	150	7.60	22.0	19.5	18	1.2	12.2	132	20	
DATE		COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI- FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB WH WAT TOT FLD (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3
OCT 23...	--	K15	72	--	19	--	5.1	1.5	--	--	--	--
NOV 18...	--	K17	27	940	16	6	4.3	1.3	11	1.4	12	--
DEC 18...	--	K8	48	400	12	--	3.3	1.0	--	--	--	--
JAN 15...	60	K11	38	K10	13	8	3.2	1.1	8.1	0.90	5	--
FEB 27...	540	K2	100	K4	--	--	--	--	--	--	--	--
MAR 12...	260	K13	120	--	12	5	3.3	1.0	8.2	1.0	--	--
APR 22...	96	K18	24	--	13	--	3.2	1.2	--	--	--	--
MAY 14...	--	35	K9	54	14	5	3.7	1.1	8.8	0.90	11	--
JUN 18...	140	35	64	--	18	--	4.8	1.4	--	--	--	--
JUL 14...	2600	74	310	100	19	9	5.2	1.5	11	1.3	12	--
AUG 13...	--	K16	75	--	22	--	5.9	1.8	--	--	--	--
SEP 03...	120	K10	28	--	20	--	5.4	1.6	21	1.5	--	--

PAWCATUCK RIVER BASIN

01118500 PAWCATUCK RIVER AT WESTERLY, RI--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	ALKA- LINITY LAB (MG/L AS CACO3)	ALKA- LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L)
OCT 23...	--	--	--	20	12	--	--	93	0.13	46.2	--
NOV 18...	10	11	10	20	12	0.10	9.6	58	0.08	54.2	--
DEC 18...	--	--	--	15	12	--	--	60	0.08	181	1
JAN 15...	5	6.0	5	18	13	<0.10	7.6	50	0.07	146	--
FEB 27...	--	--	--	--	--	--	--	--	--	--	--
MAR 12...	--	7.0	--	12	12	--	--	51	0.07	134	1
APR 22...	--	--	--	11	11	--	--	46	0.06	154	--
MAY 14...	9	8.0	10	5.0	10	0.10	2.9	54	0.07	109	--
JUN 18...	--	--	--	15	12	--	--	85	0.11	48.4	<1
JUL 14...	10	12	11	12	12	0.20	5.8	59	0.08	25.6	--
AUG 13...	--	--	--	22	14	--	--	84	0.11	23.6	--
SEP 03...	--	22	--	23	14	--	--	93	0.13	28.6	3

DATE	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (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, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)
OCT 23...	95	--	<0.010	0.500	--	0.020	--	0.48	0.50	1.0	0.030
NOV 18...	69	--	<0.010	0.300	0.340	0.040	0.030	0.76	--	1.1	0.040
DEC 18...	62	--	<0.010	0.300	--	0.030	--	0.17	0.20	0.50	0.020
JAN 15...	54	--	<0.010	0.400	0.380	0.020	0.020	0.38	0.40	0.80	0.020
FEB 27...	--	--	<0.010	0.600	--	0.080	--	0.62	0.70	1.3	0.030
MAR 12...	54	--	<0.010	0.300	--	0.070	--	0.53	0.60	0.90	0.020
APR 22...	58	0.180	0.020	0.200	--	0.050	--	0.65	0.70	0.90	0.020
MAY 14...	53	0.180	0.020	0.200	0.250	0.050	0.030	0.35	0.40	0.60	0.030
JUN 18...	80	--	<0.010	0.600	--	<0.010	--	--	0.60	1.2	0.040
JUL 14...	69	--	<0.010	0.600	0.540	0.030	0.030	0.47	0.50	1.1	0.080
AUG 13...	86	0.690	0.010	0.700	--	<0.010	--	--	3.0	3.7	0.110
SEP 03...	97	0.690	0.010	0.700	--	0.020	--	0.58	0.60	1.3	0.070

PAWCATUCK RIVER BASIN

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01118500 PAWCATUCK RIVER AT WESTERLY, RI--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS, ORTHO, TOTAL (MG/L AS P)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, TOTAL RECOV- ERABLE (UG/L AS AL)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)
OCT											
23...	0.030	0.020	--	--	--	--	--	--	--	--	--
NOV											
18...	0.020	0.020	0.020	--	110	--	<1	10	<0.5	--	--
DEC											
18...	0.010	<0.010	--	--	--	--	--	--	--	--	--
JAN											
15...	0.020	0.020	<0.010	--	90	--	<1	8	<0.5	--	--
FEB											
27...	--	0.030	--	--	--	--	--	--	--	--	--
MAR											
12...	0.020	<0.010	--	220	--	<1	--	--	--	<10	<1
APR											
22...	0.020	<0.010	--	--	--	--	--	--	--	--	--
MAY											
14...	0.010	0.030	0.020	--	90	--	<1	9	<0.5	--	--
JUN											
18...	0.030	0.020	--	--	--	--	--	--	--	--	--
JUL											
14...	<0.010	0.050	<0.010	--	<10	--	<1	14	<0.5	--	--
AUG											
13...	0.060	--	--	--	--	--	--	--	--	--	--
SEP											
03...	0.040	0.060	--	60	--	<1	--	--	--	30	<1

DATE	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)
OCT										
23...	<1	--	<1	--	--	1	--	--	--	<5
NOV										
18...	1	--	<1	<3	--	2	--	280	--	<5
DEC										
18...	1	--	<1	--	--	<1	--	--	--	<5
JAN										
15...	<1	--	<1	<3	--	2	--	130	--	<5
FEB										
27...	--	--	--	--	--	--	--	--	--	--
MAR										
12...	<1	<10	<1	--	3	<1	190	--	<5	<5
APR										
22...	<1	--	<1	--	--	5	--	--	--	<5
MAY										
14...	<1	--	<1	<3	--	2	--	240	--	<5
JUN										
18...	<1	--	1	--	--	2	--	--	--	<5
JUL										
14...	<1	--	2	<3	--	1	--	240	--	<5
AUG										
13...	<1	--	<1	--	--	1	--	--	--	<5
SEP										
03...	<1	10	5	--	8	2	290	--	26	<5

PAWCATUCK RIVER BASIN

01118500 PAWCATUCK RIVER AT WESTERLY, RI--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE,		MERCURY		MOLYB- DENUM,		NICKEL,		SELE- NIUM, TOTAL (UG/L AS SE)
		TOTAL	NESE,	TOTAL	MERCURY	TOTAL	DENUM,	TOTAL	NICKEL,	
		RECOV- ERABLE	DIS- SOLVED	RECOV- ERABLE	DIS- SOLVED	RECOV- ERABLE	DIS- SOLVED	RECOV- ERABLE	DIS- SOLVED	
		(UG/L AS MN)	(UG/L AS MN)	(UG/L AS HG)	(UG/L AS HG)	(UG/L AS MO)	(UG/L AS MO)	(UG/L AS NI)	(UG/L AS NI)	
OCT 23...	--	--	--	--	--	--	--	--	<1	--
NOV 18...	5	--	24	--	0.2	--	<10	--	2	--
DEC 18...	--	--	--	--	--	--	--	--	<1	--
JAN 15...	<4	--	25	--	<0.1	--	<10	--	2	--
FEB 27...	--	--	--	--	--	--	--	--	--	--
MAR 12...	--	20	--	0.20	--	<1	--	--	2	<1
APR 22...	--	--	--	--	--	--	--	--	<1	--
MAY 14...	<4	--	29	--	0.2	--	<10	--	<1	--
JUN 18...	--	--	--	--	--	--	--	--	<1	--
JUL 14...	<4	--	14	--	0.1	--	<10	--	4	--
AUG 13...	--	--	--	--	--	--	--	--	<1	--
SEP 03...	--	10	--	0.60	--	2	--	<1	1	<1

DATE										OIL AND
	SELE-	SILVER,		STRON-	VANA-	ZINC,				GREASE,
	NIUM,	TOTAL	SILVER,	TIUM,	DIUM,	TOTAL	ZINC,	CARBON,		TOTAL
	DIS-	RECOV-	DIS-	DIS-	DIS-	RECOV-	DIS-	ORGANIC		RECOV.
	SOLVED	ERABLE	SOLVED	SOLVED	SOLVED	ERABLE	SOLVED	TOTAL	PHENOLS	GRAVI-
(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(UG/L	(MG/L	TOTAL	METRIC	
AS SE)	AS AG)	AS AG)	AS SR)	AS V)	AS ZN)	AS ZN)	AS C)	(UG/L)	(MG/L)	
OCT										
23...	--	--	--	--	--	--	11	6.5	--	--
NOV										
18...	<1	--	<1.0	31	<6	--	11	8.4	--	--
DEC										
18...	--	--	--	--	--	--	6	7.2	--	--
JAN										
15...	<1	--	<1.0	24	<6	--	53	6.0	--	--
FEB										
27...	--	--	--	--	--	--	--	--	--	--
MAR										
12...	--	<1	--	--	--	<10	7	2.9	4	<1
APR										
22...	--	--	--	--	--	--	7	4.6	--	--
MAY										
14...	<1	--	<1.0	27	<6	--	10	7.1	--	--
JUN										
18...	--	--	--	--	--	--	6	5.4	--	--
JUL										
14...	<1	--	<1.0	36	<6	--	13	5.0	--	--
AUG										
13...	--	--	--	--	--	--	17	5.9	--	--
SEP										
03...	--	1	--	--	--	10	9	5.6	<1	<1

PAWCATUCK RIVER BASIN

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01118500 PAWCATUCK RIVER AT WESTERLY, RI--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	PCN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	CHLOR- DANE, TOTAL (UG/L)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDE, TOTAL (UG/L)
MAR 12...	1200	<0.1	--	<0.10	--	<0.010	--	<0.1	--	<0.010	--	<0.010
SEP 03...	1345	<0.1	<1	<0.10	<1.0	<0.010	<0.1	<0.1	1.0	<0.010	0.3	<0.010

DATE	TIME	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- ELDRIN, TOTAL (UG/L)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDO- SULFAN, TOTAL (UG/L)	ENDO- SULFAN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)
MAR 12...	--	<0.010	--	<0.010	--	<0.010	--	<0.010	--	<0.010	--	<0.010	<0.010
SEP 03...	0.6	<0.010	<0.1	<0.010	<0.1	<0.010	<0.1	<0.010	<0.1	<0.010	<0.1	<0.010	<0.010

DATE	TIME	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	METH- OXY- CHLOR, TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	MIREX, TOTAL (UG/L)	MIREX, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	PER- THANE, TOTAL (UG/L)	PER- THANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	TOX- APHENE, TOTAL (UG/L)	TOX- APHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
MAR 12...	--	<0.010	--	<0.01	--	<0.01	--	<0.1	--	<1	--	--
SEP 03...	0.1	<0.010	<0.1	<0.01	<0.1	<0.01	<0.1	<0.1	<1.00	<1	<10	<10

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 18...	1030	346	7	6.5	82
JAN 15...	1045	1080	--	--	--
MAY 14...	0915	751	27	55	55
JUL 14...	0830	161	8	3.5	59

PAWCATUCK RIVER BASIN

01118500 PAWCATUCK RIVER AT WESTERLY, RI--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER				NOVEMBER			DECEMBER			JANUARY		
1	106	101	103	153	129	141	-	-	-	-	-	-
2	107	97	104	155	148	151	-	-	-	-	-	-
3	115	105	108	157	147	154	-	-	-	-	-	-
4	148	113	129	148	127	141	-	-	-	-	-	-
5	182	149	163	137	131	134	-	-	-	-	-	-
6	175	129	149	134	129	132	-	-	-	-	-	-
7	128	119	123	160	127	140	-	-	-	-	-	-
8	120	109	116	165	143	157	-	-	-	-	-	-
9	125	116	120	148	134	140	-	-	-	-	-	-
10	135	120	127	139	116	126	-	-	-	-	-	-
11	144	132	140	115	105	111	-	-	-	-	-	-
12	151	144	149	109	96	101	-	-	-	-	-	-
13	162	151	157	101	96	98	-	-	-	-	-	-
14	158	130	144	99	95	97	-	-	-	-	-	-
15	128	112	122	99	95	97	-	-	-	-	-	-
16	131	123	130	99	98	99	-	-	-	-	-	-
17	135	123	130	99	95	97	-	-	-	-	-	-
18	140	137	138	131	93	97	-	-	-	-	-	-
19	143	134	140	98	93	96	-	-	-	-	-	-
20	145	135	142	-	-	-	-	-	-	-	-	-
21	143	129	136	-	-	-	-	-	-	-	-	-
22	130	116	127	-	-	-	-	-	-	-	-	-
23	135	120	126	-	-	-	-	-	-	-	-	-
24	139	130	134	-	-	-	-	-	-	-	-	-
25	142	131	140	-	-	-	-	-	-	-	-	-
26	148	143	146	-	-	-	-	-	-	-	-	-
27	148	141	147	-	-	-	-	-	-	-	-	-
28	145	129	139	-	-	-	-	-	-	-	-	-
29	133	120	129	-	-	-	-	-	-	-	-	-
30	134	128	130	-	-	-	-	-	-	-	-	-
31	144	133	136	---	---	---	-	-	-	-	-	-
MONTH	182	97	133	165	93	122						

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH				APRIL			MAY	
1	-	-	-	105	93	101	62	53	58	84	66	73
2	-	-	-	95	75	88	66	53	59	95	68	73
3	-	-	-	74	64	66	63	55	59	69	68	69
4	-	-	-	75	66	72	55	52	54	70	68	69
5	-	-	-	79	75	77	56	51	53	69	69	69
6	-	-	-	79	76	77	70	48	57	69	67	68
7	-	-	-	78	76	77	70	63	67	69	67	68
8	-	-	-	77	75	77	67	55	60	69	67	68
9	-	-	-	75	73	74	62	54	57	70	68	69
10	-	-	-	75	73	74	58	55	56	72	69	70
11	-	-	-	75	73	74	59	57	58	73	70	71
12	-	-	-	77	74	75	61	58	59	74	71	73
13	-	-	-	80	77	78	62	60	61	78	73	75
14	-	-	-	81	79	80	61	59	60	79	72	77
15	-	-	-	83	80	81	60	58	59	77	74	76
16	-	-	-	82	78	80	63	60	61	80	77	78
17	-	-	-	82	79	80	63	62	62	79	77	78
18	-	-	-	85	82	83	64	62	63	79	75	77
19	-	-	-	86	84	85	62	61	62	82	78	79
20	-	-	-	88	85	86	87	61	64	81	80	80
21	-	-	-	88	85	87	89	65	74	81	79	80
22	-	-	-	87	85	86	96	67	83	83	78	81
23	-	-	-	88	86	87	84	69	76	84	81	82
24	-	-	-	86	81	84	92	70	80	83	81	82
25	-	-	-	83	80	82	91	69	78	85	81	82
26	-	-	-	84	80	82	91	69	78	82	80	81
27	-	-	-	82	77	80	96	69	76	83	80	81
28	108	104	107	78	74	76	92	71	78	85	82	83
29	---	---	---	78	73	76	87	70	78	88	85	86
30	---	---	---	74	67	71	83	65	72	88	86	87
31	---	---	---	67	62	66	---	---	---	88	84	85
MONTH	108	104	107	105	62	79	96	48	65	95	66	76

PAWCATUCK RIVER BASIN

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01118500 PAWCATUCK RIVER AT WESTERLY, RI--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987--Continued

DAY	MAX	MIN JUNE	MEAN	MAX	MIN JULY	MEAN	MAX	MIN AUGUST	MEAN	MAX	MIN SEPTEMBER	MEAN
1	87	84	86	102	99	100	124	116	120	185	146	161
2	85	84	85	107	99	103	122	115	119	144	133	137
3	88	85	87	104	102	103	127	115	121	155	134	144
4	91	88	90	103	101	102	127	122	125	162	155	158
5	92	90	91	101	99	100	127	120	124	159	150	154
6	94	91	92	101	99	100	129	121	125	157	148	153
7	94	92	93	100	98	99	132	125	128	159	145	153
8	93	90	92	102	99	100	140	130	133	159	153	156
9	90	87	88	108	100	101	151	133	138	154	139	145
10	91	88	89	124	97	101	143	137	141	138	135	137
11	94	91	93	101	99	100	143	138	141	150	137	142
12	96	94	95	101	99	100	141	131	135	155	149	151
13	99	96	97	100	96	98	142	135	138	155	147	150
14	101	99	100	99	96	97	137	129	133	154	144	151
15	100	98	99	99	96	98	141	129	134	160	146	154
16	99	97	98	98	96	97	162	136	140	150	147	148
17	101	98	99	99	96	97	151	138	143	158	150	155
18	105	100	103	102	98	99	155	144	148	160	157	158
19	108	104	106	104	101	103	157	145	150	163	158	160
20	110	106	108	105	103	104	150	137	143	165	161	162
21	112	109	110	107	103	104	145	133	140	167	154	162
22	112	110	111	109	104	106	149	139	143	153	138	144
23	110	106	109	110	106	107	151	141	147	139	134	136
24	107	105	106	111	105	108	154	145	149	140	136	138
25	107	106	107	112	107	109	159	147	152	142	139	140
26	111	106	108	114	109	111	160	150	156	146	141	143
27	109	108	109	117	112	114	159	138	149	150	143	145
28	108	107	108	119	113	116	142	136	140	155	147	150
29	108	104	106	119	113	117	153	139	146	156	148	151
30	104	102	103	122	114	118	193	151	170	150	140	145
31	---	---	---	122	117	120	193	184	190	---	---	---
MONTH	112	84	99	124	96	104	193	115	141	185	133	149
YEAR	193	48	107									

WATER TEMPERATURE, (DEG. C), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	21.0	18.5	19.0	12.0	10.0	11.0	5.0	3.5	4.5	-	-	-
2	18.5	18.0	18.5	12.0	11.0	11.5	3.5	3.0	3.5	-	-	-
3	18.5	17.5	18.0	11.0	9.5	10.5	7.5	3.5	5.5	-	-	-
4	19.5	18.0	18.5	11.0	9.5	10.0	7.5	7.0	7.5	-	-	-
5	19.0	17.5	18.5	9.5	8.5	9.0	7.0	6.0	6.5	-	-	-
6	17.5	15.5	16.5	9.5	9.0	9.0	5.5	4.5	5.0	-	-	-
7	16.0	14.0	15.0	9.5	8.5	9.0	4.5	3.5	4.0	-	-	-
8	15.5	13.0	14.0	10.0	9.0	9.5	4.0	3.5	4.0	-	-	-
9	16.0	14.5	15.0	11.0	10.0	10.5	4.0	3.0	3.5	-	-	-
10	14.5	12.5	13.5	11.0	10.0	10.5	5.0	3.5	4.5	-	-	-
11	13.5	11.5	12.5	10.0	8.5	9.0	5.0	4.5	5.0	-	-	-
12	14.0	12.5	13.0	8.5	7.5	8.0	4.5	3.5	4.0	-	-	-
13	14.0	13.0	13.5	7.0	5.5	6.5	4.0	3.0	3.5	-	-	-
14	14.5	13.5	14.0	5.5	4.5	5.0	3.0	1.5	2.0	-	-	-
15	14.5	13.5	14.0	5.0	4.0	4.5	2.0	1.0	1.5	-	-	-
16	14.0	12.5	13.5	5.5	4.5	5.0	2.5	2.0	2.0	-	-	-
17	13.0	11.5	12.5	6.0	4.5	5.0	3.0	2.5	2.5	-	-	-
18	13.0	11.5	12.0	6.0	5.0	5.5	-	-	-	-	-	-
19	12.0	10.5	11.0	6.0	4.5	5.0	-	-	-	-	-	-
20	12.0	10.0	11.0	4.5	4.0	4.0	-	-	-	-	-	-
21	12.5	10.0	11.0	6.0	4.5	5.5	-	-	-	-	-	-
22	12.5	11.0	11.5	5.5	5.0	5.0	-	-	-	-	-	-
23	13.0	11.0	12.0	5.0	4.0	4.5	-	-	-	-	-	-
24	13.0	11.5	12.0	6.0	5.0	5.5	-	-	-	-	-	-
25	12.0	10.5	11.0	6.5	6.0	6.0	-	-	-	-	-	-
26	12.0	11.0	11.5	6.5	5.5	6.0	-	-	-	-	-	-
27	11.5	11.0	11.5	8.0	6.5	7.5	-	-	-	-	-	-
28	12.0	11.0	11.5	8.0	7.0	7.5	-	-	-	-	-	-
29	12.5	10.5	11.5	7.0	6.0	6.5	-	-	-	-	-	-
30	13.0	11.5	12.0	6.0	5.0	5.5	-	-	-	-	-	-
31	11.5	10.0	11.0	---	---	---	-	-	-	-	-	-
MONTH	21.0	10.0	13.5	12.0	4.0	7.5	7.5	1.0	4.0	-	-	-

WATER TEMPERATURE (DEG. C), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	-	-	-	4.0	3.0	3.5	10.5	9.5	10.0	11.5	9.0	10.5
2	-	-	-	2.5	1.5	2.0	10.0	8.5	9.5	12.0	10.5	11.5
3	-	-	-	2.0	1.0	1.5	10.5	9.0	9.5	12.0	11.5	11.5
4	-	-	-	2.0	1.0	1.5	10.5	10.0	10.5	11.5	10.0	10.5
5	-	-	-	2.5	1.5	2.0	10.5	9.5	10.0	10.0	9.0	9.5
6	-	-	-	3.0	1.5	2.5	9.5	8.5	9.0	9.0	8.5	9.0
7	-	-	-	5.0	3.0	4.0	8.5	8.5	8.5	11.5	8.5	10.0
8	-	-	-	7.0	5.0	6.0	9.0	8.0	8.5	13.0	11.5	12.5
9	-	-	-	7.5	6.5	7.0	9.0	8.0	8.5	14.0	12.0	13.0
10	-	-	-	6.5	4.5	5.5	10.0	8.0	9.0	15.5	13.0	14.5
11	-	-	-	4.0	3.0	3.5	11.5	9.0	10.5	17.0	15.0	16.0
12	-	-	-	3.0	2.5	3.0	13.5	11.0	12.5	18.0	16.0	17.0
13	-	-	-	3.0	3.0	3.0	13.5	10.5	12.0	17.5	16.0	16.5
14	-	-	-	3.5	3.0	3.0	10.5	9.0	10.0	17.0	15.0	16.0
15	-	-	-	4.0	2.5	3.5	10.5	9.0	10.0	15.5	14.5	15.5
16	-	-	-	4.5	3.0	4.0	10.0	9.5	10.0	16.0	14.0	15.0
17	-	-	-	4.5	3.5	4.0	9.5	9.0	9.5	17.0	14.5	15.5
18	-	-	-	5.0	3.5	4.5	10.0	9.0	9.5	18.5	15.5	17.0
19	-	-	-	6.0	4.0	5.0	12.5	10.0	11.0	17.5	16.0	16.5
20	-	-	-	6.0	5.0	5.5	14.0	12.5	13.0	15.5	14.5	15.0
21	-	-	-	6.0	5.0	5.5	16.0	14.0	15.0	16.0	14.0	15.0
22	-	-	-	6.0	5.0	5.5	16.5	15.5	16.0	16.5	14.5	15.5
23	-	-	-	7.5	5.0	6.0	15.5	13.5	14.5	18.0	16.0	17.0
24	-	-	-	9.0	6.0	7.0	14.0	13.0	13.5	20.5	16.5	19.0
25	-	-	-	10.0	7.0	8.5	13.5	12.0	13.0	19.5	18.0	18.5
26	-	-	-	10.0	8.5	9.0	13.0	11.5	12.0	19.5	17.5	18.0
27	-	-	-	11.0	8.5	9.5	13.0	11.0	12.0	18.5	17.0	17.5
28	4.0	2.5	3.5	10.5	9.5	10.0	12.0	9.5	11.0	19.0	17.0	18.0
29	---	---	---	11.0	9.0	10.0	9.5	8.5	9.0	20.5	17.5	19.0
30	---	---	---	11.5	9.5	10.5	10.0	8.5	9.0	23.0	19.0	21.0
31	---	---	---	11.0	10.5	11.0	---	---	---	24.5	21.0	23.0
MONTH	4.0	2.5	3.5	11.5	1.0	5.5	16.5	8.0	11.0	24.5	8.5	15.5
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	26.0	23.0	24.5	24.0	22.0	23.0	27.0	21.5	23.5	22.0	19.0	20.0
2	25.0	23.0	24.0	22.5	21.5	22.0	24.0	21.0	22.5	21.5	18.0	19.5
3	24.0	21.5	23.0	23.0	21.0	22.0	23.5	22.0	22.5	22.5	18.5	20.0
4	21.5	20.0	21.0	23.5	21.0	22.5	27.5	21.5	24.0	22.5	18.0	20.0
5	22.0	19.5	20.5	24.5	21.0	22.5	27.5	22.5	24.5	22.0	17.5	19.5
6	22.0	19.0	20.5	25.0	21.0	22.5	26.0	22.0	23.5	22.0	17.0	19.5
7	19.5	18.5	19.0	22.0	20.5	21.5	26.5	21.5	23.5	22.0	19.5	20.5
8	21.0	18.5	19.5	22.5	20.5	21.5	27.0	22.0	24.0	23.0	19.5	21.0
9	21.5	19.0	20.0	24.0	20.5	22.0	26.0	22.5	24.0	24.0	21.0	22.0
10	22.0	19.0	20.0	25.5	21.0	23.5	23.0	21.5	22.5	24.5	20.0	21.5
11	22.0	18.5	20.5	26.0	23.0	24.0	26.0	20.5	23.0	22.0	20.5	21.0
12	20.0	19.0	19.5	24.0	23.5	23.5	26.0	20.5	22.5	22.5	20.0	21.0
13	21.5	19.0	20.0	24.0	23.0	23.5	27.0	20.0	23.0	20.5	20.0	20.5
14	23.0	19.5	21.5	24.0	23.0	23.5	27.5	21.0	23.5	22.0	20.0	21.0
15	24.0	20.5	22.5	26.5	22.5	24.0	28.0	22.0	24.5	21.5	19.0	20.0
16	25.5	21.5	23.0	23.5	22.0	22.5	29.0	23.0	25.5	21.5	19.0	20.0
17	25.5	21.5	23.0	25.5	20.5	23.0	30.0	24.5	27.0	20.5	19.5	20.0
18	25.0	21.0	23.0	26.0	21.0	23.5	30.0	25.0	27.0	19.5	17.5	18.5
19	25.0	21.0	23.0	26.5	23.0	24.5	29.0	23.5	26.0	17.5	17.0	17.5
20	25.5	21.5	23.5	24.0	22.5	23.0	28.5	23.5	25.5	17.0	16.0	16.5
21	23.5	22.0	23.0	26.5	22.5	24.5	27.5	21.5	24.5	17.5	15.5	16.5
22	23.5	22.0	22.5	28.0	22.5	24.5	23.5	22.0	23.0	18.0	16.0	17.0
23	22.0	20.0	21.5	27.0	23.0	24.5	25.5	21.5	23.0	18.5	16.0	17.0
24	23.5	19.0	21.5	28.5	24.0	26.0	24.0	19.0	21.5	18.5	16.0	17.5
25	24.5	20.0	22.0	28.0	25.0	26.5	24.0	18.0	21.0	18.0	15.5	17.0
26	21.0	20.5	20.5	27.5	24.5	26.0	24.0	18.0	20.5	17.0	14.5	15.5
27	20.5	20.0	20.0	28.0	23.0	25.0	20.5	18.5	19.5	17.5	14.5	16.0
28	23.0	19.5	21.0	28.5	23.0	25.0	19.0	18.5	18.5	18.5	14.5	16.5
29	24.0	19.5	21.5	28.0	22.0	24.5	20.0	18.0	19.0	19.0	16.0	17.5
30	25.0	20.5	22.5	24.5	22.0	23.5	22.5	17.0	19.0	18.5	17.0	17.5
31	---	---	---	27.5	22.0	24.0	21.5	18.0	19.5	---	---	---
MONTH	26.0	18.5	21.5	28.5	20.5	23.5	30.0	17.0	23.0	24.5	14.5	19.0
YEAR	30.0	1.0	15.0									

THAMES RIVER BASIN

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01123360 QUINEBAUG RIVER BELOW EAST BRIMFIELD DAM, AT FISKDALE, MASS.

LOCATION.--Lat 42°06'31", long 72°07'27", Worcester County, Hydrologic Unit

01100001, on right bank at Fiskdale, 750 ft downstream from East Brimfield Dam, and 2.4 mi upstream from Cedar Pond outlet.

DRAINAGE AREA.--67.4 mi².

PERIOD OF RECORD.--October 1972 to current year.

REVISED RECORDS.--WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 613.51 ft above National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers benchmark).

REMARKS.--No estimated daily discharges. Records good. Flow regulated by East Brimfield Lake (Reservoirs in Thames River basin). Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--15 years, 131 ft³/s, 26.39 in/yr, adjusted for storage.EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 1,040 ft³/s Jan. 30, 1976, gage height, 6.42 ft; maximum gage height, 6.52 ft Mar. 17, 1977; minimum daily discharge, 2.2 ft³/s Sept. 10, 1983.EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1886, 15,400 ft³/s Aug. 19, 1955, by slope-area measurement. Flood of Mar. 18, 1936, reached a discharge of 2,390 ft³/s and flood in September 1938, 7,000 ft³/s, both by computation of flow over dam.EXTREMES FOR CURRENT YEAR.--Maximum discharge, 984 ft³/s Apr. 9, gage height, 6.42 ft; minimum daily, 5.8 ft³/s Aug. 25.DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.7	62	148	156	73	57	259	305	59	74	10	15
2	9.5	38	117	154	72	95	496	289	52	63	9.4	15
3	10	30	172	158	70	119	632	255	52	62	16	15
4	16	30	304	157	72	125	294	247	56	62	27	15
5	26	26	326	150	71	122	6.5	244	61	58	27	15
6	29	29	280	137	70	110	208	244	61	49	23	14
7	24	36	229	127	68	107	522	241	54	40	19	14
8	20	48	192	121	67	134	743	219	55	34	17	14
9	20	70	163	115	67	187	894	194	55	32	16	15
10	20	70	153	111	60	221	977	174	49	30	26	14
11	55	62	149	115	66	162	856	155	43	33	32	14
12	72	53	146	118	63	178	780	142	41	35	32	14
13	70	46	140	116	60	179	816	131	44	34	27	16
14	54	38	127	111	53	158	866	122	55	31	22	31
15	43	36	119	105	53	143	904	116	56	29	18	47
16	36	34	117	107	50	133	779	110	48	25	16	50
17	30	33	117	108	47	123	618	106	39	22	14	41
18	25	34	121	105	46	116	562	100	32	20	13	41
19	21	42	270	111	47	114	651	93	27	17	10	87
20	19	38	445	119	46	117	686	87	24	16	8.8	103
21	18	82	469	117	46	123	704	84	22	15	7.6	104
22	19	124	374	114	46	131	695	81	22	15	6.6	87
23	23	142	298	111	46	144	660	78	23	16	7.0	69
24	24	148	244	105	46	168	472	81	24	17	6.3	54
25	25	146	259	104	46	192	286	82	23	18	5.8	43
26	29	142	283	99	47	206	284	81	22	19	13	35
27	40	194	286	90	46	209	230	77	44	17	26	30
28	47	222	285	82	46	203	192	78	82	16	23	26
29	45	222	276	76	---	193	210	78	89	14	23	25
30	21	189	222	73	---	177	272	75	81	12	23	27
31	33	---	182	74	---	186	---	66	---	11	18	---
TOTAL	933.2	2466	7013	3546	1590	4632	16554.5	4435	1395	936	542.5	1090
MEAN	30.1	82.2	226	114	56.8	149	552	143	46.5	30.2	17.5	36.3
MAX	72	222	469	158	73	221	977	305	89	74	32	104
MIN	9.5	26	117	73	46	57	6.5	66	22	11	5.8	14
MEAN+	33.2	84.1	226	113	55.4	172	536	136	47.2	27.7	16.4	38.7
CFSM+	.49	1.25	3.35	1.68	.82	2.55	7.95	2.02	.70	.41	.24	.57
IN.+	.57	1.39	3.87	1.93	.86	2.94	8.87	2.33	.78	.47	.28	.64

CAL YR 1986 TOTAL 42238.3 MEAN 116 MAX 740 MIN 7.5 MEAN+ 116 CFSM+ 1.72 IN.+ 23.35
WTR YR 1987 TOTAL 45133.2 MEAN 124 MAX 977 MIN 5.8 MEAN+ 124 CFSM+ 1.84 IN.+ 24.93

+ Adjusted for change in contents in East Brimfield Lake.

THAMES RIVER BASIN

01123600 QUINEBAUG RIVER BELOW WESTVILLE DAM, NEAR SOUTHBRIDGE, MASS.

LOCATION.--Lat 42°04'58", long 72°03'27", Worcester County, Hydrologic Unit 01100001, on right bank 200 ft downstream from Westville Dam, 1.0 mi upstream from McKinstry Brook, and 1.3 mi west of Southbridge.

DRAINAGE AREA.--99.0 mi².

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

REVISED RECORDS.--WDR MA-RI-75-1: 1963-64 (monthly runoff). WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 511.33 ft above National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers benchmark).

REMARKS.--No estimated daily discharges. Records fair. Flow regulated by mills, by East Brimfield and Westville Lakes (Reservoirs in Thames River basin), and by other reservoirs upstream. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--25 years, 171 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,850 ft³/s Mar. 23, 1980, gage height, 6.83 ft; minimum daily, 7.3 ft³/s Nov. 21, 28, 1964, July 30, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,620 ft³/s Apr. 10, gage height, 6.65 ft; minimum daily, 11 ft³/s Aug. 21, 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	51	208	219	116	97	496	381	72	106	26	22
2	19	43	128	231	114	157	1010	370	69	92	24	22
3	19	44	162	243	113	175	1290	326	71	99	30	22
4	22	44	499	224	113	177	613	334	70	91	36	24
5	36	44	538	208	111	169	35	324	80	84	45	18
6	45	43	406	191	108	155	266	318	77	69	41	18
7	49	44	300	180	107	164	637	309	68	60	36	18
8	57	64	265	172	104	221	997	280	78	56	34	22
9	54	103	218	161	105	265	1340	254	76	54	34	34
10	52	101	218	157	97	296	1510	228	68	51	49	37
11	69	90	212	164	99	302	1470	205	57	47	54	31
12	101	83	203	166	98	296	1270	188	52	49	53	25
13	101	73	192	161	95	265	1320	171	54	48	48	24
14	93	62	174	153	83	229	1370	158	74	46	43	40
15	77	57	163	146	81	202	1320	150	76	45	34	55
16	67	54	159	155	78	188	1110	144	68	41	29	84
17	60	52	158	156	78	177	819	137	56	37	25	69
18	54	51	160	150	77	168	590	130	48	34	20	59
19	47	62	390	166	74	167	610	122	41	33	16	145
20	43	62	491	171	74	168	777	114	38	33	13	164
21	40	154	531	166	74	178	747	110	35	36	11	143
22	39	196	525	156	73	189	736	105	33	34	11	116
23	40	191	454	167	74	206	693	98	35	32	13	102
24	43	203	319	154	73	242	580	96	38	30	15	82
25	43	211	289	146	73	247	357	100	37	30	14	67
26	44	196	322	141	73	296	318	98	36	34	14	48
27	58	247	332	130	73	286	295	97	63	34	20	46
28	65	386	339	119	73	276	249	97	112	31	32	47
29	65	304	420	114	---	261	306	96	113	29	41	41
30	53	247	358	111	---	233	356	92	105	28	37	45
31	22	---	257	119	---	259	---	81	---	27	32	---
TOTAL	1597	3562	9390	5097	2511	6711	23487	5713	1900	1520	930	1670
MEAN	51.5	119	303	164	89.7	216	783	184	63.3	49.0	30.0	55.7
MAX	101	386	538	243	116	302	1510	381	113	106	54	164
MIN	19	43	128	111	73	97	35	81	33	27	11	18

CAL YR 1986 TOTAL 58054 MEAN 159 MAX 1070 MIN 17
WTR YR 1987 TOTAL 64088 MEAN 176 MAX 1510 MIN 11

THAMES RIVER BASIN

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01124000 QUINEBAUG RIVER AT QUINEBAUG, CONN.

LOCATION.--Lat 42°01'20", long 71°57'22", Windham County, Hydrologic Unit 01100001, on right bank at Quinebaug, 500 ft upstream from bridge on State Highway 197, 0.2 mi downstream from Massachusetts-Connecticut State line, 7.8 mi upstream from French River, and at mile 46.

DRAINAGE AREA.--155 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1931 to current year.

REVISED RECORDS.--WSP 851: 1936(M). WSP 1201: 1939-43, 1949. WSP 1381: 1938(M). WDR MA-RI-83-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 341.52 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by East Brimfield and Westville Lakes, (Reservoirs in Thames River basin), and by smaller reservoirs upstream.

AVERAGE DISCHARGE.--56 years, 273 ft³/s, 23.94 in/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49,300 ft³/s Aug. 19, 1955, gage height, 18.96 ft, from floodmarks, from rating curve extended above 5,100 ft³/s on basis of slope-area measurement of peak flow; minimum, about 1 ft³/s Sept. 9, 1943, July 12, 1949, Sept. 17, 18, 1950, July 9, 1951, Sept. 4 and Oct. 29, 1956, Jan. 27, 1985 (result of freezeup); minimum gage height, 1.74 ft Aug. 20, 1940; minimum daily discharge, about 1 ft³/s Sept. 4, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,930 ft³/s Apr. 1, gage height, 6.62 ft; minimum, 1.2 ft³/s Aug. 25, 26, 27, gage height, 1.78 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	22	35	362	391	228	158	2310	724	113	156	3.2	49		
2	22	85	274	461	197	338	1840	662	102	138	1.7	2.0		
3	22	31	871	465	215	326	1760	578	112	134	52	48		
4	25	70	1020	423	205	318	1300	651	110	115	34	65		
5	13	56	952	389	194	301	1520	622	137	130	44	2.7		
6	44	74	739	353	e185	282	1340	581	121	81	44	1.5		
7	52	55	563	334	e180	342	1790	560	105	80	45	42		
8	68	90	487	317	e175	506	1740	498	143	86	54	2.9		
9	65	201	411	288	e170	635	1830	449	120	74	3.7	46		
10	62	181	424	279	210	612	1850	399	104	73	59	56		
11	67	160	404	307	200	558	1730	355	87	62	50	69		
12	119	149	380	297	160	514	1490	334	78	64	86	5.8		
13	118	141	343	283	175	472	1560	298	89	87	43	59		
14	121	72	320	272	e150	415	1600	269	125	4.2	48	68		
15	95	115	282	264	e140	378	1480	275	116	107	2.3	96		
16	80	57	271	295	e138	355	1230	258	97	73	45	85		
17	72	76	269	277	e135	330	1010	203	77	2.9	40	98		
18	63	80	293	263	e132	310	814	221	54	58	2.1	104		
19	55	95	1280	334	e130	313	810	198	65	62	42	260		
20	51	91	1250	319	130	321	905	181	48	50	2.9	274		
21	46	407	993	e305	137	342	890	153	42	2.9	1.5	220		
22	45	435	876	e295	e140	364	888	183	49	43	57	140		
23	44	358	748	e285	118	407	861	157	49	72	41	168		
24	46	367	584	e275	118	463	794	170	61	3.4	2.1	116		
25	47	370	765	e270	112	491	567	214	71	55	1.2	57		
26	51	392	749	e260	124	524	494	126	53	3.7	1.3	91		
27	83	686	676	e255	115	504	466	155	103	3.0	69	46		
28	87	677	621	e245	116	483	439	140	181	99	3.7	53		
29	84	544	663	e240	---	455	614	152	158	2.5	16	41		
30	83	437	598	e245	---	408	738	149	174	2.0	77	75		
31	62	---	450	e250	---	1380	---	149	---	74	61	---		
TOTAL	1914	6587	18918	9536	4429	13605	36660	10064	2944	1997.6	1032.7	2440.9		
MEAN	61.7	220	610	308	158	439	1222	325	98.1	64.4	33.3	81.4		
MAX	121	686	1280	465	228	1380	2310	724	181	156	86	274		
MIN	13	31	269	240	112	158	439	126	42	2.0	1.2	1.5		
MEAN+	64.8	224	610	306	156	477	1191	317	98.8	61.7	32.3	83.8		
CFSM+	.42	1.45	3.94	1.97	1.01	3.08	7.68	2.05	.64	.40	.21	.54		
IN.+	.48	1.62	4.54	2.27	1.05	3.55	8.57	2.36	.71	.46	.24	.60		
CAL YR 1986	TOTAL	100028	MEAN	274	MAX	1480	MIN	13	MEAN+	274	CFSM+	1.77	IN+	24.04
WTR YR 1987	TOTAL	110128.2	MEAN	302	MAX	2310	MIN	1.2	MEAN+	302	CFSM+	1.94	IN+	26.45

e Estimated

+ Adjusted for change in contents in East Brimfield and Westville Lakes.

THAMES RIVER BASIN

01124000 QUINEBAUG RIVER AT QUINEBAUG, CONN.--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses available for water years 1953 (WSP 1290), 1960 (WSP 1741), 1963 (WSP 1941), 1969 (WSP 2143). Water temperatures available for water year 1960 (WSP 1741), 1980 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1959 to September 1960, October 1968 to September 1969.

pH: October 1959 to September 1960, October 1968 to September 1969.

WATER TEMPERATURES: October 1959 to September 1960, October 1968 to September 1969.

DISSOLVED OXYGEN: October 1959 to September 1960, October 1968 to September 1969.

INSTRUMENTATION.--Multiple parameter water-quality monitor located on right bank 50 ft upstream from bridge on Massachusetts State Highway 131, 0.2 mi upstream from State line, 0.4 mi upstream from gaging station, 2.0 mi southwest of Dudley, Massachusetts.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 308 microsiemens Jan. 31, 1969; minimum, 49 microsiemens Apr. 2, 1960.

pH: Maximum, 7.7 units June 14, 1969; minimum, 5.8 units July 18, 1969.

WATER TEMPERATURES: Maximum, 30.5 C July 16, 1969; minimum, 0.0 C on many days during winter periods.

DISSOLVED OXYGEN: Maximum, 15.1 mg/L Dec. 28, 1968; minimum, 1.4 mg/L Sept. 7, 1969.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION)	COLI- FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 22...	1030	43	160	7.10	14.5	11.5	2.1	10.4	96	280	41
NOV 17...	1015	158	153	6.60	11.0	4.0	1.4	13.3	101	420	230
DEC 18...	1445	262	121	6.70	2.0	2.0	1.6	12.4	90	3900	4700
JAN 15...	1420	262	125	6.50	9.0	2.5	1.5	13.8	102	2700	2600
MAR 11...	1400	581	121	7.10	2.5	2.0	1.4	14.0	100	120	940
APR 22...	1330	931	83	7.30	20.0	13.0	2.5	10.8	103	260	160
MAY 15...	0850	207	132	7.30	19.0	15.0	1.1	10.0	100	120	30
JUN 17...	0800	35	146	6.90	22.0	21.5	1.2	6.1	70	220	52
JUL 09...	1215	86	144	7.20	29.0	25.0	2.4	8.2	100	88	110
AUG 13...	1350	4.6	158	7.60	25.5	24.0	1.9	8.9	106	60	330
SEP 04...	1145	126	169	7.10	20.0	19.5	1.5	9.7	105	110	80

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
OCT 22...	26	--	6.8	2.1	--	13	24	--	82	0.11
NOV 17...	28	13	7.4	2.3	15	14	28	5.5	82	0.11
DEC 18...	22	--	5.8	1.8	--	13	17	--	66	0.09
JAN 15...	21	12	5.6	1.7	9.0	14	23	8.3	72	0.10
MAR 11...	21	--	5.5	1.7	--	11	22	--	65	0.09
APR 22...	16	--	3.9	1.5	--	13	14	--	57	0.07
MAY 15...	22	12	5.7	1.9	10	5.0	24	2.7	72	0.10
JUN 17...	24	--	6.6	1.9	--	15	27	--	84	0.11
JUL 09...	26	12	7.1	2.1	14	16	26	4.7	84	0.11
AUG 13...	29	--	7.8	2.2	--	11	27	--	91	0.12
SEP 04...	30	--	7.9	2.6	--	12	25	--	90	0.12

THAMES RIVER BASIN

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01124000 QUINEBAUG RIVER AT QUINEBAUG, CONN.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT-105 DEG. C, TOTAL (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)
OCT 22...	9.52	96	0.560	0.040	0.600	0.290	0.51	0.80	1.4	0.180
NOV 17...	35.0	94	--	<0.010	0.200	0.340	0.76	1.1	1.3	0.160
DEC 18...	46.7	84	--	<0.010	0.300	0.130	0.37	0.50	0.80	0.070
JAN 15...	50.9	79	0.290	<0.010	0.300	0.070	0.23	0.30	0.60	0.050
MAR 11...	102	79	--	<0.010	0.400	0.060	0.64	0.70	1.1	0.030
APR 22...	143	67	0.080	0.020	0.100	0.080	1.2	1.3	1.4	0.030
MAY 15...	40.2	75	0.090	0.010	0.100	0.160	0.64	0.80	0.90	0.110
JUN 17...	7.87	86	2.06	0.240	2.30	2.40	1.3	3.7	6.0	0.580
JUL 09...	19.5	103	0.460	0.040	0.500	0.120	0.68	0.80	1.3	0.230
AUG 13...	1.13	94	0.670	0.030	0.700	0.050	--	<0.20	--	0.240
SEP 04...	30.6	108	0.700	0.100	0.800	0.400	0.50	0.90	1.7	0.220

DATE	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	CADMIUM, DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	NICKEL, DIS- SOLVED (UG/L AS NI)	ZINC, DIS- SOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 22...	0.140	<1	<1	3	--	<5	--	<1	26	4.5
NOV 17...	0.090	2	<1	2	260	<5	41	3	11	4.4
DEC 18...	0.050	1	<1	1	--	<5	--	<1	6	5.6
JAN 15...	0.050	<1	<1	2	170	<5	41	3	10	4.7
MAR 11...	0.020	<1	<1	1	--	<5	--	2	10	2.6
APR 22...	0.030	<1	<1	3	--	<5	--	<1	12	3.9
MAY 15...	0.060	<1	<1	3	230	<5	37	<1	7	5.8
JUN 17...	0.430	<1	1	3	--	<5	--	<1	10	5.8
JUL 09...	0.160	<1	<1	3	580	5	34	3	14	6.5
AUG 13...	0.170	<1	<1	3	--	<5	--	3	8	5.4
SEP 04...	0.230	<1	<1	3	--	<5	--	3	8	6.7

THAMES RIVER BASIN

01124350 FRENCH RIVER BELOW HODGES VILLAGE DAM, AT HODGES VILLAGE, MASS.

LOCATION.--Lat 42°07'06", long 71°52'54", Worcester County, Hydrologic Unit 01100001, on right bank at Hodges Village, 240 ft downstream from Hodges Village Dam, 0.8 mi west of Oxford, and 1.2 mi upstream from Little River.

DRAINAGE AREA.--31.2 mi².

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

Water-quality records: Water year 1962.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 466.98 ft U.S. Army Corps of Engineers datum.

REVISED RECORDS.--WDR MA-RI-84-1: Drainage area.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Hodges Village Reservoir (Reservoirs in Thames River basin). Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--25 years, 56.4 ft³/s, 24.55 in/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 628 ft³/s Jan. 28, 1978, gage height, 3.47 ft; no flow for part of July 17, 1968 (caused by unusual regulation); minimum daily discharge, 1.4 ft³/s Sept. 14, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 545 ft³/s Apr. 14, gage height, 3.31 ft; minimum, 1.8 ft³/s Aug. 27; minimum daily, 2.0 ft³/s Aug. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	6.6	55	69	41	38	118	240	61	36	3.1	9.5
2	2.5	6.2	34	71	40	59	266	211	62	33	2.8	8.3
3	3.3	6.1	62	78	39	69	371	164	50	36	6.0	6.6
4	6.5	6.1	267	81	39	66	177	156	33	37	19	5.3
5	11	5.9	281	77	37	62	60	156	38	31	15	4.2
6	12	8.9	170	68	34	58	236	146	40	24	10	3.8
7	13	14	113	63	36	59	174	123	36	19	8.1	3.7
8	11	17	79	60	35	75	89	148	35	17	6.5	3.7
9	13	38	60	55	35	100	357	111	30	16	5.8	8.0
10	23	45	61	53	31	112	483	94	18	22	19	10
11	7.6	55	67	54	33	131	388	89	12	23	23	8.6
12	4.1	59	67	57	30	128	344	80	11	20	19	6.7
13	3.7	57	62	55	29	119	373	72	14	18	13	7.1
14	3.9	53	53	51	24	109	468	60	24	17	9.2	18
15	5.0	51	48	49	26	97	503	54	26	17	7.6	21
16	4.0	49	46	51	24	86	417	57	22	13	6.6	15
17	3.1	48	44	54	24	75	330	53	17	11	5.3	10
18	3.1	46	42	50	24	66	248	46	14	9.1	4.7	11
19	3.6	48	104	58	23	63	19	41	13	8.3	4.0	46
20	4.1	49	224	62	23	64	181	36	12	7.3	3.5	68
21	4.4	72	264	65	22	68	352	34	11	6.9	3.4	70
22	4.5	117	335	60	22	74	407	31	10	6.9	3.1	63
23	4.4	121	321	54	23	81	407	30	12	6.9	3.1	50
24	4.3	114	153	65	23	98	387	35	12	6.5	2.7	39
25	4.1	102	102	58	22	182	391	40	11	6.0	2.4	30
26	4.4	62	128	52	22	200	392	40	9.9	5.3	2.4	23
27	7.8	93	140	47	23	183	351	36	33	4.9	2.0	20
28	11	190	141	43	32	162	214	39	64	4.2	3.6	18
29	11	138	204	41	---	146	203	55	50	3.5	14	17
30	9.3	79	156	39	---	111	207	59	41	3.3	17	18
31	7.7	---	77	39	---	106	---	59	---	3.1	11	---
TOTAL	213.2	1756.8	3960	1779	816	3047	8913	2595	821.9	472.2	255.9	622.5
MEAN	6.88	58.6	128	57.4	29.1	98.3	297	83.7	27.4	15.2	8.25	20.7
MAX	23	190	335	81	41	200	503	240	64	37	23	70
MIN	2.5	5.9	34	39	22	38	19	30	9.9	3.1	2.0	3.7
MEAN+	6.92	58.9	128	57.0	29.0	112	286	81.6	27.0	14.7	8.33	20.8
CFSM+	.22	1.89	4.10	1.83	.93	3.59	9.17	2.62	.87	.47	.27	.67
IN.+	.26	2.11	4.74	2.11	.97	4.13	10.23	3.02	.97	.55	.31	.74

CAL YR 1986 TOTAL 20570.9 MEAN 56.4 MAX 468 MIN 2.5 MEAN+ 56.4 CFSM+ 1.81 IN.+ 24.55
WTR YR 1987 TOTAL 25252.5 MEAN 69.2 MAX 503 MIN 2.0 MEAN+ 69.2 CFSM+ 2.22 IN.+ 30.11

+ Adjusted for change in contents in Hodges Village Reservoir.

THAMES RIVER BASIN

123

01124500 LITTLE RIVER NEAR OXFORD, MASS.

LOCATION.--Lat 42°06'57", long 71°53'26", Worcester County, Hydrologic Unit 01100001, on left bank 0.6 mi upstream from mouth, 1.1 mi downstream from Buffumville Dam, and 1.5 mi west of Oxford.

DRAINAGE AREA.--26.0 mi².

PERIOD OF RECORD.--Discharge: July 1939 to current year. Prior to October 1977, published as "at Buffumville." Water-quality records: Water year 1973.

REVISED RECORDS.--WSP 1201: 1940, 1948. WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 457.00 ft above National Geodetic Vertical Datum of 1929, (levels by U.S. Army Corps of Engineers).

REMARKS.--No estimated daily discharges. Records good except those for October and November and those above 100 ft³/s, which are fair. Flow regulated by Buffumville Lake since 1958 (Reservoirs in Thames River basin) and by other reservoirs upstream. July 1982 to about January 1983, flow affected by draining of Buffum Pond. Prior to 1958, flow regulated by mill upstream. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--48 years, 49.8 ft³/s, 26.01 in/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,340 ft³/s Aug. 19, 1955, gage height, 15.53 ft, from rating curve extended above 1,200 ft³/s on basis of computation of peak flow over dam; minimum, 0.1 ft³/s Sept. 25, 26, 1957. Maximum discharge since construction of Buffumville Dam in 1958, 429 ft³/s Apr. 7, 1959, gage height, 5.04 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 357 ft³/s Apr. 14, gage height, 4.93 ft; minimum, 2.7 ft³/s Sept. 6, 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.9	9.2	73	88	36	30	162	218	45	31	5.9	6.1
2	8.4	9.5	57	78	36	48	279	238	39	29	5.9	5.8
3	9.4	9.4	69	74	35	59	288	167	35	30	7.9	5.1
4	13	9.3	177	69	35	66	180	109	37	30	6.7	3.3
5	11	9.2	236	64	34	65	70	157	33	28	6.0	3.0
6	10	13	181	58	34	62	165	201	31	25	6.0	2.9
7	8.7	14	128	54	33	61	166	156	28	21	6.0	3.0
8	7.0	18	102	51	32	77	131	122	28	19	5.9	3.5
9	6.4	23	86	48	33	110	281	93	27	17	6.4	4.6
10	5.7	26	74	46	31	116	338	65	25	15	8.5	3.3
11	4.9	27	70	48	31	116	298	68	23	15	6.3	3.2
12	4.4	28	68	49	30	114	269	74	21	14	5.8	3.3
13	4.5	27	62	47	29	111	302	57	21	14	5.8	5.0
14	4.7	26	55	44	29	101	330	42	23	13	5.7	5.1
15	4.5	24	49	42	27	82	354	40	23	12	5.6	3.7
16	4.4	23	45	44	25	73	314	44	23	12	5.9	3.4
17	4.5	23	43	46	25	67	263	43	21	11	5.6	3.4
18	4.5	23	43	46	24	63	224	42	19	10	5.4	6.1
19	4.5	26	101	52	24	62	29	39	17	9.5	5.4	8.6
20	4.5	26	120	56	23	64	139	36	15	8.9	5.7	11
21	4.6	43	131	55	23	70	265	34	15	8.5	5.6	17
22	4.7	73	167	53	23	76	296	32	13	7.9	6.1	20
23	4.9	84	209	56	23	84	304	31	10	7.4	6.1	21
24	5.6	103	143	53	24	102	293	32	9.8	6.6	5.7	20
25	5.5	98	107	50	23	112	281	33	9.8	6.5	5.7	18
26	6.0	21	107	47	23	131	277	33	10	6.6	5.7	16
27	8.5	74	107	44	23	135	272	32	20	6.5	6.4	20
28	8.6	111	105	41	23	123	219	33	35	6.2	6.8	26
29	8.9	120	104	38	---	112	169	34	39	6.1	8.0	29
30	9.1	93	101	36	---	99	151	39	34	6.2	6.4	33
31	9.2	---	98	37	---	114	---	48	---	6.1	5.8	---
TOTAL	207.5	1213.6	3218	1614	791	2705	7109	2392	729.6	439.0	190.7	313.4
MEAN	6.69	40.5	104	52.1	28.2	87.3	237	77.2	24.3	14.2	6.15	10.4
MAX	13	120	236	88	36	135	354	238	45	31	8.5	33
MIN	4.4	9.2	43	36	23	30	29	31	9.8	6.1	5.4	2.9
MEAN+	7.33	46.6	105	49.3	27.5	105	231	65.7	24.0	11.2	5.18	14.8
CFSM+	.28	1.79	4.04	1.90	1.06	4.04	8.88	2.53	.92	.43	.20	.57
IN.+	.33	2.00	4.65	2.19	1.10	4.64	9.93	2.92	1.03	.50	.23	.64

CAL YR 1986 TOTAL 17680.4 MEAN 48.4 MAX 296 MIN 2.4 MEAN+ 48.9 CFSM+ 1.88 IN.+ 25.52
WTR YR 1987 TOTAL 20922.8 MEAN 57.3 MAX 354 MIN 2.9 MEAN+ 57.7 CFSM+ 2.22 IN.+ 30.14

+ Adjusted for change in contents in Buffumville Lake.

THAMES RIVER BASIN

Reservoirs in Thames River Basin

- 01123350 EAST BRIMFIELD LAKE.--Lat 42°06'32", long 72°07'35", Worcester County, Hydrologic Unit 01100001, on Quinebaug River, 0.7 mi southwest of Fiskdale, Mass., 1.2 mi east of East Brimfield. Completed in 1960 by U.S. Army Corps of Engineers for storage of water for recreation, conservation, and flood control. Usable capacity, 1,400,000,000 ft³, including 101,000,000 ft³ storage in recreation and conservation pool. Records provided by U.S. Army Corps of Engineers.
- 01123550 WESTVILLE LAKE.--Lat 42°04'55", long 72°03'28", Worcester County, Hydrologic Unit 01100001, on Quinebaug River, 1.3 mi west of Southbridge, Mass. Completed in 1962 by U.S. Army Corps of Engineers for storage of water for recreation and flood control. Usable capacity, 484,000,000 ft³, including 4,400,000 ft³ storage in recreation pool. Records provided by U.S. Army Corps of Engineers.
- 01124300 HODGES VILLAGE RESERVOIR.--Lat 42°07'09", long 71°52'51", Worcester County, Hydrologic Unit 01100001, on French River at Hodges Village, Mass. Completed in 1960 by U.S. Army Corps of Engineers for storage of water for flood control. Usable capacity, 577,000,000 ft³. Records provided by U.S. Army Corps of Engineers.
- 01124400 BUFFUMVILLE LAKE.--Lat 42°06'58", long 71°54'29", Worcester County, Hydrologic Unit 01100001, on Little River at Charlton, Mass., 2.2 mi west of Oxford. Completed in 1958 by U.S. Army Corps of Engineers for storage of water for recreation and flood control. Usable capacity, 553,000,000 ft³, including 61,000,000 ft³ storage in recreation pool. Records provided by U.S. Army Corps of Engineers.

MONTHEND USABLE CONTENTS, IN MILLIONS OF CUBIC FEET, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

	East Brimfield Lake	Westville Lake	Hodges Village Reservoir	Buffumville Lake
Sept. 30, 1986.....	101.1	0.1	0.4	55.8
Oct. 31.....	109.3	.3	.5	57.5
Nov. 30.....	144.3	6.0	1.4	73.4
Dec. 31.....	144.3	6.3	2.4	76.2
Jan. 31, 1987.....	109.3	5.3	1.4	68.8
Feb. 28.....	106.0	5.0	1.1	67.1
Mar. 31.....	166.4	45.7	36.9	133.3
Apr. 30.....	124.4	8.1	8.3	98.6
May 31.....	106.0	5.1	2.6	68.0
June 30.....	107.7	5.3	1.7	67.1
July 31.....	101.1	4.6	.4	59.2
Aug. 31.....	98.2	4.7	.6	56.6
Sept. 30.....	104.4	4.8	.7	68.0

CONNECTICUT RIVER BASIN

125

01162000 MILLERS RIVER NEAR WINCHENDON, MASS.

LOCATION.--Lat 42°41'03", long 72°05'02", Worcester County, Hydrologic Unit 01080202, on right bank 10 ft downstream from Nolan Bridge, 0.3 mi downstream from Tarbell Brook, 2 mi west of Winchendon, and at mile 32.8.

DRAINAGE AREA.--81.8 mi².

PERIOD OF RECORD.--Discharge: June 1916 to current year. March to May 1917, monthly discharge only, published in WSP 1301. Water-quality records: Water years 1957, 1965-66.

REVISED RECORDS.--WSP 451: 1916. WSP 1051: 1919, 1920-21(M), 1922-24, 1928(M), 1933-34.
WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Concrete control since Oct. 6, 1933. Datum of gage is 826.66 ft above National Geodetic Vertical Datum of 1929. Prior to July 27, 1916, nonrecording gage at bridge at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated by Lake Monomonac 6 mi upstream and other reservoirs and, prior to 1957, by powerplant. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--71 years, 144 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,500 ft³/s Sept. 22, 1938, gage height, 21.55 ft, from flood-marks, from rating curve extended above 2,000 ft³/s on basis of computation of peak flow over dam; practically no flow because of regulation Sept. 20, 1918, Jan. 14, 1925.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,000 ft³/s Apr. 1; maximum gage height, 22.33 ft Apr. 7, from flood marks (backwater from Birch Hill Reservoir); minimum daily discharge, 15 ft³/s Aug. 26, Sept. 7, 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	84	111	211	200	e100	89	e3500	e320	42	56	33	23
2	75	106	189	201	e100	115	e2300	e370	37	54	28	21
3	68	100	385	218	e100	81	e1300	e370	35	107	52	20
4	98	100	432	211	e95	68	e800	e310	42	92	55	19
5	142	96	408	196	e90	62	e1800	e270	75	74	43	17
6	134	86	391	190	e90	58	e1600	284	65	63	37	16
7	115	87	362	157	e90	61	e1200	279	48	70	33	15
8	116	92	304	155	e88	78	e900	250	44	70	33	15
9	129	122	259	161	e86	104	e700	216	46	67	32	35
10	152	114	260	137	e84	e100	e600	186	79	65	64	29
11	139	107	250	139	e82	95	e540	153	81	57	78	25
12	130	106	233	136	e80	87	e490	135	83	51	49	22
13	126	102	205	128	e76	82	e450	126	82	61	35	36
14	166	94	184	e125	e73	76	e420	110	81	58	32	60
15	159	91	172	122	e76	73	e390	101	70	62	29	52
16	136	88	155	125	e80	70	e360	93	62	55	26	44
17	123	87	149	e125	e85	66	e320	88	57	46	25	37
18	113	86	152	e125	e79	64	e290	81	37	39	21	45
19	105	93	361	122	76	65	e270	60	26	34	20	91
20	102	85	457	126	75	65	e250	46	23	34	18	99
21	97	242	442	e120	74	70	e230	37	21	31	18	110
22	95	e350	394	e120	72	80	e210	34	20	29	18	146
23	106	e300	343	e120	72	117	e190	34	35	26	18	151
24	100	e230	294	e120	69	182	e170	38	34	24	16	131
25	92	e240	326	e115	69	253	e160	39	27	35	16	111
26	114	e250	373	e115	67	320	149	44	24	67	15	97
27	143	371	362	e115	67	350	120	49	98	58	16	87
28	124	340	326	e110	67	371	118	47	140	43	19	79
29	110	292	284	e110	---	416	166	57	95	36	29	76
30	100	252	253	e105	---	515	e250	98	72	33	28	79
31	95	---	227	e105	---	1130	---	58	---	31	24	---
TOTAL	3588	4820	9143	4354	2262	5363	20243	4383	1681	1628	960	1788
MEAN	116	161	295	140	80.8	173	675	141	56.0	52.5	31.0	59.6
MAX	166	371	457	218	100	1130	3500	370	140	107	78	151
MIN	68	85	149	105	67	58	118	34	20	24	15	15

CAL YR 1986 TOTAL 61126 MEAN 167 MAX 990 MIN 20
WTR YR 1987 TOTAL 60213 MEAN 165 MAX 3500 MIN 15

e Estimated

CONNECTICUT RIVER BASIN

01162500 PRIEST BROOK NEAR WINCHENDON, MASS.

LOCATION.--Lat 42°40'57", long 72°06'56", Worcester County, Hydrologic Unit 01080202, on right bank 100 ft downstream from highway bridge, 3 mi upstream from mouth, and 3.5 mi west of Winchendon.

DRAINAGE AREA.--19.4 mi².

PERIOD OF RECORD.--Discharge: May 1916 to current year. Monthly discharge only October 1917 to July 1918 (published in WSP 1301) and September 1935 to September 1936.
Water-quality records: Water years 1965-66.

REVISED RECORDS.--WSP 451: 1916. WSP 871: Drainage area. WSP 1051: 1919, 1922-24. WSP 1301: 1917(M), 1919-24(M), 1926-27(M), 1929(M), 1931-35(M).

GAGE.--Water-stage recorder. Concrete control since September 1936. Datum of gage is 849.67 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 11, 1936, nonrecording gage on left bank at same datum.

REMARKS.--Records good except those for period of shifting control, May 12 to Aug. 2, and those for estimated daily discharges, which are poor. Prior to 1962, occasional diurnal fluctuation at low flow by mill upstream; prior to 1953, regulation at low flow by mill and ponds. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--71 years, 32.6 ft³/s, 22.82 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,000 ft³/s Sept. 21, 1938, gage height, 9.90 ft, from rating curve extended above 620 ft³/s on basis of contracted-opening measurements at gage heights 8.4 ft and 9.90 ft; minimum, 0.08 ft³/s several times in September 1929.

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)
Apr. 1	unknown	*871	*a6.55	Apr. 5	unknown	461	5.35

a From highwater marks.

Minimum discharge, 0.79 ft³/s Aug. 25, 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	13	e87	e32	e17	11	e760	80	6.8	18	2.1	2.8
2	11	13	72	29	e16	18	e395	85	6.6	15	2.1	2.9
3	10	13	87	30	16	23	e220	78	7.4	31	e4.4	2.8
4	15	13	160	28	16	22	e170	67	8.4	37	e7.0	2.5
5	26	12	138	27	15	e18	e420	57	19	27	e5.0	2.2
6	25	16	113	25	14	17	e400	52	17	19	e3.8	2.0
7	22	22	93	24	14	17	e330	48	11	14	e3.0	2.3
8	20	24	78	23	14	22	e280	41	11	11	e2.5	2.5
9	17	40	62	22	14	e30	e230	36	13	8.8	e3.0	11
10	15	45	54	21	13	e33	e190	31	11	7.3	e8.0	14
11	13	38	50	22	13	e30	e140	26	8.9	6.4	e4.5	9.7
12	12	34	45	22	13	e28	e120	23	8.3	6.5	e3.2	6.9
13	11	31	e40	21	12	25	e105	21	8.8	13	e2.3	10
14	12	26	e36	20	12	e22	e100	18	7.6	31	e1.9	37
15	16	23	31	20	11	e21	e96	17	5.9	35	e1.6	36
16	17	21	29	22	11	e20	e85	15	4.7	26	e1.4	24
17	15	20	28	21	e11	e18	e73	14	4.4	18	e1.3	21
18	14	20	27	19	11	e18	e68	16	3.6	12	e1.2	23
19	12	22	44	21	10	18	e64	15	2.7	9.1	e1.1	41
20	11	22	70	20	10	19	e57	13	2.6	6.9	e1.1	49
21	11	47	e62	20	10	20	e49	11	3.1	5.7	e1.0	53
22	10	84	e51	19	10	23	e42	9.6	3.4	4.8	e1.3	47
23	9.4	80	42	20	10	33	e35	8.5	7.7	3.9	e1.1	39
24	8.7	82	e36	21	10	e53	e32	7.9	11	3.1	e1.0	29
25	8.1	80	43	19	9.9	e72	31	7.9	8.2	2.7	e.91	22
26	8.3	74	61	19	9.6	98	28	7.4	6.9	2.5	.88	17
27	15	110	e59	e19	9.5	119	25	6.7	17	2.3	.95	14
28	20	133	e52	e19	9.6	132	24	6.5	38	2.0	1.4	11
29	19	116	e45	e18	---	140	36	6.7	32	1.9	2.7	9.3
30	17	100	38	e18	---	153	59	13	24	1.9	3.1	14
31	15	---	35	e17	---	359	---	9.3	---	1.9	3.0	---
TOTAL	447.5	1374	1868	678	341.6	1632	4664	847.5	320.0	384.7	77.84	557.9
MEAN	14.4	45.8	60.3	21.9	12.2	52.6	155	27.3	10.7	12.4	2.51	18.6
MAX	26	133	160	32	17	359	760	85	38	37	8.0	53
MIN	8.1	12	27	17	9.5	11	24	6.5	2.6	1.9	.88	2.0
CFSM	.74	2.36	3.11	1.13	.63	2.71	8.01	1.41	.55	.64	.13	.96
IN.	.86	2.63	3.58	1.30	.66	3.13	8.94	1.63	.61	.74	.15	1.07

CAL YR 1986 TOTAL 13672.6 MEAN 37.5 MAX 380 MIN 3.4 CFSM 1.93 IN. 26.22
WTR YR 1987 TOTAL 13193.04 MEAN 36.1 MAX 760 MIN .88 CFSM 1.86 IN. 25.30

e Estimated

CONNECTICUT RIVER BASIN

127

01163200 OTTER RIVER AT OTTER RIVER, MASS.

LOCATION.--Lat 42°35'18", long 72°02'29", Worcester County, Hydrologic Unit 01080202, on right bank at upstream side of Turner Street Bridge, 0.2 mi upstream from Bailey Brook, 0.8 mi southeast of Otter River, and 2 mi northwest of Gardner.

DRAINAGE AREA.--34.1 mi².

PERIOD OF RECORD.--Discharge: December 1964 to current year. Water-quality records: Water years 1965-66.

REVISED RECORDS.--WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 900 ft above National Geodetic Vertical Datum of 1929 from topographic map.

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

AVERAGE DISCHARGE.--22 years (water years 1966-87), 62.1 ft³/s, 24.73 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 948 ft³/s Mar. 7, 1979, gage height, 5.02 ft; minimum, 2.2 ft³/s Aug. 13, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 919 ft³/s Apr. 5, gage height, 4.95 ft; minimum, 5.1 ft³/s Aug. 21, 25, 26, 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e15	23	76	66	e38	38	644	167	31	30	6.3	11
2	e15	22	64	58	e37	57	503	173	26	25	6.2	11
3	e14	21	122	e80	e36	52	343	159	23	45	9.4	9.2
4	e22	20	178	e75	e34	48	266	139	28	45	12	8.3
5	e35	19	143	66	e33	e48	693	121	49	35	10	8.0
6	e34	29	109	e63	e32	e44	866	110	49	26	9.2	7.5
7	e30	39	83	58	e32	46	779	103	36	21	8.3	7.2
8	e26	46	71	57	e31	69	613	93	32	18	8.2	7.7
9	e22	73	63	e55	e31	98	493	83	31	17	8.0	15
10	e19	67	65	51	e31	97	370	73	25	21	13	20
11	17	53	71	55	e31	e97	293	65	24	30	16	15
12	16	48	67	55	e31	79	243	58	32	23	14	13
13	15	55	60	52	e30	66	219	54	32	24	11	16
14	17	57	e51	e52	e29	58	219	49	21	23	9.9	47
15	22	50	44	49	e28	55	211	45	16	21	9.1	44
16	29	44	43	55	e27	51	180	43	15	17	8.3	30
17	22	40	44	e55	e27	47	153	40	14	14	7.2	22
18	19	38	46	e50	e26	44	143	36	13	13	7.0	27
19	18	44	160	51	e26	45	138	34	12	12	6.3	83
20	17	39	165	e49	e26	48	127	32	11	10	6.1	106
21	17	103	122	e48	e26	54	116	31	10	11	5.8	95
22	18	143	154	e43	26	61	107	30	8.7	9.7	6.1	77
23	17	133	120	e50	27	79	95	28	14	8.8	7.1	60
24	17	107	105	e46	27	111	82	34	15	8.8	5.9	44
25	16	103	120	e43	26	144	73	36	13	8.8	5.6	33
26	16	99	144	e41	26	183	65	32	13	8.4	5.6	26
27	47	157	125	e39	27	199	57	29	42	7.4	5.9	23
28	50	166	119	e38	28	198	58	29	82	7.0	7.1	19
29	40	128	99	e37	---	187	91	29	66	6.6	13	17
30	33	98	84	e36	---	179	129	39	41	6.5	16	17
31	27	---	75	e39	---	290	---	39	---	6.4	13	---
TOTAL	722	2064	2992	1612	829	2872	8369	2033	824.7	559.4	276.6	918.9
MEAN	23.3	68.8	96.5	52.0	29.6	92.6	279	65.6	27.5	18.0	8.92	30.6
MAX	50	166	178	80	38	290	866	173	82	45	16	106
MIN	14	19	43	36	26	38	57	28	8.7	6.4	5.6	7.2
CFSM	.68	2.02	2.83	1.52	.87	2.72	8.18	1.92	.81	.53	.26	.90
IN.	.79	2.25	3.26	1.76	.90	3.13	9.13	2.22	.90	.61	.30	1.00

CAL YR 1986 TOTAL 22510 MEAN 61.7 MAX 439 MIN 11 CFSM 1.81 IN. 24.56
WTR YR 1987 TOTAL 24072.6 MEAN 66.0 MAX 866 MIN 5.6 CFSM 1.93 IN. 26.26

e Estimated

CONNECTICUT RIVER BASIN

01164000 MILLERS RIVER AT SOUTH ROYALSTON, MASS.

LOCATION.--Lat 42°37'47", long 72°09'03", Worcester County, Hydrologic Unit 01080202, on right bank 500 ft downstream from bridge in South Royalston, 0.4 mi downstream from Beaver Brook, 1.7 mi downstream from Birch Hill Dam, and at mile 25.5.

DRAINAGE AREA.--189 mi².

PERIOD OF RECORD.--Discharge: July 1939 to current year. Water-quality records: Water years 1957, 1965-66.

REVISED RECORDS.--WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 792.00 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 poor. Flow regulated by Lake Manomonic and other reservoirs, by mills and powerplants prior to 1955, and at high flow by Birch Hill Reservoir since 1941 (Reservoirs in Connecticut River basin). Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--48 years, 328 ft³/s, 23.57 in/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,400 ft³/s Apr. 13, 1940, gage height, 8.40 ft; maximum gage height, at least 10.6 ft about Jan. 18, 1982 (ice jam); minimum daily discharge, 9.3 ft³/s Aug. 4, 1956. Maximum discharge since construction of Birch Hill Reservoir in 1941, 2,830 ft³/s June 25, 26, 1944, gage height, 7.57 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 21 or 22, 1938, reached a stage of 15.9 ft, from floodmarks, discharge not determined.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,490 ft³/s Apr. 10, gage height, 7.61 ft; minimum daily, 39 ft³/s Aug. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	144	201	591	432	e230	e180	293	777	170	187	61	62
2	139	202	402	384	e220	e300	190	838	138	151	62	59
3	128	196	364	401	e220	e250	1240	830	125	253	76	56
4	161	190	820	e550	e210	e220	1430	776	129	292	112	53
5	272	184	1090	e490	e210	e210	553	703	228	242	99	50
6	290	195	1110	e390	e200	e200	1330	661	247	185	83	49
7	252	231	914	e340	e200	e200	2030	626	193	161	73	45
8	219	240	708	e320	e190	e220	2220	570	158	151	67	48
9	214	353	576	e310	e190	e260	2330	509	158	142	65	103
10	235	372	527	e330	e190	e350	2430	452	163	139	88	127
11	225	328	523	333	e180	e360	2310	400	173	214	134	110
12	211	300	493	e330	e180	339	2120	362	174	176	112	88
13	204	285	449	321	e170	292	2180	330	189	178	79	94
14	230	272	447	e300	e170	260	2380	301	177	175	68	226
15	262	247	426	302	e170	244	2450	280	151	187	63	239
16	246	234	331	313	e180	230	2290	266	132	164	61	187
17	232	227	352	e290	e180	218	2190	250	117	134	58	141
18	209	225	334	e290	e180	207	2130	236	99	109	52	139
19	193	243	560	e280	e180	210	2080	213	77	94	49	297
20	182	235	874	e280	e180	212	2090	181	69	83	47	367
21	176	435	938	e270	e170	232	2100	162	65	80	45	390
22	170	716	900	e270	e170	265	2010	151	64	74	44	367
23	175	714	821	e260	e170	343	1870	146	85	69	46	349
24	177	644	668	e260	e160	498	1700	160	105	64	44	299
25	161	624	606	e250	e160	641	1540	169	91	63	41	246
26	175	578	714	e250	e150	766	1350	160	81	99	39	204
27	261	678	740	e240	e150	828	1120	161	156	101	40	177
28	293	842	717	e240	e160	865	783	158	381	86	47	157
29	262	832	688	e240	---	903	586	154	344	72	64	144
30	227	725	608	e230	---	793	654	240	254	66	80	132
31	201	---	498	e230	---	482	---	215	---	64	69	---
TOTAL	6526	11748	19789	9726	5120	11578	49979	11437	4693	4255	2068	5005
MEAN	211	392	638	314	183	373	1666	369	156	137	66.7	167
MAX	293	842	1110	550	230	903	2450	838	381	292	134	390
MIN	128	184	331	230	150	180	190	146	64	63	39	45
MEAN+	211	395	637	312	182	465	1576	365	156	137	66.7	168
CFSM+	1.12	2.09	3.37	1.65	.96	2.46	8.34	1.93	.83	.72	.35	.89
IN.+	1.29	2.33	3.89	1.91	1.01	2.84	9.31	2.23	.92	.83	.41	.99

CAL YR 1986 TOTAL 140433 MEAN 385 MAX 1850 MIN 66 MEAN+ 385 CFSM+ 2.04 IN.+ 27.65
WTR YR 1987 TOTAL 141924 MEAN 389 MAX 2450 MIN 39 MEAN+ 389 CFSM+ 2.06 IN.+ 27.94

e Estimated

+ Adjusted for change in contents in Birch Hill Reservoir.

CONNECTICUT RIVER BASIN

129

01165000 EAST BRANCH TULLY RIVER NEAR ATHOL, MASS.

LOCATION.--Lat 42°38'32", long 72°13'34", Worcester County, Hydrologic Unit 01080202, on right bank 300 ft downstream from Tully Dam, 1.3 mi downstream from Lawrence Brook, 3.5 mi north of Athol, and 4.9 mi upstream from mouth.

DRAINAGE AREA.--50.5 mi².

PERIOD OF RECORD.--Discharge: October 1915 to current year. October 1915 to May 1916 monthly discharge only, published in WSP 1301.

Water-quality records: Water years 1965-66.

REVISED RECORDS.--WSP 451: 1916. WSP 1051: 1916(M), 1928. WSP 1301: 1917-35(M), 1937(M). WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 613.71 ft above National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers benchmark). Prior to Oct. 26, 1948, nonrecording gage at site 0.2 mi upstream at datum 14.40 ft higher.

REMARKS.--No estimated daily discharges. Records good except those above 100 ft³/s, which are fair. Flow regulated by Tully Lake since 1948 (Reservoirs in Connecticut River basin). Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--72 years, 81.8 ft³/s, 22.00 in/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,140 ft³/s Sept. 21, 1938, gage height, 8.60 ft, from flood-marks, site and datum then in use, from rating curve extended above 1,500 ft³/s on basis of contracted-opening measurement and computation of peak flow over dam; minimum, 0.01 ft³/s Nov. 6-11, 1961; minimum daily, 0.01 ft³/s Nov. 7-10, 1961. Maximum discharge since construction of Tully Lake in 1948, 828 ft³/s Apr. 21, 1960, gage height, 5.38 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 638 ft³/s Apr. 25, gage height, 4.74 ft; minimum, 3.2 ft³/s Sept. 8; minimum daily, 7.7 ft³/s Aug. 26-28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	43	251	78	43	27	16	388	26	38	14	17
2	32	42	168	80	43	27	16	281	18	29	13	15
3	32	42	94	80	43	29	100	216	17	40	13	15
4	32	42	333	81	28	29	65	193	22	59	14	15
5	32	41	446	126	29	30	70	192	38	65	14	15
6	42	41	366	149	31	42	200	121	45	65	14	15
7	46	41	219	86	31	56	288	135	45	60	13	15
8	46	41	251	74	38	56	363	148	45	49	12	16
9	46	42	243	46	41	78	382	109	44	26	12	19
10	46	43	186	41	41	86	382	67	33	19	12	18
11	45	56	163	49	41	85	380	68	18	19	11	19
12	45	93	143	49	41	85	379	75	15	19	9.9	20
13	44	98	118	69	40	86	401	58	15	34	9.2	20
14	44	84	88	77	31	85	448	51	15	51	8.8	20
15	44	83	76	76	27	84	451	39	15	76	8.3	21
16	44	60	76	75	27	84	425	35	15	63	8.2	19
17	44	49	76	58	27	83	428	35	15	37	8.2	20
18	49	49	76	51	27	82	463	35	15	30	8.2	19
19	50	58	134	51	27	81	472	34	14	30	8.5	42
20	79	61	194	69	27	80	471	35	14	30	8.7	135
21	88	89	232	77	27	69	495	32	14	22	8.7	132
22	87	155	186	60	27	64	499	16	13	18	8.7	74
23	84	229	161	54	27	65	530	15	10	20	8.7	57
24	83	231	100	54	27	79	561	20	13	20	8.5	56
25	59	249	77	54	27	132	607	26	16	20	7.9	40
26	48	181	142	54	27	194	582	28	17	20	7.7	25
27	44	89	170	39	27	204	549	28	16	19	7.7	22
28	43	273	170	41	27	214	468	28	36	17	7.7	22
29	43	357	168	43	---	219	458	28	45	15	15	22
30	43	320	166	43	---	228	463	28	45	14	18	18
31	43	---	130	43	---	63	---	27	---	14	18	---
TOTAL	1539	3282	5403	2027	899	2826	11412	2591	709	1038	336.6	963
MEAN	49.6	109	174	65.4	32.1	91.2	380	83.6	23.6	33.5	10.9	32.1
MAX	88	357	446	149	43	228	607	388	45	76	18	135
MIN	32	41	76	39	27	27	16	15	10	14	7.7	15
MEAN+	33.7	113	169	63.6	32.4	148	348	74.2	25.1	28.7	6.26	39.8
CFSM+	.67	2.24	3.35	1.26	.64	2.93	6.89	1.47	.50	.57	.12	.79
IN.†	.77	2.51	3.87	1.45	.67	3.37	7.68	1.69	.56	.65	.14	.88

CAL YR 1986 TOTAL 35743 MEAN 97.9 MAX 597 MIN 11 MEAN+ 98.0 CFSM+ 1.94 IN.† 26.35
WTR YR 1987 TOTAL 33025.6 MEAN 90.5 MAX 607 MIN 7.7 MEAN+ 90.2 CFSM+ 1.79 IN.† 24.25

† Adjusted for change in contents in Tully Lake.

CONNECTICUT RIVER BASIN

01166105 WHETSTONE BROOK AT DEPOT ROAD AT WENDELL DEPOT, MASS.

LOCATION.--Lat 42°35'39", long 72°21'41", Franklin County, Hydrologic Unit 01080202, on left bank at downstream side of bridge on Depot Road, 0.2 mi southwest of Wendell Depot, and 600 ft upstream from mouth.

DRAINAGE AREA.--5.22 mi².

PERIOD OF RECORD.--December 1985 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 470 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 430 ft³/s Mar. 31, 1987, from rating curve extended above 110 ft³/s; maximum gage height, 11.44 ft Mar. 6, 1987, ice jam; minimum discharge, 0.79 ft³/s Sept. 10, 11, 1986, Aug. 21-23, 24, 1987.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 21	0600	85	4.03	Mar. 31	2030	* ^a 430	6.05
Dec. 3	0845	109	4.26	Apr. 5	0030	195	4.89
Mar. 6	0515	ice jam	*11.44	Apr. 7	0900	121	4.36

a From rating curve extended above 110 ft³/s.

Minimum discharge, 0.79 ft³/s Aug. 21-23, 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	2.7	10	e9.2	e4.9	e8.0	94	21	3.0	2.8	1.0	1.8
2	1.5	2.7	7.7	8.3	e4.8	e12	31	16	5.3	3.0	.93	1.6
3	1.7	2.8	64	e8.3	e4.8	e10	23	12	9.2	10	1.8	1.6
4	4.3	2.3	32	e8.3	e4.8	e8.0	28	11	7.8	6.2	2.0	1.4
5	4.8	2.0	18	e7.9	e4.6	e7.0	140	11	13	3.7	1.6	1.3
6	3.1	6.0	14	e7.6	e4.4	e6.5	63	11	7.0	2.8	1.4	1.2
7	2.6	5.2	12	e7.2	e4.3	e7.0	91	10	4.8	2.2	1.2	1.3
8	2.3	8.1	11	e7.0	e4.2	e13	48	8.8	4.4	2.2	1.2	1.4
9	2.2	13	11	e7.2	e4.0	e16	32	7.7	4.2	2.2	1.1	9.2
10	2.1	8.6	11	7.5	e3.9	e14	24	7.4	3.6	1.9	2.9	4.4
11	2.0	6.2	12	7.5	e3.7	e12	20	6.9	3.0	1.8	2.3	2.9
12	2.0	5.3	10	7.4	e3.5	10	17	6.1	2.9	14	1.7	2.4
13	2.0	5.1	e8.3	6.3	e3.3	9.1	19	6.0	3.2	14	1.5	10
14	2.9	4.3	e7.1	e6.1	e3.0	e7.5	18	5.4	3.7	6.4	1.3	13
15	3.3	3.8	7.1	6.1	e2.7	e7.5	16	5.2	3.5	5.3	1.1	5.3
16	3.0	3.9	7.0	6.3	e2.5	e7.1	14	5.2	2.7	3.7	1.0	3.6
17	2.7	3.9	6.8	e6.4	e2.4	7.1	13	5.1	2.3	3.0	1.0	2.8
18	2.5	3.9	6.8	6.0	e2.3	6.4	13	4.6	2.0	2.5	.86	12
19	2.1	4.5	19	7.1	e2.2	6.4	14	4.4	1.8	2.1	.86	25
20	2.1	4.4	18	6.4	e2.2	6.4	13	3.9	1.8	1.7	.99	14
21	2.2	41	13	5.8	e2.1	6.6	12	3.9	1.7	1.7	.92	8.9
22	1.9	20	e11	6.1	e2.1	7.7	11	3.9	2.3	1.7	.79	6.3
23	2.2	12	9.2	e8.0	e2.1	12	9.3	3.9	7.7	1.6	.90	5.2
24	2.1	13	8.0	e7.4	e2.1	20	9.2	4.7	4.5	1.4	.83	4.0
25	1.7	14	26	e7.0	e2.0	27	9.2	4.9	2.8	1.3	.86	3.5
26	1.9	18	24	e6.6	e2.0	31	8.9	4.7	2.3	1.3	.86	3.1
27	5.6	30	17	e6.2	e2.0	27	8.2	4.1	12	1.3	1.1	2.6
28	4.9	17	e13	e6.0	e2.0	27	8.6	4.5	9.4	1.2	1.8	2.5
29	3.9	13	12	e5.7	---	25	15	4.5	4.9	1.0	3.6	2.2
30	3.3	11	11	e5.4	---	27	22	4.0	3.5	1.0	2.8	2.9
31	2.9	---	9.6	e5.1	---	240	---	3.5	---	1.0	2.2	---
TOTAL	83.3	287.7	446.6	213.4	88.9	631.3	844.4	215.3	140.3	106.0	44.40	157.4
MEAN	2.69	9.59	14.4	6.88	3.17	20.4	28.1	6.95	4.68	3.42	1.43	5.25
MAX	5.6	41	64	9.2	4.9	240	140	21	13	14	3.6	25
MIN	1.5	2.0	6.8	5.1	2.0	6.4	8.2	3.5	1.7	1.0	.79	1.2
CFSM	.51	1.84	2.76	1.32	.61	3.90	5.39	1.33	.90	.66	.27	1.01
IN.	.59	2.05	3.18	1.52	.63	4.50	6.02	1.53	1.00	.76	.32	1.12

CAL YR 1986 TOTAL 3182.45 MEAN 8.72 MAX 130 MIN .87 CFSM 1.67 IN. 22.68
WTR YR 1987 TOTAL 3259.00 MEAN 8.93 MAX 240 MIN .79 CFSM 1.71 IN. 23.23

e Estimated

CONNECTICUT RIVER BASIN

131

01166500 MILLERS RIVER AT ERVING, MASS.

LOCATION.--Lat 42°35'51", long 72°26'19", Franklin County, Hydrologic Unit 01080202, on right bank 5 ft downstream from bridge at Farley, 0.6 mi upstream from Mormon Hollow Brook, 2.4 mi downstream from Erving, and 5.5 mi upstream from mouth.

DRAINAGE AREA.--372 mi².

PERIOD OF RECORD.--Discharge: August 1914 to June 1915 (twice-daily gage heights and corresponding discharge), July 1915 to current year.

Water-quality records: Water years 1953, 1965-66.

REVISED RECORDS.--WSP 641: 1920(M). WSP 781: 1928(M), 1933(M). WSP 1301: 1915(M). WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 380 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to June 30, 1915, nonrecording gage, June 30, 1915, to Sept. 20, 1938, water-stage recorder, and Sept. 21 to Dec. 31, 1938, non-recording gage, at site 2.2 mi upstream at different datum. Jan. 1 to Mar. 29, 1939, nonrecording gage, and Mar. 30, 1939, to Sept. 12, 1941, water-stage recorder, at site 0.4 mi downstream at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated by powerplants and by Lake Monomac and other reservoirs; high flow regulated by Birch Hill Reservoir 22 mi upstream and Tully Reservoir (Reservoirs in basin); greater regulation by powerplants prior to 1966. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--73 years, 633 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,000 ft³/s Sept. 22, 1938, gage height, 13.37 ft, from floodmarks, site and datum then in use, mean of two slope-area measurements; practically no flow at times during 1915 and 1916 because of regulation; minimum daily, 8 ft³/s Sept. 6, 1926.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,880 ft³/s Apr. 7, gage height, 6.65 ft; minimum daily, 34 ft³/s Aug. 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	216	298	1130	765	e390	e300	3150	1660	283	354	85	160
2	202	318	952	735	e380	e500	1470	1530	251	305	84	83
3	208	318	1110	658	e380	e550	1440	1440	294	390	112	93
4	253	291	1580	642	e370	e480	2580	1170	267	500	125	103
5	404	287	1910	750	e370	e430	2770	1140	349	452	146	90
6	475	329	2020	e720	e370	e400	3000	1150	443	379	136	65
7	422	382	1790	686	e370	e410	4230	1020	377	314	127	87
8	367	453	1410	607	e360	e450	4070	970	324	285	106	64
9	345	615	1160	568	e350	e600	3870	888	310	253	110	197
10	347	648	1040	541	e340	e660	3720	787	283	209	125	230
11	350	582	975	557	e340	e650	3610	668	261	241	153	193
12	330	551	912	558	e330	e600	3170	639	259	296	188	177
13	314	547	804	547	e330	e560	3110	604	271	297	142	249
14	341	503	687	543	e320	e530	3360	556	282	273	110	379
15	406	471	659	539	e320	e490	3560	520	258	300	98	384
16	397	448	647	544	e310	481	3340	479	211	291	73	326
17	372	415	567	522	e310	459	3110	461	199	230	96	262
18	340	405	601	475	e300	436	3110	431	182	196	81	295
19	325	432	825	e500	e300	440	3100	408	171	174	90	595
20	275	439	1570	e490	e300	445	2920	367	102	172	97	658
21	320	929	1600	e480	e290	475	2990	402	98	119	55	686
22	320	1270	1520	e470	e290	518	2950	364	149	167	49	613
23	316	1260	1340	e460	e280	641	2780	318	181	96	105	546
24	312	1210	1170	e450	e280	908	2670	317	201	117	138	484
25	298	1200	1060	e440	e280	1200	2480	333	153	130	34	413
26	248	1200	1310	e440	e270	1560	2280	331	156	102	38	337
27	426	1390	1360	e430	e270	1660	2020	306	260	164	45	264
28	463	1420	1260	e420	e270	1650	1660	302	523	113	82	255
29	423	1540	1170	e410	---	1660	1420	312	549	121	121	237
30	385	1380	1070	e410	---	1660	1560	305	447	159	123	243
31	337	---	929	e400	---	2600	---	370	---	74	125	---
TOTAL	10537	21531	36138	16757	9070	24403	85500	20548	8094	7273	3199	8768
MEAN	340	718	1166	541	324	787	2850	663	270	235	103	292
MAX	475	1540	2020	765	390	2600	4230	1660	549	500	188	686
MIN	202	287	567	400	270	300	1420	302	98	74	34	64

CAL YR 1986 TOTAL 257030 MEAN 704 MAX 3920 MIN 59
WTR YR 1987 TOTAL 251818 MEAN 690 MAX 4230 MIN 34

e Estimated

CONNECTICUT RIVER BASIN

01168151 DEERFIELD RIVER NEAR ROWE, MASS.

LOCATION.--Lat 42°40'57", long 72°58'37", Franklin County, Hydrologic Unit 01080203, on left bank 400 ft down-stream from Fife Brook, 600 ft downstream from Fife Brook Dam, 1.2 mi northeast of Hoosac Tunnel, and 4 mi west of Rowe.

DRAINAGE AREA.--254 mi².

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

REVISED RECORDS.--WDR MA-RI-78: 1977.

GAGE.--Water-stage recorder. Datum of gage is 745.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records excellent. Flow regulated by Somerset and Harriman Reservoirs (Reservoirs in Connecticut River basin) and by several powerplants upstream. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--13 years, 738 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,900 ft³/s May 29, 1984, gage height, 14.73 ft, from flood-mark in stilling well, from rating curve extended above 8,300 ft³/s, on basis of slope-area measurement of peak flow and conveyance-slope study; maximum gage height, 14.79 ft Aug. 10, 1976; minimum daily discharge, 28 ft³/s Nov. 14, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 20,400 ft³/s Apr. 5, gage height, 14.58 ft; minimum daily, 79 ft³/s May 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1080	348	1160	1100	1050	348	4380	189	522	634	107	288
2	988	408	1260	1070	965	604	2400	178	164	575	121	163
3	1070	750	1420	1030	1040	774	2160	174	126	642	275	145
4	1170	779	1590	1040	992	608	3920	165	188	1080	627	104
5	747	799	1540	989	991	897	8640	465	365	524	653	134
6	871	463	1270	1060	1010	661	4300	83	185	460	466	112
7	1110	918	1210	1040	781	134	7490	565	215	592	319	171
8	1080	1110	1210	1040	330	323	4170	784	231	595	206	151
9	1110	1210	1320	1060	883	516	2430	207	229	638	104	919
10	1070	1090	1200	999	853	718	2140	188	152	653	395	841
11	936	804	1040	1050	893	1010	2100	320	136	209	472	489
12	247	1080	1050	1030	874	869	2050	249	160	206	365	497
13	664	1120	1060	1100	799	642	2320	228	142	585	355	1090
14	747	1080	1030	926	651	373	2220	214	118	719	285	1820
15	734	1040	1050	1060	611	258	2020	181	195	715	143	1140
16	731	1080	1030	1020	830	421	1990	83	168	426	125	1050
17	750	901	1090	1010	747	337	1840	79	270	462	626	1170
18	259	1050	1070	1030	692	373	823	157	170	177	503	1470
19	187	782	551	1080	801	328	550	185	326	161	499	2720
20	642	1130	790	969	711	373	424	126	194	622	325	2340
21	260	1100	1020	1060	790	160	660	147	178	558	362	2080
22	218	613	1070	981	606	188	249	133	179	414	187	1870
23	476	525	1030	1080	685	477	348	138	753	472	176	1300
24	339	842	1000	1000	697	724	310	132	505	579	214	1170
25	720	1110	1050	994	993	783	258	123	470	105	185	1180
26	430	1400	1150	1080	923	988	173	157	425	159	150	825
27	949	2090	1090	952	743	728	205	84	662	318	205	677
28	788	1640	949	1030	794	484	293	309	302	331	155	754
29	652	1220	1060	973	---	1030	226	262	637	342	217	664
30	639	1190	1060	1100	---	1230	262	156	599	345	147	726
31	617	---	962	964	---	5620	---	102	---	306	244	---
TOTAL	22281	29672	34382	31917	22735	22979	61351	6563	8966	14604	9213	28060
MEAN	719	989	1109	1030	812	741	2045	212	299	471	297	935
MAX	1170	2090	1590	1100	1050	5620	8640	784	753	1080	653	2720
MIN	187	348	551	926	330	134	173	79	118	105	104	104

CAL YR 1986 TOTAL 297130 MEAN 814 MAX 2150 MIN 77
WTR YR 1987 TOTAL 292723 MEAN 802 MAX 8640 MIN 79

CONNECTICUT RIVER BASIN

133

01168500 DEERFIELD RIVER AT CHARLEMONT, MASS.

LOCATION.--Lat 42°37'33", long 72°51'20", Franklin County, Hydrologic Unit 01080203, on left bank 0.8 mi east of Charlemont, 2.5 mi downstream from Chickley River, and at mile 24.5.

DRAINAGE AREA.--361 mi².

PERIOD OF RECORD.--Discharge: June 1913 to current year.
Water-quality records: Water years 1954-55, 1958, 1967-69.

REVISED RECORDS.--WSP 781: 1915(M). WSP 1301: 1918(M). WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 517.36 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Somerset Reservoir, since 1924 by Harriman Reservoir (Reservoir in basin), and by several powerplants upstream. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--74 years, 900 ft³/s

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 56,300 ft³/s Sept. 21, 1938, gage height, 20.17 ft, from floodmarks, from rating curve extended above 31,000 ft³/s on basis of slope-area and contracted-opening measurements at gage heights 17.75 ft and 20.17 ft; minimum daily, 5 ft³/s June 17, 1921.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 36,200 ft³/s Apr. 4, gage height, 16.25 ft; minimum daily, 121 ft³/s Aug. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	973	445	1400	1290	1070	525	7200	452	528	645	133	327
2	974	495	1470	1230	1050	673	3430	414	220	646	121	199
3	988	689	2730	1190	1060	862	2870	346	192	670	349	174
4	1650	790	2570	1170	1030	688	8340	404	247	1060	606	137
5	1100	815	2180	1130	989	951	16900	630	412	718	525	164
6	848	658	1720	1160	1040	833	7420	344	250	474	616	143
7	1140	1100	1670	1140	880	290	9810	568	202	537	347	198
8	1080	1420	1560	1140	439	565	5820	926	346	559	237	166
9	1090	2120	1620	1150	909	915	3390	517	230	682	140	994
10	1070	1590	1630	1100	885	938	2900	337	237	619	451	900
11	994	1140	1400	1130	926	1240	2660	448	178	327	500	646
12	395	1280	1380	1130	912	1120	2530	377	194	257	393	512
13	646	1250	1330	1150	843	864	3150	351	126	586	380	1270
14	769	1200	1260	1040	743	660	2930	324	183	699	319	2150
15	781	1130	1290	1110	704	487	2570	293	264	832	180	1210
16	800	1160	1210	1130	863	628	2460	188	183	466	154	1090
17	771	1020	1250	1070	848	550	2330	175	304	482	577	1140
18	411	1150	1240	1100	660	561	1580	245	196	226	528	1960
19	251	904	886	1170	835	529	983	280	329	195	505	3380
20	660	1180	966	1070	732	589	1050	218	229	471	335	2630
21	340	1670	1190	1110	844	392	1010	233	205	658	367	2280
22	306	1140	1190	1100	652	383	724	212	208	436	217	1950
23	475	805	1190	1110	713	769	673	217	798	456	202	1370
24	416	1080	1130	1080	744	1160	604	228	494	494	231	1270
25	628	1460	1360	1050	984	1710	526	212	505	235	205	1220
26	513	1970	1510	1110	947	2120	373	226	437	215	174	854
27	1220	3930	1400	1000	786	1780	495	162	564	336	237	740
28	975	2300	1270	1090	878	1740	526	357	479	338	202	785
29	868	1650	1270	1010	---	2060	415	365	554	349	299	719
30	725	1520	1280	1130	---	2470	659	225	625	345	169	775
31	725	---	1160	1010	---	11000	---	167	---	317	323	---
TOTAL	24582	39061	44712	34600	23966	40052	96328	10441	9919	15330	10022	31353
MEAN	793	1302	1442	1116	856	1292	3211	337	331	495	323	1045
MAX	1650	3930	2730	1290	1070	11000	16900	926	798	1060	616	3380
MIN	251	445	886	1000	439	290	373	162	126	195	121	137

CAL YR 1986 TOTAL 368007 MEAN 1008 MAX 4800 MIN 154
WTR YR 1987 TOTAL 380366 MEAN 1042 MAX 16900 MIN 121

CONNECTICUT RIVER BASIN

01169000 NORTH RIVER AT SHATTUCKVILLE, MASS.

LOCATION.--Lat 42°38'18", long 72°43'32", Franklin County, Hydrologic Unit 01080203, on right bank in Shattuckville, 1.2 mi south of Griswoldville, and 1.3 mi upstream from mouth.

DRAINAGE AREA.--89.0 mi².

PERIOD OF RECORD.--Discharge: October 1939 to current year. October and November 1939 monthly discharge only, published in WSP 1301.
Water-quality records: Water years 1957, 1967-69.

REVISED RECORDS.--WSP 1111: 1945(M). WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 458.36 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Diurnal fluctuation at times caused by mill upstream; because storage capacity is small, daily flows are not affected appreciably. Prior to 1950, greater regulation by mill. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--48 years, 185 ft³/s, 28.23 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,200 ft³/s Apr. 5, 1987, gage height, 11.19 ft, from rating curve extended above 2,100 ft³/s on basis of slope-area measurements at gage heights 9.55 ft and 11.19 ft; minimum daily, 5.1 ft³/s Oct. 3, 1948.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,200 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 27	0115	2,540	6.31	Apr. 5	0130	*a14,200	*11.19
Dec. 3	1000	2,280	6.10	Apr. 7	0500	3,380	6.90
Mar. 31	1800	a10,200	9.95				

a From rating curve extended as explained above.

Minimum discharge, 9.7 ft³/s Aug. 26, 27; minimum daily, 11 ft³/s Aug. 22, 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62	82	277	e170	e105	84	1900	246	49	54	17	36
2	60	81	249	183	e100	145	813	194	47	59	16	36
3	69	77	1560	170	e98	127	622	170	61	296	31	27
4	306	74	948	e175	93	101	2230	156	57	161	44	22
5	313	70	514	e160	e93	e95	5830	164	83	92	33	19
6	172	173	387	e150	e91	e98	2480	188	59	66	23	18
7	126	199	334	151	e91	111	2500	164	47	54	20	19
8	105	324	295	e140	e90	229	1190	141	47	50	19	25
9	94	751	250	e145	e89	310	770	130	55	48	20	319
10	93	400	321	131	e89	205	585	120	44	46	38	107
11	86	268	275	142	e88	e205	477	110	42	46	50	59
12	84	224	239	136	e85	e180	403	104	44	108	36	46
13	81	197	e190	130	e83	154	821	97	44	125	27	405
14	117	e155	e175	e130	e81	e145	633	90	44	73	22	440
15	130	e150	197	135	e79	e135	443	87	43	73	20	148
16	98	146	185	160	e77	e125	367	84	40	55	18	92
17	88	146	171	e120	e75	e120	354	78	37	45	17	69
18	80	149	167	e160	e73	114	373	73	35	42	14	455
19	75	157	e235	e175	e71	116	334	68	33	41	12	672
20	72	e130	234	e135	e69	120	288	68	30	39	12	511
21	70	e580	189	e145	e67	129	256	65	29	40	12	346
22	68	382	e180	e150	e69	155	232	65	32	40	11	216
23	66	258	170	e145	e70	255	212	68	373	37	13	156
24	66	315	e165	e135	e69	436	202	83	143	32	13	124
25	62	324	409	e130	e67	657	187	70	71	30	12	98
26	68	677	416	e125	e67	865	170	66	54	32	11	84
27	283	1550	293	e125	e67	767	156	58	149	30	12	76
28	168	596	240	e120	e67	838	170	94	148	26	18	69
29	125	421	229	e115	---	926	242	79	81	23	68	65
30	104	345	205	e110	---	1020	336	66	59	20	64	72
31	88	---	190	e105	---	5650	---	56	---	19	36	---
TOTAL	3479	9401	9889	4403	2263	14617	25576	3302	2080	1902	759	4831
MEAN	112	313	319	142	80.8	472	853	107	69.3	61.4	24.5	161
MAX	313	1550	1560	183	105	5650	5830	246	373	296	68	672
MIN	60	70	165	105	67	84	156	56	29	19	11	18
CFSM	1.26	3.52	3.58	1.60	.91	5.30	9.58	1.20	.78	.69	.28	1.81
IN.	1.45	3.93	4.13	1.84	.95	6.11	10.69	1.38	.87	.79	.32	2.02

CAL YR 1986 TOTAL 78415 MEAN 215 MAX 1950 MIN 27 CFSM 2.41 IN. 32.78
WTR YR 1987 TOTAL 82502 MEAN 226 MAX 5830 MIN 11 CFSM 2.54 IN. 34.48

e Estimated

CONNECTICUT RIVER BASIN

135

01169900 SOUTH RIVER NEAR CONWAY, MASS.

LOCATION.--Lat 42°32'31", long 72°41'39", Franklin County, Hydrologic Unit 01080203, on left bank at upstream side of Reeds Bridge just off Bardwell Road, 2.2 mi north of Conway, and 2.6 mi upstream from mouth.

DRAINAGE AREA.--24.1 mi².

PERIOD OF RECORD.--Discharge: June 1966 to current year.

Water-quality records: Water years 1967-69.

REVISED RECORDS.--WDR MA-NH-RI-VT-73-1: 1968-70(P), 1971(M), 1972(P). WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 460 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 7, 1970, at downstream side of bridge at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Diurnal fluctuation by small powerplant upstream since April 1982. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--21 years, 52.4 ft³/s, 29.53 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,750 ft³/s Apr. 4, 1987, gage height, 10.16 ft, minimum, 2.5 ft³/s Sept. 12-14, 1980.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 660 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 3	0745	917	5.62	Apr. 7	0500	893	5.57
Mar. 31	1700	2,970	8.09	Apr. 13	1015	761	5.32
Apr. 4	2245	*5,750	*10.16				

Minimum discharge, 3.4 ft³/s Aug. 25, 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	12	54	50	e29	e40	448	72	18	9.6	4.9	7.1
2	12	12	e50	51	e28	e35	215	61	17	19	4.8	5.9
3	14	12	472	48	e27	e30	170	55	18	68	12	5.6
4	47	12	169	e46	e26	e27	994	54	21	24	8.7	5.6
5	34	11	104	e44	e25	e25	1280	59	29	16	6.4	5.4
6	20	32	85	e42	e26	e26	561	63	19	12	5.7	5.4
7	17	29	78	e40	e26	e35	541	54	16	11	5.4	5.4
8	15	64	72	e38	e25	e70	259	47	16	11	5.2	5.8
9	13	62	64	e36	e24	e90	216	44	16	10	5.4	64
10	13	35	79	e35	e24	e70	193	41	14	9.6	20	17
11	13	28	70	e34	e24	e60	164	37	13	9.9	13	11
12	12	27	61	e33	e23	e54	150	36	13	18	7.9	10
13	12	27	50	e32	e23	e49	336	34	14	18	6.5	100
14	18	e24	e42	e32	e22	e45	160	32	13	12	5.9	62
15	19	e23	e56	e33	e22	e43	123	30	11	12	5.4	22
16	14	21	50	e34	e21	e41	112	28	10	9.4	4.9	15
17	13	22	48	e36	e21	e40	117	26	9.6	8.2	4.7	13
18	12	24	45	e38	e20	39	121	24	8.7	7.7	4.5	146
19	12	26	69	e39	e20	41	101	25	8.7	7.0	4.1	167
20	12	44	66	e40	e19	44	90	24	8.5	6.9	3.8	118
21	11	195	53	e40	e19	46	84	23	8.2	6.9	3.7	71
22	11	74	e50	e39	e20	59	77	21	9.3	6.4	3.7	46
23	11	50	e48	e38	e20	99	71	22	21	6.1	3.7	35
24	11	67	e47	e37	e20	136	69	54	14	6.1	3.7	29
25	10	64	155	e36	e19	180	65	31	10	8.6	3.5	25
26	12	142	102	e35	e19	217	59	27	9.8	7.5	3.4	22
27	32	187	74	e34	e19	181	54	26	25	6.3	4.7	20
28	20	88	64	e33	e18	203	63	36	19	5.4	8.4	19
29	16	71	60	e32	---	214	97	27	12	5.2	26	18
30	14	62	56	e31	---	226	99	22	10	5.5	13	19
31	12	---	53	e30	---	1530	---	19	---	5.3	8.5	---
TOTAL	493	1547	2546	1166	629	3995	7089	1154	431.8	368.6	221.5	1095.2
MEAN	15.9	51.6	82.1	37.6	22.5	129	236	37.2	14.4	11.9	7.15	36.5
MAX	47	195	472	51	29	1530	1280	72	29	68	26	167
MIN	10	11	42	30	18	25	54	19	8.2	5.2	3.4	5.4
CFSM	.66	2.14	3.41	1.56	.93	5.35	9.80	1.54	.60	.49	.30	1.51
IN.	.76	2.39	3.93	1.80	.97	6.17	10.94	1.78	.67	.57	.34	1.69

CAL YR 1986 TOTAL 19640.9 MEAN 53.8 MAX 590 MIN 8.3 CFSM 2.23 IN. 30.32
WTR YR 1987 TOTAL 20736.1 MEAN 56.8 MAX 1530 MIN 3.4 CFSM 2.36 IN. 32.01

e estimated

CONNECTICUT RIVER BASIN

01170000 DEERFIELD RIVER NEAR WEST DEERFIELD, MASS.

LOCATION.--Lat 42°32'09", long 72°39'14", Franklin County, Hydrologic Unit 01080203, on right bank 0.4 mi downstream from South River, 1.2 mi west of West Deerfield, 2.5 mi west of Deerfield, and 9.2 mi upstream from mouth.

DRAINAGE AREA.--557 mi².

PERIOD OF RECORD.--Discharge: March to November 1904, January 1905, March to December 1905, October 1940 to current year, published as "at Deerfield" 1904-5.
Water-quality records: Water years 1953, 1967-70.

REVISED RECORDS.--WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 155 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Dec. 16, 1905, nonrecording gage at site 1.5 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since 1913 by Somerset Reservoir, since 1924 by Harriman Reservoir (Reservoirs in Connecticut River basin), and by several powerplants upstream. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--47 years (water years 1941-87), 1,294 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 61,700 ft³/s Apr. 5, 1987, gage height, 17.71 ft; minimum daily, 28 ft³/s July 29, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 61,700 ft³/s Apr. 5, gage height, 17.71 ft; minimum daily, 189 ft³/s Aug. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1030	734	2000	1620	1330	967	11900	1060	667	771	244	463
2	1340	612	1900	1620	1340	967	5110	735	401	818	189	298
3	1030	823	5750	1620	1260	1170	4070	759	303	1480	446	213
4	2250	1020	4430	1470	1330	1090	9380	845	348	1320	606	207
5	1750	1020	3190	1490	1340	1120	29300	813	583	1040	671	208
6	1140	1050	2530	1540	1330	1150	12200	998	476	607	756	198
7	1440	1450	2280	1540	1150	757	14800	735	351	684	386	195
8	1390	1820	2070	1560	735	1120	8440	1290	516	794	360	230
9	1310	3380	2010	1370	1130	1700	4840	1000	418	759	309	1640
10	1370	2420	2260	1580	1160	1350	3980	666	385	788	350	1080
11	1230	1740	1900	1490	1200	1500	3540	659	320	539	614	862
12	782	1750	1750	1510	1180	1580	3210	615	193	401	601	524
13	609	1620	1730	1490	1030	1350	4990	617	254	819	480	1870
14	1110	1590	1490	1420	1100	901	4150	540	242	981	312	3490
15	1040	1580	1640	1480	913	873	3420	528	538	838	221	1620
16	1060	1490	1630	1570	1130	925	3110	343	225	655	264	1300
17	1020	1250	1630	1380	1190	801	3060	367	258	554	729	1210
18	737	1430	1610	1430	867	874	2460	475	265	377	540	2850
19	357	1380	1670	1530	1080	813	1580	461	407	371	576	5270
20	683	1440	1460	1450	875	880	1610	366	295	558	334	3740
21	610	3150	1670	1440	1170	650	1370	380	244	746	433	3230
22	531	2190	1570	1460	785	838	1330	321	573	512	312	2600
23	609	1260	1640	1420	882	1380	1090	376	1330	618	282	1810
24	640	1470	1600	1370	1010	2210	933	492	670	548	265	1660
25	515	2290	2330	1430	1100	3000	960	391	669	348	247	1610
26	855	2760	2430	1550	1250	3890	753	403	571	237	207	995
27	1570	6790	2070	1480	1100	3340	888	395	730	407	236	997
28	1380	3540	1760	1450	1060	3270	885	484	1030	466	308	914
29	1230	2540	1770	1420	---	3510	1030	653	564	436	430	929
30	931	2220	1650	1400	---	4290	1420	399	788	381	341	952
31	1020	---	1650	1400	---	17800	---	318	---	348	431	---
TOTAL	32569	57809	65070	45980	31027	66066	145809	18484	14614	20201	12480	43165
MEAN	1051	1927	2099	1483	1108	2131	4860	596	487	652	403	1439
MAX	2250	6790	5750	1620	1340	17800	29300	1290	1330	1480	756	5270
MIN	357	612	1460	1370	735	650	753	318	193	237	189	195

CAL YR 1986 TOTAL 538850 MEAN 1476 MAX 7890 MIN 262
WTR YR 1987 TOTAL 553274 MEAN 1516 MAX 29300 MIN 189

CONNECTICUT RIVER BASIN

137

01170100 GREEN RIVER NEAR COLRAIN, MASS.

LOCATION.--Lat 42°42'12", long 72°40'16", Franklin County, Hydrologic Unit 01080203, on right bank 0.5 mi upstream from bridge on West Leyden Road and 2.5 mi northeast of Colrain.

DRAINAGE AREA.--41.4 mi².

PERIOD OF RECORD.--Discharge: October 1967 to current year.
Water-quality records: Water years 1968-69.

REVISED RECORDS.--WDR MA-NH-RI-VT-71-1: 1968(M), 1969.

GAGE.--Water-stage recorder. Elevation of gage is 435 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

AVERAGE DISCHARGE.--20 years, 92.0 ft³/s, 30.18 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,560 ft³/s Dec. 21, 1973, gage height, 8.2 ft, from floodmarks, from rating curve extended above 1,500 ft³/s on basis of slope area measurement of peak flow and conveyance-slope study; maximum gage height, 8.87 ft Jan. 27, 1976 (ice jam); minimum discharge, 1.9 ft³/s Aug. 1, 1968, caused by unusual regulation.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 27	0145	1,090	5.00	Apr. 5	0145	a3,830	7.69
Dec. 3	0930	898	4.74	Apr. 7	0430	1,640	5.71
Mar. 31	1745	*a4,400	*8.09				

a From rating curve extended as explained above.

Minimum discharge, 5.4 ft³/s Aug. 26, 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	34	e130	e78	e47	e35	732	116	23	32	8.5	17
2	22	33	125	e78	e45	e64	372	94	21	38	8.1	15
3	25	32	622	e77	e44	e52	277	83	23	163	16	11
4	87	31	397	e76	e43	e45	482	76	27	82	13	9.5
5	91	29	243	e74	e43	e40	2060	80	40	49	11	8.6
6	56	61	187	e71	e42	e43	1010	87	27	36	9.7	8.4
7	43	73	163	e69	e41	e52	1060	77	21	29	8.9	8.8
8	38	120	145	e67	e41	e110	498	67	24	27	9.7	9.4
9	35	303	128	e63	e41	e140	348	63	27	26	10	143
10	35	165	154	e60	e40	e100	273	59	22	24	19	42
11	31	111	132	e58	e40	e95	226	54	19	21	19	22
12	29	90	117	e57	e39	e87	191	51	18	38	13	18
13	29	78	94	e55	e38	e79	382	49	19	50	11	157
14	46	65	e80	e54	e37	e73	274	45	18	34	9.7	167
15	55	e67	e92	e55	e36	e69	201	44	16	32	8.8	55
16	41	59	e88	e57	e36	e65	167	41	14	23	8.4	35
17	36	59	80	e60	e35	e61	159	39	13	20	7.7	25
18	33	59	79	e62	e34	e57	171	37	13	17	7.1	140
19	31	67	115	e64	e33	e58	154	35	12	15	6.5	261
20	30	71	109	e66	e31	e60	134	34	11	15	6.2	240
21	30	253	e85	e68	e31	e67	123	31	11	16	5.9	172
22	29	157	e82	e68	e31	e84	111	31	16	14	6.0	99
23	28	110	e80	e65	e33	e130	102	36	267	14	7.3	69
24	28	133	e77	e62	e33	247	96	32	69	13	6.5	54
25	29	139	196	e60	e32	318	89	31	38	16	5.8	43
26	33	264	181	e59	e31	384	81	30	29	13	5.8	37
27	115	599	133	e57	e31	367	76	30	97	12	6.2	33
28	64	264	110	e55	e32	396	82	40	79	11	11	29
29	47	194	109	e53	---	430	118	34	47	10	30	27
30	40	161	e92	e51	---	469	146	29	36	9.4	26	30
31	36	---	e82	e49	---	2420	---	24	---	9.0	15	---
TOTAL	1294	3881	4507	1948	1040	6697	10195	1579	1097	908.4	336.8	1985.7
MEAN	41.7	129	145	62.8	37.1	216	340	50.9	36.6	29.3	10.9	66.2
MAX	115	599	622	78	47	2420	2060	116	267	163	30	261
MIN	22	29	77	49	31	35	76	24	11	9.0	5.8	8.4
CFSM	1.01	3.12	3.51	1.52	.90	5.22	8.21	1.23	.88	.71	.26	1.60
IN.	1.16	3.49	4.05	1.75	.93	6.02	9.16	1.42	.99	.82	.30	1.78

CAL YR 1986 TOTAL 33781.0 MEAN 92.6 MAX 760 MIN 14 CFSM 2.24 IN. 30.35
WTR YR 1987 TOTAL 35468.8 MEAN 97.2 MAX 2420 MIN 5.8 CFSM 2.35 IN. 31.87

e Estimated

CONNECTICUT RIVER BASIN

01170500 CONNECTICUT RIVER AT MONTAGUE CITY, MASS.

LOCATION.--Lat 42°34'48", long 72°34'30", Franklin County, Hydrologic Unit 01080201, on left bank 75 ft downstream from railroad bridge at Montague City, 1,000 ft downstream from Deerfield River, and at mile 119.0.

DRAINAGE AREA.--7,860 mi².

PERIOD OF RECORD.--March 1904 to current year. Prior to October 1929, published as "at Sunderland." Records published for both sites October 1929 to September 1932.

REVISED RECORDS.--WSP 471: 1904-17. WSP 741: 1930-32. WSP 781: 1928(M). WSP 1051: 1905, 1909-10, 1912-14, 1920, 1922-23, 1925-26, 1928, drainage area at Sunderland. WSP 1301: 1905(M), 1914-19(M), 1930-31(M). WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 99.87 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1917, nonrecording gage; Oct. 1, 1917, to Oct. 8, 1921, water-stage recorder used for low stages, nonrecording gage otherwise; and Oct. 9, 1921, to Sept. 30, 1932, water-stage recorder; all at site 9 mi downstream at datum 1.00 ft lower. Since Oct. 1, 1929, water-stage recorder at present site and datum.

REMARKS.--Records excellent except those for winter period, which are good. 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 43,400,000 ft³. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--83 years, 13,810 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 236,000 ft³/s Mar. 19, 1936, gage height, 49.2 ft, from floodmarks; minimum daily, 215 ft³/s Aug. 31, Sept. 1, 1958.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 126,000 ft³/s Apr. 1, gage height, 35.89 ft; minimum daily, 1,860 ft³/s Aug. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9540	8170	25400	12200	6060	7850	122000	17400	8990	16900	2340	3090
2	10400	7210	23700	11600	8260	8550	106000	16800	8120	14600	2160	5660
3	11700	7700	28000	12300	8250	8970	77800	16700	8000	15100	7260	3520
4	15200	7750	42500	8410	7650	8710	66400	15900	9160	12000	8450	3810
5	15400	8470	35800	8860	8190	7110	97100	14100	9520	13800	7580	2240
6	14600	9230	27400	10100	8610	7840	94400	12700	8780	10400	6900	2000
7	14800	11800	25000	10200	6050	8030	103000	13100	6240	10200	4220	1930
8	14200	9990	20000	10100	4960	7810	97200	16900	7030	8100	3290	3630
9	13500	12500	22800	9360	7280	9680	80200	14700	8250	9340	2760	11900
10	11100	16100	19400	8380	7320	11200	67900	13400	9860	9240	5360	21200
11	11400	16800	15100	7750	7630	10600	61400	13500	14100	8070	7530	16500
12	8460	18800	15800	10400	6480	11500	50800	9170	11600	5630	7410	4420
13	7800	13800	16600	10200	6410	13000	55500	9390	9290	7670	4900	8850
14	9880	12400	11900	9600	6050	10200	42500	9340	10600	10100	3910	30000
15	10100	9760	10800	8870	5490	9150	40400	8040	9090	11000	2040	32400
16	13100	7680	10600	9230	8310	8020	39000	7290	7360	12500	1970	20400
17	8920	9390	14900	9110	8150	7750	32800	6510	5890	11300	6350	17300
18	6410	13300	13900	7180	8450	8270	25800	8350	4590	5320	6600	16200
19	4840	11700	15600	7010	8110	7720	19400	9790	4960	5550	4090	23100
20	6090	13300	14900	8170	9210	7260	22600	7820	2710	7880	3250	18600
21	7640	14000	15400	9390	6220	6750	19100	6240	2500	9320	2350	19600
22	9620	16900	13700	7820	4730	7070	22200	7250	6410	7520	2010	17700
23	9600	8770	12400	9560	6440	9100	20100	6220	13600	6630	1860	19100
24	8760	12300	11600	8910	7110	14700	17100	5210	29600	7820	3510	15600
25	7040	14200	15900	7860	6970	21900	16300	6420	19700	5000	3710	10300
26	7480	18100	18500	10400	7240	40700	11200	7050	13600	2260	3000	8750
27	10700	32600	17600	e9200	6800	44800	11500	10300	11000	5380	3540	6010
28	10300	38100	12800	e9400	7300	50100	12500	9040	26600	6050	4100	8900
29	8540	35900	11400	e10000	---	50900	15100	10100	25500	5280	2590	9010
30	8640	30900	11400	e9800	---	54000	17400	7440	24800	5790	3240	9590
31	8050	---	13000	e7500	---	79900	---	7990	---	4050	3940	---
TOTAL	313810	447620	563800	288870	199730	559140	1464700	324160	337450	269800	132220	371310
MEAN	10120	14920	18190	9318	7133	18040	48820	10460	11250	8703	4265	12380
MAX	15400	38100	42500	12300	9210	79900	122000	17400	29600	16900	8450	32400
MIN	4840	7210	10600	7010	4730	6750	11200	5210	2500	2260	1860	1930

CAL YR 1986 TOTAL 5708110 MEAN 15640 MAX 84200 MIN 1860
WTR YR 1987 TOTAL 5272610 MEAN 14450 MAX 122000 MIN 1860

e Estimated

CONNECTICUT RIVER BASIN

139

01171300 FORT RIVER NEAR AMHERST, MASS.

LOCATION.--Lat 42°21'30", long 72°30'23", Hampshire County, Hydrologic Unit 01080201, on left bank 400 ft downstream from Southeast Street Bridge, 600 ft downstream from Hop Brook, and 1.3 mi southeast of Amherst.

DRAINAGE AREA.--36.3 mi², excludes 5.16 mi², drained by Nurse and Dean Brooks, flow of which is diverted from basin.

PERIOD OF RECORD.--Discharge: June 1966 to current year.

Water-quality records: Water years 1971, 1973.

REVISED RECORDS.--WDR MA-RI-84-1: 1968-69(M), 1970(P), 1974-77(M), 1979(M), 1980(P), 1983(M), drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 147 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to May 10, 1974, at site 400 ft upstream at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Diversions upstream for municipal supply of Amherst. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--21 years, 58.2 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,100 ft³/s, Mar. 6, 1979, gage height, 9.94 ft; minimum, 1.9 ft³/s Sept. 3, 1966, Sept. 6, 7, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in March 1936 and September 1938 reached discharges of 2,360 ft³/s and 1,640 ft³/s, respectively, by computation of flow over dam 1.2 mi downstream.

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)
Apr. 1	0030	*1,250	*7.51	Apr. 7	1000	621	5.17
Apr. 5	0945	569	4.92				

Minimum discharge, 4.4 ft³/s Aug. 25-27; minimum daily, 4.4 ft³/s Aug. 26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.3	14	40	72	e45	e64	728	93	20	18	6.3	11
2	11	14	37	74	e45	e130	262	72	20	21	6.2	9.5
3	13	14	264	72	e44	e90	175	63	23	53	19	8.9
4	33	13	263	e71	e44	e70	157	67	29	37	19	8.0
5	30	13	144	e69	e43	e62	493	65	64	25	13	7.1
6	22	30	103	e65	e43	e58	437	69	42	20	10	6.4
7	17	34	84	64	e42	e84	517	66	28	17	9.3	7.1
8	15	47	76	63	e41	138	330	57	28	17	8.5	8.5
9	14	73	67	e58	e41	180	214	52	28	16	8.3	51
10	13	47	80	56	e40	e150	168	48	22	15	36	27
11	12	32	84	68	e40	e115	140	42	18	19	23	16
12	12	29	72	66	e39	e89	119	39	18	17	14	13
13	12	28	61	64	e38	85	185	38	25	14	11	54
14	17	23	e49	e60	e37	e76	184	35	34	14	9.4	97
15	20	21	53	58	e36	e79	135	33	25	16	8.5	44
16	17	21	56	70	e36	e76	109	31	20	14	8.0	23
17	15	22	55	e62	e35	e72	100	30	17	12	7.2	17
18	14	24	60	e60	e34	77	103	28	15	12	6.3	50
19	13	31	381	e60	e34	92	93	27	14	11	5.8	151
20	13	25	302	e58	e33	99	82	27	13	10	5.4	78
21	13	179	169	e56	e33	103	75	25	12	11	5.4	46
22	12	153	119	e55	e33	114	69	25	13	9.5	5.4	32
23	12	83	100	e53	e33	140	64	24	23	9.4	5.4	28
24	12	81	87	e51	e33	164	62	34	19	8.5	4.8	23
25	12	82	186	e50	e32	172	64	31	15	11	4.5	18
26	14	84	196	e49	e32	177	58	29	14	9.9	4.4	15
27	42	184	151	e48	e32	151	52	25	53	8.8	7.0	14
28	32	113	116	e47	e32	136	68	38	53	7.5	11	13
29	23	74	100	e46	---	124	113	33	31	6.8	24	12
30	e18	56	92	e46	---	105	120	27	22	7.2	19	13
31	e15	---	84	e46	---	521	---	23	---	7.7	12	---
TOTAL	527.3	1644	3731	1837	1050	3793	5476	1296	758	475.3	337.1	901.5
MEAN	17.0	54.8	120	59.3	37.5	122	183	41.8	25.3	15.3	10.9	30.0
MAX	42	184	381	74	45	521	728	93	64	53	36	151
MIN	9.3	13	37	46	32	58	52	23	12	6.8	4.4	6.4

CAL YR 1986 TOTAL 22274.4 MEAN 61.0 MAX 1050 MIN 7.9
WTR YR 1987 TOTAL 21826.2 MEAN 59.8 MAX 728 MIN 4.4

e Estimated

CONNECTICUT RIVER BASIN

01171500 MILL RIVER AT NORTHAMPTON, MASS.

LOCATION.--Lat 42°19'05", long 72°39'21", Hampshire County, Hydrologic Unit 01080201, on right bank at Northampton 3.5 mi upstream from mouth.

DRAINAGE AREA.--54.0 mi².

PERIOD OF RECORD.--Discharge: October 1938 to current year. October 1938 monthly discharge only, published in WSP 1301.

Water-quality records: Water years 1957-59, 1971, 1973.

REVISED RECORDS.--WSP 921: 1940. WSP 1231: 1940-42(M), 1944-45(M), 1948(M), 1949.

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

REMARKS.--Records good except those for estimated daily discharges, which are poor. Prior to 1956, flow regulated by mill upstream. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--49 years, 96.8 ft³/s, 24.34 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,300 ft³/s Aug. 19, 1955, gage height, 11.78 ft, from rating curve extended above 3,700 ft³/s on basis of computation of peak flow over dam; minimum, 2.2 ft³/s Oct. 1, 1950; minimum daily, 4.2 ft³/s Aug. 21, 23, 24, 1957.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 31	1700	*2,650	*7.22	Apr. 5	0130	2,590	7.12

Minimum discharge, 6.9 ft³/s Aug. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	20	82	100	e59	77	949	123	34	24	8.9	e16
2	17	20	79	106	e58	169	414	105	32	33	8.8	e14
3	20	20	732	99	e58	108	303	97	41	132	26	e13
4	65	20	333	92	e57	83	493	107	54	62	20	e12
5	54	19	199	91	e57	75	1500	109	106	38	14	e11
6	36	39	155	90	e56	72	935	119	55	30	12	e10
7	27	49	135	86	e55	98	992	103	40	26	11	e10
8	23	81	122	81	e54	190	483	87	48	26	10	e11
9	21	117	108	78	e52	234	344	79	42	27	15	e80
10	21	64	139	74	e54	167	276	73	34	24	e52	e35
11	20	50	137	84	52	129	234	68	30	21	e35	e24
12	19	47	110	79	52	115	206	65	30	21	e23	e20
13	19	46	92	74	49	102	569	61	30	25	e18	e100
14	25	38	e74	71	e48	94	355	e57	28	23	e15	e150
15	47	36	89	71	e46	92	248	56	28	23	e13	e60
16	43	36	84	84	e45	89	214	52	24	20	e12	e40
17	41	37	82	65	e45	83	220	49	23	18	e11	e30
18	27	40	84	e72	e45	83	225	48	22	15	e10	e200
19	19	46	306	97	e44	95	193	51	21	14	e9.8	e300
20	19	39	225	79	e43	103	174	48	20	16	9.4	e200
21	18	308	150	74	42	111	159	45	18	17	8.9	e120
22	18	161	117	e71	42	146	144	43	23	15	8.5	e85
23	19	92	109	e69	43	214	133	45	39	14	e8.4	e65
24	17	94	97	e67	43	269	128	74	29	13	e8.0	e54
25	16	105	411	e65	42	305	123	59	24	14	e7.6	e45
26	20	150	278	e64	42	332	109	54	22	13	e7.2	e39
27	45	303	191	e63	42	280	101	52	53	12	e10	e36
28	37	159	156	e61	41	280	124	64	47	11	e15	e33
29	28	118	137	e59	---	264	175	56	31	9.8	e35	e32
30	24	98	125	e60	---	254	170	42	26	9.7	e25	e33
31	22	---	114	e60	---	1900	---	36	---	9.7	e17	---
TOTAL	845	2452	5252	2386	1366	6613	10693	2127	1054	756.2	484.5	1878
MEAN	27.3	81.7	169	77.0	48.8	213	356	68.6	35.1	24.4	15.6	62.6
MAX	65	308	732	106	59	1900	1500	123	106	132	52	300
MIN	16	19	74	59	41	72	101	36	18	9.7	7.2	10
CFSM	.50	1.51	3.14	1.43	.90	3.95	6.60	1.27	.65	.45	.29	1.16
IN.	.58	1.69	3.62	1.64	.94	4.56	7.37	1.47	.73	.52	.33	1.29

CAL YR 1986 TOTAL 36702.0 MEAN 101 MAX 1300 MIN 13 CFSM 1.86 IN. 25.28
WTR YR 1987 TOTAL 35906.7 MEAN 98.4 MAX 1900 MIN 7.2 CFSM 1.82 IN. 24.74

e Estimated

CONNECTICUT RIVER BASIN

141

01172003 CONNECTICUT RIVER BELOW HOLYOKE DAM AT HOLYOKE, MASS.

LOCATION.--Lat 42°12'36", long 72°35'44", Hampden County, Hydrologic Unit 01080201, on right bank 2,200 ft downstream from dam of Holyoke Water Power Co. in Holyoke, and at mile 86.

DRAINAGE AREA.--8,309 mi².

PERIOD OF RECORD.--December 1983 to current year.

GAGE.--Water-stage recorder. Datum of gage is 43.28 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, combined usable capacity, about 44 billion ft³. Records do not include water diverted around gage by Holyoke Water Power Co. for industrial use. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 153,000 ft³/s June 1, 1984, gage height, 25.62 ft; minimum daily, 519 ft³/s Sept. 30, 1984.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1854, 244,000 ft³/s Mar. 20, 1936, gage height, 35.0 ft, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 125,000 ft³/s Apr. 1, gage height, 22.26 ft; minimum daily, 1,640 ft³/s June 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6540	4740	22600	9240	3540	5260	118000	12800	6710	17400	1720	2660
2	6040	4740	19700	8050	3740	5760	119000	12000	5850	14600	1740	4250
3	7640	3780	20600	8610	5580	6450	93600	13400	5120	13800	3750	4010
4	8620	4620	34900	7680	5390	6860	73800	11600	5970	10900	5630	2790
5	9750	4780	34300	6350	4930	4960	93300	9390	6630	9770	5090	2730
6	9870	4380	25700	6460	5350	5230	104000	8890	7060	8380	4860	1700
7	9030	5260	22000	7210	4550	5040	109000	8190	5730	7550	2130	1690
8	9040	6280	16200	7280	2710	7030	110000	10200	5250	5010	2700	2460
9	7970	8000	17100	7500	3900	7500	97800	10100	4320	5450	2810	5340
10	7790	9710	15800	5570	4250	8430	79000	8960	6240	7320	2840	12500
11	6890	11100	12000	5460	4740	7640	66000	8880	8490	5930	3030	11100
12	6410	12200	11700	6090	5010	7790	53700	7120	8820	6620	5740	6070
13	4740	10800	12200	7290	3600	8010	52600	6930	5470	4040	2440	6310
14	6470	7370	10200	6560	3170	7850	48100	6760	8170	5850	2300	15200
15	6010	7200	6300	6610	2430	7040	38900	5920	e5700	6760	2610	27300
16	7650	5670	7320	5590	3450	6320	35600	4980	e5000	6260	1800	18400
17	4920	4160	9730	6700	4820	5970	32100	4160	e3730	7740	3620	12800
18	4890	8500	9100	5270	4970	6040	23300	5140	2700	3210	6440	10300
19	3060	7730	11200	3900	5290	5630	18900	7110	1640	2700	3830	16300
20	3030	8330	12200	4750	6110	5840	17200	5760	3370	3770	2620	14800
21	3940	8440	11600	5940	4820	5310	16400	4370	2140	6150	2170	13100
22	6910	12600	10900	6020	2230	5340	14600	4030	3850	5550	1800	11900
23	6060	8090	8480	4120	3720	5100	17000	4470	8070	3210	1740	12700
24	6350	5320	8690	6410	3670	9120	13800	4540	18800	3270	1730	11200
25	6370	8710	10900	4000	4380	14800	12100	5250	16600	5810	2640	5710
26	6170	9900	14300	5110	4080	29400	13500	5550	10800	3490	2840	7000
27	7090	22100	14400	6430	4480	41100	8680	5910	5450	3280	3010	4440
28	6760	32300	11300	5840	4080	45400	8910	7180	14700	3480	2930	4360
29	5900	31600	9030	6010	---	49100	9860	6400	23000	2830	2540	4330
30	6340	27800	10300	6120	---	49000	12700	5990	22300	2010	2160	4570
31	4640	---	9970	5400	---	67500	---	6360	---	1860	2840	---
TOTAL	202890	306210	450720	193570	118990	451820	1511450	228340	237680	194000	94100	258020
MEAN	6545	10210	14540	6244	4250	14570	50380	7366	7923	6258	3035	8601
MAX	9870	32300	34900	9240	6110	67500	119000	13400	23000	17400	6440	27300
MIN	3030	3780	6300	3900	2230	4960	8680	4030	1640	1860	1720	1690

CAL YR 1986 TOTAL 4515910 MEAN 12370 MAX 87000 MIN 1400
WTR YR 1987 TOTAL 4247790 MEAN 11640 MAX 119000 MIN 1640

e Estimated

CONNECTICUT RIVER BASIN

01172500 WARE RIVER NEAR BARRE, MASS.

LOCATION.--Lat 42°25'30", long 72°01'30" Worcester County, Hydrologic Unit 01080204, on left bank 700 ft downstream from Barre Falls Reservoir, 1.6 mi upstream from Burnshirt River, 4 mi east of Barre, and at mile 33.3.

DRAINAGE AREA.--55.1 mi².

PERIOD OF RECORD.--Discharge: July 1946 to current year.
Water-quality records: Water year 1957.

REVISED RECORDS.--WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 745 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good. Prior to August 1955, slight regulation at low flow at times by Long Pond. Flow regulated by Barre Falls Reservoir (Reservoirs in Connecticut River basin) since 1958. Diversion at times since 1955 from 6.5 mi² upstream of station for municipal supply of Fitchburg. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--41 years, 93.6 ft³/s, 23.07 in/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,890 ft³/s Oct. 16, 1955, gage height, 6.31 ft; minimum, 0.21 ft³/s Aug. 18, 1980, Oct. 22, 1984; minimum daily, 0.5 ft³/s Sept. 11, 1963. Maximum discharge since construction of Barre Falls Reservoir in 1958, 1,230 ft³/s Mar. 14, 1979, gage height, 5.62 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,180 ft³/s Apr. 13, gage height, 5.56 ft; minimum, 0.83 ft³/s Aug. 26, 27; minimum daily, 0.86 ft³/s Aug. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.2	22	139	184	70	38	47	267	44	33	2.4	5.7
2	11	20	124	181	75	39	147	276	38	27	1.9	4.8
3	11	19	124	141	73	40	398	256	36	39	4.9	4.1
4	16	18	278	125	66	47	254	235	41	43	8.7	3.3
5	29	16	313	151	64	76	24	217	71	38	7.0	2.7
6	32	23	233	154	63	89	44	203	71	29	5.9	2.3
7	26	34	153	129	63	88	260	193	52	23	5.0	2.6
8	21	41	125	129	52	88	700	176	43	19	4.4	2.7
9	18	78	125	114	49	107	819	158	42	18	3.5	7.3
10	15	81	125	105	e51	115	908	144	35	16	15	9.9
11	12	64	125	105	52	133	891	130	29	20	19	8.6
12	11	57	125	113	52	141	965	118	26	23	14	7.5
13	11	51	125	116	52	140	1050	110	29	23	10	9.0
14	12	37	96	105	e52	139	1000	100	38	21	7.7	21
15	15	31	87	94	e49	137	1010	94	33	21	6.0	21
16	16	32	89	95	69	135	683	89	26	19	4.9	18
17	15	32	89	95	73	113	504	82	21	17	4.1	14
18	13	32	73	67	63	93	516	76	17	14	3.2	15
19	13	44	90	77	41	78	502	71	14	12	2.5	66
20	12	37	248	87	40	79	518	66	12	10	2.0	85
21	11	55	434	89	40	80	542	61	11	9.9	1.7	80
22	12	116	480	88	40	98	359	58	12	8.5	1.5	66
23	13	131	462	88	39	125	176	56	15	7.4	1.4	53
24	12	131	346	101	39	167	163	61	16	6.5	1.2	42
25	11	131	247	105	39	186	164	64	15	6.4	1.0	33
26	11	169	247	96	31	277	153	60	13	6.1	.86	26
27	34	186	250	e89	28	339	137	54	38	5.2	1.0	22
28	48	224	250	e130	35	339	131	51	87	4.4	1.9	18
29	40	239	277	152	---	336	177	50	71	3.5	5.8	15
30	32	194	271	152	---	258	240	59	46	3.0	7.7	24
31	26	---	208	102	---	127	---	55	---	2.6	6.6	---
TOTAL	568.2	2345	6358	3559	1460	4247	13482	3690	1042	528.5	162.76	689.5
MEAN	18.3	78.2	205	115	52.1	137	449	119	34.7	17.0	5.25	23.0
MAX	48	239	480	184	75	339	1050	276	87	43	19	85
MIN	9.2	16	73	67	28	38	24	50	11	2.6	.86	2.3
MEAN+	18.5	88.1	209	109	52.8	168	410	118	34.7	16.6	5.32	23.4
CFSM+	.34	1.60	3.79	1.98	.96	3.05	7.44	2.14	.63	.30	.10	.42
IN.+	.39	1.79	4.37	2.28	1.00	3.52	8.31	2.46	.70	.35	.11	.47

CAL YR 1986 TOTAL 35798.7 MEAN 98.1 MAX 595 MIN 7.2 MEAN+ 98.4 CFSM+ 1.79 IN+ 24.26
WTR YR 1987 TOTAL 38131.96 MEAN 104 MAX 1050 MIN .86 MEAN+ 105 CFSM+ 1.91 IN+ 25.75

e Estimated

+ Adjusted for change in contents in Barre Falls Reservoir.

CONNECTICUT RIVER BASIN

143

01172680 NATTY POND BROOK TEMPLETON RD (DS) NEAR HUBBARDSTON, MASS.

LOCATION.--Lat 42°29'44", long 72°01'24", Worcester County, Hydrologic Unit 01080204, on right bank at upstream side of culvert on New Templeton Road, 1.7 mi northwest of Hubbardston.

DRAINAGE AREA.--1.63 mi².

PERIOD OF RECORD.--Water year 1984 (discharge measurements only), October 1984 to August 1987.

GAGE.--Water-stage recorder. Datum of gage is 922.13 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 66 ft³/s Apr. 5, 1987, gage height, 3.59 ft; minimum, 0.29 ft³/s Oct. 25, 26, Nov. 1, 4, 1984.

EXTREMES FOR PERIOD OCTOBER 1986 TO AUGUST 1987.--Peak discharges greater than base discharge of 17 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 19	1300	19	1.70	Apr. 5	0330	*266	*3.59
Mar. 31	2345	45	2.86	Apr. 7	0645	35	2.44

a From rating curve extended above 33 ft³/s.

Minimum discharge, 0.30 ft³/s July 30 to Aug. 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.40	.47	2.1	2.6	1.9	1.7	28	8.5	2.0	1.2	.30	---
2	.40	.47	2.0	2.7	1.9	2.5	13	7.9	1.9	2.3	.93	---
3	.44	.47	7.8	2.8	1.9	1.9	9.6	6.3	1.9	2.2	.80	---
4	1.4	.43	5.2	2.8	1.9	1.7	11	5.8	3.0	1.4	.50	---
5	1.7	.40	3.4	2.7	1.9	1.7	47	5.3	3.4	1.2	.42	---
6	.89	1.4	2.8	2.6	1.9	1.7	27	5.2	2.3	1.0	.40	---
7	.64	1.2	2.5	2.6	1.9	1.8	29	5.0	2.0	.98	---	---
8	.63	1.8	2.4	2.6	1.9	3.0	22	4.5	2.3	.98	---	---
9	.62	2.8	2.2	2.5	1.9	4.1	18	4.4	2.0	.98	---	---
10	.54	1.4	2.5	2.5	1.7	3.1	14	4.2	1.7	.98	---	---
11	.50	.99	2.7	2.5	1.7	2.3	11	3.9	1.6	.93	---	---
12	.47	.98	2.3	2.5	1.7	2.2	9.9	3.8	1.6	.90	---	---
13	.43	.93	2.0	2.4	1.7	2.1	10	3.5	1.6	.87	---	---
14	.58	.76	1.7	2.3	1.5	2.0	11	3.3	1.6	.90	---	---
15	.67	.72	1.6	2.4	1.5	2.0	8.5	3.2	1.4	.88	---	---
16	.51	.72	1.6	2.4	1.3	2.0	7.7	3.2	1.2	.82	---	---
17	.46	.72	1.6	2.3	1.3	2.0	7.4	3.1	1.2	.64	---	---
18	.43	.81	1.6	2.1	1.3	1.9	7.3	3.0	1.1	.62	---	---
19	.40	.98	1.4	2.2	1.3	1.9	7.2	2.9	1.1	.51	---	---
20	.40	.80	7.9	2.3	1.3	1.9	6.6	2.9	1.0	.52	---	---
21	.40	6.7	4.6	2.2	1.3	1.9	6.3	2.9	.92	.54	---	---
22	.40	3.6	3.5	2.1	1.3	2.1	6.0	2.8	1.2	.54	---	---
23	.40	2.1	3.3	2.6	1.3	3.7	5.5	2.8	1.8	.49	---	---
24	.40	2.9	3.1	2.2	1.3	5.4	5.3	2.8	1.4	.40	---	---
25	.37	2.8	5.4	2.1	1.3	6.8	5.2	2.7	1.3	.40	---	---
26	.48	3.2	5.7	2.1	1.3	7.5	4.8	2.6	1.6	.40	---	---
27	2.5	7.5	4.2	2.0	1.3	6.8	4.6	2.5	6.0	.40	---	---
28	1.0	3.4	3.5	2.0	1.3	7.1	4.5	2.5	2.3	.36	---	---
29	.69	2.8	3.2	1.9	---	6.9	5.6	2.9	1.6	.36	---	---
30	.55	2.4	2.8	1.9	---	7.1	7.4	3.1	1.4	.35	---	---
31	.51	---	2.7	1.9	---	22	---	2.3	---	.30	---	---
TOTAL	20.21	56.65	111.9	72.8	43.8	120.8	360.4	119.8	55.42	25.35	---	---
MEAN	.65	1.89	3.61	2.35	1.56	3.90	12.0	3.86	1.85	.82	---	---
MAX	2.5	7.5	14	2.8	1.9	22	47	8.5	6.0	2.3	---	---
MIN	.37	.40	1.6	1.9	1.3	1.7	4.5	2.3	.92	.30	---	---
CFSM	.40	1.16	2.21	1.44	.96	2.39	7.37	2.37	1.13	.50	---	---
IN.	.46	1.29	2.55	1.66	1.00	2.76	8.23	2.73	1.26	.58	---	---

CAL YR 1986 TOTAL 997.74 MEAN 2.73 MAX 24 MIN .30 CFSM 1.68 IN. 22.77

CONNECTICUT RIVER BASIN

01172800 NATTY POND BROOK NEAR HUBBARDSTON, MASS.

LOCATION.--Lat 42°27'06", long 72°01'48", Worcester County, Hydrologic Unit 01080204, on left bank at upstream side of bridge on Hale Road, 0.2 mi southwest of Hubbardston.

DRAINAGE AREA.--5.48 mi².

PERIOD OF RECORD.--Water year 1984 (discharge measurements only), November 1984 to July 1987.

GAGE.--Water-stage recorder. Datum of gage is 865.37 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daly discharges. Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 137 ft³/s Apr. 5, 1987, gage height, 3.75 ft; minimum, 0.09 ft³/s July 21, 22, 1987.

EXTREMES FOR PERIOD OCTOBER 1986 TO JULY 1987.--Peak discharges greater than base discharge of 35 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 20	0230	46	2.51	Apr. 5	1945	*a137	*3.75
Apr. 1	1415	a115	3.50	July 13	0200	42	2.42

a From rating curve attended above 39 ft³/s.

Minimum discharge, 0.09 ft³/s July 21, 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	2.3	8.1	10	6.5	6.3	102	25	4.1	1.3	---	---
2	1.3	2.1	7.2	9.3	6.5	10	71	25	3.7	3.8	---	---
3	1.4	2.3	19	13	6.1	9.6	47	22	3.6	4.3	---	---
4	2.2	2.2	24	12	6.0	7.3	41	20	5.0	3.3	---	---
5	3.0	2.4	19	11	6.3	6.6	112	18	5.8	2.0	---	---
6	2.2	3.9	13	9.9	5.9	6.1	115	17	4.1	2.0	---	---
7	1.5	4.8	9.9	9.6	5.8	7.1	96	15	3.7	2.0	---	---
8	1.2	7.8	9.1	9.4	5.7	11	81	14	4.0	1.6	---	---
9	1.2	11	8.1	8.7	5.6	14	62	13	11	1.1	---	---
10	1.3	9.1	9.5	8.4	5.6	15	49	12	7.0	1.3	---	---
11	1.1	6.7	10	8.9	5.3	12	40	20	1.5	1.2	---	---
12	1.3	6.3	8.9	9.2	5.3	9.8	33	17	.98	7.6	---	---
13	1.4	5.2	7.7	9.9	5.0	8.5	32	13	1.9	28	---	---
14	1.9	4.1	6.1	7.9	4.7	8.1	34	9.0	2.3	3.9	---	---
15	2.7	3.6	5.8	7.8	4.5	8.1	31	5.3	1.6	1.5	---	---
16	2.1	3.6	5.9	8.4	4.8	7.9	26	3.0	1.3	.69	---	---
17	2.0	3.6	6.2	7.8	5.4	7.3	23	3.4	.94	.27	---	---
18	1.8	3.7	6.6	7.2	5.4	7.2	23	3.8	.74	.16	---	---
19	1.8	4.1	34	8.5	5.0	7.8	23	4.0	.75	.16	---	---
20	1.9	4.1	44	8.1	4.7	8.4	21	4.3	.46	.21	---	---
21	1.7	16	34	7.8	4.6	9.3	19	4.3	.47	.13	---	---
22	1.7	20	25	7.1	4.5	11	17	4.3	.78	.13	---	---
23	1.8	14	16	7.9	4.5	15	16	6.8	24	.22	---	---
24	1.8	12	14	8.6	4.4	20	15	22	3.8	.32	---	---
25	1.9	11	20	7.0	4.4	26	18	18	1.2	.42	---	---
26	2.2	11	25	6.5	4.3	29	15	11	2.1	---	---	---
27	7.0	24	21	6.3	4.2	30	13	7.2	7.6	---	---	---
28	6.0	21	16	6.2	4.4	29	12	8.3	4.5	---	---	---
29	4.4	15	13	6.3	---	28	19	8.0	2.9	---	---	---
30	3.6	11	13	6.2	---	28	25	7.8	1.5	---	---	---
31	2.7	---	12	6.1	---	48	---	5.6	---	---	---	---
TOTAL	69.2	247.9	471.1	261.0	145.4	451.4	1231	367.1	113.32	---	---	---
MEAN	2.23	8.26	15.2	8.42	5.19	14.6	41.0	11.8	3.78	---	---	---
MAX	7.0	24	44	13	6.5	48	115	25	24	---	---	---
MIN	1.1	2.1	5.8	6.1	4.2	6.1	12	3.0	.46	---	---	---
CFSM	.41	1.51	2.77	1.54	.95	2.66	7.49	2.16	.69	---	---	---
IN.	.47	1.68	3.20	1.77	.99	3.06	8.36	2.49	.77	---	---	---

CAL YR 1986 TOTAL 3238.92 MEAN 8.87 MAX 58 MIN .23 CFSM 1.62 IN. 21.99

CONNECTICUT RIVER BASIN

145

01173000 WARE RIVER AT INTAKE WORKS, NEAR BARRE, MASS.

LOCATION.--Lat 42°23'26", long 72°03'39", Worcester County, Hydrologic Unit 01080204, on right bank above diversion dam at Ware River intake works, 2.7 mi downstream from Burnshirt River, 3 mi southeast of Barre, and at mile 29.1.

DRAINAGE AREA.--96.3 mi².

PERIOD OF RECORD.--January 1928 to current year. Prior to October 1977, published as Ware River at Coldbrook.

REVISED RECORDS.--WSP 1031: 1944. WDR MA-RI-84-1: Drainage area.

GAGE.--Venturi meters and water-stage recorder. Datum of gage is 5.65 ft below National Geodetic Vertical Datum of 1929. Prior to Feb. 1, 1936, water-stage recorder at site 0.2 mi downstream at datum 631.91 ft above NGVD.

REMARKS.--No estimated daily discharges. Records good. Figures of discharge include diversion as needed for Boston metropolitan district during period Oct. 15 to June 14 of each year and at other times for emergency flood-control purposes as authorized by U. S. Army Corps of Engineers; diversion began in March 1931. Flow regulated by Barre Falls Reservoir 4.3 mi upstream (Reservoirs in Connecticut River basin) since 1958. Diversion at times since 1955 from 6.5 mi² upstream for municipal supply of Fitchburg.

COOPERATION.--Computations of daily discharge made in cooperation with Water Division, Metropolitan District Commission, which collected gage-height and venturi-meter records.

AVERAGE DISCHARGE.--59 years, 167 ft³/s, 23.55 in/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,000 ft³/s Sept. 21, 1938, gage height, 664.28 ft, by computation of flow over dam; minimum daily, 0.46 ft³/s Sept. 15, 1987, caused by unusual regulation. Maximum daily discharge since construction of Barre Falls Reservoir in 1958, 1,590 ft³/s Apr. 14, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,590 ft³/s Apr. 14; minimum daily, 0.46 ft³/s Sept. 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	38	192	240	118	95	997	530	80	36	12	12
2	18	34	148	245	123	118	675	530	74	54	11	12
3	21	32	358	214	123	112	750	453	72	72	16	12
4	34	31	469	180	117	108	697	416	91	73	23	5.3
5	32	30	453	248	112	121	1170	338	131	63	51	5.1
6	11	44	331	219	111	131	1030	373	119	50	28	5.3
7	11	57	189	184	111	135	1150	336	91	42	23	5.6
8	71	82	197	160	100	154	1450	290	81	49	17	6.2
9	30	122	225	161	95	235	1490	259	79	58	18	6.7
10	26	120	216	139	95	205	1520	234	76	19	40	6.7
11	23	97	201	141	97	230	1500	214	57	30	37	6.7
12	22	88	174	180	96	209	1440	190	53	33	32	6.7
13	22	78	169	169	93	212	1540	158	61	73	24	16
14	24	58	137	153	90	199	1590	171	76	67	20	139
15	26	54	137	156	79	201	1540	147	55	54	17	.46
16	27	53	138	166	75	194	1060	149	46	25	16	11
17	26	52	136	137	77	150	921	138	39	30	14	12
18	25	53	137	134	78	144	1000	135	34	38	13	45
19	24	66	511	135	77	138	983	125	32	35	11	128
20	23	63	555	139	76	140	904	117	29	19	10	112
21	22	145	651	139	76	142	829	112	27	22	9.1	95
22	21	206	628	137	76	180	528	108	26	23	9.0	83
23	22	238	606	139	76	243	315	105	37	22	9.0	71
24	22	175	440	139	76	353	352	125	48	17	8.0	56
25	20	194	421	142	75	394	342	126	33	17	7.6	44
26	25	276	424	149	65	558	306	115	29	17	7.4	36
27	64	366	400	136	61	577	284	104	88	17	8.8	30
28	73	345	378	125	70	588	235	100	124	16	11	42
29	65	339	411	112	---	554	375	98	111	14	21	31
30	53	248	359	108	---	404	535	107	74	13	21	81
31	44	---	308	112	---	851	---	95	---	13	14	---
TOTAL	945	3784	10099	4938	2518	8075	27508	6498	1973	1111	558.9	1122.76
MEAN	30.5	126	326	159	89.9	260	917	210	65.8	35.8	18.0	37.4
MAX	73	366	651	248	123	851	1590	530	131	73	51	139
MIN	11	30	136	108	61	95	235	95	26	13	7.4	.46
MEAN+	30.6	136	329	153	90.6	292	878	208	65.7	35.4	18.1	37.8
CFSM+	.32	1.41	3.42	1.59	.94	3.03	9.12	2.16	.68	.37	.19	.39
IN.+	.37	1.58	3.95	1.84	.98	3.49	10.17	2.50	.76	.42	.22	.44

CAL YR 1986 TOTAL 62545 MEAN 171 MAX 988 MIN 11 MEAN+ 172 CFSM+ 1.79 IN.+ 24.21
WTR YR 1987 TOTAL 69130.66 MEAN 189 MAX 1590 MIN .46 MEAN+ 189 CFSM+ 1.96 IN.+ 26.71

+ Adjusted for change in contents in Barre Falls Reservoir.

CONNECTICUT RIVER BASIN

01173500 WARE RIVER AT GIBBS CROSSING, MASS.

LOCATION.--Lat 42°14'10", long 72°16'23", Hampshire County, Hydrologic Unit 01080204, on right bank 0.5 mi upstream from Gibbs Crossing, 1.8 mi upstream from Beaver Brook, 2.5 mi southwest of Ware, and 8.8 mi upstream from mouth.

DRAINAGE AREA.--197 mi².

PERIOD OF RECORD.--Discharge: August 1912 to current year.
Water-quality records: Water years 1953-54.

WSP 1301: 1914(M). WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 379.79 ft above National Geodetic Vertical Datum of 1929. Prior to Mar. 1, 1930, at site 0.5 mi downstream at different datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Doubtful gage-height record Oct. 1 to Sept. 30. Diversion at times: Since March 1931 from 96.3 mi² for supply of Boston metropolitan district and since 1955 from 6.5 mi² for municipal supply of Fitchburg. Regulation by Barre Falls Reservoir (Reservoirs in Connecticut River basin) since 1958. Flow regulated by mills upstream. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--18 years, (water years 1913-30), 313 ft³/s, 21.36 in/yr; 57 years (water years 1931-87), affected by diversion and storage, 282 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,700 ft³/s Sept. 21, 1938, gage height, 18.2 ft, from floodmarks, from rating curve extended above 4,600 ft³/s on basis of contracted-opening measurement at gage height 12.83 ft and slope-area measurement at gage height 18.2 ft; minimum, 5.0 ft³/s Oct. 26, 1914; minimum daily, 6.0 ft³/s Oct. 4, 1914. Maximum discharge since construction of Barre Falls Reservoir in 1958, 5,050 ft³/s Mar. 6, 1979, gage height, 7.94 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,800 ft³/s Apr. 5, gage height, 5.98 ft; minimum, 25 ft³/s Aug. 27; minimum daily, 26 ft³/s Aug. 25, 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	65	237	253	e210	169	2380	672	162	168	46	49
2	51	75	224	297	210	322	1150	538	139	81	30	40
3	44	66	481	e280	218	368	695	455	147	132	53	40
4	73	57	552	e260	216	369	664	434	146	160	65	49
5	97	56	376	e260	e200	311	2260	397	226	139	54	38
6	79	81	318	e220	e200	293	1830	412	243	117	53	37
7	56	103	264	278	e190	302	2070	383	177	114	74	38
8	52	127	259	e240	e180	401	1500	338	165	84	54	36
9	80	245	251	e240	e170	619	1310	314	149	102	53	49
10	59	210	251	224	e170	e550	990	278	130	116	97	41
11	49	222	280	260	e160	e440	862	296	128	85	117	41
12	50	151	257	262	e160	e420	722	260	116	84	72	40
13	51	145	e235	270	e160	366	689	256	109	99	53	53
14	48	120	e200	e190	e150	289	672	247	129	99	48	114
15	60	116	200	264	e150	380	527	242	132	130	51	165
16	61	89	213	261	e140	346	665	243	103	89	49	72
17	52	103	213	e250	e130	300	565	234	90	73	48	48
18	46	87	215	e250	e130	288	518	225	87	53	46	71
19	59	123	1000	286	e150	314	550	222	77	62	43	269
20	47	115	915	e260	e140	330	452	201	73	63	47	324
21	44	312	526	e240	e170	367	394	194	70	60	41	211
22	47	438	397	e230	e150	384	400	187	74	58	41	168
23	54	318	359	e270	e140	477	345	161	81	57	48	150
24	46	299	304	e250	e140	635	372	188	84	70	28	118
25	45	277	450	e230	e140	670	393	227	88	64	26	107
26	44	259	547	e220	e130	659	353	192	79	60	26	59
27	90	490	416	e220	e130	570	327	184	134	56	27	44
28	125	373	367	e210	e130	514	343	175	272	50	28	59
29	121	321	329	e210	---	466	513	173	229	48	39	44
30	111	256	319	e200	---	426	679	177	207	48	41	75
31	91	---	291	e200	---	986	---	164	---	47	47	---
TOTAL	1978	5699	11246	7585	4564	13331	25190	8669	4046	2668	1545	2649
MEAN	63.8	190	363	245	163	430	840	280	135	86.1	49.8	88.3
MAX	125	490	1000	297	218	986	2380	672	272	168	117	324
MIN	44	56	200	190	130	169	327	161	70	47	26	36

CAL YR 1986 TOTAL 98216 MEAN 269 MAX 2670 MIN 38
WTR YR 1987 TOTAL 89170 MEAN 244 MAX 2380 MIN 26

e Estimated

CONNECTICUT RIVER BASIN

147

01174500 EAST BRANCH SWIFT RIVER NEAR HARDWICK, MASS.

LOCATION.--Lat 42°23'36", long 72°14'21", Worcester County, Hydrologic Unit 01080204, on left bank 100 ft above spillway of regulating dam and 4.6 mi northwest of Hardwick.

DRAINAGE AREA.--43.7 mi².

PERIOD OF RECORD.--Discharge: January 1937 to current year. Published as "near Dana" January 1937 to September 1939.
Water-quality records: Water year 1957.

GAGE.--Water-stage recorder. Concrete spillway since Mar. 12, 1940. Datum of gage is 504.70 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair October to February, poor March to May, good thereafter. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--50 years, 69.8 ft³/s, 21.69 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,780 ft³/s Sept. 21, 1938, average of slope-area and contracted-opening measurements; maximum gage height since construction of concrete spillway in 1940, 22.49 ft June 25, 1944; no flow at times during several years.

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)
Apr. 1	0700	*1,200	*21.17	Apr. 5	1900	961	20.88

Minimum discharge, 0.93 ft³/s Aug. 2, 25, 26, 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	22	69	77	43	51	1060	188	20	33	1.6	8.3
2	12	22	59	92	42	92	627	203	24	31	1.4	7.6
3	13	21	130	93	41	106	412	182	e39	43	6.0	7.2
4	21	20	219	78	41	93	343	152	e35	43	8.0	6.5
5	28	18	166	70	41	82	791	130	49	40	7.5	5.9
6	28	25	119	64	40	72	828	124	54	32	7.4	5.6
7	24	30	92	64	39	70	793	118	41	27	7.7	6.0
8	21	40	80	64	39	87	694	109	36	23	7.6	7.4
9	22	64	70	58	40	128	516	94	34	21	7.9	19
10	21	65	69	60	38	143	397	84	32	19	17	20
11	18	58	73	70	40	130	317	74	27	17	16	17
12	17	52	71	68	38	114	267	68	25	16	12	16
13	17	43	64	63	38	100	251	64	29	16	10	26
14	19	34	49	55	37	91	233	57	35	15	8.6	55
15	22	31	46	55	35	86	207	52	33	16	7.5	47
16	22	29	47	57	34	82	195	46	29	13	6.6	34
17	21	28	46	54	34	82	180	37	24	11	6.0	27
18	19	32	51	52	34	78	171	56	20	9.7	5.6	37
19	17	42	217	62	33	77	155	47	18	8.9	4.6	88
20	16	36	302	65	32	83	129	33	17	7.9	4.0	89
21	16	93	215	55	34	93	112	29	16	8.1	3.0	69
22	16	152	150	56	33	106	111	27	16	8.1	2.5	55
23	16	122	117	66	34	129	95	25	19	9.2	2.4	42
24	18	88	97	56	36	178	82	35	17	8.2	1.6	33
25	17	92	120	48	36	233	78	39	17	8.0	1.1	27
26	20	91	186	46	34	287	70	28	17	6.4	1.1	22
27	37	169	172	44	36	302	64	23	29	5.2	1.9	20
28	40	160	136	42	36	278	73	24	50	3.9	3.6	17
29	36	117	110	41	---	258	130	23	49	2.6	7.9	16
30	32	89	96	42	---	228	160	23	39	2.1	8.7	19
31	27	---	88	46	---	444	---	22	---	2.2	7.9	---
TOTAL	665	1885	3526	1863	1038	4383	9541	2216	890	506.5	194.7	849.5
MEAN	21.5	62.8	114	60.1	37.1	141	318	71.5	29.7	16.3	6.28	28.3
MAX	40	169	302	93	43	444	1060	203	54	43	17	89
MIN	12	18	46	41	32	51	64	22	16	2.1	1.1	5.6
CFSM	.49	1.44	2.60	1.38	.85	3.24	7.28	1.64	.68	.37	.14	.65
IN.	.57	1.60	3.00	1.59	.88	3.73	8.12	1.89	.76	.43	.17	.72

CAL YR 1986 TOTAL 25697.5 MEAN 70.4 MAX 912 MIN 7.7 CFSM 1.61 IN. 21.88
WTR YR 1987 TOTAL 27557.6 MEAN 75.5 MAX 1060 MIN 1.1 CFSM 1.73 IN. 23.46

e Estimated

CONNECTICUT RIVER BASIN

01174570 DICKEY BROOK NEAR COOLEYVILLE, MASS.

LOCATION.--Lat 42°25'42", long 72°21'06", Franklin County, Hydrologic Unit 01080204, on left bank off gate 17 road, 2.4 mi south of State Highway 202, and 2.7 mi southeast of Cooleyville.

DRAINAGE AREA.--1.19 mi².

PERIOD OF RECORD.--February 1985 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 870 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair except those for estimated daily discharges and those below 1.0 ft³/s, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 46 ft³/s Mar. 31, 1987, gage height, 2.45 ft; minimum, 0.04 ft³/s Aug. 26, 27, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 16 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 3	1345	17	1.63	Apr. 5	0215	33	2.12
Mar. 31	2045	*46	*2.45	Apr. 7	0530	30	2.03

Minimum discharge, 0.04 ft³/s Aug. 26, 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.51	.62	e1.4	e1.9	1.3	5.4	21	4.6	.66	.57	.07	.20
2	.55	.50	1.4	1.8	1.3	6.8	9.5	2.9	1.2	.90	.07	.17
3	.65	.46	11	2.1	1.3	3.3	6.5	2.6	1.2	1.7	.38	.14
4	1.0	.46	7.0	e2.0	1.1	1.9	7.3	2.5	1.8	1.3	.27	.09
5	.96	.46	3.9	1.9	1.0	1.7	28	2.4	3.5	.89	.12	.09
6	.65	.89	3.0	1.8	.95	1.6	18	2.6	1.9	.77	.12	.09
7	.46	.85	2.6	1.8	.88	2.0	22	2.5	1.2	.68	.10	.09
8	.46	1.4	2.3	1.5	.88	3.7	12	2.0	.96	.68	.09	.12
9	.46	1.9	2.3	1.4	.88	e5.1	8.1	1.8	.95	.63	.11	.91
10	.46	1.4	2.3	1.4	.88	e4.4	6.1	1.7	.74	.51	.57	.47
11	.46	1.1	2.6	1.9	.88	e2.8	5.0	1.4	.68	.51	.38	.36
12	.46	1.0	2.3	1.9	.88	e2.4	4.2	1.3	.56	.47	.23	.34
13	.46	.98	e2.1	1.6	.88	2.1	4.5	1.2	.56	.36	.15	1.9
14	.70	e.74	e1.9	1.6	.88	1.9	4.5	.91	.56	.36	.11	2.3
15	.80	.74	e1.6	1.4	e.82	e2.0	3.5	.88	.56	.40	.09	1.2
16	.59	.74	1.6	e1.6	e.76	e1.9	3.1	.88	.54	.36	.09	.72
17	.56	.74	1.6	e1.5	e.74	e1.6	2.9	.88	.49	.35	.09	.51
18	.56	.74	1.7	e1.4	e.72	1.6	3.1	.88	.36	.31	.08	2.6
19	.56	.74	7.6	1.7	e.70	1.6	3.2	.88	.36	.26	.07	5.5
20	.56	e.81	6.4	1.6	.68	1.8	3.0	.84	.33	.21	.06	2.5
21	.44	6.2	4.2	1.5	.68	2.0	2.7	.74	.24	.20	.06	1.6
22	.28	3.7	e2.8	1.4	.68	2.5	2.1	.74	.27	.17	.05	.95
23	.31	2.2	2.3	1.4	.68	4.4	2.1	.63	.50	.14	.05	.95
24	.36	2.2	2.2	1.5	.68	5.9	1.7	.86	.45	.12	.05	.87
25	.36	2.1	5.3	1.5	.68	6.1	1.8	.74	.41	.12	.05	.68
26	.51	2.5	5.6	1.5	.74	5.9	1.7	.74	.41	.12	.05	.59
27	1.1	5.3	3.9	1.3	.78	4.7	1.4	.73	2.1	.11	.05	.51
28	.83	2.8	e3.1	1.3	.81	3.8	1.7	1.1	1.5	.09	.08	.51
29	.81	1.9	2.4	1.2	---	3.2	3.6	.93	.83	.08	.44	.47
30	.69	1.5	2.4	1.2	---	2.6	5.6	.69	.68	.08	.39	.53
31	.62	---	2.0	1.3	---	27	---	.68	---	.08	.25	---
TOTAL	18.18	47.67	102.8	48.9	24.14	123.7	199.9	44.23	26.50	13.53	4.77	27.96
MEAN	.59	1.59	3.32	1.58	.86	3.99	6.66	1.43	.88	.44	.15	.93
MAX	1.1	6.2	11	2.1	1.3	27	28	4.6	3.5	1.7	.57	5.5
MIN	.28	.46	1.4	1.2	.68	1.6	1.4	.63	.24	.08	.05	.09
CFSM	.49	1.34	2.79	1.33	.72	3.35	5.60	1.20	.74	.37	.13	.78
IN.	.57	1.49	3.21	1.53	.75	3.87	6.25	1.38	.83	.42	.15	.87

CAL YR 1986 TOTAL 627.97 MEAN 1.72 MAX 28 MIN .12 CFSM 1.45 IN. 19.63
WTR YR 1987 TOTAL 682.28 MEAN 1.87 MAX 28 MIN .05 CFSM 1.57 IN. 21.33

e Estimated

CONNECTICUT RIVER BASIN

149

01174575 DICKEY BROOK TRIBUTARY NEAR COOLEYVILLE, MASS.

LOCATION.--Lat 42°26'38", long 72°22'13", Franklin County, Hydrologic Unit 01080204, on right bank off gate 17 road, 1.2 mi southeast of State Highway 202, and 1.4 mi southeast of Cooleyville.

DRAINAGE AREA.--1.06 mi².

PERIOD OF RECORD.--February 1985 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 575 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32 ft³/s Mar. 31, 1987, gage height, 1.52 ft; minimum, 0.03 ft³/s Aug. 8, 1987.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 2	0115	15	1.21	Apr. 5	1915	21	1.33
Mar. 31	2030	*32	*1.52	Apr. 7	0445	19	1.31

Minimum discharge, 0.03 ft³/s Aug. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.29	.44	1.7	2.0	e1.0	3.5	14	2.4	.40	.30	.09	.19
2	.24	.43	1.6	2.1	.98	5.6	7.9	2.0	.48	.30	.08	.15
3	.22	.44	6.1	2.1	.98	1.4	5.8	1.7	.78	.96	.16	.13
4	.58	.37	4.9	2.0	.98	1.1	6.0	1.6	1.0	.86	.15	.10
5	.85	.37	4.2	1.9	.98	e1.2	17	1.7	1.8	.50	.14	.10
6	.60	.63	3.4	1.7	.96	e1.2	12	1.8	.80	.35	.12	.09
7	.55	.67	2.8	e1.6	.91	1.3	15	1.8	.47	.27	.10	.08
8	.53	.96	2.7	e1.5	.91	2.1	9.3	1.5	.43	.21	.09	.10
9	.55	1.4	2.3	e1.4	.91	2.7	7.2	1.3	.37	.27	.08	.33
10	.48	1.1	2.4	1.3	.85	e2.4	5.6	1.3	.37	.22	.21	.30
11	.48	.92	2.5	1.6	.84	e1.9	4.7	1.1	.33	.24	.19	.29
12	.42	.91	2.1	1.5	.79	e1.8	3.6	.98	.27	.24	.19	.23
13	.34	.88	2.0	1.4	.79	1.7	3.9	.96	.48	.24	.17	.50
14	.41	.72	e1.9	1.3	e.79	1.7	3.8	.88	.79	.23	.15	.81
15	.48	.63	1.8	1.3	e.79	e1.6	3.2	.91	.63	.21	.12	.72
16	.54	.62	1.8	1.4	e.79	e1.6	2.7	.86	.44	.19	.10	.44
17	.55	.62	1.8	e1.4	e.79	1.5	2.7	.86	.33	.19	.09	.30
18	.46	.62	1.8	e1.3	e.79	1.4	2.8	.67	.27	.21	.08	.75
19	.40	.76	6.4	1.2	e.73	1.5	2.7	.69	.25	.17	.08	2.4
20	.40	.78	4.5	1.2	e.73	1.5	2.5	.62	.23	.17	.07	1.4
21	.40	3.5	2.9	e1.1	e.73	1.6	2.0	.62	.24	.17	.07	.99
22	.33	2.7	2.3	e1.3	e.68	1.9	1.9	.67	.21	.17	.07	.79
23	.33	1.8	2.1	e1.3	e.68	2.7	1.8	.63	.27	.17	.07	.55
24	.41	1.7	1.9	e1.2	.59	3.3	1.8	.72	.27	.18	.07	.45
25	.46	1.7	4.2	e1.2	.57	3.2	1.7	.71	.27	.17	.07	.38
26	.59	1.9	4.1	e1.1	.57	3.3	1.6	.62	.25	.17	.06	.30
27	1.0	2.9	3.1	e1.1	.57	3.5	1.4	.61	1.0	.16	.07	.27
28	.98	2.2	2.7	e1.0	.57	3.2	1.8	.86	1.0	.14	.10	.20
29	.93	2.0	2.4	e1.0	---	2.8	3.1	.70	.49	.12	.23	.17
30	.72	1.9	2.3	e1.0	---	2.3	3.3	.52	.45	.11	.19	.22
31	.54	---	2.2	e1.0	---	16	---	.44	---	.11	.19	---
TOTAL	16.06	36.57	88.9	43.5	22.25	82.5	152.8	32.73	15.37	8.00	3.65	13.73
MEAN	.52	1.22	2.87	1.40	.79	2.66	5.09	1.06	.51	.26	.12	.46
MAX	1.0	3.5	6.4	2.1	1.0	16	17	2.4	1.8	.96	.23	2.4
MIN	.22	.37	1.6	1.0	.57	1.1	1.4	.44	.21	.11	.06	.08
CFSM	.49	1.15	2.71	1.32	.75	2.51	4.81	1.00	.48	.24	.11	.43
IN.	.56	1.28	3.12	1.53	.78	2.90	5.36	1.15	.54	.28	.13	.48

CAL YR 1986 TOTAL 548.38 MEAN 1.50 MAX 19 MIN .11 CFSM 1.42 IN. 19.25
WTR YR 1987 TOTAL 516.06 MEAN 1.41 MAX 17 MIN .06 CFSM 1.33 IN. 18.11

e Estimated

CONNECTICUT RIVER BASIN

01174600 CADWELL CREEK NEAR PELHAM, MASS.

LOCATION.--Lat 42°21'16", long 72°23'18", Hampshire County, Hydrologic Unit 01080204, on left bank 0.8 mi east of Knights Corner, 2 mi upstream from mouth, 2.7 mi south of Pelham, and 5 mi north of Belchertown.

DRAINAGE AREA.--0.60 mi².

PERIOD OF RECORD.--July 1961 to current year.

REVISED RECORDS.--WDR MA-RI-84-1: 1962(M), 1964(M), 1968-69(M), 1970(P), 1972-73(P), 1974(M), 1975-77(P), 1979-80(P), 1982-83(P), Drainage area.

GAGE.--Water-stage recorder and concrete control with V-notch sharp-crested weir. Elevation of gage is 860 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good: Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--26 years, 1.15 ft³/s, 26.03 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 62 ft³/s, Mar. 6, 1979, gage height, 5.26 ft; no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 19 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 3	0845	20	4.56	Apr. 5	0015	24	4.66
Mar. 31	2045	*42	*5.00	Apr. 7	0345	19	4.54

No flow Aug. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	.21	.92	.96	.53	2.2	12	2.2	.16	.09	.01	.06
2	.05	.21	.90	1.0	.53	2.8	4.5	1.4	.14	.19	.0	.04
3	.07	.21	10	.99	.55	1.6	3.0	1.1	.13	.77	.19	.02
4	1.1	.20	4.2	.88	.55	1.2	4.3	1.2	.51	.37	.21	.01
5	.59	.19	2.2	.85	.55	1.0	18	1.1	1.2	.17	.09	.01
6	.28	.82	1.6	.79	.53	.97	8.9	1.3	.43	.11	.05	.01
7	.18	.62	1.3	.78	.53	1.6	12	1.1	.23	.08	.03	.02
8	.16	1.6	1.1	.77	.53	3.8	5.1	.90	.36	.07	.02	.02
9	.18	1.9	1.0	.71	.60	5.1	3.2	.79	.26	.06	.05	.54
10	.15	1.1	1.6	.71	.53	e3.0	2.3	.69	.16	.05	.65	.28
11	.11	.77	1.5	1.2	.49	1.9	1.9	.59	.14	.15	.32	.12
12	.10	.71	1.2	.98	.48	1.4	1.6	.56	.15	.13	.15	.07
13	.12	.66	1.0	.87	.48	1.2	3.3	.52	.18	.09	.08	2.1
14	.29	.52	.81	.81	.46	1.1	2.5	.47	.23	.08	.04	1.5
15	.33	.44	.81	.94	.44	1.1	1.9	.45	.15	.08	.03	.45
16	.19	.46	.81	1.3	.42	1.1	1.5	.43	.10	.07	.02	.24
17	.17	.52	.80	.99	.38	.94	1.4	.39	.08	.05	.02	.15
18	.16	.62	.88	.89	.37	.96	1.5	.34	.06	.03	.01	2.7
19	.13	.62	6.2	1.0	.37	1.2	1.3	.31	.05	.03	.01	3.6
20	.13	.52	4.0	.87	e.34	1.3	1.2	.31	.04	.03	.01	1.4
21	.13	6.6	2.4	.77	e.34	1.5	1.1	.29	.03	.02	.01	.85
22	.08	2.5	1.6	.70	.34	2.1	1.0	.27	.04	.02	.01	.66
23	.10	1.4	1.3	.78	.36	4.8	.93	.27	.06	.06	.01	.66
24	.10	2.4	1.1	.68	.36	5.6	.92	.65	.04	.02	.01	.42
25	.10	1.7	4.3	.62	.35	4.9	1.0	.45	.04	.02	.01	.29
26	.22	3.0	4.0	.60	.35	4.1	.85	.36	.04	.02	.01	.22
27	1.1	4.8	2.4	.57	.36	2.8	.76	.31	1.2	.01	.01	.18
28	.51	2.0	1.7	.53	.37	2.2	.89	.42	.70	.01	.02	.15
29	.35	1.4	1.4	.53	---	1.8	2.1	.39	.24	.01	.13	.13
30	.27	1.1	1.3	.51	---	1.5	3.2	.32	.13	.01	.25	.26
31	.22	---	1.1	.55	---	26	---	.23	---	.01	.10	---
TOTAL	7.72	39.80	65.43	25.13	12.49	92.77	104.15	20.11	7.28	2.91	2.56	17.16
MEAN	.25	1.33	2.11	.81	.45	2.99	3.47	.65	.24	.094	.083	.57
MAX	1.1	6.6	10	1.3	.60	26	18	2.2	1.2	.77	.65	3.6
MIN	.05	.19	.80	.51	.34	.94	.76	.23	.03	.01	.00	.01
CFSM	.42	2.21	3.52	1.35	.74	4.99	5.79	1.08	.40	.16	.14	.95
IN.	.48	2.47	4.06	1.56	.77	5.75	6.46	1.25	.45	.18	.16	1.06

CAL YR 1986 TOTAL 402.06 MEAN 1.10 MAX 20 MIN .03 CFSM 1.84 IN. 24.93
WTR YR 1987 TOTAL 397.51 MEAN 1.09 MAX 26 MIN .00 CFSM 1.82 IN. 24.65

e Estimated

CONNECTICUT RIVER BASIN

151

01174900 CADWELL CREEK NEAR BELCHERTOWN, MASS.

LOCATION.--Lat 42°20'08", long 72°22'12", Hampshire County, Hydrologic Unit 01080204, on left bank 200 ft upstream from mouth, 2 mi southeast of Knights Corner, and 4.5 mi north of Belchertown.

DRAINAGE AREA.--2.55 mi².

PERIOD OF RECORD.--July 1961 to current year.

REVISED RECORDS.--WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder and concrete control with V-notch sharp-crested weir. Elevation of gage is 540 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.--26 years, 4.89 ft³/s, 26.04 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 271 ft³/s Mar. 6, 1979, gage height, 7.42 ft, from rating curve extended above 92 ft³/s; minimum, 0.07 ft³/s several times in water years 1964-66.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 3	unknown	85	unknown	Apr. 5	unknown	100	unknown
Mar. 31	unknown	*170	*unknown	Apr. 7	unknown	80	unknown

Minimum discharge, 0.08 ft³/s Aug. 24, 25, 26, 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.38	.99	e4.6	4.9	2.7	e5.8	e50	9.0	1.0	.66	.12	.42
2	.40	.97	e4.8	5.2	2.8	e10	e25	6.8	.92	1.1	.14	.30
3	.53	.95	e39	5.0	2.9	6.2	e17	5.9	1.1	3.7	2.9	.25
4	4.9	.92	e15	4.5	2.9	4.9	e25	6.1	2.8	1.9	1.1	.19
5	3.0	.87	e9.8	4.3	2.9	4.5	e68	5.8	5.8	.97	.49	.16
6	1.5	4.0	7.5	4.1	2.9	4.3	e35	5.9	2.5	.64	.35	.15
7	1.0	2.9	6.6	4.1	2.9	e7.0	e45	5.7	1.5	.51	.27	.19
8	.89	4.8	5.8	3.8	2.8	e15	e26	4.9	2.2	.52	.22	.29
9	.89	7.2	5.4	3.7	2.8	e19	18	e4.4	1.7	.53	.28	3.7
10	.81	4.6	7.0	3.6	2.8	e11	14	e4.1	1.0	.40	3.7	1.2
11	.70	3.3	6.7	5.9	2.8	e8.0	11	e3.7	.84	.67	1.5	.61
12	.68	3.1	5.7	4.9	2.8	6.7	9.7	e3.5	.93	.51	.70	.48
13	.68	3.0	4.5	4.4	2.5	5.9	16	e3.3	1.2	.40	.43	9.7
14	1.4	2.3	4.1	4.1	2.8	5.4	13	e3.1	1.5	.38	.32	7.2
15	1.5	2.0	4.3	4.3	2.5	5.4	9.7	2.9	1.0	.50	.27	2.0
16	1.0	2.0	4.0	5.8	2.4	5.1	8.5	2.8	.69	.30	.24	1.1
17	.92	2.3	4.1	4.1	2.1	4.6	8.0	2.5	.53	.26	.21	.79
18	.83	2.9	4.3	4.2	e2.0	4.7	8.0	2.2	.43	.20	.15	9.0
19	.75	2.8	e23	4.9	e1.9	5.6	7.5	2.1	.40	.18	.13	14
20	.72	2.2	e17	4.0	e1.8	6.1	7.0	2.0	.37	.17	.11	5.2
21	.70	e25	e11	3.8	e1.7	6.7	6.4	1.9	.32	.17	.10	3.4
22	.67	e10	7.5	3.3	e1.7	e10	5.9	1.8	.38	.16	.12	2.8
23	.63	6.1	6.6	3.9	e1.7	e18	5.5	1.6	.89	.21	.11	2.6
24	.65	e9.5	5.8	3.4	e1.7	e21	5.5	4.0	.62	.17	.10	1.7
25	.61	e6.1	e16	3.5	1.7	e19	5.9	2.8	.40	.35	.09	1.2
26	.90	e12	e15	3.2	1.8	e15	5.2	2.2	.43	.25	.10	.99
27	5.3	e18	e10	2.5	1.9	e12	4.7	1.9	6.0	.19	.16	.85
28	2.4	e9.0	7.5	2.5	1.9	e10	5.3	2.4	3.4	.13	.30	.77
29	1.6	e6.1	6.7	2.2	---	e8.0	11	2.1	1.4	.12	1.8	.71
30	1.3	e5.0	6.1	2.4	---	6.8	12	1.9	.84	.12	.86	1.8
31	1.1	---	5.6	2.7	---	e100	---	1.4	---	.13	.44	---
TOTAL	39.34	160.90	281.0	123.2	66.1	371.7	488.8	110.7	43.09	16.50	17.81	73.75
MEAN	1.27	5.36	9.06	3.97	2.36	12.0	16.3	3.57	1.44	.53	.57	2.46
MAX	5.3	25	39	5.9	2.9	100	68	9.0	6.0	3.7	3.7	14
MIN	.38	.87	4.0	2.2	1.7	4.3	4.7	1.4	.32	.12	.09	.15
CFSM	.50	2.10	3.55	1.56	.93	4.70	6.39	1.40	.56	.21	.23	.96
IN.	.57	2.35	4.10	1.80	.96	5.42	7.13	1.61	.63	.24	.26	1.08

CAL YR 1986 TOTAL 1773.29 MEAN 4.86 MAX 78 MIN .28 CFSM 1.91 IN. 25.87
WTR YR 1987 TOTAL 1792.89 MEAN 4.91 MAX 100 MIN .09 CFSM 1.93 IN. 26.16

e Estimated

CONNECTICUT RIVER BASIN

01175500 SWIFT RIVER AT WEST WARE, MASS.

LOCATION.--Lat 42°16'04", long 72°19'59", Hampshire County, Hydrologic Unit 01080204, on left bank at West Ware, 1.4 mi downstream from Quabbin Reservoir, 3.5 mi east of Belchertown, and 8.0 mi upstream from mouth.

DRAINAGE AREA.--189 mi², includes 1.6 mi² drained by Beaver Brook, flow of which is diverted from Ware River basin. Prior to January 1937, 186 mi².

PERIOD OF RECORD.--Discharge: July 1910 to September 1912 (twice-daily gage heights and corresponding discharge), October 1912 to current year.
Water-quality records: Water years 1952-54.

REVISED RECORDS.--WSP 451: 1916. WSP 871: 1919. WSP 1031: 1944 (changes in reservoir contents and adjusted figures only). WSP 1301: 1925(M). WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 365.18 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 25, 1912, nonrecording gage at site 400 ft upstream at same datum.

REMARKS.--Records excellent. Flow regulated since August 1939 by Quabbin Reservoir (Reservoirs in Connecticut River basin). Diversion from Ware River to Quabbin Reservoir since 1940, from Quabbin Reservoir to Wachusett Reservoir since 1941, from Quabbin Reservoir to Chicopee Valley aqueduct since 1950, and at times since 1966 from Quabbin Reservoir to city of Worcester. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--27 years (water years 1913-39) prior to completion of Quabbin Reservoir, 314 ft³/s, 22.56 in/yr; 48 years (water years 1940-87), affected by storage and diversions, 96.2 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,590 ft³/s Mar. 19, 1936, gage height, 15.00 ft; minimum daily, 9.1 ft³/s Dec. 15, 1968. Maximum discharge since construction of Quabbin Reservoir in 1939, 3,070 ft³/s June 1, 1984, gage height, 11.58 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 128 ft³/s Aug. 3, gage height, 2.68 ft; maximum gage height, 3.15 ft, Feb. 16 (ice jam); minimum daily discharge, 23 ft³/s Sept. 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	41	42	39	42	43	48	45	42	43	42	112
2	41	36	43	44	42	42	46	45	42	43	42	112
3	41	39	45	44	42	42	45	45	43	43	45	83
4	42	42	43	43	42	41	50	45	43	43	43	77
5	42	41	43	43	42	41	57	45	44	42	43	111
6	42	42	43	43	e42	41	53	45	43	42	42	111
7	41	42	43	43	42	42	58	44	43	43	42	112
8	41	43	43	43	42	43	50	44	43	43	42	112
9	41	43	42	43	42	44	48	44	43	43	43	80
10	41	42	44	43	e42	e43	48	44	42	43	44	44
11	41	42	43	43	42	42	47	44	42	43	43	44
12	41	42	43	43	42	41	47	44	43	43	42	44
13	41	42	43	43	e42	41	49	44	43	43	42	49
14	42	e42	42	43	e42	41	47	43	43	43	42	45
15	41	41	42	43	e42	42	47	44	43	42	42	44
16	41	42	42	43	e42	42	47	43	43	43	43	43
17	41	42	43	42	e41	41	46	43	42	42	43	43
18	41	42	43	42	41	42	46	43	42	42	43	47
19	41	42	50	43	42	42	46	43	42	42	43	46
20	41	42	45	41	42	42	46	43	42	42	43	44
21	41	46	44	e41	41	42	45	43	42	43	43	41
22	41	43	44	35	41	43	45	43	42	42	43	44
23	41	42	43	42	41	44	45	43	43	42	43	44
24	41	33	36	42	41	43	45	43	42	42	76	23
25	41	42	44	42	41	43	45	43	42	42	112	31
26	41	44	44	42	41	43	45	43	42	42	112	48
27	42	44	44	43	41	43	45	43	45	42	113	44
28	41	43	30	e43	41	43	46	43	43	42	113	30
29	41	43	43	43	---	43	47	43	43	42	113	37
30	41	43	43	53	---	43	46	43	43	42	112	45
31	37	---	43	42	---	54	---	42	---	42	112	---
TOTAL	1272	1253	1325	1322	1166	1322	1425	1352	1280	1316	1846	1790
MEAN	41.0	41.8	42.7	42.6	41.6	42.6	47.5	43.6	42.7	42.5	59.5	59.7
MAX	42	46	50	53	42	54	58	45	45	43	113	112
MIN	37	33	30	35	41	41	45	42	42	42	42	23

CAL YR 1986 TOTAL 16091 MEAN 44.1 MAX 80 MIN 30
WTR YR 1987 TOTAL 16669 MEAN 45.7 MAX 113 MIN 23

e Estimated

CONNECTICUT RIVER BASIN

153

01175670 SEVENMILE RIVER NEAR SPENCER, MASS.

LOCATION.--Lat 42°15'54", long 72°00'19", Worcester County, Hydrologic Unit 01080204, on right bank 40 ft upstream from bridge on Cooney Road and 1.5 mi north of Spencer.

DRAINAGE AREA.--8.68 mi².

PERIOD OF RECORD.--Occasional low-flow measurements, water year 1960. October 1960 to current year. October and November 1960 monthly discharge only, published in WSP 1901.

REVISED RECORDS.--WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 630 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Sept. 25, 1984, at datum 8.83 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Occasional regulation by ponds upstream since 1971. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--27 years, 14.7 ft³/s, 23.00 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 412 ft³/s Mar. 18, 1968, gage height, 5.19 ft, datum then in use; maximum gage height, unknown Apr. 1, 1987, present datum; minimum discharge, 0.04 ft³/s Sept. 10, 11, 1980 (regulated); minimum daily, 0.13 ft³/s July 21, 1976.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 60 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 3	1230	64	10.44	Apr. 5	1030	223	11.91
Dec. 19	1000	201	11.64	Apr. 7	0715	226	11.93
Apr. 1	unknown	*300	*unknown				

Minimum discharge, 0.32 ft³/s, Aug. 21, 22, 24, 25, 26; minimum daily, 0.32 ft³/s Aug. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	2.1	e9.0	e17	e9.4	e12	e230	51	7.6	4.2	.50	.86
2	.97	2.4	e8.6	e16	e9.8	e15	116	49	9.6	3.5	.58	.71
3	1.3	1.9	49	e16	e10	e12	72	44	8.9	4.2	2.9	.64
4	4.2	1.6	47	e15	e10	e9.7	65	43	6.8	3.9	2.1	.54
5	3.6	1.5	32	e15	e9.6	e8.3	207	39	10	3.3	1.1	.55
6	3.0	3.2	24	e14	e9.2	e7.4	179	37	8.1	2.4	.88	.62
7	2.6	3.3	20	e14	e8.9	e8.0	209	35	6.2	1.9	.75	.65
8	2.2	6.9	17	e13	e8.6	14	151	32	5.4	2.1	.79	.66
9	1.9	9.7	15	e15	e8.3	e23	98	29	4.5	2.0	1.0	1.7
10	1.7	7.0	14	16	e8.0	e22	70	26	4.5	1.9	5.9	1.2
11	1.6	6.0	14	15	e8.0	e20	57	22	3.4	2.1	3.5	.86
12	1.6	6.0	13	15	e7.8	e17	48	20	2.7	2.2	2.3	.86
13	1.6	e5.9	12	15	e7.5	e15	49	19	3.6	1.7	1.8	2.1
14	1.6	e5.0	e9.7	e14	e7.0	e14	54	17	4.1	1.6	1.6	3.3
15	1.6	e3.8	e9.0	13	e6.5	e13	46	16	3.1	2.0	1.5	2.3
16	1.5	e3.2	8.6	12	e6.0	e12	38	16	2.7	1.9	1.5	2.1
17	1.4	e3.0	8.3	e12	e6.4	e11	34	14	2.2	1.8	1.0	1.6
18	1.4	e4.0	9.8	e12	e6.5	e10	33	12	2.1	1.6	.78	4.9
19	1.5	e5.2	156	e12	e6.4	e10	33	10	1.9	1.7	.56	17
20	1.4	e4.5	103	e12	e6.2	e11	31	10	2.0	1.2	.57	11
21	1.2	e15	63	e11	e6.2	e13	29	8.3	1.8	1.1	.50	8.3
22	1.2	e23	e45	e11	e6.2	e16	26	8.1	1.4	1.0	.32	6.0
23	.99	e19	36	e11	e6.2	e20	24	8.0	2.0	1.2	.42	4.8
24	.93	e14	30	e11	e6.0	e30	23	9.3	2.3	.99	.44	3.7
25	.94	e12	43	e10	e6.0	e40	23	9.0	1.9	1.3	.34	3.0
26	1.2	e11	47	e10	e5.8	e50	23	7.6	2.0	1.4	.37	2.7
27	3.1	e37	37	e10	e5.6	e40	20	6.7	8.6	.81	.43	2.8
28	2.4	e30	30	e9.6	e5.4	e33	20	9.2	9.7	.50	.50	2.0
29	2.5	e17	26	e9.2	---	e29	33	10	6.8	.49	1.7	1.9
30	2.4	e11	23	e9.0	---	e25	44	16	4.9	.52	1.8	2.2
31	2.2	---	20	e9.0	---	e140	---	10	---	.51	1.0	---
TOTAL	57.23	275.2	979.0	393.8	207.5	700.4	2085	643.2	140.8	57.02	39.43	91.55
MEAN	1.85	9.17	31.6	12.7	7.41	22.6	69.5	20.7	4.69	1.84	1.27	3.05
MAX	4.2	37	156	17	10	140	230	51	10	4.2	5.9	17
MIN	.93	1.5	8.3	9.0	5.4	7.4	20	6.7	1.4	.49	.32	.54
CFSM	.21	1.06	3.64	1.46	.85	2.60	8.01	2.39	.54	.21	.15	.35
IN.	.25	1.18	4.20	1.69	.89	3.00	8.94	2.76	.60	.24	.17	.39

CAL YR 1986 TOTAL 5765.14 MEAN 15.8 MAX 160 MIN .73 CFSM 1.82 IN. 24.71
WTR YR 1987 TOTAL 5670.13 MEAN 15.5 MAX 230 MIN .32 CFSM 1.79 IN. 24.30

e Estimated

CONNECTICUT RIVER BASIN

01176000 QUABOAG RIVER AT WEST BRIMFIELD, MASS.

LOCATION.--Lat 42°10'56", long 72°15'51", Hampden County, Hydrologic Unit 01080204, on right bank 10 ft upstream from abandoned highway bridge site at West Brimfield, 0.9 mi upstream from Blodgett Mill Brook, 3.5 mi northeast of Palmer, and 9.9 mi upstream from mouth.

DRAINAGE AREA.--150 mi².

PERIOD OF RECORD.--Discharge: August 1909 to July 1912 (twice-daily gage heights and corresponding discharges), August 1912 to current year.

Water-quality records: Water years 1953, 1967, 1969-70, 1972-74.

REVISED RECORDS.--WSP 451: 1916. WSP 1301: 1918(M). WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 390 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Aug. 19, 1912, nonrecording gage, and Aug. 19, 1912, to Oct. 31, 1955, water-stage recorder, at several sites 0.5 mi downstream at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Slight diurnal fluctuation at low flow caused by mill upstream prior to 1956; regulation much greater prior to 1938. High flow slightly affected by retarding reservoirs since 1965. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--75 years (water years 1913-87), 246 ft³/s, 22.27 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,800 ft³/s Aug. 19, 1955, gage height, 15.36 ft, from floodmarks, present site and datum, from rating curve extended above 2,700 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 6.6 ft³/s Sept. 28, 29, 1957.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 840 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 7	0700	*2,170	*7.78	No other peak greater than base discharge.			

Minimum discharge, 27 ft³/s Aug. 26, 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	66	e270	408	e190	150	1110	559	193	101	39	46
2	47	63	e260	399	e195	189	1260	566	170	99	37	43
3	49	62	e300	384	e200	187	1280	564	191	106	89	41
4	78	60	e370	e370	e200	195	1310	581	190	101	90	39
5	86	57	e390	e360	e195	198	1660	563	197	94	78	37
6	84	71	e370	347	e190	197	1730	550	184	88	74	37
7	77	71	e350	327	e180	222	2100	525	171	81	68	35
8	81	96	e345	297	e170	287	2080	498	178	77	64	37
9	81	122	334	267	e160	351	1940	466	155	74	62	55
10	76	118	320	289	e130	340	1730	430	134	71	115	52
11	74	e135	300	278	e170	349	1510	403	124	72	100	52
12	72	e130	287	261	e160	341	1320	374	118	72	92	52
13	69	e120	253	249	e150	326	1220	350	114	93	85	64
14	68	e105	189	250	e145	308	1110	325	116	76	77	93
15	70	e95	271	247	e140	294	1030	297	109	73	70	86
16	64	e88	232	247	e135	278	938	267	98	66	64	81
17	65	e83	220	e240	e130	258	856	249	87	63	60	76
18	63	e90	217	e235	e125	254	794	236	78	58	55	106
19	61	e110	524	e240	e120	258	741	220	73	55	50	220
20	59	e110	544	e245	e120	264	694	206	68	53	49	207
21	59	e170	587	e230	e120	276	650	191	64	53	44	202
22	58	e270	585	e230	e115	292	607	170	63	51	42	202
23	56	e290	552	238	e110	326	566	155	65	55	40	184
24	53	e270	523	244	e90	373	532	183	63	53	34	165
25	53	e260	580	e235	e115	415	521	170	60	53	31	148
26	55	e250	565	e230	e100	449	489	161	58	52	30	134
27	67	e290	551	e220	e115	473	455	153	101	50	31	122
28	69	e310	528	e210	e110	495	450	150	120	48	37	111
29	66	e310	497	e200	---	503	504	151	109	45	53	102
30	69	e290	469	e190	---	497	548	151	104	45	52	130
31	63	---	431	e190	---	737	---	164	---	43	48	---
TOTAL	2042	4562	12214	8357	4080	10082	31735	10028	3555	2121	1860	2959
MEAN	65.9	152	394	270	146	325	1058	323	118	68.4	60.0	98.6
MAX	86	310	587	408	200	737	2100	581	197	106	115	220
MIN	47	57	189	190	90	150	450	150	58	43	30	35
CFSM	.44	1.01	2.63	1.80	.97	2.17	7.05	2.16	.79	.46	.40	.66
IN.	.51	1.13	3.03	2.07	1.01	2.50	7.87	2.49	.88	.53	.46	.73

CAL YR 1986 TOTAL 89206 MEAN 244 MAX 942 MIN 43 CFMS 1.63 IN. 22.12
WTR YR 1987 TOTAL 93595 MEAN 256 MAX 2100 MIN 30 CFMS 1.71 IN. 23.21

e Estimated

CONNECTICUT RIVER BASIN

155

01177000 CHICOPEE RIVER AT INDIAN ORCHARD, MASS.

LOCATION.--Lat 42°09'38", long 72°30'52", Hampden County, Hydrologic Unit 01080204, on left bank 1,000 ft downstream from West Street Bridge at Indian Orchard, 1.1 mi upstream from Fuller Brook, and 7.2 mi upstream from mouth.

DRAINAGE AREA.--689 mi².

PERIOD OF RECORD.--Discharge: August 1928 to current year. Published as "at Bircham Bend" prior to November 1938. Water-quality records: Water years 1953, 1957.

REVISED RECORDS.--WSP 1231: 1934. WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 125 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Nov. 1, 1938, water-stage recorder at site 1.8 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records excellent. Diversion since 1941 from 186 mi² in Swift River basin and at times since 1931 from 97 mi² in Ware River basin for Boston metropolitan district; since 1950, for Chicopee; since 1952, for South Hadley; at times since 1966 for Worcester; at times since 1955 from 6.5 mi² in Ware River basin for Fitchburg. Diversion from Ludlow Reservoir for Springfield and, prior to 1952, for Chicopee. Flow regulated by powerplants upstream, by Quabbin Reservoir 21 mi upstream on Swift River since 1939, by Barre Falls Reservoir on Ware River since 1958, by Conant Brook Reservoir since 1966 (Reservoirs in Connecticut River basin), and by smaller reservoirs. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--59 years, 905 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,200 ft³/s Sept. 21, by computation of flow over dam; minimum daily, 16 ft³/s several times in 1929-31.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,680 ft³/s Apr. 7, gage height, 10.17 ft; minimum daily, 50 ft³/s Sept. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	224	204	814	982	627	496	4660	1870	570	540	166	277
2	197	219	797	999	637	858	3760	1660	547	457	162	245
3	221	213	957	1020	641	914	2830	1510	545	382	416	251
4	282	171	1410	920	668	764	2670	1540	563	430	495	181
5	347	199	1220	865	605	843	5280	1500	615	353	298	50
6	318	285	989	877	597	720	5390	1460	686	301	231	110
7	322	322	926	873	592	708	5990	1450	623	375	235	230
8	305	375	864	890	584	1040	5310	1330	618	374	198	437
9	292	534	834	789	589	1490	4430	1120	577	199	201	338
10	298	578	823	769	533	1360	3840	1100	492	345	409	235
11	239	583	833	844	501	1260	3270	1110	415	315	507	137
12	199	529	833	820	529	1170	2840	1030	421	336	352	248
13	247	311	789	806	558	1060	2790	929	205	282	218	302
14	306	528	550	780	505	863	2700	893	507	300	121	486
15	243	447	678	753	482	820	2360	837	581	284	146	301
16	193	395	678	790	430	962	2170	759	482	432	202	598
17	266	383	667	801	489	868	2090	792	368	180	388	312
18	248	391	628	764	432	826	1880	739	320	162	262	302
19	233	275	1740	757	468	852	1860	719	268	173	187	703
20	218	467	2430	797	418	908	1710	700	244	203	204	901
21	188	720	1800	776	407	952	1570	697	316	274	119	821
22	260	1090	1480	753	440	1020	1470	664	285	345	131	650
23	182	908	1300	606	261	1180	1380	570	260	305	161	512
24	210	831	1220	832	504	1490	1210	658	301	130	271	511
25	185	831	1240	729	322	1570	1380	671	241	91	186	491
26	259	810	1650	693	561	1500	1290	641	412	147	101	361
27	277	1090	1430	694	434	1480	1180	590	287	208	113	346
28	333	1140	1310	661	436	1400	1130	650	653	230	371	228
29	297	917	1270	614	---	1370	1520	616	333	164	365	139
30	331	851	891	614	---	1280	1910	570	582	168	311	130
31	225	---	1050	640	---	2010	---	562	---	172	257	---
TOTAL	7945	16597	34101	24508	14250	34034	81870	29937	13317	8657	7784	10833
MEAN	256	553	1100	791	509	1098	2729	966	444	279	251	361
MAX	347	1140	2430	1020	668	2010	5990	1870	686	540	507	901
MIN	182	171	550	606	261	496	1130	562	205	91	101	50

CAL YR 1986 TOTAL 287921 MEAN 789 MAX 4900 MIN 67
WTR YR 1987 TOTAL 283833 MEAN 778 MAX 5990 MIN 50

CONNECTICUT RIVER BASIN

01179500 WESTFIELD RIVER AT KNIGHTVILLE, MASS.

LOCATION.--Lat 42°17'16", long 72°51'53", Hampshire County, Hydrologic Unit 01080206, on left bank at Knightville, 0.2 mi downstream from Knightville Dam, 0.2 mi upstream from Sykes Brook, 2.4 mi upstream from Middle Branch, 3.5 mi north of Huntington, and at mile 29.7.

DRAINAGE AREA.--161 mi².

PERIOD OF RECORD.--Discharge: August 1909 to current year.
Water-quality records: Water year 1953.

REVISED RECORDS.--WSP 415: 1909-12. WSP 1001: 1941-43. WSP 1231: 1910, 1912, 1913(M), 1914-15, 1916-19(M), 1921-23(M), 1925-27(M), 1929-33(M), 1935(M). WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Concrete control since Dec. 20, 1940. Datum of gage is 461.25 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Jan. 11, 1936, nonrecording gage at site 0.5 mi upstream at different datum. Jan. 11, 1935, to May 20, 1940, water-stage recorder at site 700 ft upstream at datum 10.57 ft higher. May 21 to Dec. 19, 1940, nonrecording gage at site 700 ft upstream at datum 18.75 ft higher.

REMARKS.--Records good. Flow regulated by Knightville Reservoir since 1941 (Reservoirs in Connecticut River basin). Several observations of water temperatures and specific conductance were made during the year.

AVERAGE DISCHARGE.--78 years, 328 ft³/s, 27.67 in/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 37,900 ft³/s Sept. 21, 1938, gage height, 29.58 ft, from floodmarks, site and datum then in use, from rating curve extended above 3,800 ft³/s on basis of slope-area measurements at gage heights 24.07 ft and 29.58 ft; minimum, 0.1 ft³/s Apr. 3, 1965; minimum daily, 1.1 ft³/s Apr. 2, 1965. Maximum discharge since construction of Knightville Reservoir in 1941, 6,660 ft³/s Mar. 21, 1945, gage height, 7.45 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,300 ft³/s Apr. 6, gage height, 9.43 ft; minimum, 14 ft³/s June 10; minimum daily, 19 ft³/s Aug. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	63	104	514	404	164	103	120	420	97	60	27	50
2	73	103	322	292	161	111	116	337	87	64	27	43
3	77	105	448	261	160	138	123	299	106	398	55	37
4	436	103	1460	219	159	216	153	296	111	306	87	33
5	436	99	1580	203	156	244	2030	292	168	133	53	30
6	231	177	1080	184	153	294	4890	363	124	89	41	28
7	148	310	697	211	152	311	4660	320	94	69	35	29
8	118	301	469	228	151	305	4860	267	97	61	32	32
9	105	668	399	198	152	465	5010	236	96	59	33	293
10	98	679	397	175	148	600	5080	216	81	56	108	258
11	91	488	435	208	132	476	4950	194	71	146	111	112
12	84	314	400	230	126	335	4680	181	66	138	69	83
13	81	274	339	187	129	306	3900	171	74	198	48	189
14	97	209	215	173	e130	286	2740	158	72	127	39	933
15	170	195	241	225	135	259	1940	151	72	208	34	471
16	134	194	289	241	133	234	1790	148	61	120	31	154
17	103	194	276	174	126	223	1060	137	53	80	29	110
18	92	211	259	142	121	221	798	127	48	64	27	257
19	85	230	334	221	117	221	844	133	44	54	24	850
20	82	177	424	251	117	243	592	132	43	52	23	1120
21	86	733	354	169	115	260	477	120	40	53	24	1370
22	84	917	277	147	115	252	432	112	44	47	22	896
23	81	455	263	149	114	333	309	106	74	41	21	288
24	81	421	262	e170	113	549	208	370	99	37	21	223
25	86	600	295	e170	94	762	207	238	63	36	20	174
26	86	455	355	169	81	1140	918	172	52	39	19	144
27	266	466	374	e170	98	1420	932	162	79	37	22	129
28	238	1060	376	176	101	1400	543	188	133	35	33	116
29	164	1240	541	174	---	1380	682	184	84	30	106	108
30	135	1070	593	171	---	1100	550	137	65	29	119	108
31	114	---	543	167	---	320	---	113	---	28	66	---
TOTAL	4225	12552	14811	6259	3653	14507	55594	6480	2398	2894	1406	8668
MEAN	136	418	478	202	130	468	1853	209	79.9	93.4	45.4	289
MAX	436	1240	1580	404	164	1420	5080	420	168	398	119	1370
MIN	63	99	215	142	81	103	116	106	40	28	19	28
MEAN+	136	426	479	200	130	766	1540	209	80.0	93.3	45.4	289
CFSM+	.84	2.65	2.98	1.24	.81	4.76	9.57	1.30	.50	.58	.28	1.80
IN.+	.98	2.95	3.43	1.43	.84	5.49	10.68	1.49	.55	.67	.33	2.00

CAL YR 1986 TOTAL 119875 MEAN 328 MAX 2790 MIN 39 MEAN+ 329 CFSM+ 2.04 IN.+ 27.72
WTR YR 1987 TOTAL 133447 MEAN 366 MAX 5080 MIN 19 MEAN+ 366 CFSM+ 2.27 IN.+ 30.84

e Estimated

+ Adjusted for change in contents in Knightville Reservoir.

CONNECTICUT RIVER BASIN

157

01180500 MIDDLE BRANCH WESTFIELD RIVER AT GOSS HEIGHTS, MASS.

LOCATION.--Lat 42°15'31", long 72°52'23", Hampshire County, Hydrologic Unit 01080206, on right bank at upstream side of highway bridge at Goss Heights, 0.3 mi upstream from mouth, 0.7 mi downstream from Littleville Dam, and 1.7 mi north of Huntington.

DRAINAGE AREA.--52.7 mi².

PERIOD OF RECORD.--July 1910 to current year.

REVISED RECORDS.--WSP 415: 1910-13. WSP 781: 1933(M). WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 399.30 ft above National Geodetic Vertical Datum of 1929. Prior to June 25, 1930, datum was 2.00 ft higher, and June 25, 1930, to Sept. 30, 1964, datum was 1.00 ft higher. Prior to Sept. 8, 1912, nonrecording gage at same site.

REMARKS.--Records good. Some diurnal fluctuation at low flow prior to 1952 caused by mill upstream. Flow regulated by Littleville Lake (Reservoirs in Connecticut River basin) since 1965. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--77 years, 105 ft³/s 27.06 in/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,900 ft³/s Sept. 12, 1938, gage height, 11.61 ft, present datum, from rating curve extended above 3,200 ft³/s on basis of mean of two contracted-opening measurements of peak flow; maximum gage height, 14.87 ft, present datum, Mar. 12, 1936, (ice jam); practically no flow Sept. 3, 22, Oct. 20, 1910, July 30, 1912, Oct. 26, 27, 1914. Maximum discharge since construction of Littleville Dam in 1965, 1,670 ft³/s Mar. 26, 1980, gage height, 5.93 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,540 ft³/s Apr. 9, gage height, 6.25 ft; minimum, 2.7 ft³/s Aug. 25-27; minimum daily, 2.7 ft³/s Aug. 25, 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	28	130	85	48	42	7.2	129	35	18	4.3	19
2	15	26	106	89	46	75	4.6	108	30	18	4.1	15
3	18	24	277	86	47	93	204	93	29	59	8.5	12
4	61	23	665	74	47	86	220	91	31	72	14	9.9
5	95	22	485	68	e46	72	33	89	38	52	14	8.3
6	77	31	241	63	e45	65	355	96	36	36	11	7.3
7	54	56	167	67	45	67	1040	97	29	26	9.3	7.1
8	40	80	134	67	45	117	1270	86	28	20	8.0	7.7
9	33	207	112	61	e45	234	1440	76	29	18	8.0	34
10	28	201	115	62	e43	229	1500	69	25	16	30	43
11	24	142	131	69	43	175	1410	62	21	15	33	33
12	22	106	115	66	42	145	1290	57	19	22	25	25
13	20	85	95	62	e41	124	1220	53	19	44	18	49
14	22	66	67	59	e40	107	1070	49	20	36	14	193
15	31	57	69	59	e39	95	711	47	20	32	11	119
16	32	53	74	69	e38	87	550	43	19	31	9.5	68
17	30	51	72	62	e37	81	445	40	16	26	8.1	45
18	27	54	73	55	e36	77	425	38	14	20	7.2	74
19	24	66	115	64	e35	76	396	38	12	16	5.8	270
20	22	58	136	68	e34	78	281	38	11	14	5.3	344
21	20	221	112	59	e33	80	205	37	9.9	16	4.4	327
22	19	309	90	63	33	89	143	35	10	13	3.8	223
23	19	206	82	63	34	121	105	33	13	12	3.7	122
24	18	162	77	e57	33	233	93	49	16	10	3.1	83
25	17	206	134	e53	33	316	93	63	16	9.1	2.7	63
26	17	169	233	52	32	394	455	56	14	8.3	2.7	50
27	32	450	201	e52	32	474	407	50	16	7.0	3.1	42
28	46	519	151	e51	32	494	173	58	21	6.1	5.1	36
29	44	268	129	e48	---	497	129	64	21	5.1	16	33
30	38	179	112	49	---	358	139	53	20	4.5	25	32
31	32	---	100	49	---	79	---	43	---	4.6	21	---
TOTAL	990	4125	4800	1951	1104	5260	15813.8	1940	637.9	686.7	338.7	2394.3
MEAN	31.9	137	155	62.9	39.4	170	527	62.6	21.3	22.2	10.9	79.8
MAX	95	519	665	89	48	497	1500	129	38	72	33	344
MIN	13	22	67	48	32	42	4.6	33	9.9	4.5	2.7	7.1
MEAN+	32.9	142	152	61.5	38.9	285	411	59.7	20.3	21.2	12.4	80.3
CFSM+	.62	2.69	2.88	1.17	.74	5.41	7.80	1.13	.39	.40	.24	1.52
IN.+	.72	3.01	3.34	1.35	.77	6.24	8.70	1.31	.43	.46	.27	1.70

CAL YR 1986 TOTAL 37691.5 MEAN 103 MAX 931 MIN 8.4 MEAN+ 103 CFSM+ 1.95 IN.+ 26.64
WTR YR 1987 TOTAL 40041.4 MEAN 110 MAX 1500 MIN 2.7 MEAN+ 110 CFSM+ 2.09 IN.+ 28.29

e Estimated

+ Adjusted for change in contents in Littleville Lake.

CONNECTICUT RIVER BASIN

01181000 WEST BRANCH WESTFIELD RIVER AT HUNTINGTON, MASS.

LOCATION.--Lat 42°14'14", long 72°53'46", Hampshire County, Hydrologic Unit 01080206, on left bank at Huntington, 0.4 mi downstream from Roaring Brook, and 1.5 mi upstream from mouth.

DRAINAGE AREA.--94.0 mi².

PERIOD OF RECORD.--Discharge: September 1935 to current year.

Water-quality records: Water years 1957, 1967-74.

REVISED RECORDS.--WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 388.60 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges and period of shifting control, Apr. 8 to Sept. 9, which are fair. Prior to 1950, some diurnal fluctuation at low flow caused by small mill upstream. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--52 years, 190 ft³/s, 27.45 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,100 ft³/s Aug. 19, 1955, gage height, 15.27 ft, from rating curve extended above 9,500 ft³/s on basis of slope-area measurement of peak flow; minimum, 3.3 ft³/s Aug. 9, 1955, Nov. 27, 1957.

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)
Mar. 31	1715	7,020	7.84	Apr. 4	2230	*13,900	*11.08

Minimum discharge, 9.4 ft³/s Aug. 25-27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	45	184	e155	88	81	1470	210	66	45	13	26
2	36	45	165	e160	87	179	605	178	61	44	12	25
3	37	45	1020	e150	88	187	458	160	94	198	26	20
4	184	45	635	e140	82	141	3720	181	90	100	41	17
5	120	57	362	e130	75	121	4870	185	120	61	23	15
6	75	87	276	e125	77	115	2240	213	85	45	18	14
7	59	126	238	e130	74	141	2010	185	66	35	16	14
8	59	157	215	e125	76	311	1040	156	75	32	14	16
9	50	270	189	e115	74	407	686	142	81	31	14	103
10	54	207	232	e115	72	294	510	131	66	34	95	74
11	47	136	e220	e125	72	230	413	119	52	35	57	50
12	44	119	e180	e120	71	209	348	111	47	50	37	41
13	42	105	e150	e115	67	184	1120	105	57	64	26	228
14	46	81	e120	e105	e68	162	963	96	52	36	20	304
15	65	80	e140	106	e66	149	675	91	56	42	17	102
16	53	76	e130	135	e64	139	467	86	47	37	15	69
17	48	78	e125	87	e62	130	431	81	37	27	14	55
18	45	94	e130	107	e60	124	480	79	30	23	13	369
19	43	108	e500	151	e58	131	389	94	25	20	12	764
20	42	82	e400	110	55	137	324	90	23	18	13	336
21	41	536	e250	111	55	146	289	80	21	22	12	219
22	40	321	e190	103	57	166	255	73	25	22	11	150
23	40	211	e170	e110	57	279	232	72	39	18	11	113
24	39	278	e150	e105	56	456	219	137	43	17	10	92
25	39	298	e700	e100	54	646	221	114	32	16	9.8	75
26	40	358	e500	e95	55	815	191	96	28	15	9.4	68
27	78	828	e320	e92	56	680	173	107	39	14	11	60
28	72	373	e250	89	56	734	181	153	58	14	21	54
29	59	275	e220	87	---	730	223	138	52	13	62	53
30	52	227	e200	79	---	742	267	97	42	12	52	54
31	48	---	e180	85	---	3730	---	76	---	12	32	---
TOTAL	1730	5748	8741	3562	1882	12696	25470	3836	1609	1152	737.2	3580
MEAN	55.8	192	282	115	67.2	410	849	124	53.6	37.2	23.8	119
MAX	184	828	1020	160	88	3730	4870	213	120	198	95	764
MIN	33	45	120	79	54	81	173	72	21	12	9.4	14
CFSM	.59	2.04	3.00	1.22	.72	4.36	9.03	1.32	.57	.40	.25	1.27
IN.	.68	2.27	3.46	1.41	.74	5.02	10.08	1.52	.64	.46	.29	1.42

CAL YR 1986 TOTAL 57815 MEAN 158 MAX 1840 MIN 24 CFSM 1.69 IN. 22.88
WTR YR 1987 TOTAL 70743.2 MEAN 194 MAX 4870 MIN 9.4 CFSM 2.06 IN. 28.00

e Estimated

01183000 LITTLE RIVER AT OUTLET OF COBBLE MOUNTAIN RESERVOIR, NEAR WESTFIELD, MASS.

LOCATION.--Lat 42°07'34", long 72°53'37", Hampden County, Hydrologic Unit 01080206, at Cobble Mountain Dam, 7.5 mi west of Westfield, and at mile 13.0.

DRAINAGE AREA.--45.8 mi².

PERIOD OF RECORD.--Discharge: July 1905 to current year. Published as Westfield Little River near Blandford 1905-11, as Westfield Little River near Westfield 1912-35, and as Westfield Little River at outlet of Cobble Mountain Reservoir, near Westfield 1936-76.
Water-quality records: Water year 1957.

REVISED RECORDS.--WSP 501: Drainage area. WDR MA-RI-80-1: 1979.

GAGE.--Venturi meters at outlet tunnel at powerhouse 2.4 mi downstream. Prior to Mar. 1, 1910, nonrecording gage at site 0.2 mi upstream, and Mar. 1, 1910, to Sept. 30, 1935, water-stage recorder at diversion dam 2.8 mi downstream.

REMARKS.--Discharge computed on basis of flow through venturi meters and flow over reservoir spillway or through bypass tunnel. Flow regulated by Borden Brook Reservoir since 1910 and Cobble Mountain Reservoir since August 1931 (Reservoirs in Connecticut River basin).

COOPERATION.--Records provided by Springfield Board of Water Commissioners.

AVERAGE DISCHARGE.--77 years (water years 1911-87), 89.9 ft³/s, 26.66 in/yr, adjusted for storage.

MONTHLY DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

	Meant	Per square mile†	Runoff, in inches†
October.....	6.99	0.15	0.18
November.....	95.7	2.09	2.33
December.....	128	2.79	3.23

Calendar year 1986.....	77.3	1.69	22.92

January.....	48.7	1.06	1.23
February.....	25.0	.55	.57
March.....	294	6.42	7.40
April.....	400	8.73	9.75
May.....	26.5	.58	.65
June.....	13.6	.30	.34
July.....	6.54	.14	1.31
August.....	21.0	.46	.16
September.....	37.3	.81	.91

Water year 1987.....	95.3	2.08	28.24

† Adjusted for change in contents in Borden Brook and Cobble Mountain Reservoirs.

CONNECTICUT RIVER BASIN

01183500 WESTFIELD RIVER NEAR WESTFIELD, MASS.

LOCATION.--Lat 42°06'24", long 72°41'58", Hampden County, Hydrologic Unit 01080206, on left bank 0.7 mi downstream from Great Brook, 3 mi east of Westfield, and 8.1 mi upstream from mouth.

DRAINAGE AREA.--497 mi².

PERIOD OF RECORD.--Discharge: June 1914 to current year.
Water-quality records: Water years 1952-53, 1957, 1967-74.

REVISED RECORDS.--WSP 601: 1924(M). WSP 756: Drainage area. WSP 1051: 1919-21(M), 1925(M). WSP 1231: 1915-16(M), 1920.

GAGE.--Water-stage recorder. Datum of gage is 98.25 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 3, 1933, on right bank at same datum.

REMARKS.--No estimated daily discharges. Records excellent. Flow regulated by Borden Brook Reservoir, Cobble Mountain Reservoir since 1931, Knightville Reservoir since 1941, and Littleville Lake since 1965 (Reservoirs in Connecticut River basin). High flow slightly affected by retarding reservoirs since 1963. Diversion from Little River for municipal supply of Springfield. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--73 years, 924 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 70,300 ft³/s Aug. 19, 1955, gage height, 34.2 ft, from floodmarks, from rating curve extended above 18,000 ft³/s on basis of computations of flow over dam at gage heights 27.20 ft, 29.40 ft, and 34.2 ft; minimum, 9 ft³/s Oct. 2, 1921; minimum daily, 40 ft³/s Dec. 28, 29, 1914.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 21,200 ft³/s Apr. 5, gage height, 17.81 ft; minimum, 65 ft³/s, Aug. 15, 16, 26, 27; minimum daily, 67 ft³/s Aug. 25, 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	264	270	1350	993	500	547	5200	1190	471	218	109	202
2	195	246	925	896	532	879	2570	992	420	234	101	192
3	205	243	2510	819	574	802	2300	885	493	626	224	156
4	562	242	3450	728	646	793	4630	996	497	733	225	137
5	847	247	3230	655	591	704	13700	975	629	440	200	99
6	583	336	2220	609	526	691	10900	1120	513	306	152	111
7	416	596	1650	650	476	800	10900	993	377	243	136	134
8	319	631	1250	715	460	1230	9100	836	379	224	120	177
9	296	1300	1040	689	461	1830	8530	825	379	204	132	506
10	262	1300	1070	645	481	1820	8450	698	314	199	307	619
11	243	1010	1160	696	451	1410	8050	703	297	239	359	320
12	226	741	1070	711	422	1080	6840	649	221	247	268	242
13	234	629	890	694	391	979	7760	619	264	501	185	765
14	249	516	701	670	386	872	6160	543	345	351	159	1680
15	312	462	663	613	418	814	4330	508	607	317	78	1130
16	347	451	754	717	457	752	3890	494	327	342	73	517
17	270	442	782	603	444	711	3310	461	237	236	368	333
18	256	466	718	492	380	708	2990	421	205	193	468	667
19	240	542	1630	593	362	692	2370	459	191	185	150	2520
20	215	489	1590	679	354	748	2110	485	165	146	107	2200
21	226	1740	1200	644	345	795	1640	435	156	163	100	2090
22	205	2150	938	494	346	848	1420	401	173	139	113	1710
23	219	1290	881	524	353	1050	1220	433	200	206	99	826
24	198	1040	905	573	344	1690	990	809	256	230	71	610
25	214	1400	1630	544	347	2300	1080	751	211	142	67	481
26	240	1320	1780	537	344	3080	1580	561	207	124	67	388
27	391	2410	1420	598	335	3270	1960	531	254	254	83	351
28	533	2290	1190	603	333	3240	1480	621	296	129	106	349
29	402	2230	1220	601	---	3230	1450	641	289	115	265	291
30	341	1850	1310	666	---	3190	1450	515	213	116	357	357
31	302	---	1160	547	---	5780	---	409	---	119	247	---
TOTAL	9812	28879	42287	20198	12059	47335	138360	20959	9586	7921	5496	20160
MEAN	317	963	1364	652	431	1527	4612	676	320	256	177	672
MAX	847	2410	3450	993	646	5780	13700	1190	629	733	468	2520
MIN	195	242	663	492	333	547	990	401	156	115	67	99

CAL YR 1986 TOTAL 327789 MEAN 898 MAX 5220 MIN 122
WTR YR 1987 TOTAL 363052 MEAN 995 MAX 13700 MIN 67

CONNECTICUT RIVER BASIN

161

01184000 CONNECTICUT RIVER AT THOMPSONVILLE, CONN.

(National stream-quality accounting network and radiochemical station)

LOCATION.--Lat 41°59'14", long 72°36'21", Hartford County, Hydrologic Unit 01080205, on right bank just upstream from Enfield Dam, 1 mi downstream from Thompsonville, 3 mi downstream from Massachusetts-Connecticut State line, and at mile 68.2.

DRAINAGE AREA.--9,660 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1928 to current year.

REVISED RECORDS.--WSP 741: 1932. WDR MA-RI-77-1: 1976. WDR MA-RI-83-1: Drainage area, 1982.

GAGE.--Water-stage recorders on river and on canal of The Dexter Corp. Datum of gage is 38.48 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Discharge includes water diverted around station by canal of The Dexter Corp. Flow regulated by powerplants, by diversion from Chicopee River basin, and by First Connecticut and Second Connecticut Lakes, Lake Francis, Moore and Comerford Reservoirs, Quabbin Reservoir, (Reservoirs in Connecticut River basin), and other reservoirs, combined usable capacity, about 107 billion cu ft.

AVERAGE DISCHARGE.--59 years, 16,510 ft³/s, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 282,000 ft³/s Mar. 20, 1936, gage height, 16.6 ft, from floodmarks; minimum daily, 968 ft³/s Oct. 20, 1963.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 152,000 ft³/s Apr. 1, gage height, 8.74 ft; minimum daily, 2,870 ft³/s Aug. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12000	9360	32200	16700	9450	10300	140000	21700	10200	21400	4860	4680
2	10600	9320	28300	15600	8440	11500	145000	20900	10400	17200	3430	4580
3	11900	8820	30100	15700	11200	11900	114000	20100	9420	16000	5000	5490
4	14200	9450	43600	15100	10900	12200	86900	19900	10100	16000	9780	4230
5	16400	9730	46100	12000	9700	10700	117000	18500	11200	14000	9280	4340
6	16600	10900	36600	12100	10100	9810	134000	17100	12000	13200	8510	3310
7	15800	12100	31000	13700	10300	10000	138000	16300	8610	11600	7050	3250
8	15600	13000	25900	13600	8170	13600	139000	17300	8430	9980	4860	3360
9	14500	13800	25000	13500	7940	13900	120000	18600	8770	8650	4640	6520
10	14000	17000	24600	11900	11800	16300	98500	16700	10800	10900	5460	17400
11	12000	19000	20800	11600	9190	14600	83900	15800	12200	8510	7260	18300
12	11300	19700	18900	11600	9150	13900	70500	14600	14400	9470	9700	11700
13	9140	19400	19500	14200	8060	15500	67500	11400	10500	6680	7290	7280
14	10800	13800	17800	12400	7800	14700	64100	11400	12300	11000	5270	19000
15	11300	14600	13400	12300	7420	12700	51400	10900	10700	9990	4480	33500
16	12800	11500	13800	12100	7590	11900	47700	9700	10300	12400	3360	26000
17	11500	9290	16100	12600	8810	10600	44300	8710	8030	12400	3930	19000
18	9870	13700	16700	11100	9490	10000	35600	8960	7140	8110	8110	16800
19	7780	14500	21700	10300	9650	10800	29600	11200	5710	5890	6570	23800
20	6680	14700	22900	10500	9610	10500	27200	10700	5180	6140	4160	23500
21	7740	17300	21200	11400	10000	10200	26400	8940	4080	8660	3930	21400
22	10400	21900	19300	12100	7120	10100	23200	7880	4130	9100	2960	20200
23	10300	18400	16600	11700	7130	11400	25700	8860	9860	7230	3040	19300
24	10300	12300	16700	15800	7500	15500	22600	8470	21700	6270	2870	18000
25	9400	17500	19800	13000	8270	22100	20900	7930	23900	7120	3070	12600
26	8410	18400	23800	11300	8340	35300	18200	9400	18400	5040	3920	9670
27	10800	28200	23900	12700	8470	49400	15000	9330	12100	3600	3890	7850
28	13000	40900	20400	11700	7950	53600	16300	12300	18500	6180	4390	7770
29	11600	40900	16600	11300	---	58100	17800	10900	27200	6600	5100	8780
30	10500	37300	15800	11400	---	57900	21100	11100	24900	5530	4070	9620
31	9080	---	16400	11600	---	77100	---	9190	---	6010	3730	---
TOTAL	356300	516770	715500	392600	249550	646110	1961400	404770	361160	300860	163970	391230
MEAN	11490	17230	23080	12660	8912	20840	65380	13060	12040	9705	5289	13040
MAX	16600	40900	46100	16700	11800	77100	145000	21700	27200	21400	9780	33500
MIN	6680	8820	13400	10300	7120	9810	15000	7880	4080	3600	2870	3250

CAL YR 1986 TOTAL 6809360 MEAN 18660 MAX 89800 MIN 5210
WTR YR 1987 TOTAL 6460220 MEAN 17700 MAX 145000 MIN 2870

CONNECTICUT RIVER BASIN

01184000 CONNECTICUT RIVER AT THOMPSONVILLE, CT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1956, 1966 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1974 to current year.

WATER TEMPERATURES: October 1955 to September 1956, October 1973 to current year.

INSTRUMENTATION.--Water-quality monitor since October 1973.

REMARKS.--Interruptions in the record are due to malfunctions of the instrument. Instantaneous records are representative of the cross section while continuous records are based on point samples. The instantaneous record values will not necessarily fall within the corresponding daily range of the continuous records.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 246 microsiemens Jan. 26, 1984; minimum, 46 microsiemens Apr. 2, 1977.

WATER TEMPERATURES: Maximum, 36.5°C Aug. 30, 1977; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 164 microsiemens Aug. 3; minimum, 75 microsiemens Apr. 14, 16.

WATER TEMPERATURES: Maximum, 28.5°C July 25, Aug. 18; minimum, 0.0°C on many days during winter period.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION)	COLI- FORM, FECAL, 0.45 KF AGAR UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, PER (COLS./ 100 ML)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT												
21...	0830	7620	120	7.50	9.0	11.5	0.90	9.6	88	K9	K17	--
NOV												
13...	0930	19900	95	6.70	4.0	6.0	2.2	11.8	94	40	150	2500
DEC												
16...	0940	15800	110	7.20	5.0	1.0	1.2	13.4	93	180	720	--
JAN												
13...	1430	13700	132	6.60	4.0	1.0	1.6	15.2	107	220	220	460
MAR												
10...	0930	16000	114	7.00	<-5.0	0.5	4.0	14.0	95	400	660	--
APR												
21...	0900	27600	86	6.90	22.0	11.0	1.5	10.8	97	80	560	--
MAY												
12...	0850	16600	120	6.70	22.0	14.5	0.53	10.0	98	100	96	100
JUN												
16...	0845	10600	131	7.40	22.0	22.0	0.60	7.4	85	92	73	--
JUL												
07...	0850	11700	102	7.10	21.0	21.0	1.2	7.0	79	68	31	120
AUG												
11...	0930	7200	140	7.30	27.0	22.0	0.55	7.0	80	400	30	--
SEP												
01...	1420	4300	155	7.50	21.0	20.0	1.1	7.8	86	56	40	--

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE IT-FLD (MG/L AS HCO3)	ALKA- LINITY, CARBON- ATE IT-FLD (MG/L- CACO3)	ALKA- LINITY LAB (MG/L AS CACO3)	ALKA- LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
OCT												
21...	40	--	13	1.8	--	--	--	--	--	--	11	9.5
NOV												
13...	30	10	9.7	1.5	6.3	1.3	25	21	22	21	13	9.1
DEC												
16...	31	--	9.8	1.7	--	--	--	--	--	--	11	11
JAN												
13...	35	14	11	1.8	9.3	1.1	26	22	24	23	12	18
MAR												
10...	32	--	9.5	1.9	--	--	--	--	--	--	11	15
APR												
21...	25	--	7.7	1.5	--	--	--	--	--	--	10	8.9
MAY												
12...	37	10	12	1.7	7.3	1.1	33	27	27	28	6.0	9.0
JUN												
16...	37	--	12	1.8	--	--	--	--	--	--	11	12
JUL												
07...	34	5	11	1.5	6.6	1.4	35	29	26	28	17	9.3
AUG												
11...	43	--	14	2.0	--	--	--	--	--	--	11	13
SEP												
01...	47	--	15	2.3	--	--	--	--	--	--	15	13

CONNECTICUT RIVER BASIN

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WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	FLUORIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (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)
OCT												
21...	--	--	75	0.10	1540	81	0.290	0.010	0.300	--	0.090	--
NOV												
13...	<0.10	5.9	56	0.08	3010	58	0.290	0.010	0.300	0.260	0.050	0.040
DEC												
16...	--	--	60	0.08	2560	70	0.390	0.010	0.400	--	0.170	--
JAN												
13...	<0.10	7.1	77	0.10	2850	78	0.480	0.020	0.500	0.510	0.180	0.160
MAR												
10...	--	--	75	0.10	3240	95	--	<0.010	0.500	--	0.140	--
APR												
21...	--	--	55	0.07	4100	78	0.380	0.020	0.400	--	0.100	--
MAY												
12...	<0.10	5.3	72	0.10	3230	80	--	<0.010	0.300	0.390	0.150	0.160
JUN												
16...	--	--	78	0.11	2230	97	0.480	0.020	0.500	--	0.360	--
JUL												
07...	<0.10	5.4	72	0.10	2270	93	--	<0.010	0.400	0.400	0.240	0.220
AUG												
11...	--	--	79	0.11	1540	84	--	<0.010	0.300	--	0.140	--
SEP												
01...	--	--	92	0.12	1070	93	0.390	0.010	0.400	--	0.180	--

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, 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)	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)
OCT												
21...	0.61	0.70	1.0	<0.010	0.040	--	--	--	--	--	<1	<1
NOV												
13...	0.25	0.30	0.60	0.040	0.020	<0.010	30	<1	11	<0.5	<1	1
DEC												
16...	0.73	0.90	1.3	0.060	0.030	--	--	--	--	--	<1	<1
JAN												
13...	0.92	1.1	1.6	0.020	0.020	0.020	20	<1	15	<0.5	1	<1
MAR												
10...	1.1	1.2	1.7	0.090	<0.010	--	--	--	--	--	<1	<1
APR												
21...	0.30	0.40	0.80	0.030	0.020	--	--	--	--	--	<1	1
MAY												
12...	0.95	1.1	1.4	0.050	0.040	0.050	20	<1	13	<0.5	<1	<1
JUN												
16...	0.34	0.70	1.2	0.120	0.110	--	--	--	--	--	<1	<1
JUL												
07...	0.96	1.2	1.6	0.090	0.080	0.080	20	<1	14	<0.5	<1	<1
AUG												
11...	0.66	0.80	1.1	0.070	0.050	--	--	--	--	--	<1	<1
SEP												
01...	0.32	0.50	0.90	0.090	0.050	--	--	--	--	--	<1	<1

CONNECTICUT RIVER BASIN

01184000 CONNECTICUT RIVER AT THOMPSONVILLE, CT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	CHROMIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGANESE, DIS- SOLVED (UG/L AS MN)
OCT 21...	<1	<1	--	6	5	340	--	6	<5	--	--
NOV 13...	<1	<1	<3	7	3	360	100	<5	<5	4	15
DEC 16...	<1	<1	--	3	<1	290	--	8	<5	--	--
JAN 13...	<1	<1	<3	4	2	290	100	<5	<5	4	35
MAR 10...	4	<1	--	5	2	820	--	<5	<5	--	--
APR 21...	7	<1	--	5	3	560	--	<5	<5	--	--
MAY 12...	50	<1	<3	6	2	310	73	16	<5	4	23
JUN 16...	3	2	--	6	3	260	--	<5	<5	--	--
JUL 07...	1	<1	<3	4	3	340	88	6	6	<4	13
AUG 11...	4	<1	--	6	4	120	--	<5	<5	--	--
SEP 01...	4	<1	--	5	3	120	--	<5	<5	--	--

DATE	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYBDENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELENIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRONTIUM, DIS- SOLVED (UG/L AS SR)	VANADIUM, DIS- SOLVED (UG/L AS V)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 21...	--	--	6	3	--	--	--	--	80	10	4.8
NOV 13...	0.2	<10	2	3	<1	<1.0	44	<6	<10	13	3.8
DEC 16...	--	--	1	2	--	--	--	--	10	7	4.1
JAN 13...	--	<10	3	3	<1	<1.0	52	<6	<10	4	4.0
MAR 10...	--	--	3	2	--	--	--	--	10	12	5.0
APR 21...	--	--	3	<1	--	--	--	--	<10	8	2.9
MAY 12...	<0.1	<10	<1	<1	<1	<1.0	58	<6	40	7	3.3
JUN 16...	--	--	5	3	--	--	--	--	<10	5	3.4
JUL 07...	0.2	<10	<1	<10	<1	<1.0	53	<6	<10	13	5.5
AUG 11...	--	--	4	<1	--	--	--	--	<10	6	4.4
SEP 01...	--	--	<1	2	--	--	--	--	<10	<3	3.9

CONNECTICUT RIVER BASIN

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01184000 CONNECTICUT RIVER AT THOMPSONVILLE, CT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L)
OCT 21...	0830	<0.4	<0.4	1.6	<0.4	1.4	<0.4	0.03	0.04
APR 21...	0900	<0.4	<0.4	1.4	<0.4	1.2	<0.4	0.03	0.03

SUSPENDED SEDIMENT MEASUREMENTS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 13...	0930	19900	11	591	92
JAN 13...	1430	13700	--	--	--
MAY 12...	0850	16600	23	1030	80
JUL 07...	0850	11700	6	190	88

CONNECTICUT RIVER BASIN

01184000 CONNECTICUT RIVER AT THOMPSONVILLE, CT--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG C), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MAX	MIN OCTOBER	MEAN	MAX	MIN NOVEMBER	MEAN	MAX	MIN DECEMBER	MEAN	MAX	MIN JANUARY	MEAN
1	128	123	126	119	118	118	89	85	87	109	108	109
2	128	124	126	120	119	119	93	88	91	116	100	111
3	127	124	125	119	118	119	100	94	98	124	116	122
4	131	124	127	120	118	119	97	83	89	124	121	122
5	133	128	131	119	116	117	84	82	83	122	120	121
6	129	116	122	119	117	118	86	82	84	122	121	121
7	116	111	113	119	113	116	90	86	87	122	119	121
8	111	107	109	113	111	112	91	89	90	121	119	120
9	107	105	106	114	109	112	96	91	93	121	117	119
10	107	105	106	108	105	106	107	97	103	120	117	118
11	108	106	107	104	93	96	106	102	104	142	121	130
12	111	107	109	97	93	95	108	104	106	154	143	149
13	113	110	112	98	97	97	109	106	108	142	127	133
14	115	112	114	99	97	98	108	105	107	128	125	126
15	114	112	113	102	100	101	111	107	109	126	123	124
16	114	112	113	106	102	103	113	111	112	127	125	126
17	113	111	112	109	105	107	114	112	113	126	122	124
18	113	111	112	111	108	110	120	113	114	125	122	123
19	117	113	114	108	106	107	133	117	127	132	125	128
20	120	117	118	111	108	109	125	112	116	138	132	136
21	121	119	120	122	111	115	112	109	110	135	129	131
22	122	119	121	124	106	115	112	110	111	129	122	125
23	120	118	119	106	101	103	114	111	113	131	124	127
24	119	118	119	105	100	102	115	114	114	134	127	131
25	119	118	119	106	103	105	115	111	114	129	127	128
26	121	118	120	104	103	103	112	108	109	128	122	125
27	123	121	122	105	101	104	108	107	107	127	125	126
28	123	120	121	100	88	92	109	107	108	125	123	124
29	121	119	120	89	87	88	110	100	108	126	124	125
30	119	118	119	90	86	89	110	107	109	125	124	125
31	119	108	118	---	---	---	109	108	109	126	123	125
MONTH	133	105	117	124	86	107	133	82	104	154	100	125
DAY	MAX	MIN FEBRUARY	MEAN	MAX	MIN MARCH	MEAN	MAX	MIN APRIL	MEAN	MAX	MIN MAY	MEAN
1	133	124	130	143	137	140	88	82	85	100	97	99
2	135	132	134	143	135	137	92	88	90	101	99	100
3	135	131	133	139	134	137	92	88	90	105	100	102
4	134	130	132	135	131	133	88	83	85	106	105	105
5	131	129	130	134	131	133	84	80	82	108	105	106
6	129	127	128	135	132	133	84	82	83	110	107	108
7	129	126	128	133	127	130	85	84	84	110	107	108
8	131	126	129	130	119	124	86	84	85	111	108	109
9	134	130	132	119	113	116	86	85	86	113	109	110
10	139	134	136	117	113	115	86	83	84	115	113	114
11	140	134	137	115	112	113	84	80	82	118	114	117
12	136	132	134	119	112	114	80	76	78	125	118	121
13	134	132	133	118	115	117	78	76	77	129	124	126
14	134	133	133	118	114	116	77	75	76	129	126	128
15	134	130	132	118	117	118	78	76	77	131	127	129
16	135	130	132	119	117	118	77	75	76	131	127	129
17	134	130	132	125	118	121	80	76	77	134	130	132
18	132	128	130	127	123	124	82	80	81	133	128	130
19	133	128	130	129	123	125	85	81	83	132	129	130
20	135	127	131	126	123	124	87	84	85	133	131	132
21	136	130	133	125	121	123	90	86	88	136	133	134
22	137	133	136	124	120	121	93	90	91	137	135	136
23	144	136	140	122	118	120	93	90	91	144	137	140
24	150	143	147	120	108	114	95	92	93	145	141	143
25	150	138	146	109	100	104	99	95	97	144	138	141
26	144	138	141	100	95	97	100	98	99	143	138	141
27	142	138	140	96	91	93	100	94	96	145	142	143
28	140	137	139	91	88	90	102	97	98	146	137	141
29	---	---	---	89	86	87	103	101	102	140	136	138
30	---	---	---	86	82	84	102	99	100	139	135	137
31	---	---	---	84	82	83	---	---	---	141	135	138
MONTH	150	124	134	143	82	116	103	75	87	146	97	125

CONNECTICUT RIVER BASIN

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01184000 CONNECTICUT RIVER AT THOMPSONVILLE, CT--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG C), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	142	139	141	101	98	99	136	118	131	157	151	155
2	142	138	139	103	101	102	---	---	---	160	153	156
3	139	137	138	106	102	103	164	140	153	159	155	157
4	142	139	141	106	101	104	142	137	139	155	115	151
5	140	136	138	101	98	99	139	136	137	156	151	154
6	137	132	134	102	99	100	138	134	136	-	-	-
7	133	130	132	103	101	102	137	133	134	-	-	-
8	133	131	132	105	103	103	139	133	136	-	-	-
9	134	132	132	110	105	108	138	134	136	161	157	158
10	138	133	136	111	108	110	139	134	136	159	147	153
11	133	128	131	111	109	110	149	139	141	147	141	143
12	127	122	124	116	110	114	140	136	138	141	140	140
13	126	123	125	118	115	116	138	136	137	141	131	137
14	132	126	129	121	116	118	142	137	140	143	130	138
15	131	128	129	117	115	116	142	140	141	129	120	124
16	132	127	130	118	113	116	---	---	---	120	118	119
17	129	125	127	114	110	112	---	---	---	124	118	121
18	134	129	132	115	110	112	149	142	147	123	120	122
19	146	133	139	122	115	119	145	141	144	123	113	119
20	149	143	146	125	121	123	145	142	144	113	108	110
21	147	141	144	123	120	122	150	142	145	108	107	107
22	144	98	123	122	121	122	---	---	---	108	106	107
23	136	125	129	127	122	124	---	---	---	110	106	108
24	125	108	117	127	119	124	---	---	---	109	107	108
25	108	104	107	137	124	128	---	---	---	110	108	109
26	104	102	103	149	130	134	144	128	136	114	110	112
27	112	104	109	144	125	129	133	118	128	116	113	114
28	112	105	108	137	127	131	142	124	134	118	113	116
29	105	93	97	134	130	132	155	142	149	121	116	120
30	98	94	95	129	117	127	154	152	153	121	117	119
31	---	---	---	131	124	128	---	---	---	---	---	---
MONTH	149	93	127	149	98	116	164	118	140	161	106	129
YEAR	164	75	118									

WATER TEMPERATURE, (DEG. C), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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

CONNECTICUT RIVER BASIN

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01185500 WEST BRANCH FARMINGTON RIVER NEAR NEW BOSTON, MASS.

LOCATION.--Lat 42°04'45", long 73°04'24", Berkshire County, Hydrologic Unit 01080207, on left bank 5 ft downstream from highway bridge, 0.3 mi downstream from Clam River, 1 mi south of New Boston, and at mile 65.0.

DRAINAGE AREA.--91.7 mi²

PERIOD OF RECORD.--May 1913 to current year. Prior to October 1948, published as Farmington River near New Boston.

REVISED RECORDS:--WSP 641: 1924(M). WSP 781: 1928(M). WSP 1231: 1914. WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 758.21 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated by Otis Reservoir 7.0 mi upstream on Fall River (Reservoirs in Connecticut River basin). High flow slightly affected by retarding reservoirs since 1966. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--74 years, 183 ft³/s, 27.10 in/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 34,300 ft³/s Aug. 19, 1955, gage height, 14.06 ft, from rating curve extended above 9,600 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 2.4 ft³/s Aug. 20, 21, 1957.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,630 ft³/s Apr. 4; gage height, 9.51 ft; minimum daily, 8.1 ft³/s Aug. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	102	367	129	e76	e100	2320	194	66	30	14	30
2	32	98	348	e130	e76	e170	1090	151	113	37	12	25
3	45	96	763	e125	e80	e160	799	138	118	114	51	21
4	167	93	719	e120	e78	e135	2630	172	180	91	39	19
5	133	93	549	e115	e76	e120	3590	185	219	67	26	16
6	92	124	420	e110	e74	e110	2070	224	145	52	23	16
7	68	130	366	e115	e72	e130	1870	193	113	43	19	16
8	54	190	287	e115	e70	e200	1240	162	124	41	17	18
9	45	277	205	e110	e69	e280	884	139	130	52	17	82
10	42	260	209	e115	e68	e220	736	123	108	43	40	57
11	35	231	176	e120	e67	e190	650	110	86	42	34	43
12	32	212	155	e120	e66	e170	482	100	78	44	25	36
13	32	191	124	113	e64	140	764	94	86	44	21	134
14	46	165	171	145	e63	123	655	87	79	52	18	224
15	53	152	188	159	e62	114	488	84	70	51	17	137
16	46	143	127	104	e60	105	387	79	56	42	15	105
17	47	182	102	e110	e58	99	359	73	45	39	14	91
18	152	285	106	e105	e57	92	375	65	36	27	13	397
19	141	298	274	e105	e56	95	321	71	33	18	13	730
20	36	287	248	e100	e55	96	266	68	28	19	13	539
21	53	685	194	e100	e54	102	229	62	28	36	12	353
22	78	557	171	e98	e53	126	198	58	29	25	11	180
23	102	449	153	e96	e52	226	172	79	41	22	9.8	102
24	101	489	134	e94	e52	351	166	195	35	19	9.0	79
25	183	497	251	e91	e52	491	178	143	30	17	8.2	63
26	220	566	295	e88	e53	643	139	117	27	16	8.1	52
27	228	857	236	e86	e55	631	122	196	39	15	12	44
28	131	646	197	e84	e55	736	144	247	45	13	24	40
29	120	514	176	e82	---	735	194	186	36	12	63	36
30	113	435	157	e80	---	729	232	99	30	12	46	46
31	106	---	144	e78	---	2480	---	78	---	18	30	---
TOTAL	2763	9304	8012	3342	1773	10099	23750	3972	2253	1153	674.1	3731
MEAN	89.1	310	258	108	63.3	326	792	128	75.1	37.2	21.7	124
MAX	228	857	763	159	80	2480	3590	247	219	114	63	730
MIN	30	93	102	78	52	92	122	58	27	12	8.1	16
MEAN+	58.0	221	260	108	53.1	386	865	128	73.6	35.8	21.7	126
CFSM+	.63	2.41	2.84	1.18	.58	4.21	9.43	1.40	.80	.39	.24	1.37
IN.+	.73	2.69	3.26	1.36	.60	4.86	10.53	1.61	.90	.45	.27	1.53

CAL YR 1986 TOTAL 63526 MEAN 174 MAX 1200 MIN 14 MEAN+ 175 CFSM+ 1.91 IN.+ 25.89
WTR YR 1987 TOTAL 70826.1 MEAN 194 MAX 3590 MIN 8.1 MEAN+ 194 CFSM+ 2.12 IN.+ 28.79

e Estimated

+ Adjusted for change in contents in Otis Reservoir.

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, N. H., 506,000,000 ft³; First Lake, 5.6 mi northeast of Pittsburg, N. H., 3,330,000,000 ft³. Records provided by New England Power Co.
01129000. LAKE FRANCIS on Connecticut River at Pittsburg, N. H., 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, N. H., filled in April 1956, 4,970,000,000 ft³; Comerford Reservoir, 5 mi northeast of Monroe, N. H., 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, N. H., 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, N. H., 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, N. H., 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, N. H., 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.
01163500. BIRCH HILL RESERVOIR on Millers River, 1 mi east of South Royalston, Mass., completed in 1941 for flood control, has usable capacity of 2,180,000,000 ft³. Records provided by U.S. Army Corps of Engineers.
01164500. TULLY LAKE on East Branch Tully River, 3.5 mi north of Athol, Mass., completed in 1948 for flood control, has usable capacity of 958,000,000 ft³. Records provided by U.S. Army Corps of Engineers.
- 01167490; 01168000. SOMERSET AND HARRIMAN RESERVOIRS in Deerfield River basin 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: Somerset Reservoir on East Branch Deerfield River, 2.5 mi northeast of Somerset, Vt., completed in 1913, 2,500,000,000 ft³; Harriman Reservoir on Deerfield River at Davis Bridge, Vt., completed in 1924, 5,060,000,000 ft³. Records provided by New England Power Co.
01172400. BARRE FALLS RESERVOIR on Ware River, 4 mi east of Barre, Mass., completed in 1958 for flood control, has usable capacity of 1,050,000,000 ft³. Records provided by U.S. Army Corps of Engineers.
01175000. QUABBIN RESERVOIR on Swift River, 3.2 mi east of Belchertown, Mass., completed in August 1939 for storage of water for municipal supply, has usable capacity of 53,800,000,000 ft³. Records provided by Water Division, Metropolitan District Commission.
01176410. CONANT BROOK RESERVOIR in Chicopee River basin, 1.5 mi southeast of South Monson, Mass., completed in September 1966 for flood control, has usable capacity of 163,000,000 ft³. Records provided by U.S. Army Corps of Engineers.
01176500. LUDLOW RESERVOIR in Chicopee River basin, 3.2 mi northwest of Three Rivers, Mass., completed in 1875 for storage of water for municipal supply, has usable capacity of 201,000,000 ft³. Records provided by Board of Water Commissioners, Springfield, Mass.
01179000. KNIGHTVILLE RESERVOIR on Westfield River, 4 mi north of Huntington, Mass., completed in 1941 for flood control, has usable capacity of 2,130,000,000 ft³. Records provided by U.S. Army Corps of Engineers.
01180450. LITTLEVILLE LAKE on Middle Branch Westfield River, 2 mi north of Huntington, Mass., completed in 1965, used for flood control, water supply, and recreation, has usable capacity of 1,410,000,000 ft³. Records provided by U.S. Army Corps of Engineers.
- 01181900; 01182500. BORDEN BROOK AND COBBLE MOUNTAIN RESERVOIRS in Little River basin are operated as a unit for storage of water for municipal supply and for hydroelectric power development. The downstream order and usable capacity of each are as follows: Borden Brook Reservoir on Borden Brook, 3.5 mi south of Blandford, Mass., completed in 1909, 344,000,000 ft³; Cobble Mountain Reservoir on Little River, 6.5 mi west of Westfield, Mass., completed in 1931, 3,050,000,000 ft³. Records provided by Board of Water Commissioners, Springfield, Mass.
01185000. OTIS RESERVOIR in Farmington River basin, 3 mi southeast of Otis, Mass., completed in 1865, used for storage of water for power and for recreation, has usable capacity of 780,000,000 ft³. Records provided by Massachusetts Department of Natural Resources, Division of Forests and Parks.

CONNECTICUT RIVER BASIN

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Reservoirs in Connecticut River basin--Continued

MONTHEND USABLE CONTENTS, IN MILLIONS OF CUBIC FEET, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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, 1986.....	2702.1	3660.4	5876.6	2.2	1040.0	112.0
Oct. 31.....	2448.3	3528.7	5774.9	1.5	966.0	118.0
Nov. 30.....	2337.7	3318.4	6010.4	17.6	641.3	157.7
Dec. 31.....	2118.9	2857.5	4760.9	15.5	495.6	120.0
Jan. 31, 1987.....	1588.8	1915.5	3946.1	15.7	498.1	116.0
Feb. 28.....	1007.6	1042.0	2168.9	17.1	504.7	117.0
Mar. 31.....	1225.2	1225.1	1255.8	293.2	808.5	789.7
Apr. 30.....	2849.1	2706.5	4701.6	5.3	1007.4	112.0
May 31.....	3406.3	3081.2	5892.0	3.5	1035.8	121.0
June 30.....	3513.0	3827.2	6030.8	3.4	1056.9	118.0
July 31.....	3293.7	3760.0	6205.3	1.8	1045.8	126.0
Aug. 31.....	2804.1	3278.4	4829.4	1.7	1001.2	115.0
Sept. 30.....	2576.1	3214.9	5168.3	4.9	1016.1	121.0

	Sunapee Lake	North Springfield Reservoir	Ball Mountain Reservoir	Townshend Reservoir	Surry Mountain Lake	Otter Brook Lake
Sept. 30, 1986.....	461	24.0	168.6	37.6	53.2	37.6
Oct. 31.....	340	23.3	21.0	37.2	69.3	38.2
Nov. 30.....	243	35.6	192.9	102.0	172.3	67.6
Dec. 31.....	292	22.5	35.2	38.6	78.2	39.0
Jan. 31, 1987.....	258	22.5	34.1	37.6	79.5	36.5
Feb. 28.....	204	24.7	31.4	35.8	80.7	35.4
Mar. 31.....	442	677.2	849.9	728.4	525.0	235.7
Apr. 30.....	603	61.7	232.0	39.0	86.0	40.4
May 31.....	619	25.4	106.3	36.9	62.2	37.2
June 30.....	704	27.6	101.6	38.3	90.1	40.4
July 31.....	561	25.4	96.5	35.2	57.4	37.2
Aug. 31.....	496	25.4	115.3	37.2	56.3	37.2
Sept. 30.....	529	28.4	117.7	38.3	57.4	53.5

	Birch Hill Reservoir	Tully Lake	Somerset and Harriman Reservoirs	Barre Falls Reservoir	Quabbin Reservoir†	Conant Brook Reservoir
Sept. 30, 1986.....	2.8	73.1	5666.1	2.2	42001	0
Oct. 31.....	3.6	30.4	5460.9	2.6	40750	0
Nov. 30.....	11.8	40.8	6306.2	28.4	40630	.1
Dec. 31.....	7.5	27.8	5564.7	38.3	42288	.1
Jan. 31, 1987.....	3.9	23.0	3775.7	22.1	43010	.1
Feb. 28.....	2.8	23.6	2267.8	23.7	42452	.1
Mar. 31.....	247.5	175.2	3100.1	107.7	43966	5.0
Apr. 30.....	14.2	90.5	6561.0	6.5	47874	.2
May 31.....	3.3	65.3	6687.3	3.1	48486	.1
June 30.....	3.3	69.2	6830.7	2.9	47694	.1
July 31.....	1.6	56.3	6255.2	1.8	46240	0
Aug. 31.....	1.6	44.0	5793.9	2.0	44317	0
Sept. 30.....	4.2	64.0	6144.8	3.1	43771	0

	Ludlow Reservoir	Knightville Reservoir	Littleville Lake	Borden Brook and Cobble Mountain Reservoirs	Otis Reservoir
Sept. 30, 1986.....	147.6	0.1	417.2	2445.5	688.0
Oct. 31.....	147.6	.3	419.8	2318.1	604.5
Nov. 30.....	181.1	19.4	431.5	2450.8	373.6
Dec. 31.....	181.1	23.0	425.0	2650.9	376.7
Jan. 31, 1987.....	181.1	16.8	421.1	2562.4	376.7
Feb. 28.....	181.1	14.5	419.8	2450.5	352.0
Mar. 31.....	186.6	812.8	729.0	3100.8	513.6
Apr. 30.....	181.1	1.6	427.6	3246.7	703.3
May 31.....	181.1	.3	419.8	3203.0	703.3
June 30.....	172.2	.4	417.2	3049.2	699.5
July 31.....	147.6	.1	414.6	2849.2	695.7
Aug. 31.....	137.6	.3	418.5	2599.1	695.7
Sept. 30.....	154.5	1.0	419.8	2592.3	699.5

† Affected by diversion from Ware River and diversion to Wachusett Reservoir and Chicopee Valley aqueduct.

HOUSATONIC RIVER BASIN

01197000 EAST BRANCH HOUSATONIC RIVER AT COLTSVILLE, MASS.

LOCATION.--Lat 42°28'10", long 73°11'49", Berkshire County, Hydrologic Unit 01100005, on right bank 40 ft downstream from Hubbard Avenue Bridge at Coltsville, 1.2 mi upstream from Unkamet Brook, and 2 mi northeast of Pittsfield.

DRAINAGE AREA.--57.6 mi².

PERIOD OF RECORD.--Discharge: March 1936 to current year. Prior to October 1945, published as Housatonic River at Coltsville.
Water-quality records: Water years 1963-65.

REVISED RECORDS.--WSP 851: 1936(M). WDR MA-RI-82-1: 1976-77, 1979-80. WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 993.49 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated by powerplants upstream and, since 1949, by Cleveland Brook Reservoir, usable capacity, 214,000,000 ft³, 5.4 mi upstream; regulation greater prior to 1955. Diversion upstream from Cleveland Brook Reservoir for municipal supply of Pittsfield since May 1950. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--51 years, 105 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,400 ft³/s Sept. 21, 1938, gage height, 10.80 ft, from rating curve extended above 2,300 ft³/s on basis of computation of peak flow over dam; minimum daily, 4.4 ft³/s Aug. 15, 1936.

Maximum discharge since at least 1755, that of Sept. 21, 1938.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage Height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
Mar. 31	2015	3,020	6.71	Apr. 5	unknown	*5,000	unknown

Minimum daily discharge, 13 ft³/s Sept. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	36	134	68	55	53	1390	101	36	29	15	27
2	44	41	127	76	56	79	458	81	41	40	16	24
3	61	44	418	74	58	79	316	72	51	124	28	22
4	284	44	545	66	57	81	886	75	55	76	32	19
5	144	41	280	64	54	77	e2860	78	60	42	26	15
6	93	53	191	64	55	71	1180	96	45	33	22	13
7	71	68	163	71	54	75	952	93	35	29	20	16
8	62	125	149	66	53	113	579	73	40	28	19	20
9	58	381	128	65	55	146	384	62	41	29	18	58
10	57	270	157	64	51	121	308	57	35	26	31	48
11	52	152	158	67	53	107	270	54	31	23	35	31
12	47	125	113	68	52	98	233	51	31	24	28	24
13	46	111	82	67	50	83	474	49	34	23	24	83
14	64	85	65	66	42	73	479	46	34	35	19	144
15	73	75	78	70	38	68	283	46	45	57	17	68
16	60	77	81	78	38	68	221	44	34	37	15	39
17	60	84	81	62	40	65	198	41	29	27	16	32
18	61	97	81	61	41	64	194	40	26	20	16	120
19	58	99	113	80	40	66	185	45	24	19	16	350
20	59	74	107	72	38	70	166	44	22	20	17	184
21	56	240	92	65	37	72	145	41	20	18	16	131
22	49	240	83	62	36	76	130	39	24	18	15	75
23	47	164	75	58	39	118	109	62	36	18	15	44
24	47	229	74	56	39	204	99	148	35	17	14	37
25	43	273	128	53	38	289	94	84	27	18	15	31
26	52	293	177	59	35	362	85	60	21	17	15	28
27	93	680	145	55	35	348	79	64	29	17	18	25
28	67	329	106	55	33	342	80	93	30	16	23	37
29	48	209	99	57	---	388	94	88	30	16	34	37
30	41	168	88	56	---	439	114	54	29	16	33	37
31	38	---	79	57	---	1700	---	40	---	15	26	---
TOTAL	2076	4907	4397	2012	1272	5995	13045	2021	1030	927	654	1819
MEAN	67.0	164	142	64.9	45.4	193	435	65.2	34.3	29.9	21.1	60.6
MAX	284	680	545	80	58	1700	2860	148	60	124	35	350
MIN	38	36	65	53	33	53	79	39	20	15	14	13

CAL YR 1986 TOTAL 37294 MEAN 102 MAX 788 MIN 17
WTR YR 1987 TOTAL 40155 MEAN 110 MAX 2860 MIN 13

e Estimated

HOUSATONIC RIVER BASIN

173

01197500 HOUSATONIC RIVER NEAR GREAT BARRINGTON, MASS.

LOCATION.--Lat 42°13'55", long 73°21'19", Berkshire County, Hydrologic Unit 01100005, on left bank at upstream side of highway bridge at Van Deusenville, 0.5 mi upstream from Williams River, and 2 mi north of Great Barrington.

DRAINAGE AREA.--282 mi².

PERIOD OF RECORD.--Discharge: May 1913 to current year.
Water-quality records: Water years 1957-59, 1963-64, 1971, 1979-80.

REVISED RECORDS.--WSP 415: 1913-14. WSP 781: 1928(M). WSP 1051: 1928, 1933. WSP 1301: 1914-15(M), 1917-27(M), 1929-31(M). WDR MA-RI-83-1: 1980(P), 1982(P). WDR MA-RI-84-1: Drainage Area.

GAGE.--Water-stage recorder. Datum of gage is 683.04 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1931, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Regulation at low flow by powerplants upstream. High flow slightly affected by retarding reservoir since 1973. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--74 years, 525 ft³/s, 25.28 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,200 ft³/s Jan. 1, 1949, gage height, 12.08 ft, from rating curve extended above 6,400 ft³/s on basis of computations of flow over dams at gage heights 11.72 ft and 12.08 ft; minimum daily, 1.0 ft³/s Oct. 18, 1914.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 2	0115	3,910	7.27	Apr. 6	0815	*6,050	*9.15

Minimum daily discharge, 88 ft³/s Aug. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	185	320	822	396	317	314	3420	482	256	158	88	148
2	204	287	755	395	320	540	3500	443	261	169	103	148
3	216	265	985	408	333	506	2250	400	419	452	126	135
4	510	249	1440	e380	335	447	1860	383	375	446	202	129
5	715	273	1470	e350	e320	410	4780	390	382	310	165	123
6	523	338	1150	e340	e320	394	5760	394	338	234	146	117
7	395	393	933	350	e310	394	4710	431	279	224	135	111
8	327	415	836	348	319	514	3590	403	259	194	126	110
9	298	685	771	342	e310	743	2550	365	269	150	121	204
10	298	927	761	342	e310	693	1810	339	252	159	163	e310
11	294	831	790	360	e310	598	1380	319	225	155	203	e270
12	286	746	741	360	e300	553	1120	305	212	151	170	e250
13	277	689	660	357	e290	492	1370	300	241	147	145	e230
14	297	607	e530	356	e250	462	1730	282	236	146	154	e450
15	354	564	535	386	e230	453	1490	272	233	308	121	e480
16	345	568	533	440	e230	444	1150	271	223	287	114	356
17	345	572	512	386	e240	426	978	311	201	211	111	280
18	350	579	482	e340	e240	411	904	353	187	176	108	328
19	340	553	608	359	e230	428	845	276	172	157	104	958
20	338	476	760	e370	e220	453	775	261	162	151	101	988
21	335	819	695	e370	e220	469	706	245	161	148	101	708
22	334	1100	605	e340	e220	496	640	235	159	147	99	541
23	324	893	554	e340	e220	619	585	221	180	150	96	424
24	319	864	520	e330	e230	836	545	431	193	155	93	378
25	307	1050	591	e330	e230	1040	543	463	177	147	91	314
26	302	1030	798	e330	e230	1350	502	344	167	133	91	264
27	351	1500	737	e320	231	1530	448	337	170	134	98	235
28	401	1630	605	e320	e240	1530	432	411	186	130	109	216
29	388	1280	546	e320	---	1520	453	447	168	127	144	211
30	397	989	494	e320	---	1530	473	365	159	100	192	213
31	363	---	450	e330	---	2060	---	290	---	100	162	---
TOTAL	10718	21492	22669	11015	7555	22655	51299	10769	6902	5856	3982	9629
MEAN	346	716	731	355	270	731	1710	347	230	189	128	321
MAX	715	1630	1470	440	335	2060	5760	482	419	452	203	988
MIN	185	249	450	320	220	314	432	221	159	100	88	110
CFSM	1.23	2.54	2.59	1.26	.96	2.59	6.06	1.23	.82	.67	.46	1.14
IN.	1.41	2.84	2.99	1.45	1.00	2.99	6.77	1.42	.91	.77	.53	1.27

CAL YR 1986 TOTAL 193118 MEAN 529 MAX 2940 MIN 129 CFMS 1.88 IN. 25.48
WTR YR 1987 TOTAL 184541 MEAN 506 MAX 5760 MIN 88 CFMS 1.79 IN. 24.34

e Estimated

HUDSON RIVER BASIN

01331500 HOOSIC RIVER AT ADAMS, MASS.

LOCATION.--Lat 42°36'40", long 73°07'28", Berkshire County, Hydrologic Unit 02020003, on left bank at Adams, 500 ft downstream from Dry Brook, and 0.4 mi upstream from Pecks Brook.

DRAINAGE AREA.--46.7 mi².

PERIOD OF RECORD.--Discharge: October 1931 to current year.
Water-quality records: Water years 1967-69.

REVISED RECORDS.--WDR MA-NH-RI-VT-73-1: 1971-72. WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 828.01 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1964, datum was 9.00 ft higher and Oct. 1, 1964, to May 29, 1974, 8.00 ft higher, at site 500 ft upstream.

REMARKS.--Records good except those for estimated daily discharge, which are fair. Diversion upstream for municipal supply of Adams. Some diurnal fluctuation by mill upstream prior to 1961. Flow regulated by Cheshire Reservoir 5.1 mi upstream. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--56 years 89.6 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,080 ft³/s Sept. 21, 1938, gage height, 9.25 ft, site and datum then in use, from rating curve extended above 1,100 ft³/s on basis of computation of peak flow over dam; minimum daily, 8.0 ft³/s Aug. 31, Sept. 1, 1968.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 31	1645	1,600	8.63	Apr. 5	unknown	*2,200	unknown

Minimum discharge, 14 ft³/s Aug. 25-27; minimum daily, 14 ft³/s Aug. 25, 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	58	180	81	51	56	660	67	39	26	20	23
2	42	57	171	90	50	80	358	60	53	36	20	22
3	60	56	347	86	50	66	311	60	54	92	40	20
4	214	54	308	79	50	58	e750	58	51	54	33	19
5	147	51	205	76	49	54	e1500	61	57	42	28	18
6	105	88	166	78	48	52	e750	74	47	36	25	18
7	83	91	150	80	48	61	e640	71	39	32	23	20
8	70	156	139	79	48	103	e430	61	41	29	21	22
9	64	333	125	73	48	134	e330	57	42	28	21	103
10	61	222	144	45	47	92	e260	57	38	26	35	50
11	55	158	131	45	48	83	e220	50	33	25	31	36
12	52	146	118	44	46	78	e200	51	34	32	27	31
13	51	130	100	43	46	75	e330	48	37	41	24	165
14	76	106	84	43	44	72	e250	46	36	36	23	186
15	80	101	94	47	48	70	e200	46	35	66	21	80
16	62	96	97	57	48	67	181	46	31	38	21	60
17	55	98	93	40	43	64	174	44	29	32	20	51
18	50	124	90	44	43	62	172	40	28	29	19	189
19	47	115	125	56	41	65	159	42	28	29	18	303
20	46	90	116	49	40	67	150	42	27	27	18	175
21	45	198	98	47	40	68	131	49	25	26	17	143
22	45	147	91	e50	41	77	75	39	27	26	17	122
23	45	118	88	e56	40	127	68	42	37	25	17	106
24	44	204	87	51	40	181	66	57	30	26	15	45
25	41	176	132	54	39	250	64	47	24	27	14	37
26	60	256	143	52	38	348	59	44	21	26	14	34
27	160	531	114	49	38	295	60	42	28	25	16	32
28	99	294	94	49	38	322	61	51	29	22	19	30
29	80	239	98	50	---	355	70	51	24	19	29	29
30	71	211	93	48	---	398	79	47	25	19	27	36
31	61	---	89	52	---	1100	---	41	---	20	23	---
TOTAL	2213	4704	4110	1793	1250	4980	8758	1591	1049	1017	696	2205
MEAN	71.4	157	133	57.8	44.6	161	292	51.3	35.0	32.8	22.5	73.5
MAX	214	531	347	90	51	1100	1500	74	57	92	40	303
MIN	41	51	84	40	38	52	59	39	21	19	14	18

CAL YR 1986 TOTAL 37591 MEAN 103 MAX 735 MIN 24
WTR YR 1987 TOTAL 34366 MEAN 94.2 MAX 1500 MIN 14

e Estimated

HUDSON RIVER BASIN

175

01332000 NORTH BRANCH HOOSIC RIVER AT NORTH ADAMS, MASS.

LOCATION.--Lat 42°42'08", long 73°05'37", Berkshire County, Hydrologic Unit 02020003, on left bank at North Adams, 0.4 mi downstream from Hudson Brook, and 1.5 mi upstream from mouth.

DRAINAGE AREA.--40.9 mi².

PERIOD OF RECORD.--Discharge: June 1931 to current year.

Water-quality records: Water years 1967-69.

REVISED RECORDS.--WSP 781: 1933(M). WSP 801: 1928(M). WDR MA-NH-RI-VT-73-1: 1971. WDR-MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Concrete control at present site. Datum of gage is 820.46 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 23, 1938, at site 100 ft upstream at same datum. July 9, 1959, to July 29, 1960, nonrecording gage at site 500 ft upstream at datum about 4.6 ft lower.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Infrequent diurnal fluctuation at low flow by mill upstream; more frequent fluctuation prior to 1948. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--56 years 96.4 ft³/s, 32.01 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,950 ft³/s Sept. 21, 1938, gage height, 12.05 ft, from floodmarks, by computation of peak flow over dam; maximum gage height, 12.24 ft Aug. 10, 1976; minimum discharge, 1.7 ft³/s July 30, 1965; minimum daily, 3.1 ft³/s July 30, 1965.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 27	0015	2,000	8.86	Apr. 5	0045	*6,720	*11.61
Mar. 31	1900	4,390	10.47	Sept. 13	1945	1,900	8.78

Minimum discharge, 4.5 ft³/s Aug. 27; minimum daily, 6.1 ft³/s Aug. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	69	127	53	e35	42	882	58	13	26	7.2	46
2	59	69	115	58	e35	59	344	50	24	26	7.0	24
3	124	67	432	56	e35	43	254	46	27	100	33	16
4	521	62	381	49	e33	36	1060	44	37	64	22	13
5	360	57	204	48	e31	32	2650	44	65	36	13	10
6	195	107	151	59	e31	32	1030	51	32	28	10	9.4
7	138	110	128	58	e31	39	842	48	22	22	8.7	11
8	111	261	110	49	e31	79	455	42	24	19	8.2	21
9	97	603	94	49	e30	102	283	38	34	21	8.8	259
10	87	318	110	46	e30	68	212	35	25	17	30	90
11	77	192	92	49	e29	63	177	32	20	13	30	50
12	71	150	81	46	e29	59	157	33	20	40	16	37
13	67	124	61	44	e28	54	309	33	26	38	11	535
14	118	101	55	42	e28	49	215	28	20	24	9.3	438
15	121	92	70	46	e27	47	156	30	16	39	8.4	150
16	90	88	62	58	e27	45	129	30	13	23	7.7	93
17	78	87	58	39	e26	43	116	26	11	16	7.2	67
18	70	88	57	48	e26	42	109	24	10	13	6.8	355
19	64	88	97	60	e26	42	98	24	14	12	6.5	426
20	60	75	80	49	e25	43	88	23	11	12	6.6	207
21	57	199	63	47	25	43	80	23	8.6	14	6.5	148
22	54	139	58	45	25	48	74	21	11	11	6.6	110
23	53	106	53	e44	25	83	67	20	87	11	8.2	90
24	57	246	52	e42	25	159	65	19	38	11	7.4	77
25	50	196	126	e41	24	308	60	19	30	18	6.5	63
26	60	430	131	e40	24	483	54	18	21	14	6.1	55
27	182	1020	91	e39	24	379	50	18	32	12	6.3	49
28	120	343	74	e38	24	453	50	31	29	10	9.8	42
29	102	217	71	e38	---	528	55	27	23	9.0	40	38
30	86	164	65	e37	---	606	73	19	18	8.1	29	52
31	75	---	60	e36	---	2470	---	15	---	7.8	15	---
TOTAL	3465	5868	3409	1453	789	6579	10194	969	761.6	714.9	398.8	3581.4
MEAN	112	196	110	46.9	28.2	212	340	31.3	25.4	23.1	12.9	119
MAX	521	1020	432	60	35	2470	2650	58	87	100	40	535
MIN	50	57	52	36	24	32	50	15	8.6	7.8	6.1	9.4
CFSM	2.73	4.78	2.69	1.15	.69	5.19	8.31	.76	.62	.56	.31	2.92
IN.	3.15	5.34	3.10	1.32	.72	5.98	9.27	.88	.69	.65	.36	3.26

CAL YR 1986 TOTAL 40852 MEAN 112 MAX 1270 MIN 18 CFSM 2.74 IN. 37.16
WTR YR 1987 TOTAL 38182.7 MEAN 105 MAX 2650 MIN 6.1 CFSM 2.56 IN. 34.73

e Estimated

HUDSON RIVER BASIN

01332500 HOOSIC RIVER NEAR WILLIAMSTOWN, MASS.

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

DRAINAGE AREA.--126 mi².

PERIOD OF RECORD.--Discharge: July 1940 to current year.

Water-quality records: Water years 1953-54, 1957-58, 1967-69.

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

REMARKS.--Records good except those for winter period, which are poor. Prior to 1966, slight diurnal fluctuation at low flow caused by mills upstream. Some regulation by Cheshire Reservoir 16 mi upstream. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--47 years, 273 ft³/s, 29.42 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,000 ft³/s Dec. 31, 1948, gage height, 14.85 ft, former site and datum, from rating curve extended above 4,300 ft³/s on basis of contracted-opening measurement of peak flow; minimum, 5.8 ft³/s Aug. 30, 31, Oct. 26, 1940; minimum daily, 24 ft³/s Sept. 9, 1980.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 27	0045	2,980	8.64	Apr. 5	0145	*a9,350	*12.44
Mar. 31	1915	a6,110	10.70	Sept. 13	2000	2,680	8.40

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

Minimum discharge, 49 ft³/s Aug. 22, 23-27; minimum daily, 49 ft³/s Aug. 24-26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	153	198	413	200	e135	169	2200	210	105	83	65	115
2	151	195	381	219	e135	215	961	193	127	100	57	88
3	212	194	1070	213	e135	174	761	179	141	250	113	73
4	924	177	979	194	e130	158	1700	174	139	162	100	69
5	660	166	604	189	e125	148	4910	168	176	115	80	69
6	410	280	481	195	e125	145	2290	181	127	100	72	66
7	318	299	425	199	e125	174	2030	182	108	98	67	68
8	262	562	385	195	e125	314	1260	171	107	80	63	89
9	234	1300	332	186	e125	387	891	154	124	79	64	505
10	215	788	377	162	119	251	720	154	107	79	106	204
11	194	518	337	158	e120	228	617	151	101	74	103	131
12	182	439	305	150	e120	221	548	146	92	125	84	106
13	170	374	248	147	e120	208	883	144	103	125	72	853
14	259	306	215	150	e115	197	682	135	102	101	69	817
15	286	285	235	152	e115	192	532	133	90	153	62	311
16	224	278	235	190	e110	186	466	133	83	108	60	214
17	199	276	228	138	e110	179	434	129	82	92	60	170
18	185	283	223	146	e110	177	422	127	76	88	59	722
19	170	279	396	184	e110	179	388	127	76	79	53	1000
20	166	246	312	165	e105	182	355	124	78	73	52	526
21	166	599	247	154	e105	182	327	128	71	79	52	402
22	158	450	219	142	e105	196	254	120	82	82	51	315
23	155	341	211	160	e105	315	231	117	199	78	51	270
24	161	660	214	e140	106	511	231	126	118	73	49	196
25	146	585	384	e140	105	807	220	123	99	98	49	158
26	165	889	412	e140	105	1190	202	114	89	103	49	141
27	485	2080	304	e135	105	993	192	112	103	85	54	132
28	319	881	247	e135	105	1090	185	133	100	75	62	126
29	267	627	253	e135	---	1210	200	138	80	68	118	114
30	234	511	243	e135	---	1340	234	122	82	65	99	130
31	210	---	224	e140	---	3740	---	108	---	68	75	---
TOTAL	8040	15066	11139	5088	3255	15658	25326	4456	3167	3038	2170	8180
MEAN	259	502	359	164	116	505	844	144	106	98.0	70.0	273
MAX	924	2080	1070	219	135	3740	4910	210	199	250	118	1000
MIN	146	166	211	135	105	145	185	108	71	65	49	66
CFSM	2.06	3.99	2.85	1.30	.92	4.01	6.70	1.14	.84	.78	.56	2.16
IN.	2.37	4.45	3.29	1.50	.96	4.62	7.48	1.32	.94	.90	.64	2.42

CAL YR 1986 TOTAL 111533 MEAN 306 MAX 2610 MIN 79 CFSM 2.43 IN. 32.93
WTR YR 1987 TOTAL 104583 MEAN 287 MAX 4910 MIN 49 CFSM 2.27 IN. 30.88

e Estimated

HUDSON RIVER BASIN

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01333000 GREEN RIVER AT WILLIAMSTOWN, MASS.

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

DRAINAGE AREA.--42.6 mi².

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

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

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

REMARKS.--Records good except those for winter period, which are poor. Slight diurnal fluctuation at times caused by mill upstream. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--38 years 82.3 ft³/s, 26.24 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,060 ft³/s Dec. 31, 1973, gage height, 5.68 ft in gage well, from rating curve extended above 750 ft³/s on basis of slope-area measurement at gage height 4.94 ft; maximum gage height, 6.35 ft Mar. 13, 1977, from floodmarks, gage height in well unknown; minimum discharge, 3.1 ft³/s Sept. 20, 22, 24, 25, 1964.

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

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 850 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 26	2315	1,130	3.97	Apr. 5	0115	1,790	4.71
Mar. 31	1900	*2,050	*4.96				

Minimum discharge, 4.0 ft³/s Aug. 25, 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	57	150	56	41	68	668	55	17	13	6.6	16
2	22	57	137	59	40	79	390	50	51	21	6.4	9.7
3	34	54	346	e56	39	53	298	49	28	34	18	8.0
4	116	52	246	e53	37	47	506	46	29	20	12	6.9
5	89	49	188	e50	e37	e44	1020	48	30	16	8.8	6.4
6	68	81	162	e49	e36	e44	639	50	22	14	7.6	6.0
7	56	66	145	e48	35	59	669	46	21	13	7.0	7.4
8	49	146	130	47	34	153	478	42	22	13	6.5	17
9	46	399	121	47	e34	e155	348	40	23	12	7.1	104
10	46	260	127	45	e33	109	276	37	20	11	15	32
11	41	187	111	48	e34	101	228	34	18	10	11	20
12	39	161	102	45	e31	96	199	34	19	18	8.4	16
13	37	136	81	43	e29	84	231	31	23	15	7.3	165
14	60	119	73	45	e27	77	182	29	18	12	6.5	128
15	60	109	e73	46	e26	73	158	31	17	23	6.1	57
16	52	103	72	51	e25	69	142	28	15	14	5.8	39
17	48	97	69	42	e26	65	133	26	14	12	5.5	30
18	46	89	69	48	e26	63	126	25	13	11	5.1	225
19	44	90	111	67	e26	65	117	27	13	10	4.8	235
20	42	82	85	50	e25	65	107	24	12	9.7	5.0	125
21	39	266	72	e49	e25	65	97	23	12	9.8	4.5	91
22	38	152	66	e48	e26	88	89	22	14	8.7	4.8	73
23	40	134	60	e48	26	154	84	22	25	8.4	5.6	61
24	39	292	57	e45	25	197	80	27	15	7.5	4.5	52
25	36	208	119	e42	e25	289	75	22	13	16	4.1	44
26	49	337	111	e44	e24	421	68	21	12	14	4.1	38
27	120	536	86	e43	24	355	64	22	14	10	6.0	33
28	82	311	74	e42	e24	358	63	30	14	8.7	9.4	30
29	73	230	71	e42	---	362	63	23	12	7.6	18	27
30	67	182	68	44	---	382	62	21	12	7.6	11	32
31	61	---	63	42	---	1190	---	19	---	8.1	8.8	---
TOTAL	1666	5042	3445	1484	840	5430	7660	1004	568	408.1	241.3	1734.4
MEAN	53.7	168	111	47.9	30.0	175	255	32.4	18.9	13.2	7.78	57.8
MAX	120	536	346	67	41	1190	1020	55	51	34	18	235
MIN	22	49	57	42	24	44	62	19	12	7.5	4.1	6.0
CFSM	1.26	3.95	2.61	1.12	.70	4.11	5.99	.76	.44	.31	.18	1.36
IN.	1.45	4.40	3.01	1.30	.73	4.74	6.69	.88	.50	.36	.21	1.51

CAL YR 1986 TOTAL 30937.0 MEAN 84.8 MAX 1050 MIN 14 CFSM 1.99 IN. 27.02
WTR YR 1987 TOTAL 29522.7 MEAN 80.9 MAX 1190 MIN 4.1 CFSM 1.90 IN. 25.78

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.

Records collected at partial-record stations or miscellaneous sites are presented in two tables. The first is a table of annual maximum stage and discharge at crest-stage partial record stations. The second is a table of discharge measurements made at miscellaneous sites. There were no low-flow partial-record stations operated during the year.

Crest-stage partial-record stations

The following table contains annual maximum discharges for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained, 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 station during water year 1987

Station No.	Station name	Location	Drainage area (mi ²)	Period of record	Annual maximum		
					Date	Gage height (feet)	Dis- charge (ft ³ /s)
Blackstone River Basin							
01109480	Kettle Brook Diversion Weir at Auburn, Mass.	Lat 42 13 06, long 71 49 40, Worcester County, on right bank behind MacKensie Machinery Co., on State Highway 12, 1.8 mi north of Massachusetts Turnpike overpass.	-	1979-87	4-5-87	488.75	al,120

a Does not include unknown amount of bypass flow.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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Measurements at miscellaneous sites

Measurements of streamflow at points other than gaging stations or partial-record stations are given in the following table. Those that are measurements of base flow are designated by an asterisk (*).

Discharge measurements made at miscellaneous sites during water year 1987

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Dis- charge (ft ³ /s)
Merrimack River Basin						
01096603 Assabet River	Concord River	Lat 42°16'46", long 71°38'19", Worcester County, 1400 ft upstream of State Highway 9 Bridge, 1.5 mi northwest of West Borough, Mass.	-	1986	10-28-86 10-29-86	1.3 1.4
01096608 Assabet River	do.	Lat 42°17'16", long 71°38'35", Worcester County, at Town Line, 2,000 ft down- stream from State Highway 9 Bridge, 2.0 mi northwest of Westborough, Mass.	-	1986	10-28-86 10-28-86 10-29-86	4.0 4.1 3.4
01100696 Johnson Creek	Merrimack River	Lat 42°42'07", long 71°31'24", Essex County, 10 feet upstream from Brindel Brook, at Center Street, 0.4 mi northeast of South Groveland, Mass.	5.3	-	6-16-87 7-21-87 8-14-87	*2.4 *.47 *.08
011006961 Brindel Brook	Johnson Creek	Lat 42°42'08", long 71°02'19", Essex County, at mouth at Center Street, 0.4 mi northeast of South Groveland, Mass.	.74	-	6-16-87 7-21-87 8-14-87	*.36 *.37 *.23
011006962 Johnson Creek	Merrimack River	Lat 42°42'13", long 71°02'18", Essex County, 50 feet downstream from Johnson Creek, at Center Street, 0.4 mi northeast of South Groveland, Mass.	6.0	-	5-22-87 6-16-87 7-21-87 8-14-87	*6.8 *2.8 *.84 *.31
011006964 Johnson Creek (west channel)	do.	Lat 42°42'23", long 71°02'24", Essex County, about 300 ft west of main channel, at Center Street, 0.3 mi northeast of South Groveland, Mass.	5.3	-	6-19-87 7-21-87 8-14-87	*.51 *.03 *0
011006966 Johnson Creek	do.	Lat 42°43'33", long 71°02'27", Essex County, 50 feet downstream from Mill Pond, 0.5 mi north of South Groveland, Mass.	6.1	-	6-19-87 7-21-87 8-14-87	*3.80 *.90 *.42
011006968 Johnson Creek tributary	Johnson Creek	Lat 42°44'32", long 71°02'31", Essex County, at Washington Street, 0.7 mi north of South Groveland, Mass.	0.70	-	6-19-87 7-21-87 8-14-87	*.74 *.51 *.43
01100697 Johnson Creek	Merrimack River	Lat 42°44'53", long 71°02'31", Essex County, at Lawrence Road, 0.7 mi north of South Groveland, Mass.	7.6	-	6-19-87 7-21-87 8-14-87	*4.9 *1.5 *1.2
011006972 Argilla Brook	Johnson Creek	Lat 42°42'42", long 71°01'39", Essex County, at Center Street, 1.0 mi northeast of South Groveland, Mass.	1.5	-	5-22-87 6-19-87 7- 1-87 7-21-87 8-14-87	*1.3 *.34 *.32 *.21 *.16
011006974 Argilla Brook	do.	Lat 42°44'23", long 71°01'49", Essex County, on trail near end of Anne Street, 1.0 mi northeast of South Groveland, Mass.	1.6	-	5-22-87 6-19-87 7- 1-87 7-21-87 8-14-87	*1.6 *.54 *.44 *.35 *.24
01106976 Argilla Brook	do.	Lat 42°45'02", long 71°01'49", Essex County, 600 feet upstream from pump station, 0.8 mi south of Groveland, Mass.	1.8	-	5-22-87 6-19-87 7- 1-87 7-21-87 8-14-87	*2.0 *.77 *.58 *.42 *.22
011006978 Argilla Brook	do.	Lat 42°45'02", long 71°01'30", Essex County, at pump station, 0.8 mi south of Groveland, Mass.	1.9	-	5-22-87 6-19-87 7- 1-87 7-21-87 8-14-87	*2.3 *.77 *.57 *.45 *.26
011006982 Argilla Brook tributary	Argilla Brook	Lat 42°45'05", long 71°01'33", Essex County, 50 feet upstream from Argilla Brook, 0.8 mi south of Groveland, Mass.	0.003	-	7- 1-87 7-21-87 8-14-87	*.01 0 0

See footnotes at end of table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at miscellaneous sites during water year 1987

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Dis- charge (ft ³ /s)
Merrimack River Basin--Continued						
011006984 Argilla Brook	Johnson Creek	Lat 42°45'07", long 71°01'36", Essex County, at Lawrence Road, 0.8 mi south of Groveland, Mass.	2.0	-	5-22-87 6-19-87 7-1-87 7-21-87 8-14-87	*2.8 *.94 *1.1 *.52 *.33
Ipswich River Basin						
01101820 Ipswich River	Atlantic Ocean	Lat 42°37'25", long 70°55'57", Essex County, 20 ft downstream from mouth of Salem-Beverly Waterway Canal, 900 downstream from bridge on State Highway 97, 1.4 mi southeast of Topsfield, Mass.	-	-	6-22-87	23
01101830 Ipswich River	do.	Lat 42°37'41", long 70°55'02",, Essex County, 1.7 mi downstream from mouth of Salem-Beverly Waterway Canal, and 1.9 mi west of Topsfield, Mass.	-	-	6-23-87	27
Neponset River Basin						
01104820 Neponset River	Dorchester Bay (Atlantic Ocean)	Lat 42°07'28", long 71°15'10", Norfolk County, at bridge on South Street, 1.5 mi north of South Walpole, Mass.	7.62	1967, 1985-86	7-30-87	*4.1
01104843 Neponset River	do.	Lat 42°08'47", long 71°15'21", Norfolk County, at Elm Street, in Walpole, Mass.	11.9	1986	7-30-87	*4.0
01104846 Mill Brook	do.	Lat 42°11'08", long 71°16'57", Norfolk County, at inlet to Jewells Pond, at Foundry Street, 1.25 mi east of Medfield, Mass.	3.31	1986	5-14-87 7-30-87	*3.6 *.60
01104847 Mine Brook	Neponset River	Lat 42°10'58", long 71°16'58", Norfolk County, at bridge on Phillip Street, 1.2 mi east of Medfield, Mass.	3.54	1968, 1985-86	7-30-87	*.63
01104850 Mine Brook	do.	Lat 42°09'14", long 71°15'52", Norfolk County, at inlet to Turner Pond, 0.8 mi northwest of Walpole, Mass.	5.98	1968, 1985-86	7-30-87	*.28
01104860 Spring Brook	do.	Lat 42°08'47", long 71°14'59", Norfolk County, 200 ft downstream from Memorial Pond outlet, at Walpole, Mass.	1.84	1967, 1985-86	7-30-87	*1.2
01104870 Neponset River	Dorchester Bay (Atlantic Ocean)	Lat 42°09'14", long 71°14'56", Norfolk County, at bridge on State Highway 1A, 500 ft downstream from Stetson Pond outlet, and 0.6 mi north of Walpole, Mass.	23.4	1985-86	7-30-87	*5.5
01104883 Neponset River	do.	Lat 42°09'33", long 71°14'06", Norfolk County, at bridge on Plimpton Street, .1 mi northeast of Walpole, Mass.	24.8	1985-86	7-30-87	*6.0
01104970 Hawes Brook	Neponset River	Lat 42°10'47", long 71°13'16", Norfolk County, at U.S. Highway 1A, 1.45 mi southwest of Norwood, Mass.	8.25	1986	7-29-87	*1.9
01104980 Hawes Brook	do.	Lat 42°10'26", long 71°12'31", Norfolk County at Washington Street, at Norwood, Mass.	8.65	1967, 1986	7-29-87	*1.0
01105100 Traphole Brook	do.	Lat 42°09'36", long 71°11'47", Norfolk County, at Sumner Street, 2.25 mi south of Norwood, Mass.	3.39	1967, 1986	7-30-87	*1.8
01105148 Neponset River tributary No. 2	do.	Lat 42°08'05", long 71°11'01", Norfolk County, at Maskwonicut Street, 0.9 mi north of Sharon, Mass.	.12	1986	7-29-87	0

See footnotes at end of table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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Discharge measurements made at miscellaneous sites during water year 1987--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Dis- charge (ft ³ /s)
Neponset River Basin--Continued						
01105200 Massapoag Brook	East Branch Neponset River	Lat 42°06'53", long 71°10'19", Norfolk County at Ames Street, at Sharon, Mass.	4.25	1967, 1986	7-29-87	*.41
01105220 Massapoag Brook	do.	Lat 42°07'16", long 71°09'50", Norfolk County, at Billings Street, 0.8 mi east of Sharon, Mass.	4.96	1986	7-29-87	*.12
01105250 Massapoag Brook	do.	Lat 42°08'12", long 72°09'59", Norfolk County at State Highway 27, 1 mi northeast of Sharon, Mass.	6.32	1967, 1986	7-29-87	*1.6
01105255 Beaver Brook	Massapoag Brook	Lat 42°07'59", long 71°10'41", Norfolk County, at Maskwonicut Street, 0.75 mi north of Sharon, Mass.	2.45	1968, 1985-86	7-29-87	*.45
01105270 Massapoag Brook	East Branch Neponset River	Lat 42°08'58", long 71°09'00", Norfolk County, at Walnut Street, 0.7 mi south of Canton, Mass.	10.4	1986	7-29-87	*1.3
01105290 Steep Hill Brook	do.	Lat 42°07'52", long 71°08'23", Norfolk County, at the outlet of Pinewood Pond, at Lakewood Drive, 2 mi west of Stoughton, Mass.	.08	1986	7-29-87	0
01105300 Steep Hill Brook	do.	Lat 42°08'39", long 71°08'14", Norfolk County at Bailey Street, 1 mi southeast of Canton, Mass.	6.66	1967, 1986	7-29-87	*3.9
01105340 Beaver Meadow Brook	do.	Lat 42°08'36", long 71°05'44", Norfolk County, at York Street, 1.3 mi north of Stoughton, Mass.	.21	1986	7-29-87	*.01
01105350 Beaver Meadow Brook	do.	Lat 42°08'59", long 71°07'36", Norfolk County, at Pleasant Street, 1 mi east of Canton, Mass.	2.45	1967, 1986	7-29-87	*.30
01105395 Pequid Brook	do.	Lat 42°10'37", long 71°05'47", Norfolk County, at York Street, 2.8 mi northwest of Canton, Mass.	2.1	1986	7-29-87	0
01105400 Pequid Brook	do.	Lat 42°10'29", long 71°06'45", Norfolk County at State Highway 138, 2 mi northeast of Canton, Mass.	4.54	1967, 1986	7-29-87	0
01105450 Pequid Brook	do.	Lat 42°10'03", long 71°08'04", Norfolk County, at Pleasant Street, 1 mi northeast of Canton, Mass.	6.24	1967, 1986	7-29-87	*1.4
01105525 Purgatory Brook	Neponset River	Lat 42°12'54", long 71°11'24", Norfolk County, at U.S. Highway 1A, at Islington, Mass.	1.24	1986	7-29-87 8-19-87	0 *.01
01105532 Purgatory Brook	do.	Lat 42°12'23", long 71°10'57", Norfolk County, 0.2 mi downstream of U.S. Highway 1, 1.2 mi northeast of Norwood, Mass.	3.26	1986	8-19-87	*.46
01105551 Neponset River	Dorchester Bay (Atlantic Ocean)	Lat 42°11'49", long 71°09'19", Norfolk County, at Dedham Street, 3 mi north of Canton, Mass.	82.1	1967, 1986	7-29-87 8-19-87	*16 *15
01105552 Pecunit Brook	Neponset River	Lat 42°11'21", long 71°08'40", Norfolk County, at Elm Street, 2 mi north of Canton, Mass.	.79	1967, 1986	7-29-87	*.04
01105554 Ponkapog Brook	do.	Lat 42°12'12", long 71°08'09", Norfolk County, at Elm Street, 3 mi north of Canton, Mass.	3.78	1967, 1986	7-29-87	*2.9
01105555 Neponset River	Dorchester Bay (Atlantic Ocean)	Lat 42°14'04", long 71°07'23", Norfolk County, at Neponset Valley Parkway, 3 mi southwest of Milton, Mass.	93.2	1967, 1986	7-29-87	*14
01105556 Neponset River	do.	Lat 42°12'33", long 71°08'47", Norfolk County, at Greenlodge Street, 3 mi southeast of Dedham, Mass.	88.5	1986	7-29-87	*15

See footnotes at end of table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at miscellaneous sites during water year 1987--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Dis- charge (ft ³ /s)
North River Basin						
01105740 Iron Mine Brook	Indian Head River	Lat 42°06'52" long 70°49'22", Plymouth County, at culvert on State Highway 139, 0.4 mi northwest of Hanover, Mass.	0.07	-	8-14-87 8-25-87	*0.08 *.12
01105750 Iron Mine Brook tributary	Iron Mine Brook	Lat 42°07'06" long 70°49'41", Plymouth County, at culvert on Hanover Street, 0.8 mi northwest of Hanover, Mass.	.35	-	8-14-87 8-25-87	0 0
01105760 Iron Mine Brook	Indian Head River	Lat 42°06'30" long 70°49'18", Plymouth County, at culvert on Broadway, 0.4 mi southwest of Hanover, Mass.	.81	-	8-14-87 8-25-87	*.11 *.04
01105770 Herring Brook	North River	Lat 42°03'43" long 70°48'09", Plymouth County, at culvert on Mountain Avenue, 0.8 mi southeast of Pembroke, Mass.	5.61	1958-60, 1965, 1969-71	8-14-87 8-25-87	*6.3 *1.4
01105806 Third Herring Brook	do.	Lat 42°08'22" long 70°50'07", Plymouth County, 80 ft downstream from dam at mouth of Mill Pond, 2.2 mi northwest of Hanover, Mass.	2.77	-	8-14-87 8-25-87	*1.4 *.09
011058065 Third Herring Brook	do.	Lat 42°08'02" long 70°50'01", Plymouth County, at sluiceway on Pond Street, 1.8 mi northwest of Hanover, Mass.	2.82	-	8-14-87 8-25-87	*.86 *0
01105807 Silver Brook	Third Herring Brook	Lat 42°07'57" long 70°50'01", Plymouth County, at culvert on Pond Street, 1.7 mi northwest of Hanover, Mass.	1.25	-	8-14-87 8-25-87	*.12 *.03
01105808 Wildcat Brook	do.	Lat 42°08'57" long 70°48'59", Plymouth County, at culvert on Pleasant Street, 1.4 mi southwest of Norwell, Mass.	.24	-	8-14-87 8-25-87	*.04 *0
011058085 Wildcat Brook tributary	Wildcat Brook	Lat 42°09'03" long 70°48'42", Plymouth County, at culvert on Circuit Street, 1.1 mi southwest of Norwell, Mass.	.87	-	8-14-87 8-25-87	*.04 *.01
01105809 Wildcat Creek	do.	Lat 42°08'49" long 70°49'31", Plymouth County, at culvert on Pleasant Street, 1.9 mi southwest of Norwell, Mass.	1.46	-	8-14-87 8-25-87	*.02 *0
01105810 Third Herring Brook	North River	Lat 42°07'01" long 70°48'35", Plymouth County, at culvert on River Street, 0.5 mi northeast of Hanover, Mass.	9.80	1969-71	8-14-87 8-25-87	*.72 *.10
South River Basin						
01105845 South River	Massachusetts Bay	Lat 42°05'32" long 70°43'50", Plymouth County, at culvert on Old Ocean Street, 0.8 mi west of Marshfield, Mass.	7.52	1969-71	8-14-87 8-25-87	*3.6 *.46
01105848 Furnace Brook	South River	Lat 42°07'06" long 70°44'34", Plymouth County, at culvert on School Street, 2.5 mi northwest of Marshfield, Mass.	.88	1970-71	8-26-87	*.01
01105850 Furnace Brook	do.	Lat 42°06'30" long 70°43'53", Plymouth County, at culvert on Furnace Street, 1.8 mi northwest of Marshfield, Mass.	1.57	1964-82+ 1965	8-14-87 8-26-87	*.32 *.26
01105852 Littles Creek	do.	Lat 42°08'09" long 70°42'35", Plymouth County, 100 ft downstream from culvert on Summer Street, 1.7 mi southeast of Marshfield Hills, Mass.	2.00	-	8-14-87 8-26-87	*1.1 *.87

See footnotes at end of table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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Discharge measurements made at miscellaneous sites during water year 1987--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Dis- charge (ft ³ /s)
Jones River Basin						
01105856 Jones River	Massachusetts Bay	Lat 42°00'43" long 70°47'16", Plymouth County, 100 ft downstream from culvert on West Street, 2.0 mi northeast of North Plympton, Mass.	4.18	1965, 1983	8-21-87	*0.01
01105859 Pine Brook	Jones River	Lat 42°00'03" long 70°46'34", Plymouth County, at culvert on Grove Street, 1.8 mi northeast of North Plympton, Mass.	4.81	1983	8-19-87 8-21-87 9-17-87	*.28 *.44 .94
01105861 Jones River Brook	do.	Lat 41°59'47" long 70°47'18", Plymouth County, at culvert on West Street, 1.2 mi northeast of North Plympton, Mass.	4.72	1983	8-21-87	*.44
01105862 Jones River	Massachusetts Bay	Lat 41°59'53" long 70°46'23", Plymouth County, at culvert on private road, 2700 ft north of State Highway 106, 2.1 mi west of Kingston, Mass.	14.7	1983	8-18-87	*2.3
01105864 Jones River tributary No. 2	Jones River	Lat 41°59'41" long 70°46'15", Plymouth County, at dirt road, 1800 ft north of State Highway 106, 2.0 mi west of Kingston, Mass.	.52	-	8-18-87	*.26
01105865 Jones River	Massachusetts Bay	Lat 41°59'46" long 70°45'41", Plymouth County, 30 ft upstream from confluence with cranberry bog, 1.6 mi west of Kingston, Mass.	16.2	1986	8-18-87	*2.2
01105866 Fountainhead Brook	Jones River	Lat 41°59'14" long 70°45'42", Plymouth County, 1800 ft south of State Highway 106, 1.7 mi southwest of Kingston, Mass.	.53	-	8-18-87	*.04
01105867 Jones River	Massachusetts Bay	Lat 41°59'48" long 70°45'24", Plymouth County, 50 ft downstream from confluence with Fountainhead Brook, 1.3 mi west of Kingston, Mass.	17.3	-	8-18-87	*1.8
01105869 Furnace Brook	Jones River	Lat 41°59'26" long 70°44'43", Plymouth County, at footbridge on logging road in conservation land, 1.0 mi west of Kingston, Mass.	1.99	1983	8-19-87 9-17-87	*2.4 3.5
011058714 Bassett Brook	Halls Brook	Lat 42°00'31" long 70°44'42", Plymouth County, at culvert on Winthrop Street, 1.0 mi northwest of Kingston, Mass.	.81	-	8-19-87 8-26-87 9-17-87	1.1
011058716 Mile Brook	do.	Lat 42°00'29" long 70°44'08", Plymouth County, 200 ft north of Winthrop Street, 0.7 mi north of Kingston, Mass.	.73	-	8-19-87 8-26-87 9-17-87	*.26 *.28 .51
011058722 Halls Brook	Jones River	Lat 41°59'58" long 70°43'38", Plymouth County, at culvert on Maple Street, 0.2 mi northeast of Kingston, Mass.	4.14	-	8-21-87 9-17-87	*2.0 6.6
011058726 Smelt Brook	do.	Lat 41°58'15" long 70°43'29", Plymouth County, at culvert on Raboth Road, 1.9 mi south of Kingston, Mass.	.59	1986	8-26-87	*.13
011058728 Smelt Brook	do.	Lat 41°58'38" long 70°42'48", Plymouth County, at culvert on Cranberry Road, 1.7 mi southeast of Kingston, Mass.	.91	1986	8-26-87	*.34
West Branch Westport River Basin						
01106000 Adamsville Brook	Westport River	Lat 41°33'30", long 71°07'47", Newport County, on right bank 0.2 mi upstream from milldam at Adamsville, R.I., and 0.7 mi upstream from mouth.	8.01	1941-78++ 1978, 1986, 1987++	10-16-86 11-13-86 12-16-86 1-14-87 2-13-87	7.4 30 18 26 21

See footnotes at end of table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES
 Discharge measurements made at miscellaneous sites during water year 1987--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Dis- charge (ft ³ /s)
Taunton River Basin						
01108400 Mill River	Taunton River	Lat 41°55'23", long 71°06'23", Plymouth County, at bridge on Whittenton Street, 0.5 mi west of Whittenton, Mass.	41.1	1986	10-16-86	20
					11-14-86	83
					12-16-86	131
					1-15-87	172
					2-12-87	86
					3-16-87	123
					4- 6-87	717
					4-21-87	221
					5-13-87	126
					6-15-87	18
					7-14-87	22
					8-14-87	5.2
					9-18-87	75
01109087 Assonet River	do.	Lat 41°47'57", long 71°03'37", Plymouth County, at bridge on Locust Street, 0.5 mi northwest of Assonet, Mass.	20.7	1986	10-16-86	11
					11-14-86	33
					12-16-86	43
					1-14-87	82
					2-12-87	46
					3-16-87	62
					4- 6-87	427
					4-20-87	105
					5-13-87	48
					6-15-87	14
					7-14-87	7.1
					8-14-87	1.9
					9-18-87	18
Cole River Basin						
01109135 Cole River	Mount Hope Bay (Narragansett Bay)	Lat 41°46'30", long 71°11'57", Bristol County, at bridge on Hortonville Road, 0.1 mi southeast of Hortonville, Mass.	7.80	1986	10-16-86	1.5
					11-14-86	14
					12- 5-86	72
					12-16-86	16
					1-14-87	27
					2-12-87	13
					3-17-87	17
					4- 6-87	175
					4-20-87	34
					5-13-87	14
					6-16-87	1.6
					7-14-87	.29
					8-13-87	e.1
					9-18-87	9.1
Palmer River Basin						
01109220 Palmer River	Warren River (Narragansett Bay)	Lat 41°48'33", long 71°16'42", Bristol County, at bridge on Reed Street, 0.4 mi north of South Rehobath, Mass.	30.9	1986	10-17-86	6.2
					11-13-86	60
					12- 5-86	326
					12-16-86	65
					1-15-87	92
					2-13-87	56
					3-17-87	71
					4- 6-87	767
					4-21-87	140
					5-14-87	53
					6-16-87	4.3
					7-15-87	1.4
					8-13-87	e<.1
					9-17-87	28
01109225 Rocky Run	Palmer River	Lat 41°46'52", long 71°15'03", Bristol County, at bridge on Davis Street, 2.2 mi southeast of South Rehobath, Mass.	7.37	1972-74a 1979-81a 1983a, 1986	10-17-86	2.1
					11-14-86	4.4
					12- 5-86	70
					12-17-86	12
					1-14-87	22
					2-13-87	12
					3-17-87	14
					4- 6-87	140
					4-21-87	27
					5-13-87	13
					6-16-87	1.2
					7-14-87	.64
					8-13-87	e<.2
9-17-87	6.1					
See footnotes at end of table.						

See footnotes at end of table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES
 Discharge measurements made at miscellaneous sites during water year 1987--Continued

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Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Dis- charge (ft ³ /s)
Runnins River Basin						
01109280 Runnins River	Barrington River (Narragansett Bay)	Lat 41°48'59", long 71°20'10", Bristol County, at bridge on Fall River Avenue, 0.5 mi north of Seekonk, Mass.	5.92	1986	10-17-86	1.9
					11-13-86	8.7
					12- 5-86	40
					12-17-86	10
					1-15-87	17
					2-13-87	11
					3-17-87	12
					4- 6-87	105
					4-21-87	21
					5-14-87	8.5
					6-16-87	.79
					7-15-87	1.0
					8-13-87	.25
					9-17-87	9.1
Blackstone River Basin						
01110500 Blackstone River	Narragansett Bay (Atlantic Ocean)	Lat 42°09'13", long 71°39'09", Worcester County, 100 ft downstream from Sutton Street Bridge, at Northbridge, Mass.	139	1940-77+, 1978-86	4- 2-87	1520
					4- 6-87	3220
					5-26-87	232
					7- 6-87	192
					7-17-87	99
					8-18-87	116
01113650 Blackstone River	Providence River (Narragansett Bay)	Lat 41°54'40", long 71°24'12", Providence County, at bridge on Lonsdale Avenue, at Lonsdale, R.I.	441	1986	10-17-86	314
					11-13-86	616
					12-17-86	982
					1-15-87	1080
					3-17-87	1150
					4- 7-87	9110
					5-14-87	1120
					7-15-87	267
					8-13-87	279
					9-17-87	281
Woonasquatucket River Basin						
01115010 Woonasqua- tucket River	Providence River (Narragansett Bay)	Lat 41°49'20", long 71°26'25", Providence County, at bridge on Valley Street, 1.2 mi west of Providence, R.I.	47.8	1986	10-16-86	29
					11-13-86	67
					12-04-86	334
					12-16-86	152
					1-14-87	130
					2-12-87	94
					3-16-87	99
					4- 6-87	979
					4-20-87	255
					6-16-87	38
					7-15-87	26
					8-13-87	22
					9-16-87	25
Old Mill Creek Basin						
01116635 Old Mill Creek	Narragansett Bay (Atlantic Ocean)	Lat 41°42'43", long 71°22'33", Kent County, at bridge on Tidewater Road, 1.1 mi north of Warwick, R.I.	5.40	1986	10-16-86	14
					11-13-86	12
					12- 4-86	48
					12-16-86	16
					1-14-87	17
					2-12-87	15
					3-16-87	16
					4- 6-87	53
					4-21-87	30
					5-15-87	16
					6-17-87	10
					7-16-87	7.6
					8-13-87	5.3
					9-16-87	18

See footnotes at end of table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES
 Discharge measurements made at miscellaneous sites during water year 1987--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Dis- charge (ft ³ /s)
Maskerchugg River Basin						
01116750 Maskerchugg River	Greenwich Bay (Narragansett Bay)	Lat 41°39'00", long 71°27'30", Kent County, at bridge on Boston Post Road, 0.5 mi south of East Greenwich, R.I.	5.87	1986	10-16-86 11-13-86 12- 4-86 12-16-86 1-14-87 2-12-87 3-16-87 4- 6-87 4-20-87 5-15-87 6-16-87 7-15-87 8-13-87 9-16-87	1.9 5.8 27 14 15 11 12 56 23 12 2.3 3.8 .62 3.4
Annaquatucket River Basin						
01117100 Annaquatucket River	Narragansett Bay (Atlantic Ocean)	Lat 41°33'25", long 71°27'54", Washington County, at bridge on Tower Hill Road, 0.25 mi northeast of Belleville, R.I.	6.50	1962-64++ 1986	10-16-86 11-13-86 12-04-86 12-16-86 1-14-86 2-12-87 3-16-87 4-06-87 4-21-87 5-15-87 6-16-87 7-15-87 8-13-87 9-16-87	12 19 50 19 20 19 19 50 29 21 14 12 7.9 19
Thames River Basin						
01125000 French River	Quinebaug River	Lat 42°03'03", long 71°53'08", Worcester County, on right bank in Dudley, 50 ft upstream from Pleasant Street Bridge at Webster, 1.1 mi upstream from Potash Brook, in Dudley, Mass.	85.3	1949-81+, 1982-86	4- 2-87 7- 7-87	700 16
Connecticut River Basin						
Millers River subbasin						
01163050 Otter River	Millers River	Lat 42°34'29", long 72°01'22", Worcester County, at bridge on Town Road, 3,900 ft downstream from Gardner sewage treatment plant, 1.2 mi west of Gardner, Mass.	-	1986	5-19-87	30
01163150 Otter River	do.	Lat 42°35'02", long 72°02'33", Worcester County, at Boston and Maine Railroad Bridge, 2.4 mi west of Gardner, Mass.	-	1986	5-19-87	35
Mill River subbasin						
01170715 Mill River	Connecticut River	Lat 42°23'18", long 72°32'24", Hampshire County, 500 ft upstream from bridge on State Highway 116, 1.5 mi northwest of Amherst, Mass.	-	-	5-22-87 5-29-87 7-28-87 8- 3-87 8-24-87	18 22 7.4 15 5.3
01170717 Mill River	do.	Lat 42°23'10", long 72°33'03", Hampshire County, at bridge on Maple Street, 1.6 mi east of North Hadley, Mass.	-	-	7-29-87 8-24-87	6.0 4.9

See footnotes at end of table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES
 Discharge measurements made at miscellaneous sites during water year 1987--Continued

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Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Dis- charge (ft ³ /s)
Connecticut River Basin--Continued						
Mill River subbasin--Continued						
01170722 Mill River	Connecticut River	Lat 42°23'07", long 72°34'54", Hampshire County, 100 ft downstream from Lake Warner dam, at North Hadley, Mass.	-	-	5-22-87	19
					5-29-87	30
					7-29-87	7.2
					8-24-87	5.1
Chicopee River subbasin						
01172580 Ware River	Chicopee River	Lat 42°25'16", long 72°02'52", Worcester County, 30 ft upstream from mouth of Burnshirt River, 3 mi east of Barre, Mass.	-	-	9-10-87	10
01172700 Natty Pond Brook	Canesto Brook	Lat 42°28'41", long 72°01'26", Worcester County, at bridge on Williamsville Road, 0.9 mi west of Hubbardston, Mass.	2.99	1960, 1984-86	12- 3-86	14
					12- 4-86	10
					4- 1-87	64
01172730 Natty Pond Brook	do.	Lat 42°28'05", long 71°01'25", Worcester County, 800 ft downstream from bridge on Parson Road, 0.9 mi southwest of Hubbardston, Mass.	3.98	1985-86	10-10-86	.56
01172750 Natty Pond Brook	do.	Lat 42°27'52", long 72°00'49", Worcester County, at dirt road crossing, 770 ft west of Barre Road, and 0.8 mi south of Hubbardston, Mass.	4.23	1985-86	10-10-86	.67
					12- 4-86	18
Hudson River Basin						
01331620 Hoosic River	Hudson River	Lat 42°38'38", long 73°06'29", Berkshire County, 0.3 mi downstream from bridge on Lime Street, 1.2 mi north of Adams, Mass.	-	-	6- 9-87	51
01331630 Hoosic River	do.	Lat 42°39'54", long 73°06'16", Berkshire County, at bridge on State Highway 8A, 2.9 mi north of Adams, Mass.	-	-	6- 9-87	66
01331640 Hoosic River	do.	Lat 42°41'08", long 73°06'21", Berkshire County, at entrance of North Adams flood control channel, 1.0 mi south of North Adams, Mass.	-	-	6-10-87	58

† Operated as a crest-stage partial record station.

†† Operated as a continuous-record gaging station.

e Field estimate.

< Less than.

a Operated as a low-flow partial record station.

SUPPLEMENTAL WATER-QUALITY DATA FOR GAGING STATIONS

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)
MERRIMACK RIVER BASIN									
01094400 NORTH NASHUA RIVER AT FITCHBURG, MASS.									
OCT 1986					APR 1987				
15...	0800	41	8.0	290	08...	1440	952	6.5	85
DEC					JUN				
03...	1240	1030	3.0	115	26...	1200	24	18.0	285
JAN 1987					AUG				
21...	1410	83	0.0	66	03...	0915	27	20.5	272
MAR									
03...	0735	106	2.0	250					
01094500 NORTH NASHUA RIVER NEAR LEOMINSTER, MASS.									
OCT 1986					APR 1987				
14...	1300	89	14.0	280	08...	0810	1920	6.0	103
DEC					MAY				
04...	0820	950	3.5	115	13...	1050	204	13.5	230
JAN 1987					AUG				
22...	0925	147	0.0	200	06...	1245	42	22.5	378
MAR									
02...	1410	296	2.0	250					
01096000 SQUANNAHOOK RIVER NEAR WEST GROTON, MASS.									
OCT 1986					MAY 1987				
14...	0854	36	11.0	118	14...	0850	117	13.5	87
DEC					JUN				
03...	1000	300	1.0	73	22...	1225	27	21.0	130
JAN 1987					AUG				
21...	1015	150	0.0	101	05...	1205	20	23.5	139
MAR					SEP				
02...	0925	117	0.0	139	28...	1210	27	16.5	116
01096500 NASHUA RIVER AT EAST PEPPERELL, MASS.									
NOV 1986					JUN 1987				
25...	1105	991	4.0	133	22...	0945	90	23.5	205
JAN 1987					AUG				
08...	1225	695	2.5	144	05...	1350	229	27.0	255
FEB					SEP				
24...	1205	383	2.0	202	28...	0845	173	20.0	194
MAY									
13...	1430	941	17.0	148					
01097000 ASSABET RIVER AT MAYNARD, MASS.									
OCT 1986					APR 1987				
15...	1230	48	13.0	330	09...	1250	2080	7.0	123
DEC					MAY				
02...	1215	237	2.0	200	27...	1054	152	16.0	230
JAN 1987					JUL				
22...	1700	249	0.0	131	07...	1147	65	25.0	220
MAR					AUG				
06...	0830	318	1.0	255	19...	1046	14	26.0	405
01097300 NASHOBA BROOK NEAR ACTON, MASS.									
OCT 1986					APR 1987				
20...	0730	4.8	6.0	230	10...	1110	96	8.0	148
DEC					MAY				
02...	1005	21	0.0	194	27...	1318	12	17.0	200
JAN 1987					JUL				
22...	1310	25	0.0	138	07...	1403	4.1	23.0	230
MAR					AUG				
03...	1205	53	0.5	194	19...	1313	0.67	24.0	215
01098530 SUDBURY RIVER AT SAXONVILLE, MASS.									
OCT 1986					MAY 1987				
08...	1002	24	14.0	270	27...	0847	194	16.0	225
DEC					JUL				
01...	0850	245	3.0	250	07...	0943	41	23.0	275
JAN 1987					AUG				
07...	0910	351	3.0	197	19...	0836	27	26.0	280
MAR									
06...	1240	268	2.0	300					
21...	0940	589	11.0	205					

SUPPLEMENTAL WATER-QUALITY DATA FOR GAGING STATIONS

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DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)
MERRIMACK RIVER BASIN--Continued									
01099500 CONCORD RIVER BELOW RIVER MEADOW BROOK, AT LOWELL, MASS.									
OCT 1986					MAR 1987				
08...	1123	177	14.5	290	30...	1415	1270	11.5	180
NOV					MAY				
25...	1448	1030	4.5	195	29...	1226	603	18.0	250
JAN 1987									
08...	1020	1180	0.5	210					
01100000 MERRIMACK RIVER BELOW CONCORD RIVER AT LOWELL, MASS.									
NOV 1986					MAY 1987				
25...	1550	9550	4.5	190	29...	0918	5470	21.0	240
MAR 1987									
30...	1000	20900	9.5	155					
01100600 SHAWSHOEN RIVER NEAR WILMINGTON, MASS.									
OCT 1986					APR 1987				
20...	1450	15	9.5	320	13...	0815	194	12.0	290
DEC					MAY				
01...	1110	69	1.0	252	27...	1400	42	22.0	330
JAN 1987					JUL				
23...	1245	73	0.0	167	08...	0954	15	22.0	330
MAR					AUG				
11...	0745	198	0.0	310	21...	0859	0.0	20.0	332
PARKER RIVER BASIN									
01101000 PARKER RIVER AT BYFIELD, MASS.									
OCT 1986					APR 1987				
16...	1105	6.5	10.0	188	06...	1740	745	6.5	71
DEC					MAY				
02...	0750	51	0.0	135	28...	1249	25	18.0	151
JAN 1987					JUL				
27...	0930	46	0.0	157	09...	1043	4.5	22.0	125
MAR					AUG				
04...	0850	41	0.5	166	20...	1159	0.64	26.0	236
IPSWICH RIVER BASIN									
01101500 IPSWICH RIVER AT SOUTH MIDDLETON, MASS.									
DEC 1986					MAY 1987				
02...	1510	91	1.0	178	28...	0855	43	17.0	225
JAN 1987					JUL				
26...	0740	116	0.0	250	09...	1330	7.3	23.0	250
MAR					AUG				
05...	1145	123	1.0	225	20...	1316	1.2	27.0	290
APR									
06...	0920	812	7.0	104					
01102000 IPSWICH RIVER NEAR IPSWICH, MASS.									
OCT 1986					APR 1987				
16...	0700	38	11.0	220	07...	1210	3290	7.0	90
DEC					MAY				
01...	1500	302	1.0	150	28...	1059	135	17.0	250
JAN 1987					JUL				
27...	0800	293	0.0	250	09...	1243	28	22.0	250
MAR					AUG				
04...	0730	234	0.5	210	20...	0901	4.4	25.0	270
MYSTIC RIVER BASIN									
01102500 ABERJONA RIVER AT WINCHESTER, MASS.									
OCT 1986					APR 1987				
20...	1315	2.8	10.0	620	14...	1050	135	7.0	410
DEC					MAY				
01...	0900	164	2.0	500	27...	1557	20	17.0	540
JAN 1987					JUL				
23...	0905	62	0.0	780	08...	1501	6.1	23.0	575
MAR					AUG				
11...	1210	63	2.5	540	18...	1416	4.5	24.0	620

SUPPLEMENTAL WATER-QUALITY DATA FOR GAGING STATIONS

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)
CHARLES RIVER BASIN									
01104000 MOTHER BROOK AT DEDHAM, MASS.									
NOV 1986					MAY 1987				
28...	0735	165	5.0	172	26...	1437	31	18.0	210
JAN 1987					JUL				
20...	1030	171	0.0	290	06...	1523	8.1	26.0	280
MAR					AUG				
09...	1010	210	3.0	210	18...	1029	1.0	25.0	440
01104200 CHARLES RIVER AT WELLESLEY, MASS.									
OCT 1986					APR 1987				
21...	1210	51	12.0	290	15...	0803	1550	10.0	150
NOV					MAY				
28...	1250	482	7.0	180	26...	1005	287	19.0	225
JAN 1987					JUL				
20...	1330	424	0.0	180	06...	1104	61	27.0	280
MAR					AUG				
10...	1330	575	4.0	210	18...	1157	29	30.0	294
01104500 CHARLES RIVER AT WALTHAM, MASS.									
OCT 1986					APR 1987				
20...	1100	88	11.0	300	16...	0945	1480	11.0	173
DEC					MAY				
01...	0730	470	2.0	190	26...	0744	320	16.0	245
JAN 1987					JUL				
20...	1425	441	0.0	170	06...	0759	127	24.0	310
MAR					AUG				
06...	1245	465	2.0	270	18...	0829	45	28.0	309
NEPONSET RIVER BASIN									
01105000 NEPONSET RIVER AT NORWOOD, MASS.									
OCT 1986					JUN 1987				
17...	1000	11	12.0	270	01...	1323	12	--	260
JAN 1987					03...	1035	75	2.0	225
14...	1042	135	1.0	184	JUL				
MAR					07...	1600	12	--	260
06...	1035	75	2.0	225	AUG				
					19...	1611	11	26.5	280
01105500 EAST BRANCH NEPONSET RIVER AT CANTON, MASS.									
OCT 1986					JUN 1987				
17...	0827	16	11.0	177	02...	0800	27	24.5	202
DEC					JUL				
04...	1345	193	7.0	132	07...	1035	19	22.5	210
JAN 1987					AUG				
14...	0835	93	1.0	169	10...	1215	32	--	234
MAR									
03...	1428	64	2.0	183					
WEYMOUTH BACK RIVER BASIN									
01105600 OLD SWAMP RIVER NEAR SOUTH WEYMOUTH, MASS.									
NOV 1986					MAY 1987				
24...	1100	18	8.0	188	02...	0905	47	1.0	160
JAN 1987					28...	1529	8.9	19.0	207
12...	0835	33	1.0	155					
NORTH RIVER BASIN									
01105730 INDIAN HEAD RIVER AT HANOVER, MASS.									
OCT 1986					MAY 1987				
07...	0847	16	12.0	300	28...	1300	47	19.0	245
NOV					JUL				
24...	1304	116	6.0	154	14...	1234	10	25.0	279
JAN 1987					AUG				
12...	1041	183	1.0	169	17...	1430	14	28.0	363
MAR									
06...	0829	90	0.0	0					

SUPPLEMENTAL WATER-QUALITY DATA FOR GAGING STATIONS

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DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)
JONES RIVER BASIN									
01105870 JONES RIVER AT KINGSTON, MASS.									
OCT 1986					MAR 1987				
06...	1501	12	13.0	103	02...	1114	74	1.0	81
NOV					AUG				
24...	1540	48	8.0	78	20...	0828	8.0	21.5	126
JAN 1987									
12...	1330	57	1.0	76					
HERRING RIVER BASIN									
01105880 HERRING RIVER AT NORTH HARWICH, MASS.									
OCT 1986					MAR 1987				
07...	1136	2.8	12.0	90	02...	1414	21	3.0	79
NOV					MAY				
25...	0901	6.4	--	86	27...	1333	21	15.0	84
JAN 1987					JUL				
13...	0851	15	2.0	80	09...	1300	13	22.0	87
TAUNTON RIVER BASIN									
01108000 TAUNTON RIVER NEAR BRIDGEWATER, MASS.									
MAR 1987					JUL 1987				
05...	0927	881	1.0	163	10...	0730	150	22.5	220
MAY					AUG				
29...	1400	479	25.0	162	21...	0839	57	23.5	395
01109000 WADING RIVER NEAR NORTON, MASS.									
NOV 1986					JUN 1987				
25...	1440	160	5.0	149	01...	1038	36	25.0	182
JAN 1987					JUL				
13...	1342	168	2.0	132	07...	0815	14	20.5	220
MAR					AUG				
03...	1130	144	1.0	172	19...	1059	4.8	25.0	280
01109060 THREEMILE RIVER AT NORTH DIGHTON, MASS.									
MAR 1987					JUL 1987				
05...	1328	287	2.0	183	08...	1535	28	22.0	210
MAY					AUG				
29...	0815	109	19.5	169	20...	1228	12	24.0	264
01109070 SEGREGANSET RIVER NEAR DIGHTON, MASS.									
MAR 1987					JUL 1987				
05...	1556	51	1.0	64	08...	1330	1.2	--	99
MAY					AUG				
29...	1022	8.0	2.0	77	20...	1418	0.0	29.0	99
BLACKSTONE RIVER BASIN									
01110000 QUINSIGAMOND RIVER AT NORTH GRAFTON, MASS.									
OCT 1986					APR 1987				
08...	1333	9.7	14.0	310	21...	1158	125	13.0	280
DEC					MAY				
01...	1208	49	4.0	280	26...	1303	42	17.0	310
JAN 1987					JUL				
07...	1425	53	1.0	300	13...	1530	13	27.0	290
FEB					AUG				
24...	1056	22	1.0	351	18...	1422	7.3	29.0	322

SUPPLEMENTAL WATER-QUALITY DATA FOR GAGING STATIONS

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)
THAMES RIVER BASIN									
01123360 QUINEBAUG RIVER BELOW EAST BRIMFIELD DAM AT FISKDALE, MASS.									
OCT 1986					FEB 1987				
09...	1226	19	17.0	105	25...	0838	46	1.0	98
DEC					MAY				
03...	0908	120	6.0	84	19...	0930	88	18.0	84
JAN 1987					JUL				
09...	0854	114	2.0	76	07...	1050	40	25.0	92
01123600 QUINEBAUG RIVER BELOW WESTVILLE DAM NEAR SOUTHBRIDGE, MASS.									
OCT 1986					MAY 1987				
09...	0857	48	12.0	154	19...	1215	129	18.0	111
JAN 1987					JUL				
09...	1137	159	1.0	100	07...	1535	59	23.5	130
FEB					AUG				
25...	1057	74	1.0	141	27...	1355	22	19.5	104
APR									
22...	1432	726	13.0	75					
01124350 FRENCH RIVER BELOW DAM, AT HODGES VILLAGE, MASS.									
OCT 1986					MAY 1987				
15...	0830	5.0	12.0	128	20...	0935	35	15.5	120
DEC					JUL				
03...	1238	32	9.0	128	08...	0805	17	20.0	126
FEB 1987					AUG				
26...	0847	23	1.0	170	21...	1100	3.5	22.0	135
APR					SEP				
22...	1027	410	11.0	88	28...	0830	18	13.0	128
01124500 LITTLE RIVER NEAR OXFORD, MASS.									
OCT 1986					MAY 1987				
15...	1219	5.5	12.0	123	20...	1150	37	18.0	90
DEC					JUL				
03...	1345	55	7.0	87	08...	0920	20	23.0	106
FEB 1987					AUG				
26...	1227	22	2.0	132	21...	1250	4.9	22.0	112
APR					SEP				
22...	1100	305	11.0	64	28...	1050	23	16.0	123
CONNECTICUT RIVER BASIN									
01162000 MILLERS RIVER NEAR WINCHENDON, MASS.									
OCT 1986					MAR 1987				
07...	1215	144	12.5	59	31...	1330	986	6.0	50
NOV					MAY				
26...	1100	212	2.5	62	12...	0805	155	15.0	52
JAN 1987					JUN				
07...	1225	152	0.5	58	25...	1020	26	18.5	70
FEB					AUG				
18...	1230	80	0.5	65	03...	1335	69	21.0	71
01162500 PRIEST BROOK NEAR WINCHENDON, MASS.									
OCT 1986					MAY 1987				
07...	1004	22	9.5	48	12...	0940	22	15.5	44
NOV					JUN				
26...	0925	74	1.5	57	25...	1300	7.9	19.5	48
JAN 1987					AUG				
07...	1020	23	0.0	47	03...	1420	4.9	20.0	50
FEB									
18...	1035	12	0.0	53					
01163200 OTTER RIVER AT OTTER RIVER, MASS.									
OCT 1986					MAY 1987				
06...	1615	33	14.5	165	11...	1500	64	18.0	138
NOV					JUN				
26...	1340	92	4.0	140	25...	1430	12	20.5	205
FEB 1987					AUG				
18...	1610	30	0.5	190	03...	1030	11	21.0	269

SUPPLEMENTAL WATER-QUALITY DATA FOR GAGING STATIONS

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DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)
CONNECTICUT RIVER BASIN--Continued									
01164000 MILLERS RIVER AT SOUTH ROYALSTON, MASS.									
OCT 1986					MAY 1987				
07...	0902	258	10.5	118	12...	1210	364	15.5	102
DEC					JUN				
01...	1400	570	4.5	193	29...	0900	355	18.0	118
APR 1987					AUG				
01...	1610	276	6.0	57	04...	1255	117	24.0	210
01165000 EAST BRANCH TULLY RIVER NEAR ATHOL, MASS.									
OCT 1986					MAY 1987				
06...	1510	45	15.5	44	12...	1315	74	15.0	37
DEC					JUN				
02...	1355	247	2.5	44	24...	1325	15	21.5	43
FEB 1987					AUG				
17...	1630	26	2.0	44	03...	1200	12	23.5	49
APR					SEP				
02...	1040	17	5.5	35	30...	1125	16	16.0	54
01166105 WHETSTONE BROOK AT DEPOT RD AT WENDELL DEPOT, MASS.									
FEB 1987					AUG 1987				
17...	1225	2.3	0.0	29	04...	1205	1.8	18.0	24
MAY					SEP				
12...	1445	6.6	12.5	22	30...	0900	1.8	14.0	29
JUN									
24...	1112	4.5	16.5	23					
01166500 MILLERS RIVER AT ERVING, MASS.									
OCT 1986					MAY 1987				
06...	0945	467	14.0	122	12...	1400	651	16.5	93
DEC					JUN				
02...	0945	958	2.0	80	24...	0825	209	19.5	164
JAN 1987					AUG				
06...	0925	754	0.0	96	04...	0850	64	23.0	205
FEB					SEP				
17...	1115	594	0.0	138	30...	0817	231	15.0	168
APR									
02...	0915	1610	6.0	52					
01168151 DEERFIELD RIVER NEAR ROWE, MASS.									
OCT 1986					APR 1987				
29...	0800	1120	15.0	37	20...	1000	1190	--	36
DEC					JUN				
10...	1035	1240	6.0	35	02...	1320	650	--	39
JAN 1987					JUL				
27...	0830	1050	3.0	36	15...	1000	845	18.0	37
MAR					SEP				
04...	0800	76	5.0	37	02...	0835	76	21.0	41
01168500 DEERFIELD RIVER AT CHARLEMONT, MASS.									
OCT 1986					APR 1987				
29...	0930	309	11.0	44	16...	1205	2550	6.0	42
DEC					JUN				
10...	1125	1770	5.0	42	02...	1535	142	--	53
JAN 1987					JUL				
27...	1315	1060	2.0	39	15...	1155	768	19.0	43
MAR					SEP				
04...	0855	246	3.0	51	02...	1105	122	17.0	55
01169000 NORTH RIVER AT SHATTUCKVILLE, MASS.									
OCT 1986					APR 1987				
30...	1315	99	10.0	76	21...	1450	244	--	106
DEC					JUN				
11...	1030	258	1.0	87	03...	1005	57	--	205
JAN 1987					JUL				
22...	1455	151	0.5	114	16...	1120	55	19.0	99
MAR									
04...	1415	94	2.0	114					
31...	1700	10000	6.0	39					

SUPPLEMENTAL WATER-QUALITY DATA FOR GAGING STATIONS

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)
CONNECTICUT RIVER BASIN--Continued									
01169900 SOUTH RIVER NEAR CONWAY, MASS.									
OCT 1986					JUN 1987				
29...	1445	16	11.0	144	03...	1620	18	--	147
DEC					JUL				
11...	1445	65	1.5	107	17...	0820	8.1	16.0	185
JAN 1987					AUG				
23...	0830	212	0.0	104	25...	1330	3.5	17.0	--
MAR					SEP				
05...	1245	84	0.5	145	24...	1040	30	--	210
APR									
01...	0930	433	4.0	69					
20...	1645	92	--	102					
01170000 DEERFIELD RIVER NEAR WEST DEERFIELD, MASS.									
OCT 1986					APR 1987				
29...	1310	1050	12.0	77	01...	1345	9420	4.0	53
DEC					16...	1305	3100	7.0	75
10...	1415	2290	3.0	84	JUN				
JAN 1987					03...	1455	667	--	95
26...	1435	1430	0.5	83	JUL				
MAR					16...	1500	1110	22.0	99
05...	1600	1620	2.0	106	AUG				
					25...	1540	210	21.0	--
01170100 GREEN RIVER NEAR COLRAIN, MASS.									
OCT 1986					APR 1987				
30...	1515	39	10.0	78	21...	1230	124	--	73
DEC					JUN				
11...	0930	131	1.0	76	02...	0820	20	--	107
JAN 1987					JUL				
22...	1245	351	0.0	75	16...	0845	25	16.0	83
MAR					AUG				
05...	0800	63	0.0	88	25...	0830	5.6	12.0	--
01170500 CONNECTICUT RIVER AT MONTAGUE CITY, MASS.									
OCT 1986					MAR 1987				
30...	1045	9400	11.0	102	06...	0820	9810	5.0	116
DEC					JUN				
10...	1655	18600	2.0	84	01...	1425	11800	--	126
JAN 1987					JUL				
28...	0855	12000	1.0	113	15...	1705	9690	26.0	108
01171300 FORT RIVER NEAR AMHERST, MASS.									
OCT 1986					APR 1987				
29...	1630	22	12.0	109	01...	1400	585	9.5	50
DEC					MAY				
10...	0845	72	1.0	76	15...	0835	33	14.0	84
JAN 1987					JUL				
13...	1434	63	3.0	81	02...	0720	17	19.5	105
MAR					AUG				
02...	1600	126	1.0	82	19...	1055	5.8	22.5	138
01171500 MILL RIVER AT NORTHAMPTON, MASS.									
OCT 1986					APR 1987				
29...	1221	28	11.0	105	01...	1830	641	7.0	--
DEC					MAY				
10...	1115	126	1.0	90	14...	1400	60	15.0	96
JAN 1987					JUL				
14...	0821	79	0.0	--	01...	1350	21	22.0	115
FEB					AUG				
27...	1500	40	6.0	--	19...	0735	9.7	21.0	139

SUPPLEMENTAL WATER-QUALITY DATA FOR GAGING STATIONS

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DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)
CONNECTICUT RIVER BASIN--Continued									
01172500 WARE RIVER NEAR BARRE, MASS.									
OCT 1986					MAY 1987				
10...	1220	314	12.5	63	11...	0915	131	14.5	52
DEC					JUN				
01...	1300	125	2.0	61	23...	1705	16	19.0	65
FEB 1987					AUG				
19...	1345	40	0.5	62	05...	0905	6.8	22.0	69
APR					SEP				
23...	1124	175	11.0	50	30...	1440	15	16.5	76
01173500 WARE RIVER AT GIBBS CROSSING, MASS.									
NOV 1986					APR 1987				
03...	0924	73	6.0	90	03...	1430	754	9.0	59
DEC					MAY				
12...	1615	260	2.0	49	18...	0900	243	18.0	69
JAN 1987					JUL				
12...	1437	227	1.5	87	06...	1335	134	24.5	78
MAR					AUG				
02...	1040	333	2.5	81	20...	1345	32	26.5	98
01174500 EAST BRANCH SWIFT RIVER NEAR HARDWICK, MASS.									
OCT 1986					MAY 1987				
10...	1105	22	13.5	47	11...	1240	78	16.0	42
DEC					JUN				
01...	1145	69	1.5	53	23...	1450	19	23.0	49
FEB 1987					AUG				
19...	1000	34	0.0	62	04...	1620	7.7	27.0	55
APR					SEP				
23...	1311	92	13.0	42	30...	1600	21	17.5	53
01174600 CADWELL CREEK NEAR PELHAM, MASS.									
OCT 1986					APR 1987				
30...	1520	0.25	11.0	64	08...	1530	4.8	8.5	44
DEC					MAY				
09...	0858	0.98	1.0	31	15...	1510	0.46	16.0	45
JAN 1987					JUL				
13...	1037	0.87	0.5	53	02...	1210	0.07	19.0	45
FEB					AUG				
26...	1230	0.34	2.5	46	20...	1200	0.01	18.0	46
01174900 CADWELL CREEK NEAR BELCHERTOWN, MASS.									
NOV 1986					APR 1987				
03...	1402	0.94	7.0	40	08...	1300	31	6.5	29
DEC					MAY				
09...	1135	5.0	--	36	15...	1345	3.1	13.0	30
JAN 1987					JUL				
13...	0918	4.4	1.0	37	02...	0930	0.55	16.0	34
FEB					AUG				
26...	1005	1.8	0.0	30	20...	0930	0.13	17.0	38
01175500 SWIFT RIVER AT WEST WARE, MASS.									
OCT 1986					APR 1987				
31...	1230	108	13.0	40	01...	1545	48	5.0	42
DEC					MAY				
09...	1400	109	--	30	15...	1630	31	10.0	40
JAN 1987					JUL				
13...	1239	109	3.0	40	06...	1045	106	14.5	39
FEB					AUG				
26...	1445	87	4.5	36	19...	1450	87	16.0	39
01175670 SEVENMILE RIVER NEAR SPENCER, MASS.									
OCT 1986					MAY 1987				
10...	0842	1.8	10.0	63	18...	1320	12	20.0	48
DEC					JUL				
02...	0958	8.1	1.0	56	07...	0740	2.5	16.0	59
APR 1987					AUG				
23...	0839	23	10.0	48	28...	0855	0.51	14.5	74

SUPPLEMENTAL WATER-QUALITY DATA FOR GAGING STATIONS

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)
CONNECTICUT RIVER BASIN--Continued									
01176000 QUABOAG RIVER AT WEST BRIMFIELD, MASS.									
NOV 1986					FEB 1987				
03...	0730	63	6.0	115	27...	0900	103	1.0	121
DEC					JUL				
08...	1245	348	3.0	63	06...	1650	86	25.5	100
JAN 1987					AUG				
12...	1020	260	1.5	91	20...	1640	48	26.5	153
01177000 CHICOPPEE RIVER AT INDIAN ORCHARD, MASS.									
OCT 1986					MAY 1987				
27...	1315	560	--	115	11...	0940	966	14.0	82
DEC					JUN				
12...	0810	803	2.0	95	29...	1200	103	24.0	120
JAN 1987					AUG				
15...	1308	756	4.0	100	17...	1310	756	25.0	120
FEB					SEP				
24...	1715	93	0.0	110	30...	091	54	18.0	117
MAR									
30...	0750	1360	8.0	78					
01179500 WESTFIELD RIVER AT KNIGHTVILLE, MASS.									
OCT 1986					APR 1987				
28...	1408	207	11.0	63	06...	0940	5100	5.0	36
DEC					MAY				
10...	1405	395	1.5	60	13...	1340	179	14.5	65
JAN 1987					JUN				
15...	0800	271	0.0	60	30...	0750	67	20.0	79
FEB					AUG				
25...	0840	113	0.0	64	18...	1145	27	25.5	93
01180500 MIDDLE BRANCH WESTFIELD RIVER AT GOSS HEIGHTS, MASS.									
OCT 1986					MAY 1987				
29...	0752	44	11.0	55	14...	1115	53	12.5	43
DEC					JUN				
10...	1542	131	--	50	30...	1620	20	25.0	54
JAN 1987					JUL				
14...	1522	64	3.0	50	01...	0800	18	--	54
FEB					AUG				
25...	1400	34	--	48	18...	1350	7.2	27.0	57
APR					SEP				
09...	0820	1390	6.0	34	30...	1605	33	17.0	57
01181000 WEST BRANCH WESTFIELD RIVER AT HUNTINGTON, MASS.									
OCT 1986					APR 1987				
28...	1046	71	9.5	95	06...	1257	1780	--	42
DEC					MAY				
11...	1328	209	0.0	72	12...	1538	106	14.0	80
JAN 1987					JUN				
14...	1245	124	3.0	72	30...	1302	41	23.0	103
FEB					AUG				
25...	1020	57	1.5	85	18...	1530	13	27.0	115
MAR					SEP				
31...	1250	6530	6.0	42	30...	1415	54	15.0	102
01183500 WESTFIELD RIVER NEAR WESTFIELD, MASS.									
OCT 1986					MAY 1987				
27...	1545	467	10.5	126	12...	0725	624	14.5	105
DEC					JUN				
12...	1040	1090	4.0	82	29...	1435	285	22.0	126
JAN 1987					AUG				
15...	1140	578	5.5	106	18...	0730	167	19.0	93
FEB					SEP				
24...	1255	395	4.0	113	30...	1250	274	16.0	134
MAR									
31...	0740	3510	8.0	64					
01185500 WEST BRANCH FARMINGTON RIVER NEAR NEW BOSTON, MASS.									
OCT 1986					APR 1987				
31...	1015	10	7.5	--	06...	1115	1880	6.0	--
NOV					MAY				
07...	1445	111	7.0	--	28...	1400	273	18.0	--
MAR 1987					AUG				
24...	1300	288	3.5	--	27...	1145	13	15.0	--

SUPPLEMENTAL WATER-QUALITY DATA FOR GAGING STATIONS

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DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)
HOUSATONIC RIVER BASIN									
01197000 EAST BRANCH HOUSATONIC RIVER AT COLTSVILLE, MASS.									
OCT 1986					APR 1987				
27...	1515	98	10.0	195	14...	1335	459	6.0	96
DEC					JUN				
09...	0815	120	1.0	149	05...	1045	64	--	280
JAN 1987					JUL				
20...	1545	75	1.0	175	13...	1450	24	21.0	402
MAR					AUG				
02...	1410	80	2.0	325	31...	1305	28	17.0	347
01197500 HOUSATONIC RIVER NEAR GREAT BARRINGTON, MASS.									
OCT 1986					JUL 1987				
31...	1245	338	10.0	--	31...	1030	99	23.0	--
MAY 1987									
07...	1000	442	12.0	--					
HUDSON RIVER BASIN									
01331500 HOOSIC RIVER AT ADAMS, MASS.									
OCT 1986					APR 1987				
28...	0840	102	9.0	157	15...	0900	197	--	171
DEC					JUN				
09...	1230	48	1.0	181	05...	0820	57	--	190
JAN 1987					JUL				
21...	0810	41	1.0	132	14...	1010	35	23.0	225
MAR					AUG				
03...	0830	61	2.0	260	31...	1550	23	18.0	--
01332000 NORTH BRANCH HOOSIC RIVER AT NORTH ADAMS, MASS.									
OCT 1986					APR 1987				
28...	1100	115	9.0	54	15...	1530	163	12.0	68
DEC					JUN				
09...	1500	97	0.0	63	04...	0845	26	--	130
JAN 1987					JUL				
21...	1530	50	0.5	76	14...	1450	20	25.0	121
MAR					SEP				
03...	1350	47	3.0	104	01...	0930	67	16.0	116
01332500 HOOSIC RIVER NEAR WILLIAMSTOWN, MASS.									
OCT 1986					MAR 1987				
28...	1600	311	10.0	159	03...	1600	164	4.0	315
DEC					JUL				
10...	0815	367	2.0	255	14...	1250	99	24.0	280
JAN 1987					SEP				
21...	1720	156	0.5	425	01...	0800	105	--	289
01333000 GREEN RIVER AT WILLIAMSTOWN, MASS.									
OCT 1986					APR 1987				
28...	1230	78	9.0	170	16...	0745	144	4.0	151
DEC					JUN				
09...	1545	115	5.0	168	04...	1555	32	--	210
JAN 1987					JUL				
21...	1310	55	1.0	160	14...	1530	11	29.0	197
MAR					SEP				
05...	1105	48	1.0	245	01...	1545	14	19.0	222

GROUND-WATER LEVELS IN MASSACHUSETTS

BARNSTABLE COUNTY

413956070164301. Barnstable well AlW 230.

LOCATION.--Lat 41°39'56", long 70°16'43", Hydrologic Unit 01090002, 50 ft west of Mary Dunn Road at Hyannis Airport and 0.3 mi north of intersection of Willow Street and State Highway 28 in Barnstable.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.25 in, depth 35.8 ft, screened 32.8 to 35.8 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 43.23 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, at land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 20.51 ft below land-surface datum, May 20, 1987; lowest measured, 26.22 ft below land-surface datum, Oct. 25, 1966.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	25.35	DEC 22	23.90	MAR 24	22.08	MAY 20	20.51	JUL 20	22.70	SEP 28	23.90
NOV 24	25.07	JAN 22	22.68	APR 21	20.74	JUN 22	21.66	AUG 21	23.81		

414154070165001. Barnstable well AlW 247.

LOCATION.--Lat 41°41'54", long 70°16'50", Hydrologic Unit 01090002, 30 ft east of Mary Dunn Road and 0.2 mi south of State Highway 6A in Barnstable.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.25 in, depth 52 ft, screened 49 to 52 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 44.52 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.0 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 20.73 ft below land-surface datum, May 26, 1987; lowest measured, 28.64 ft below land-surface datum, Oct. 25, 1966.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	25.42	DEC 22	24.96	FEB 24	23.13	APR 21	21.38	JUN 23	21.15	AUG 21	22.45
NOV 24	25.53	JAN 22	23.58	MAR 25	22.55	MAY 26	20.73	JUL 24	21.82	SEP 28	22.99

414129070361401. Bourne well BHW 198.

LOCATION.--Lat 41°41'29", long 70°36'14", Hydrologic Unit 01090002, 50 ft west of County Road and 0.3 mi south of Pocasset Road in Bourne.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.25 in, depth 50 ft, screened 47 to 50 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 55.56 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 5.0 ft above land-surface datum.

PERIOD OF RECORD.--November 1962 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 29.88 ft below land-surface datum, Apr. 22, 1987; lowest measured, 36.17 ft below land-surface datum, Oct. 25, 1966.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	34.22	DEC 23	34.68	FEB 25	31.62	APR 22	29.88	JUN 22	30.92	AUG 27	32.95
NOV 24	34.25	JAN 23	31.69	MAR 23	31.61	MAY 27	30.05	JUL 20	31.91	SEP 23	33.31

GROUND-WATER LEVELS IN MASSACHUSETTS

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BARNSTABLE COUNTY--Continued

414518070020301. Brewster well BMW 21.

LOCATION.--Lat 41°45'18", long 70°02'03", Hydrologic Unit 01090002, about 50 ft north of Nook Road, 0.1 mi south of Cliff Pond, 0.3 mi east of Silas Road, and at Nickerson State Park in Brewster.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.5 in, depth 25 ft, screened 22 to 25 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 36.97 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.40 ft above land-surface datum.

PERIOD OF RECORD.--October 1957 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.90 ft below land-surface datum, Apr. 25, 1974; lowest measured, 13.34 ft below land-surface datum, Oct. 25, 1966.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	11.71	DEC 24	11.25	APR 23	8.88	MAY 21	8.43	AUG 26	8.85
22	11.70	FEB 25	10.05	MAY 05	8.63	JUN 23	8.17	SEP 24	8.71
NOV 25	11.61	MAR 25	9.65	20	8.36	JUL 22	8.41	29	8.81

414630070014901. Brewster well BMW 22.

LOCATION.--Lat 41°46'30", long 70°01'49", Hydrologic Unit 01090002, 50 ft east of entrance to Nickerson State Park and 50 ft south of State Highway 6A in Brewster.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.25 in, depth 52 ft, screened 49 to 52 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 50.45 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, at land-surface datum.

PERIOD OF RECORD.--November 1962 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 28.44 ft below land-surface datum, May 20, 1987; lowest measured, 33.60 ft below land-surface datum, Jan. 31, 1966.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	32.43	DEC 24	31.95	MAR 25	29.75	MAY 20	28.44	AUG 26	30.02
22	32.33	JAN 28	30.36	APR 23	29.09	JUN 23	28.77	SEP 24	30.22
NOV 25	32.41	FEB 25	30.08	MAY 05	28.94	JUL 22	29.33	29	30.28

414100070011101. Chatham well CGW 138.

LOCATION.--Lat 41°41'00", long 70°01'11", Hydrologic Unit 01090002, 50 ft east of State Highway 137 and 300 ft north of State Highway 28 in Chatham.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.25 in, depth 44 ft, screened 41 to 44 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 35.28 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 4.77 ft above land-surface datum; prior to June 1980, 3.80 ft above land-surface datum.

PERIOD OF RECORD.--November 1962 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 20.94 ft below land-surface datum, Apr. 25, 1983; lowest measured, 26.22 ft below land-surface datum, Jan. 31, 1966.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	24.84	JAN 28	22.55	APR 21	21.66	JUN 25	22.89	SEP 24	23.53
NOV 26	24.62	FEB 24	22.51	MAY 20	21.28	JUL 21	22.48	29	24.46
DEC 22	24.03	MAR 24	22.21	JUN 23	21.82	AUG 26	23.43		

GROUND-WATER LEVELS IN MASSACHUSETTS

BARNSTABLE COUNTY--Continued

413525070291904. Mashpee well MIW 29.

LOCATION.--Lat 41°35'25", long 70°29'19", Hydrologic Unit 01090002, 20 ft west of dirt road, 0.8 mi north of intersection of Great Hay Road and dirt road which is 0.12 mi northeast of intersection of Red Brook Road and Great Hay Road in Mashpee.

Owner: Town of Mashpee.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Hydraulic-rotary drilled observation water-table well, diameter 2.0 in, depth 40.0 ft, screened 37.0 to 40.0 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 15.78 above National Geodetic Vertical Datum of 1929. Measuring point: Top of steel coupling, 1.36 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.62 ft below land-surface datum, Apr. 22 1987; lowest measured, 10.03 ft below land-surface datum, Oct. 24, 1980.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	9.25	DEC 23	7.86	APR 22	5.62	JUN 22	6.67	AUG 27	8.56
NOV 24	8.69	MAR 23	6.96	MAY 27	5.96	JUL 20	7.48	SEP 23	8.36

414418070241601. Sandwich well SDW 252.

LOCATION.--Lat 41°44'18", long 70°24'16", Hydrologic Unit 01090002, 0.5 mi north of State Highway 6A and 15 ft east of Private Road in Sandwich.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.25 in, depth 57 ft, screened 55 to 57 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 53.47 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.0 ft above land-surface datum.

PERIOD OF RECORD.--November 1962 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 45.88 ft below land-surface datum, Apr. 25, 1983; lowest measured, 48.23 ft below land-surface datum, Oct. 25, 1966.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	47.62	DEC 23	47.53	FEB 25	46.60	APR 22	46.03	JUN 22	46.15	AUG 24	46.99
NOV 25	47.64	JAN 22	46.91	MAR 23	46.40	MAY 27	45.91	JUL 20	46.51	SEP 23	47.09

414124070265901. Sandwich well SDW 253.

LOCATION.--Lat 41°41'24", long 70°26'59", Hydrologic Unit 01090002, 800 ft west of Stowe Road and 50 ft south of Farmersville Road in Sandwich.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.25 in, depth 70 ft, screened 67 to 70 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 111.20 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.0 ft above land-surface datum.

PERIOD OF RECORD.--November 1962 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 45.78 ft below land-surface datum, July 30, 1973; lowest measured, 55.05 ft below land-surface datum, Feb. 28, 1967.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	51.41	DEC 27	50.89	FEB 25	49.33	APR 22	47.75	JUN 22	48.51	AUG 24	47.78
NOV 25	51.33	JAN 23	50.00	MAR 23	49.02	MAY 27	46.89	JUL 20	47.23	SEP 23	47.79

GROUND-WATER LEVELS IN MASSACHUSETTS

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BARNSTABLE COUNTY--Continued

420239070062001. Truro well TSW 1.

LOCATION.--Lat 42°02'39", long 70°06'20", Hydrologic Unit 01090002, near old pumping station about 200 ft north of State Highway 6A and 1.2 mi northwest of North Truro.

Owner: Town of Provincetown.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Driven observation water-table well, diameter 1.25 in, depth 68 ft, cased to 68 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 16.80 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.50 ft above land-surface datum.

REMARKS.--Water levels affected by pumping, barometric pressure, and tide.

PERIOD OF RECORD.--August 1950 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.28 ft below land-surface datum, Mar. 23, 1983; lowest measured, 12.1 ft below land-surface datum, Sept. 11, 1954.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	10.67	DEC 24	10.64	FEB 25	10.32	APR 23	10.06	JUN 24	10.23	AUG 25	10.85
NOV 25	10.83	JAN 28	9.98	MAR 25	10.05	MAY 20	9.96	JUL 21	10.56	SEP 24	10.65

420206070045901. Truro well TSW 89.

LOCATION.--Lat 42°02'06", long 70°04'59", Hydrologic Unit 01090002, 300 ft west of U.S. Highway 6 and 50 ft north of Highland Road in Truro.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.25 in, depth 27.7 ft, screened 24.7 to 27.7 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 16.60 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.7 ft above land-surface datum.

PERIOD OF RECORD.--September 1962 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.20 ft below land-surface datum, Apr. 25, 1983; lowest measured, 12.96 ft below land-surface datum, Sept. 28, 1965.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	12.34	DEC 24	12.00	MAR 25	11.08	MAY 20	10.59	JUL 21	11.53	SEP 24	11.97
NOV 25	12.23	JAN 28	11.23	APR 23	10.89	JUN 24	11.11	AUG 25	12.02		

GROUND-WATER LEVELS IN MASSACHUSETTS

BARNSTABLE COUNTY--Continued

42023070051601. Truro well TSW 135.

LOCATION.--Lat 42°02'32", long 70°05'16", Hydrologic Unit 01090002, 900 ft northeast of U.S. Highway 6 from a point 0.25 mi north of Head of Meadow Road, 200 ft northeast of pumping station in deep, steep-sided kettle hole.

Owner: Cape Cod National Seashore.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Drive-washed observation water-table well, diameter 2.5 in, depth 61.3 ft, screened 56.3 to 61.3 ft.

INSTRUMENTATION.--Measurement with chalked tape by observer, intermittently May 1968 to July 1985, weekly August 1985 to current year.

DATUM.--Elevation of land-surface datum is 10.59 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 5.40 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.65 ft below land-surface datum, Apr. 21, 1983; lowest measured, 7.83 ft below land-surface datum, Sept. 10, 1980.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAY 20, 1968	6.25	DEC 07, 1983	6.63	JAN 21, 1986	6.70	NOV 26, 1986	6.70
JUN 13, 1971	6.18	12	6.46	22	6.74	DEC 03	6.72
APR 07, 1972	5.82	JAN 23, 1984	6.53	27	6.73	09	6.73
JUN 05	5.75	MAR 01	6.28	FEB 04	6.69	15	6.74
NOV 10	6.08	APR 19	5.35	11	6.70	22	6.55
MAY 14, 1973	5.52	26	5.29	28	6.44	30	6.37
OCT 18	6.43	JUN 04	6.04	MAR 05	6.38	JAN 07, 1987	6.09
SEP 04, 1974	6.79	09	6.10	12	6.40	13	5.95
AUG 03, 1978	7.25	JUL 02	6.53	20	6.33	25	5.77
17	7.31	AUG 07	6.86	26	6.40	FEB 01	5.62
SEP 21	7.28	SEP 20	7.10	APR 04	6.39	06	5.63
OCT 13	7.25	OCT 18	7.08	09	6.35	28	5.65
MAY 03, 1979	5.81	DEC 18	7.04	15	6.27	MAR 05	5.55
JUN 14	6.67	JAN 29, 1985	6.72	22	6.25	10	5.61
28	6.71	MAR 21	6.79	30	6.19	20	5.62
JUL 19	7.25	MAY 02	6.95	MAY 06	6.25	24	5.48
AUG 20	7.23	JUN 04	6.80	14	6.21	APR 01	5.50
OCT 09	7.34	JUL 11	7.26	20	6.31	09	5.48
22	7.12	AUG 07	7.23	27	6.32	16	5.43
NOV 14	7.05	15	7.49	JUN 03	6.36	23	5.38
19	7.07	21	7.21	10	6.42	29	5.35
26	7.18	28	7.21	17	6.47	MAY 08	5.23
FEB 21, 1980	6.69	SEP 04	5.78	24	6.49	13	5.16
MAR 19	6.74	11	6.58	JUL 01	6.52	20	5.08
APR 09	6.60	12	6.52	07	6.54	26	5.11
MAY 08	6.45	19	6.46	16	6.60	JUN 03	5.21
JUN 12	7.00	25	6.42	22	6.62	11	5.33
JUL 10	7.54	OCT 02	6.42	29	6.66	17	5.39
AUG 17	7.80	09	6.45	AUG 05	6.66	25	5.49
SEP 10	7.83	14	6.47	12	6.70	JUL 02	5.63
OCT 08	7.70	23	6.49	21	6.68	10	5.80
NOV 13	7.67	30	6.59	26	6.63	17	5.89
DEC 17	7.15	NOV 06	6.49	SEP 03	6.75	24	6.01
FEB 04, 1981	7.16	13	6.45	11	6.76	31	6.13
MAR 18	6.14	14	6.50	17	6.78	AUG 08	6.26
FEB 18, 1983	6.56	19	6.45	25	6.78	14	6.30
MAR 22	4.76	27	6.53	30	6.80	22	6.38
APR 21	4.65	DEC 09	6.51	OCT 07	6.75	30	6.49
MAY 24	5.24	13	6.49	13	6.77	SEP 04	6.56
JUN 23	6.32	24	6.53	22	6.72	11	6.63
JUL 22	6.99	30	6.56	27	6.75	16	6.65
AUG 23	7.29	31	6.61	NOV 06	6.79	22	6.49
OCT 05	6.99	JAN 06, 1986	6.58	11	6.78		
NOV 08	6.74	13	6.63	21	6.72		

GROUND-WATER LEVELS IN MASSACHUSETTS

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BARNSTABLE COUNTY--Continued

415353069585401. Wellfleet well WNW 17.

LOCATION.--Lat 41°53'53", long 69°58'54", Hydrologic Unit 01090002, about 150 ft east of old pumping station and 45 ft west of road to the public beach at Cape Cod National Seashore in Wellfleet.

Owner: Cape Cod National Seashore.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Driven observation water-table well, diameter 2.5 in, depth 42 ft, screen information not available.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 19.10 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.13 ft above land-surface datum.

PERIOD OF RECORD.--November 1962 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 7.27 ft below land-surface datum, June 27, 1967; lowest measured, 12.75 ft below land-surface datum, Jan. 31, 1967.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	11.37	DEC 24	11.01	APR 23	8.36	JUN 24	8.06	AUG 25	9.36
NOV 25	11.51	MAR 25	8.94	MAY 20	7.65	JUL 21	8.59	SEP 24	9.57

BERKSHIRE COUNTY

423503073075401. Cheshire well CJW 2.205

LOCATION.--Lat 42°35'03", long 73°07'54", Hydrologic Unit 02020003, at intersection of Wells and Jenks Roads 2.3 mi northeast of Cheshire.

Owner: John Jayko.

AQUIFER.--Glacial till of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 30 in, depth 22 ft, cased with stone to 22 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 1,210 ft, above National Geodetic Vertical Datum of 1929. Measuring point: Inside rim of concrete well top, 1.0 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.09 ft below land-surface datum, Jan. 19, 1952; lowest measured, 14.03 ft below land-surface datum, Nov. 20, 1964.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	5.48	DEC 21	4.06	FEB 22	7.19	APR 23	2.79	JUN 22	8.69	AUG 21	13.57
NOV 22	1.88	JAN 23	4.70	MAR 22	2.80	MAY 22	6.66	JUL 23	9.83	SEP 22	7.88

421316073212801. Great Barrington well GMW 2.

LOCATION.--Lat 42°13'16", long 73°21'28", Hydrologic Unit 01100005, 30 ft west of State Highway 41 and 1.5 mi north of intersection of State Highway 41 and U.S. Highway 7 in Great Barrington.

Owner: Mr. Jacobson.

AQUIFER.--Glacial outwash of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 36 in, depth 15 ft, cased with stone to 15 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 732 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of stone curbing, east side of well 0.33 ft above land-surface datum. Prior to July 25, 1978, measured at land-surface datum.

REMARKS.--Water level affected by stream.

PERIOD OF RECORD.--June 1951 to current year. Continuous graphic recorder January 1968 to August 1982.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.99 ft below land-surface datum, Apr. 21, 1983; lowest measured, 14.97 ft below land-surface datum, Nov. 20, 1964.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	12.28	DEC 21	8.01	FEB 22	11.55	APR 23	7.47	JUN 22	12.00	AUG 21	12.62
NOV 22	7.27	JAN 23	9.51	MAR 22	6.71	MAY 22	10.96	JUL 23	12.10	SEP 22	10.80

GROUND-WATER LEVELS IN MASSACHUSETTS

BERKSHIRE COUNTY

420912073043001. Otis well OTW 7.

LOCATION.--Lat 42°09'12", long 73°04'30", Hydrologic Unit 01080207, about 400 ft south of Hawley Road and 15 ft west of State Highway 8 in Otis.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in, depth 17.5 ft, screened 15.5 to 17.5 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 1,145 ft above National Geodetic Vertical Datum of 1929. Measuring point:

Top of casing, 3.5 ft above land-surface datum.

REMARKS.--Water levels affected by Minor Brook and Farmington River.

PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Repo205rt No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.55 ft below land-surface datum, Apr. 21, 1983; lowest measured, 10.16 ft below land-surface datum, Sept. 21, 1983.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	9.43	DEC 21	7.82	FEB 22	8.99	APR 23	6.37	JUN 22	8.92	AUG 21	9.77
NOV 22	8.11	JAN 25	8.65	MAR 22	7.57	MAY 21	8.29	JUL 23	8.82	SEP 22	8.03

422745073112001. Pittsfield well PTW 51.

LOCATION.--Lat 42°27'45", long 73°11'20", Hydrologic Unit 01100005, 30 ft east of Hubbard Ave. and about 100 ft north of Barton Brook in Pittsfield.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 ft, depth 31.5 ft, screened 26.5 to 31.5 ft.

Prior to July 1986, augered observation water-table well, diameter 1.25 in depth 31.5 ft, screened 29.5 to 31.5 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer. Digital recorder (60-min punch) July 1986 to current year.

DATUM.--Elevation of land-surface datum is 1,050 ft above National Geodetic Vertical Datum of 1929. Measuring point:

Top of casing, 1.83 ft above land-surface datum; prior to July 1986, top of casing, 2.50 ft above land-surface datum.

PERIOD OF RECORD.--August 1963 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.30 ft below land-surface datum, Apr. 25, 1969; lowest measured, 27.57 ft below land-surface datum, Dec. 11, 1964.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.49	17.55	15.73	15.65	16.44	16.95	15.17	14.21	15.17	16.81	18.89	20.99
2	19.46	17.47	15.73	15.60	16.50	16.75	15.17	14.24	15.22	16.90	18.95	21.06
3	19.54	17.41	15.65	15.66	16.56	16.68	15.18	14.28	15.23	16.83	18.91	21.14
4	19.37	17.36	15.55	15.70	16.62	16.68	15.14	14.31	15.23	16.76	18.89	21.21
5	19.07	17.34	15.54	15.73	16.67	16.70	14.71	14.31	15.23	16.76	18.99	21.29
6	18.86	17.29	15.54	15.73	16.69	16.70	14.48	14.30	15.23	16.87	19.07	21.36
7	18.74	17.23	15.52	15.71	16.70	16.70	14.38	14.31	15.27	16.97	19.16	21.42
8	18.61	17.16	15.55	15.77	16.72	16.63	14.33	14.35	15.28	17.05	19.26	21.47
9	18.52	17.01	15.55	15.82	16.74	16.52	14.32	14.37	15.31	17.16	19.37	21.51
10	18.46	16.87	15.52	15.85	16.77	16.44	14.30	14.38	15.36	17.26	19.39	21.49
11	18.41	16.79	15.55	15.85	16.81	16.35	14.30	14.42	15.44	17.36	19.45	21.53
12	18.46	16.74	15.55	15.91	16.81	16.27	14.28	14.45	15.50	17.46	19.55	21.61
13	18.54	16.71	15.63	15.99	16.84	16.23	14.22	14.50	15.54	17.52	19.66	21.66
14	18.56	16.70	15.64	16.04	16.85	16.22	14.16	14.53	15.59	17.61	19.76	21.64
15	18.40	16.69	15.63	16.07	16.85	16.22	14.14	14.56	15.64	17.55	19.86	21.55
16	18.27	16.57	15.63	16.12	16.85	16.21	14.13	14.61	15.71	17.47	19.95	21.50
17	18.15	16.51	15.66	16.15	16.85	16.19	14.12	14.63	15.79	17.58	20.04	21.51
18	18.07	16.49	15.65	16.15	16.85	16.19	14.12	14.71	15.86	17.68	20.13	21.55
19	18.02	16.48	15.62	16.14	16.85	16.17	14.12	14.79	15.94	17.77	20.22	21.47
20	18.00	16.46	15.58	16.20	16.85	16.15	14.12	14.87	16.03	17.86	20.30	21.35
21	18.03	16.34	15.59	16.22	16.85	16.13	14.11	14.93	16.12	17.95	20.39	21.25
22	18.10	16.24	15.60	16.22	16.89	16.12	14.12	15.01	16.21	18.04	20.46	21.15
23	18.17	16.20	15.60	16.23	16.88	16.08	14.12	15.09	16.25	18.13	20.52	21.05
24	18.25	16.13	15.62	16.31	16.92	15.98	14.13	15.07	16.31	18.21	20.61	20.94
25	18.32	16.05	15.58	16.35	16.96	15.86	14.15	15.07	16.39	18.32	20.70	20.83
26	18.34	15.99	15.57	16.36	16.97	15.71	14.16	15.09	16.48	18.40	20.80	20.77
27	18.11	15.85	15.57	16.38	17.00	15.61	14.16	15.09	16.52	18.50	20.87	20.77
28	17.92	15.77	15.57	16.40	17.00	15.53	14.16	15.09	16.56	18.60	20.88	20.77
29	17.80	15.73	15.56	16.40	---	15.48	14.15	15.08	16.66	18.71	20.86	20.78
30	17.73	15.72	15.56	16.38	---	15.43	14.17	15.09	16.77	18.81	20.86	20.78
31	17.64	---	15.62	16.37	---	15.29	---	15.12	---	18.85	20.95	---
MEAN	18.4	16.6	15.6	16.0	16.8	16.2	14.3	14.7	15.8	17.7	19.9	21.2
LOW	19.54	17.55	15.73	16.40	17.00	16.95	15.18	15.12	16.77	18.85	20.95	21.66
HIGH	17.64	15.72	15.52	15.60	16.44	15.29	14.11	14.21	15.17	16.76	18.89	20.77

WTR YR 1987 HIGH 14.11 APR 21, 22 LOW 21.66 SEPT 13,14

GROUND-WATER LEVELS IN MASSACHUSETTS

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BRISTOL COUNTY

415447071155301. Attleboro well ATW 83.

LOCATION.--Lat 41°54'47", long 71°15'53", Hydrologic Unit 01090004, about 150 ft north of parking lot and 200 ft west of dirt road at Bristol County Nursing Home in Attleboro.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in, depth 20.6 ft, scraened 18.6 to 20.6 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 145 ft above National Geodetic kVertical Datum of 1929. Measuring point:

Top of casing, 2.5 ft above land-surface datum.

PERIOD OF RECORD.--June 1964 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.98 ft below land-surface datum, Jan. 27, 1978; lowest measured, 5.23 ft below land-surface datum, Aug. 26, 1964.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	4.59	DEC 20	2.63	FEB 21	3.77	APR 22	3.02	JUN 25	4.33	AUG 25	5.21
NOV 23	3.32	JAN 24	3.39	MAR 23	3.59	MAY 22	3.62	JUL 23	4.66	SEP 22	3.15

414705071045301. Freetown well F3W 23.

LOCATION.--Lat 41°47'05", long 71°04'53", Hydrologic Unit 01090004, about 300 ft west of State Highway 24 and 200 ft north of State Highway 79 in Freetown.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in, depth 42 ft, screened 40 to 42 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 38 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.0 ft above land-surface datum.

REMARKS.--Water level affected by tide.

PERIOD OF RECORD.--June 1964 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 8.72 ft below land-surface datum, Apr. 22, 1983; lowest measured, 15.70 ft below land-surface datum, Jan. 29, 1966.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	12.30	DEC 20	13.50	FEB 21	13.22	APR 22	10.78	JUN 25	10.80	AUG 25	13.48
NOV 23	14.42	JAN 24	12.66	MAR 23	13.01	MAY 22	11.16	JUL 23	12.86	SEP 22	13.35

414025070572801. New Bedford well NGW 116.

LOCATION.--Lat 41°40'25", long 70°57'28", Hydrologic Unit 01090002, New Bedford Municipal Airport, 30 ft east of control tower building in New Bedford.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2 in, depth 27.3 ft, screened 25.3 to 27.3 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 65 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.0 ft above land-surface datum.

PERIOD OF RECORD.--June 1964 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.31 ft below land-surface datum, Mar. 26, 1969; lowest measured, 5.20 ft below land-surface datum, July 24, 1964.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	4.46	DEC 20	3.13	FEB 21	4.16	APR 22	3.78	JUN 25	4.33	AUG 25	5.03
NOV 23	3.41	JAN 24	3.55	MAR 23	3.99	MAY 22	4.15	JUL 23	4.76	SEP 22	4.63

GROUND-WATER LEVELS IN MASSACHUSETTS

BRISTOL COUNTY--Continued

415812071111101. Norton well N4W 37.

LOCATION.--Lat 41°58'12", long 71°11'11", Hydrologic Unit 01090004, at Wheaton College, 250 ft northeast of observatory in Norton.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in, depth 19.4 ft, screened 17.4 to 19.4 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 105 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.0 ft above land-surface datum.

PERIOD OF RECORD.--June 1964 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.35 ft below land-surface datum, Dec. 29, 1969; lowest measured, 11.24 ft below land-surface datum, Oct. 23, 1980.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	8.30	DEC 20	3.54	FEB 21	6.95	APR 22	4.53	JUN 25	8.99	AUG 25	10.59
NOV 23	5.31	JAN 24	5.56	MAR 23	6.12	MAY 22	6.70	JUL 23	9.75	SEP 22	5.05

414714071175901. Seekonk well SHW 275.

LOCATION.--Lat 41°47'14", long 71°17'59", Hydrologic Unit 01090004, middle of median strip of Interstate Highway 195 and 1.1 mi west of Palmer River in Seekonk.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in, depth 14.4 ft, screened 12.4 to 14.4 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 21 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.0 ft above land-surface datum.

PERIOD OF RECORD.--June 1964 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.02 ft below land-surface datum, Dec. 20, 1986; lowest measured, 8.02 ft below land-surface datum, Sept. 26, 1980.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	6.82	DEC 20	5.02	FEB 21	5.97	APR 22	5.59	JUN 25	7.22	AUG 25	7.62
NOV 23	5.57	JAN 24	5.40	MAR 23	6.01	MAY 22	6.14	JUL 23	7.23	SEP 22	5.41

415454071061801. Taunton well TAW 258.

LOCATION.--Lat 41°54'54", long 71°06'18", Hydrologic Unit 01090004, 420 ft northwest of Danforth Street and 520 ft southwest of Chester Street in Taunton.

Owner: Joseph Mozzone.

AQUIFER.--Sandstone interbedded with shale and conglomerate of Carboniferous age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 3.0 in, depth 1,006.0 ft, cased to 10.0 ft, open hole.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 60 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.0 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.10 ft below land-surface datum, Jan. 27, 1978; lowest measured, 15.85 ft below land-surface datum, Sept. 26, 1981.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	14.32	DEC 20	10.77	FEB 21	11.95	APR 22	10.45	JUN 25	12.66
NOV 23	12.96	JAN 24	11.07	MAR 23	11.61	MAY 22	11.55	JUL 23	13.87

GROUND-WATER LEVELS IN MASSACHUSETTS

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BRISTOL COUNTY--Continued

415457071060101. Taunton well TAW 337.

LOCATION.--Lat 41°54'57", long 71°06'01", Hydrologic Unit 01090004, Taunton State Hospital, about 200 ft west of Mill River and about 300 ft east of Danforth Street in Taunton.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in, depth 20 ft, screened 18 to 20 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 50 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.5 ft above land-surface datum.

REMARKS.--Water levels affected by Mill River.

PERIOD OF RECORD.--June 1964 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.96 ft below land-surface datum, Dec. 29, 1969; lowest measured, 10.85 ft below land-surface datum, Sept. 27, 1984.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	9.80	DEC 20	7.48	FEB 21	8.54	APR 22	7.13	JUN 25	9.25	AUG 25	10.09
NOV 23	8.97	JAN 24	7.82	MAR 23	8.36	MAY 22	8.18	JUL 23	9.59	SEP 22	8.79

DUKES COUNTY

412346070353403. Edgartown well ENW 52.

LOCATION.--Lat 41°23'46", long 70°35'34", Hydrologic Unit 01090002, 0.5 mi west of Airport Road and 0.6 mi north of West Tisbury Road in Edgartown.

Owner: Martha's Vineyard State Forest.

AQUIFER.--Glacial sand, gravel and cobbles of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 2 in, depth 64.02 ft, screened 61.02 to 64.02 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 34 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.02 ft below land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.93 ft below land-surface datum, May 24 and June 27, 1987; lowest measured, 20.51 ft below land-surface datum, Feb. 26, 1981.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 27	18.39	NOV 28	18.45	MAR 22	15.11	MAY 24	12.93	JUL 26	13.83
NOV 27	18.37	DEC 28	17.61	APR 18	14.31	JUN 27	12.93	AUG 27	14.74

ESSEX COUNTY

423734071080901. Andover well AJW 26.

LOCATION.--Lat 42°37'34", long 71°08'09", Hydrologic Unit 01070002, 90 ft north of Ballardvale Road and 30 ft west of Sunset Rock Road in Andover.

Owner: Harry K. Jenkins.

AQUIFER.--Glacial till of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 25 in, depth 15 ft, cased with stone to 15 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 189 ft above National Geodetic Vertical Datum of 1929. Measuring point:

Upper edge of brick lip in corner of opening, 2.5 ft above land-surface datum.

PERIOD OF RECORD.--June 1962 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.47 ft below land-surface datum, Mar. 26, 1969; lowest measured, dry, Oct. 26, 1986.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	DRY	DEC 21	7.42	FEB 20	11.02	APR 20	8.20	JUN 21	12.46	AUG 23	12.72
NOV 23	12.02	JAN 25	9.46	MAR 22	9.01	MAY 26	11.56	JUL 25	12.68	SEP 22	12.28

GROUND-WATER LEVELS IN MASSACHUSETTS

ESSEX COUNTY

423641071102501. Andover well AJW 462.

LOCATION.--Lat 42°36'41", long 71°10'25", Hydrologic Unit 01070002, about 1,200 ft south of Shawsheen River, and 30 ft west of Interstate Highway 93 in Andover.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.25 in, depth 32.5 ft, screened 30.5 to 32.5 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 110 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.0 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 11.72 ft below land-surface datum, June 20, 1984; lowest measured, 15.80 ft below land-surface datum, Oct. 23, 1980.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	15.45	DEC 21	13.03	FEB 20	14.06	APR 20	11.90	JUN 21	14.12	AUG 23	15.17
NOV 23	14.64	JAN 25	13.71	MAR 22	13.59	MAY 26	13.33	JUL 25	14.65	SEP 22	14.91

424322070592401. Georgetown well GCW 168.

LOCATION.--Lat 42°43'22", long 70°59'24", Hydrologic Unit 01090001, 18 ft south of State Highway 133 and 25 ft east of Winter Street at Murca Park in Georgetown.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial outwash of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in, depth 21 ft, screened 19 to 21 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 80 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.0 ft above land-surface datum.

PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.42 ft below land-surface datum, Mar. 27, 1969; lowest measured, 6.65 ft below land-surface datum, Sept. 22, 1965.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	5.47	DEC 21	3.02	FEB 20	4.24	APR 20	2.87	JUN 21	4.92	AUG 23	6.10
NOV 23	4.12	JAN 25	3.77	MAR 22	3.56	MAY 26	4.32	JUL 25	5.34	SEP 22	4.35

GROUND-WATER LEVELS IN MASSACHUSETTS

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ESSEX COUNTY--Continued

424841071004101. Haverhill well HLW 23.

LOCATION.--Lat 42°48'41", long 71°00'41", Hydrologic Unit 01070002, about 50 ft north of Amesbury Line Road and 0.9 mi south of State Highway 110 in Haverhill.

Owner: Mrs. Benjamin Hamm.

AQUIFER.--Glacial sand of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 12 in, depth 15.1 ft, cased with tile to 15.1 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer. Continuous graphic recorder October 1960 to

September 1982, digital recorder (60-minute punch) October 1984 to current year.

DATUM.--Elevation of land-surface datum is 105 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top edge of hole in base of wooden recorder shelter, 1.09 ft above land-surface datum.

PERIOD OF RECORD.--October 1960 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 4.96 ft below land-surface datum, Apr. 7, 8, 1987; lowest, 15.02 ft below land-surface datum, Feb. 2, 1966.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.71	14.00	12.98	10.67	10.79	11.57	9.66	7.86	9.55	11.39	12.78	13.60
2	13.70	14.01	12.96	10.61	10.80	11.47	8.99	7.87	9.63	11.45	12.82	13.61
3	13.72	14.02	12.92	10.58	10.82	11.42	8.64	7.92	9.70	11.49	12.85	13.63
4	13.73	14.03	12.77	10.59	10.85	11.44	8.51	7.99	9.77	11.51	12.88	13.65
5	13.73	14.04	12.51	10.58	10.89	11.47	7.69	8.04	9.83	11.56	12.90	13.67
6	13.72	14.05	12.35	10.58	10.91	11.48	5.83	8.02	9.89	11.61	12.93	13.68
7	13.73	14.06	12.27	10.55	10.92	11.48	5.09	8.03	9.95	11.66	12.97	13.70
8	13.74	14.06	12.23	10.58	10.94	11.40	5.07	8.06	10.02	11.70	12.99	13.72
9	13.75	14.06	12.21	10.61	10.96	11.33	5.34	8.07	10.08	11.76	13.01	13.73
10	13.76	14.04	12.19	10.61	10.99	11.27	5.60	8.11	10.15	11.80	13.05	13.71
11	13.77	14.04	12.20	10.54	11.02	11.21	5.84	8.18	10.23	11.85	13.09	13.71
12	13.79	14.04	12.20	10.52	11.05	11.16	6.07	8.23	10.29	11.90	13.11	13.73
13	13.80	14.04	12.23	10.56	11.08	11.13	6.28	8.33	10.35	11.95	13.14	13.74
14	13.81	14.05	12.26	10.59	11.11	11.12	6.42	8.38	10.42	11.99	13.17	13.67
15	13.83	14.05	12.27	10.60	11.15	11.12	6.55	8.43	10.48	12.04	13.20	13.57
16	13.84	14.05	12.29	10.63	11.18	11.11	6.68	8.50	10.55	12.09	13.22	13.54
17	13.86	14.05	12.31	10.65	11.21	11.12	6.80	8.56	10.63	12.14	13.25	13.56
18	13.87	14.06	12.32	10.64	11.24	11.12	6.90	8.63	10.70	12.18	13.28	13.60
19	13.88	14.06	12.19	10.61	11.27	11.12	6.99	8.71	10.76	12.23	13.31	13.63
20	13.90	14.07	11.83	10.64	11.31	11.12	7.09	8.78	10.83	12.27	13.33	13.60
21	13.91	14.01	11.58	10.65	11.33	11.11	7.16	8.85	10.90	12.32	13.36	13.25
22	13.92	13.71	11.43	10.64	11.36	11.10	7.27	8.91	10.96	12.36	13.39	13.01
23	13.93	13.42	11.34	10.61	11.39	11.06	7.37	8.98	10.99	12.41	13.42	12.94
24	13.95	13.25	11.29	10.66	11.42	10.95	7.46	9.03	11.02	12.45	13.44	12.92
25	13.96	13.16	11.22	10.69	11.46	10.79	7.58	9.10	11.07	12.49	13.46	12.93
26	13.97	13.12	11.09	10.69	11.50	10.61	7.67	9.17	11.12	12.53	13.48	12.95
27	13.97	13.09	11.00	10.72	11.53	10.45	7.76	9.23	11.17	12.57	13.50	12.97
28	13.97	13.05	10.92	10.73	11.56	10.30	7.83	9.29	11.22	12.62	13.53	12.99
29	13.98	13.02	10.85	10.75	---	10.18	7.85	9.35	11.28	12.66	13.55	13.01
30	13.99	13.00	10.77	10.75	---	10.08	7.84	9.41	11.33	12.70	13.56	13.05
31	14.00	---	10.71	10.75	---	9.97	---	9.48	---	12.74	13.58	---
MEAN	13.8	13.8	11.9	10.6	11.1	11.0	7.06	8.56	10.5	12.1	13.2	13.4
LOW	14.00	14.07	12.98	10.75	11.56	11.57	9.66	9.48	11.33	12.74	13.58	13.74
HIGH	13.70	13.00	10.71	10.52	10.79	9.97	5.07	7.86	9.55	11.39	12.78	12.92

WTR YR 1987 HIGH 4.96 APR 7, 8 LOW 14.07 NOV 19-21

GROUND-WATER LEVELS IN MASSACHUSETTS

ESSEX COUNTY--Continued

424520070562401. Newbury well NIW 27.

LOCATION.--Lat 42°45'20", long 70°56'24", Hydrologic Unit 01090001, about 300 ft east of Interstate Highway 95 and 100 ft north of Central Street in Newbury.

Owner: Mrs. George Brown.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 31 in, depth 19.8 ft, cased with tile to 19.8 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer. Continuous graphic recorder January 1967 to September 1982, digital recorder (60-minute punch) October 1984 to current year.

DATUM.--Elevation of land-surface datum is 55 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top edge of hole in base of wooden recorder shelter, 1.95 ft above land-surface datum. Prior to October 1978, 2.0 ft above land-surface datum.

PERIOD OF RECORD.--February 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 1.48 ft below land-surface datum, Apr. 5, 1987; lowest, 12.68 ft below land-surface datum, Nov. 24, 1965.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.97	10.21	6.48	4.16	4.73	5.89	3.28	3.24	5.29	7.57	9.27	10.46
2	9.96	10.21	6.55	4.14	4.78	---	3.23	3.34	5.39	7.65	9.33	10.49
3	10.0	10.22	6.12	4.15	4.82	---	3.37	3.43	5.48	7.66	9.38	10.51
4	10.00	10.22	4.75	4.23	4.87	4.75	3.43	3.50	5.57	7.64	9.42	10.54
5	9.96	10.24	4.75	4.28	4.91	4.81	2.17	3.46	5.63	7.69	9.46	10.57
6	9.91	10.24	4.86	4.34	4.95	4.83	1.85	3.20	5.69	7.77	9.51	---
7	9.91	10.20	4.94	4.36	4.97	4.69	2.08	3.25	5.78	7.83	9.56	---
8	9.92	10.16	5.00	4.43	4.99	4.17	2.58	3.37	5.85	7.90	9.61	---
9	9.94	10.07	5.08	4.51	5.02	3.72	2.81	3.44	5.91	7.96	9.65	---
10	9.96	9.97	5.09	4.58	5.05	3.77	2.96	3.51	6.00	8.02	9.67	---
11	9.99	9.91	5.14	4.09	5.09	3.94	3.07	3.62	6.10	8.09	9.69	---
12	10.00	9.85	5.14	3.97	5.13	4.02	3.13	3.72	6.18	8.15	9.73	---
13	10.01	9.80	5.18	4.08	5.17	4.06	3.12	3.86	6.25	8.21	9.77	---
14	10.01	9.77	5.24	4.17	5.20	4.12	3.05	3.96	6.33	8.26	9.81	---
15	10.02	9.73	5.26	4.20	5.23	4.15	3.15	4.02	6.41	8.32	9.86	---
16	10.03	9.70	5.33	4.17	5.31	4.16	3.20	4.12	6.51	8.39	9.90	---
17	10.04	9.68	5.39	4.18	5.42	4.22	3.19	4.20	6.61	8.45	9.94	---
18	10.07	9.67	5.42	4.22	5.50	4.31	3.14	4.29	6.70	8.51	9.99	---
19	10.09	9.67	4.35	4.17	5.59	4.32	3.17	4.39	6.79	8.57	10.04	---
20	10.11	9.68	3.88	4.23	5.69	4.36	3.22	4.47	6.88	8.63	10.08	---
21	10.12	9.16	4.01	4.29	5.76	4.32	3.25	4.55	6.98	8.68	10.13	---
22	10.14	7.39	4.15	4.36	5.82	4.17	3.30	4.62	7.06	8.74	10.17	m9.83
23	10.16	6.46	4.24	4.14	5.86	4.10	3.35	4.70	7.10	8.79	10.20	---
24	10.18	6.29	4.35	4.16	5.92	4.09	3.38	4.76	7.10	8.84	10.25	---
25	10.21	6.38	4.01	4.28	5.99	4.11	3.43	4.81	7.15	8.90	10.30	---
26	10.23	6.54	3.71	4.34	6.04	4.12	3.49	4.87	7.22	8.96	10.34	---
27	10.23	6.55	3.79	4.39	6.07	4.14	3.53	4.94	7.28	9.01	10.38	---
28	10.20	6.45	3.87	4.47	6.03	4.18	3.56	4.98	7.33	9.07	10.42	---
29	10.18	6.39	3.95	4.57	---	4.24	3.33	5.04	7.40	9.12	10.44	---
30	10.18	6.40	4.00	4.64	---	4.27	3.16	5.12	7.48	9.18	10.45	---
31	10.20	---	4.07	4.67	---	4.06	---	5.20	---	9.23	10.45	---
MEAN	10.1	8.91	4.78	4.29	5.35	---	3.10	4.13	6.45	8.38	9.91	---
LOW	10.23	10.24	6.55	4.67	6.07	---	3.56	5.20	7.48	9.23	10.45	---
HIGH	9.91	6.29	3.71	3.97	4.73	---	1.85	3.20	5.29	7.57	9.27	---

WTR YR 1987 HIGH 1.48 APR 5 LOW 10.57 SEPT 5

m Measured

GROUND-WATER LEVELS IN MASSACHUSETTS

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ESSEX COUNTY--Continued

425103070513401. Salisbury well SBW 9.

LOCATION.--Lat 42°51'03", long 70°51'34", Hydrologic Unit 01070002, at intersection of Gerrish and Seabrook Roads 0.6 mi north of Salisbury.

Owner: Eugene G. Folsom.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 30 in, depth 11 ft, cased with tile to 11 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 35 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top inside lip of tile casing, 1.60 ft above land-surface datum.

PERIOD OF RECORD.--August 1960 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.90 ft below land-surface datum, Mar. 23, 1983; lowest measured, 8.37 ft below land-surface datum, Sept. 22, 1983.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	6.76	DEC 21	3.53	FEB 20	4.70	APR 20	3.68	JUN 21	6.18	AUG 23	7.49
NOV 23	4.57	JAN 25	4.12	MAR 22	3.85	MAY 26	5.16	JUL 25	6.47	SEP 22	6.60

423845070542501. Topsfield well TQW 1.

LOCATION.--Lat 42°38'45", long 70°54'25", Hydrologic Unit 01090001, 0.7 mi south of Ipswich Road and 120 ft west of Hamilton Road in Topsfield.

Owner: Mr. Sullivan.

AQUIFER.--Glacial till of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 30 in, depth 22.0 ft, cased with stone to 22.0 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 130 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top edge of steel rim in concrete cover, 0.6 ft above land-surface datum.

PERIOD OF RECORD.--February 1936 to October 1947, April 1957 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.22 ft below land-surface datum, Mar. 23, 1983; lowest measured, 17.52 ft below land-surface datum, Jan. 27, 1966.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	15.12	DEC 21	7.94	FEB 20	9.79	APR 20	7.65	JUN 21	12.47	AUG 23	15.00
NOV 23	14.69	JAN 25	7.95	MAR 22	8.95	MAY 26	11.09	JUL 25	13.40	SEP 22	14.61

423505070491702. Wenham well WPW 76.

LOCATION.--Lat 42°35'05", long 70°49'17", Hydrologic Unit 01090001, 45 ft west of State Highway 128 and 120 ft of Grapevine Road in Wenham.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in, depth 22.0 ft, screened 20.0 to 22.0 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 60 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.0 ft above land-surface datum.

PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.39 ft below land-surface datum, Jan. 26, 1978; lowest measured, 4.36 ft below land-surface datum, Sept. 28, 1971.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	3.31	DEC 21	1.71	FEB 20	2.34	APR 20	1.40	JUN 21	2.98	AUG 20	3.79
NOV 23	2.63	JAN 25	1.82	MAR 22	1.99	MAY 26	2.18	JUL 25	2.18	SEP 22	1.83

GROUND-WATER LEVELS IN MASSACHUSETTS

FRANKLIN COUNTY

423809072435601. Colrain well CSW 8.

LOCATION.--Lat 42°38'09", long 72°43'56", Hydrologic Unit 01080203, 15 ft east of State Highway 112 and 100 ft north of North River Bridge in Colrain.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.25 in, depth 32.3 ft, screened 30.3 to 32.3 ft. INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 460 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.5 ft above land-surface datum.

REMARKS.--Water levels affected by North River.

PERIOD OF RECORD.--December 1964 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 14.62 ft below land-surface datum, Apr. 24, 1969; lowest measured, 23.48 ft below land-surface datum, Jan. 31, 1965.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	21.76	DEC 21	20.30	FEB 22	19.45	APR 23	16.30	JUN 21	19.43	AUG 21	21.42
NOV 23	21.70	JAN 22	18.81	MAR 22	18.64	MAY 21	17.91	JUL 22	20.56	SEP 21	21.05

423310072355801. Deerfield well DFW 44.

LOCATION.--Lat 42°33'10", long 72°35'58", Hydrologic Unit 01080203, 1.2 mi south of Deerfield River Bridge and 15 ft east of U.S. Highway 5 in Deerfield.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in, depth 27.6 ft, screened 25.6 to 27.6 ft. INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 140 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.0 ft above land-surface datum.

PERIOD OF RECORD.--December 1964 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.42 ft below land-surface datum, May 29, 1979; lowest measured, 6.16 ft below land-surface datum, Sept. 25, 1980.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	3.11	DEC 22	2.46	FEB 23	2.75	APR 24	2.70	JUN 23	3.10	AUG 22	5.30
NOV 21	2.03	JAN 22	2.83	MAR 23	2.49	MAY 22	3.16	JUL 22	4.11	SEP 23	2.49

423305072320301. Montague well M5W 5.

LOCATION.--Lat 42°33'05", long 72°32'03", Hydrologic Unit 01080201, about 15 ft west of Montague Road, 0.2 mi north of Old Northfield Road, and 1.0 mi north of Montague.

Owner: Thomas C. Kurtyka.

AQUIFER.--Glacial outwash of Pleistocene age.

WELL CHARACTERISTICS.--Driven observation water-table well, diameter 1.25 in, depth 12 ft, screened 9 to 12 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 240 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.75 ft above land-surface datum.

PERIOD OF RECORD.--January 1936 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.41 ft below land-surface datum, Feb. 26, 1976; lowest measured, 8.00 ft below land-surface datum, Dec. 28, 1966.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	4.93	DEC 22	2.48	FEB 21	3.91	APR 22	1.65	JUN 23	2.83	AUG 23	4.96
NOV 21	3.90	JAN 22	3.06	MAR 21	2.12	MAY 22	2.18	JUL 22	3.96	SEP 23	2.97

FRANKLIN COUNTY--Continued

423441072170701. Orange well ORW 63.

LOCATION.--Lat 42°34'41", long 72°17'07", Hydrologic Unit 01080202, at Orange Airport, 100 ft along and 50 ft northwest of main entrance road to airport, off East River Street in Orange.

Owner: U. S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in, depth 20.6 ft, screened 18.6 to 20.6 ft. INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 530 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.4 ft above land-surface datum.

PERIOD OF RECORD.--January 1985 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.30 ft below land-surface datum, Apr. 23, 1987; lowest measured, 8.35 ft below land-surface datum, Oct. 24, 1986.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	8.35	DEC 22	6.80	FEB 23	7.90	APR 23	5.30	JUN 21	6.99	AUG 22	8.22
NOV 23	7.85	JAN 24	7.27	MAR 23	7.10	MAY 22	6.03	JUL 22	7.60	SEP 21	7.64

422607072324401. Sunderland well S6W 7.

LOCATION.--Lat 42°26'07", long 72°32'44", Hydrologic Unit 01080201, about 100 ft east of State Highway 116 and 30 ft north of Russellville Brook in Sunderland.

AQUIFER.--Glacial outwash of Pleistocene age.

WELL CHARACTERISTICS.--Driven observation water-table well, diameter 2.5 in, depth 54 ft, cased to 54 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 210 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, at land-surface datum.

REMARKS.--Water level affected by pumping and nearby Russellville Brook.

PERIOD OF RECORD.--November 1957 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.85 ft below land-surface datum, Apr. 25, 1973; lowest measured, 23.26 ft below land-surface datum, Feb. 24, 1966.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	15.58	DEC 22	16.76	FEB 21	15.32	APR 22	7.15	JUN 23	11.54	AUG 23	15.82
NOV 21	16.31	JAN 22	13.92	MAR 21	13.50	MAY 22	10.40	JUL 22	14.20	SEP 23	17.20

HAMPDEN COUNTY

421012072324501. Chicopee well CMW 95.

LOCATION.--Lat 42°10'12", long 72°32'45", Hydrologic Unit 01080204, in Chicopee Memorial State Park, 100 ft east of check-in house on north side of road in Chicopee.

Owner: Commonwealth of Massachusetts.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in PVC, depth 34.0 ft, screened 30.0 to 34.0 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 200 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.0 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 19.40 ft below land-surface datum, Aug. 21, 1984; lowest measured, 23.05 ft below land-surface datum, Dec. 23, 1986.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	22.71	DEC 23	23.05	FEB 21	22.85	APR 22	21.30	JUN 24	21.50	AUG 21	22.30
NOV 21	23.00	JAN 24	22.59	MAR 21	22.77	MAY 23	21.02	JUL 24	20.82	SEP 24	22.63

GROUND-WATER LEVELS IN MASSACHUSETTS

HAMPDEN COUNTY--Continued

420357072511601. Granville well GLW 5.

LOCATION.--Lat 42°03'57", long 72°51'16", Hydrologic Unit 01080206, near Granville Public School, 275 ft south of State Highway 57 and 0.2 mi west of Sodom Street in Granville.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in, depth 67.7 ft, screened 65.7 to 67.7 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 675 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.0 ft above land-surface datum.

PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 28.06 ft below land-surface datum, June 21, 1983; lowest, 37.20 ft below land-surface datum, Jan. 24, 1966.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	34.56	DEC 21	34.52	FEB 22	33.54	APR 23	31.86	JUN 22	31.35	AUG 21	32.70
NOV 22	34.94	JAN 25	33.99	MAR 22	33.32	MAY 21	31.06	JUL 23	31.82	SEP 22	33.13

420259072581701. Granville well GLW 6.

LOCATION.--Lat 42°02'59", long 72°58'17", Hydrologic Unit 01080207, at Granville State Forest, 20 ft west of West Hartland Road and 0.9 mi north of state boundary in Granville.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in, depth 20.8 ft, screened 18.8 to 20.8 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 1,160 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.5 ft above land-surface datum.

REMARKS.--Water levels affected by Halfway Brook.

PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.49 ft below land-surface datum, Apr. 26, 1972; lowest measured, 8.42 ft below land-surface datum, Aug. 25, 1981.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	7.02	DEC 21	3.12	FEB 22	6.63	APR 23	3.58	JUN 22	6.27	AUG 21	7.84
NOV 22	4.38	JAN 25	4.69	MAR 22	5.28	MAY 21	5.10	JUL 23	6.96	SEP 22	4.44

420646072420101. Westfield well WVW 62.

LOCATION.--Lat 42°06'46", long 72°42'01", Hydrologic Unit 01080206, at Western Massachusetts Hospital about 200 ft east of East Mountain Road and 0.4 mi north of U.S. Highway 20 in Westfield.

Owner: Commonwealth of Massachusetts.

AQUIFER.--Glacial outwash of Pleistocene age.

WELL CHARACTERISTICS.--Driven observation water-table well, diameter 2.5 in, depth 25 ft, casing information not available.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 210 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.5 ft above land-surface datum.

REMARKS.--Water level affected by pumping.

PERIOD OF RECORD.--August 1957 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.70 ft below land-surface datum, Oct. 29, 1975; lowest measured, well dry Sept. 22, 1983, Nov. 21, 1983, Mar. 21, 1985.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	9.43	DEC 21	8.88	FEB 23	7.51	APR 24	4.29	JUN 22	7.12	AUG 22	9.20
NOV 22	9.28	JAN 24	6.88	MAR 23	6.07	MAY 22	5.69	JUL 24	8.48	SEP 21	8.03

GROUND-WATER LEVELS IN MASSACHUSETTS

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HAMPDEN COUNTY--Continued

420905072254001. Wilbraham well XJW 55.

LOCATION.--Lat 42°09'05", long 72°25'40", Hydrologic Unit 01080204, 45 ft south of U.S. Highway 20 and 0.1 mi west of North Main Street in Wilbraham.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in, depth 62.5 ft, screened 60.5 to 62.5 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 255 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.0 ft above land-surface datum.

PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 30.56 ft below land-surface datum, Mar. 28, 1979; lowest measured, 45.44 ft below land-surface datum, Jan. 24, 1966.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	43.59	DEC 23	43.75	FEB 21	43.18	APR 22	33.45	JUN 24	38.99	AUG 21	42.65
NOV 21	44.30	JAN 24	43.36	MAR 21	42.26	MAY 23	35.82	JUL 23	41.03	SEP 24	43.31

HAMPSHIRE COUNTY

421355072322001. Granby well GWK 68.

LOCATION.--Lat 42°13'55", long 72°32'20", Hydrologic Unit 01080201, about 15 ft east of Morgan Street, 0.3 mi south of East Street, and 2.0 mi southwest of Granby.

Owner: Holyoke Water Power Co.

AQUIFER.--Glacial outwash of Pleistocene age.

WELL CHARACTERISTICS.--Driven observation water-table well, diameter 1.25 in, depth 18 ft, screened 16 to 18 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 239.17 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, at land-surface datum.

PERIOD OF RECORD.--April 1954 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.25 ft below land-surface datum, Apr. 21, 1983; lowest measured, 11.17 ft below land-surface datum, Nov. 25, 1964.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	9.97	DEC 23	7.60	FEB 21	8.09	MAY 23	6.85	JUL 24	8.90	SEP 24	9.16
NOV 21	9.70	JAN 24	7.42	APR 22	5.58	JUN 24	7.10	AUG 21	9.69		

422103072241102. Pelham well PDW 23.

LOCATION.--Lat 42°21'03", long 72°24'11", Hydrologic Unit 01080204, at Knight's Corner, 50 ft east of U.S. Highway 202 and 75 ft south of small pond in Pelham.

Owner: Massachusetts Department of Public Works.

AQUIFER.--Glacial sand and gravel of the Pleistocene age and bedrock.

WELL CHARACTERISTICS.--Air-percussion observation water-table well, diameter 6.0 in, depth 740 ft, cased to 740 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer. April 1986 to current year, continuous graphic recorder, data unpublished and available in U.S. Geological Survey files.

DATUM.--Elevation of land-surface datum is 939 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of hole in base of wooden recorder shelter, 1.6 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.43 ft below land-surface datum, Mar. 22, 1986; lowest measured, 14.49 ft below land-surface datum, Aug. 23, 1987.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	13.03	DEC 22	10.85	FEB 21	11.39	APR 22	10.90	JUN 24	12.93	AUG 23	14.49
NOV 21	11.71	JAN 22	11.02	MAR 21	10.95	MAY 23	12.05	JUL 22	13.83	SEP 23	13.67

GROUND-WATER LEVELS IN MASSACHUSETTS

HAMPSHIRE COUNTY--Continued

422103072241103. Pelham well PDW 24.

LOCATION.--Lat 42°21'03", long 72°24'11", Hydrologic Unit 01080204, at Knight's Corner, 50 ft east of U.S. Highway 202 and 75 ft south of small pond in Pelham.

Owner: Massachusetts Department of Public Works.

AQUIFER.--Glacial sand and till of the Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in, PVC, depth 25.0 ft, screened 21.0 to 25.0 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 940 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.0 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.74 ft below land-surface datum, Mar. 22, 1986; lowest water level measured, 6.79 ft below land-surface datum, Aug. 23, 1987.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	6.06	DEC 22	3.33	FEB 21	4.65	APR 22	3.13	JUN 24	5.10	AUG 23	6.79
NOV 21	4.35	JAN 22	3.97	MAR 21	3.34	MAY 23	4.20	JUL 22	5.83	SEP 23	3.43

421627072201701. Ware well WEW 43.

LOCATION.--Lat 42°16'27", long 72°20'17", Hydrologic Unit 01080204, 30 ft north of State Highway 9 and 200 ft east of Swift River in Ware.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in, depth 27.2 ft, screened 25.2 to 27.2 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 380 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.0 ft above land-surface datum.

REMARKS.--Water levels affected by Swift River.

PERIOD OF RECORD.--January 1965 to current year. Prior to October 1975, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.17 ft below land-surface datum, June 22, 1984; lowest measured, 10.34 ft below land-surface datum, Jan. 26, 1971.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	9.29	DEC 23	9.20	FEB 21	9.58	APR 22	8.70	JUN 24	9.31	AUG 23	9.15
NOV 21	9.50	JAN 22	9.58	MAR 21	9.30	MAY 23	9.07	JUL 22	9.44	SEP 24	9.46

MIDDLESEX COUNTY

422812071244401. Acton well ACW 158.

LOCATION.--Lat 42°28'12", long 71°24'44", Hydrologic Unit 01070005, 30 ft north of State Highway 2 and 150 ft east of Wetherbee Street in Acton.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in, depth 33.8 ft, screened 31.8 to 33.8 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 153 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.0 ft above land-surface datum.

PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 14.98 ft below land-surface datum, Apr. 23, 1987; lowest measured, 21.86 ft below land-surface datum, Jan. 26, 1966.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	20.26	DEC 22	18.83	FEB 24	18.31	APR 23	14.98	JUN 22	17.17	AUG 21	19.09
NOV 24	20.38	JAN 21	17.88	MAR 24	17.28	MAY 21	15.70	JUL 22	18.17	SEP 21	19.79

GROUND-WATER LEVELS IN MASSACHUSETTS

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MIDDLESEX COUNTY--Continued

423349071134101. Billerica well BCW 363.

LOCATION.--Lat 42°33'49", long 71°13'41", Hydrologic Unit 01070002, 20 ft south of Baldwin Road and 50 ft west of Westminster Road in Billerica.

Owner: Robert M. Young.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 30 in, depth 15.5 ft, cased with stone to 15.5 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 166 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of hole in wooden cover, 2.35 ft above land-surface datum.

PERIOD OF RECORD.--June 1962 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.13 ft below land-surface datum, Mar. 22, 1984; lowest measured, 13.11 ft below land-surface datum, Oct. 27, 1978.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	10.68	DEC 22	3.57	FEB 23	5.90	APR 23	2.98	JUN 22	7.62	AUG 21	10.58
NOV 24	8.58	JAN 21	4.62	MAR 24	4.07	MAY 21	5.22	JUL 21	9.31	SEP 21	9.50

423845071231401. Chelmsford well CHW 68.

LOCATION.--Lat 42°38'45", long 71°23'14", Hydrologic Unit 01070002, 1,300 ft north of intersection of Wharton Lane and the B and M Railroad, 400 ft east of Middlesex Street, and 0.5 mi north of Vinal Square in North Chelmsford.

Owner: Wellman Realty Company.

AQUIFER.--Glacial outwash of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 6 in, depth 50 ft, cased to 50 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 100.83 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of hole in cap on casing, 1.40 ft below land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.83 ft below land-surface datum, Apr. 23, 1987; lowest measured, 12.24 ft below land-surface datum, Sept. 28, 1957.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	8.81	DEC 22	5.79	FEB 24	7.80	APR 23	3.83	JUN 22	8.41	AUG 21	8.50
NOV 24	7.20	JAN 21	7.58	MAR 24	8.08	MAY 21	7.45	JUL 21	7.60	SEP 21	7.55

423546071190702. Chelmsford well CHW 385.

LOCATION.--Lat 42°35'46", long 71°19'07", Hydrologic Unit 01070002, 15 ft east of U.S. Highway 3 and 0.4 mi north of State Highway 129 in Chelmsford.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in, depth 42.8 ft, screened 40.8 to 42.8 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 123.30 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.5 ft above land-surface datum.

PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 13.83 ft below land-surface datum, June 25, 1982; lowest measured, 19.04 ft below land-surface datum, Nov. 21, 1965.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	17.18	DEC 22	15.39	FEB 24	16.25	APR 23	14.26	JUN 22	15.93	AUG 21	16.94
NOV 24	16.08	JAN 22	15.69	MAR 24	15.50	MAY 21	14.96	JUL 21	16.55	SEP 21	16.41

GROUND-WATER LEVELS IN MASSACHUSETTS

MIDDLESEX COUNTY--Continued

422637071202701. Concord well CTW 165.

LOCATION.--Lat 42°26'37", long 71°20'27", Hydrologic Unit 01070005, 30 ft south of State Highway 2 and 0.1 mi west of State Highway 126 in Concord.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in, depth 66.7 ft, screened 64.7 to 66.7 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 201.12 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.0 ft above land-surface datum.

PERIOD OF RECORD.--February 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 35.50 ft below land-surface datum, July 20, 1984; lowest measured, 47.10 ft below land-surface datum, Feb. 28, 1967.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	42.71	DEC 22	42.95	FEB 24	42.15	APR 23	40.16	JUN 22	38.80	AUG 21	39.47
NOV 24	42.94	JAN 21	42.30	MAR 24	41.92	MAY 21	39.13	JUL 21	38.97	SEP 21	40.00

422650071214402. Concord well CTW 167.

LOCATION.--Lat 42°26'50", long 71°21'44", Hydrologic Unit 01070005, 10 ft south of State Highway 2 and 10 ft west of Sudbury Road in Concord.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in, depth 24.8 ft, screened 21.8 to 24.8 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 135 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.30 ft above land-surface datum.

PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.47 ft below land-surface datum, Apr. 21, 1984; lowest measured, 10.59 ft below land-surface datum, Sept. 27, 1966.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	8.71	DEC 22	5.69	MAR 24	5.25	MAY 21	6.10	JUL 21	8.02	SEP 21	8.57
NOV 24	7.28	JAN 22	5.95	APR 23	4.98	JUN 22	7.19	AUG 21	8.79		

422627071154002. Lexington well LTW 104.

LOCATION.--Lat 42°26'27", long 71°15'40", Hydrologic Unit 01090001, at The Commonwealth of Massachusetts Department of Public Works maintenance depot, 0.2 mi west of State Highway 128 and 500 ft south of State Highway 2A in Lexington.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in, depth 20.7 ft, screened 18.7 to 20.7 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 180 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 4.5 ft above land-surface datum.

PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.22 ft below land-surface datum, Mar. 20, 1984; lowest measured, 4.35 ft below land-surface datum, Aug. 26, 1975.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	3.10	DEC 22	1.74	FEB 23	2.38	APR 23	1.81	JUN 22	2.88	AUG 21	3.55
NOV 24	2.20	JAN 21	2.03	MAR 25	1.97	MAY 21	2.35	JUL 22	3.39	SEP 22	2.35

GROUND-WATER LEVELS IN MASSACHUSETTS

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MIDDLESEX COUNTY--Continued

424055071435301. Townsend well TRW 13.

LOCATION.--Lat 42°40'55", long 71°43'43", Hydrologic Unit 01070004, 15 ft south of Dudley Road and 15 ft north of Turnpike Road in Townsend.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in, depth 32.9 ft, screened 30.9 to 32.9 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 313 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.0 ft above land-surface datum.

PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.55 ft below land-surface datum, Apr. 24, 1987; lowest measured, 17.41 ft below land-surface datum, Jan. 26, 1966.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	13.88	DEC 22	12.91	FEB 24	12.75	APR 24	9.55	JUN 22	11.30	AUG 21	13.11
NOV 24	13.93	JAN 21	12.17	MAR 24	12.89	MAY 21	10.19	JUL 21	12.23	SEP 21	13.82

423115071032001. Wakefield well WAW 38.

LOCATION.--Lat 42°31'15", long 71°03'20", Hydrologic Unit 01090001, 75 ft north of State Highway 128 and 0.4 mi southeast of Saugus River in Wakefield.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in, depth 25.5 ft, screened 23.5 to 25.5 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 80 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.0 ft above land-surface datum.

PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.51 ft below land-surface datum, Mar. 27, 1969; lowest measured, 9.99 ft below land-surface datum, Sept. 22, 1965.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	8.85	DEC 22	5.49	FEB 23	6.64	APR 23	5.60	JUN 22	7.46	AUG 21	8.43
NOV 24	7.18	JAN 21	5.93	MAR 24	6.15	MAY 21	6.45	JUL 21	8.02	SEP 21	6.63

421852071220501. Wayland well WKW 2.

LOCATION.--Lat 42°18'52", long 71°22'05", Hydrologic Unit 01070005, 0.25 mi west of State Highway 27 and 100 ft south of State Highway 30, at Cochituate State Park in Wayland.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in, depth 33.0 ft, screened 31.0 to 33.0 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 157.75 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 4.0 ft above land-surface datum.

PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 13.96 ft below land-surface datum, Mar. 27, 1972; lowest measured, 17.47 ft below land-surface datum, Jan. 22, 1981.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	16.96	DEC 22	15.63	FEB 23	16.22	APR 23	14.18	JUN 23	15.87	AUG 21	17.20
NOV 24	16.40	JAN 21	15.78	MAR 25	16.01	MAY 21	14.85	JUL 22	16.60	SEP 22	17.01

GROUND-WATER LEVELS IN MASSACHUSETTS

MIDDLESEX COUNTY--Continued

423401071093801. Wilmington well XMW 78.

LOCATION.--Lat 42°34'01", long 71°09'38", Hydrologic Unit 01090001, at Whitefield Public School in Wilmington, about 30 ft west of State Highway 62, and 0.3 mi north of Concord Street.

Owner: Town of Wilmington.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 42 in, depth 12 ft, cased with stone to 12 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer. Continuous graphic recorder March 1958 to September 1982, digital recorder (60-minute punch) October 1984 to current year.

DATUM.--Elevation of land-surface datum is 95 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top edge of hole in base of wooden recorder shelter, 0.33 ft above land-surface datum.

PERIOD OF RECORD.--July 1951 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 4.19 ft below land-surface datum, Apr. 19, 20, 1987; lowest measured, 11.27 ft below land-surface datum, Oct. 30, 1957.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.15	9.27	7.89	6.43	7.11	7.65	6.40	5.53	7.16	8.36	9.19	9.64
2	9.16	9.27	7.87	6.44	7.15	7.38	6.23	5.59	7.22	8.39	9.22	9.66
3	9.17	9.27	7.44	6.51	7.18	7.39	6.14	5.68	7.27	8.39	9.23	9.67
4	9.11	9.28	7.43	6.57	7.21	7.38	6.07	5.75	7.32	8.42	9.26	9.68
5	9.09	9.29	7.32	6.62	7.24	7.37	5.28	5.78	7.35	8.45	9.29	9.69
6	9.09	9.27	7.24	6.65	7.26	7.35	5.10	5.79	7.40	8.48	9.31	9.71
7	9.10	9.27	7.18	6.66	7.27	7.32	4.59	5.82	7.45	8.51	9.34	9.72
8	9.11	9.26	7.17	6.71	7.29	7.27	4.59	5.87	7.49	8.53	9.34	9.72
9	9.12	9.21	7.16	6.74	7.31	7.18	4.60	5.92	7.54	8.55	9.36	9.50
10	9.14	9.19	7.17	6.77	7.34	7.10	4.67	5.97	7.59	8.58	9.24	9.54
11	9.15	9.16	7.21	6.66	7.36	7.04	4.77	6.03	7.64	8.61	9.30	9.53
12	9.16	9.14	7.20	6.69	7.38	7.00	4.85	6.08	7.67	8.64	9.34	9.54
13	9.16	9.12	7.25	6.73	7.41	6.97	4.90	6.15	7.72	8.66	9.37	9.34
14	9.17	9.08	7.27	6.76	7.44	6.96	4.88	6.20	7.75	8.69	9.38	9.25
15	9.17	9.05	7.30	6.78	7.47	6.97	4.95	6.25	7.79	8.72	9.40	9.27
16	9.18	9.03	7.34	6.79	7.50	6.98	5.02	6.31	7.84	8.75	9.41	9.24
17	9.19	9.02	7.38	6.79	7.53	6.98	5.08	6.36	7.88	8.78	9.43	9.21
18	9.20	9.01	7.34	6.78	7.56	7.00	5.12	6.42	7.93	8.81	9.44	9.19
19	9.21	9.00	6.25	6.77	7.59	7.00	5.14	6.49	7.97	8.84	9.46	9.08
20	9.21	9.00	6.43	6.81	7.62	7.01	4.54	6.55	8.01	8.86	9.47	8.83
21	9.22	8.37	6.37	6.83	7.65	7.01	5.21	6.61	8.04	8.89	9.49	8.83
22	9.24	8.44	6.35	6.83	7.67	6.99	5.28	6.66	8.08	8.92	9.51	8.75
23	9.25	8.34	6.34	6.83	7.69	6.96	5.39	6.71	8.11	8.95	9.53	8.66
24	9.26	8.23	6.38	6.88	7.72	6.91	5.44	6.73	8.15	8.97	9.55	8.60
25	9.27	8.17	6.14	6.91	7.75	6.85	5.52	6.77	8.18	8.99	9.57	8.56
26	9.28	8.10	6.20	6.93	7.77	6.80	5.59	6.82	8.21	9.02	9.59	8.53
27	9.24	7.98	6.19	6.96	7.78	6.77	5.65	6.88	8.24	9.05	9.61	8.52
28	9.26	7.97	6.22	6.98	7.78	6.76	5.69	6.93	8.26	9.08	9.63	8.51
29	9.26	7.93	6.26	7.02	---	6.77	5.56	6.99	8.29	9.11	9.61	8.52
30	9.26	7.91	6.30	7.04	---	6.78	5.48	7.04	8.33	9.14	9.63	8.52
31	9.27	---	6.37	7.07	---	6.69	---	7.10	---	9.17	9.65	---
MEAN	9.19	8.82	6.90	6.77	7.47	7.05	5.26	6.32	7.80	8.75	9.42	9.17
MAX	9.28	9.29	7.89	7.07	7.78	7.65	6.40	7.10	8.33	9.17	9.65	9.72
MIN	9.09	7.91	6.14	6.43	7.11	6.69	4.54	5.53	7.16	8.36	9.19	8.51

WTR YR 1987 HIGH 4.19 APR 19, 20 LOW 9.73 SEPT 8

422819071065701. Winchester well XOW 14.

LOCATION.--Lat 42°28'19", long 71°06'57", Hydrologic Unit 01090001, at 220 Forest Street and 100 ft north of Forest Street in Winchester.

Owner: J. E. Sharkey.

AQUIFER.--Glacial till of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 36 in, depth 17.0 ft, cased with stone to 17.0 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 116.29 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top edge of angle iron, at land-surface datum.

PERIOD OF RECORD.--July 1940 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.03 ft below land-surface datum, Mar. 26, 1969; lowest measured, 15.60 ft below land-surface datum, Oct. 31, 1957.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	14.17	DEC 22	4.99	FEB 23	9.96	APR 23	7.47	JUN 23	12.26	AUG 21	14.04
NOV 24	10.54	JAN 21	7.36	MAR 25	8.12	MAY 21	10.19	JUL 22	13.25	SEP 22	11.89

GROUND-WATER LEVELS IN MASSACHUSETTS

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NANTUCKET COUNTY

411555070021901. Nantucket well NBW 228.

LOCATION.--Lat 41°15'55", long 70°02'19", Hydrologic Unit 01090002, 165 ft south of Milestone Road and 300 ft east of Madequecham Valley Brook in Nantucket.

Owner: Nantucket Conservation Foundation.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in, depth 35.6 ft, screened 32.6 to 35.6 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 39 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.7 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 21.45 ft below land-surface datum, Apr. 21, 1978; lowest measured, 27.90 ft below land-surface datum, Feb. 23, 1981.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	25.82	DEC 23	25.39	FEB 26	22.53	APR 24	22.25	JUN 29	21.75	AUG 27	23.08
NOV 25	25.73	JAN 22	23.85	MAR 23	22.42	MAY 21	21.69	JUL 24	22.20	SEP 23	23.79

NORFOLK COUNTY

421250071090901. Dedham well DDW 231.

LOCATION.--Lat 42°12'50", long 71°09'09", Hydrologic Unit 01090001, 50 ft south of State Highway 128 and 0.3 mi west of University Avenue in Dedham.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial till of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in, depth 21.9 ft, screened 19.9 to 21.9 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 65 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.3 ft above land-surface datum. Prior to July 17, 1978, 1.5 ft above land-surface datum.

PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.45 ft below land-surface datum, Mar. 28, 1978; lowest measured, 13.81 ft below land-surface datum, Sept. 27, 1965.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	11.40	DEC 20	3.71	FEB 20	5.59	APR 20	3.71	JUN 20	8.40	AUG 22	12.08
NOV 22	9.05	JAN 24	4.34	MAR 22	5.20	MAY 20	4.69	JUL 25	10.94	SEP 22	11.55

421435071165701. Dover well DVW 10.

LOCATION.--Lat 42°14'35", long 71°16'57", Hydrologic Unit 01090001, at Dover Public School about 400 ft southwest of and about 400 ft west of Center Street in Dover.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2 in, depth 54 ft, screened 52 to 54 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 160 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.0 ft above land-surface datum.

PERIOD OF RECORD.--January 1965 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 29.95 ft below land-surface datum, Apr. 20, 1987; lowest measured, 36.87 ft below land-surface datum, Jan. 21, 1966.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	34.21	DEC 20	33.81	FEB 20	32.18	APR 20	29.95	JUN 20	32.11	AUG 23	34.01
NOV 22	34.93	JAN 24	32.03	MAR 22	32.17	MAY 20	30.66	JUL 25	33.28	SEP 22	34.42

GROUND-WATER LEVELS IN MASSACHUSETTS

NORFOLK COUNTY--Continued

420432071151201. Foxborough well FXW 3.

LOCATION.--Lat 42°04'32", long 71°15'12", Hydrologic Unit 01090004, at Foxborough State Hospital, near railroad tracks, 100 ft east of driveway, and 250 ft north of Chestnut Street in Foxborough.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2 in, depth 32 ft, screened 30 to 32 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 290 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.0 ft above land-surface datum.

PERIOD OF RECORD.--January 1965 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 16.24 ft below land-surface datum, Mar. 25, 1968; lowest measured, 21.42 ft below land-surface datum, Dec. 28, 1965.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	20.07	DEC 20	17.72	FEB 20	18.65	APR 20	16.93	JUN 20	18.98	AUG 23	20.33
NOV 22	20.64	JAN 24	18.02	MAR 22	18.41	MAY 20	17.66	JUL 25	19.79	SEP 22	20.15

420545071174001. Norfolk well NNW 27.

LOCATION.--Lat 42°05'45", long 71°17'40", Hydrologic Unit 01090001, 15 ft northwest of State Highway 1A and 0.1 mi northeast of Valley Street in Norfolk.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.25 in, depth 18.4 ft, screened 16.4 to 18.4 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 160 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.7 ft above land-surface datum.

PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.20 ft below land-surface datum, Dec. 20, 1986, and Apr. 20, 1987; lowest measured, 7.97 ft below land-surface datum, Sept. 24, 1980.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	5.95	DEC 20	4.20	FEB 20	5.25	APR 20	4.20	JUN 20	5.85	AUG 23	6.75
NOV 22	5.33	JAN 24	4.84	MAR 22	5.10	MAY 20	4.77	JUL 25	6.49	SEP 22	5.94

420954070564501. Weymouth well XGW 2.

LOCATION.--Lat 42°09'54", long 70°56'45", Hydrologic Unit 01090001, 40 ft south of main gate guard house at U.S. Naval Air Station at Weymouth.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial till of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2 in, depth 30 ft, screened 28 to 30 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 180 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.0 ft above land-surface datum.

PERIOD OF RECORD.--January 1965 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.25 ft below land-surface datum, Jan. 28, 1970; lowest measured, 22.63 ft below land-surface datum, Nov. 21, 1980.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	17.58	DEC 20	8.08	FEB 20	8.83	APR 20	6.15	JUN 20	11.70	AUG 22	17.98
NOV 22	16.32	JAN 24	7.48	MAR 22	7.96	MAY 20	7.71	JUL 25	15.48	SEP 22	18.97

GROUND-WATER LEVELS IN MASSACHUSETTS

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NORFOLK COUNTY--Continued

421147070571901. Weymouth well XGW 3.

LOCATION.--Lat 42°11'47", long 70°57'19", Hydrologic Unit 01090001, about 100 ft east of State Highway 18 and about 600 ft off State Highway 3 in Weymouth.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2 in, depth 22.3 ft, screened 20.3 to 22.3 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 90 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.5 ft above land-surface datum.

REMARKS.--Water level affected by pumping.

PERIOD OF RECORD.--January 1965 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.91 ft below land-surface datum, Jan. 27, 1978; lowest measured, 18.10 ft below land-surface datum, Sept. 27, 1965.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	7.27	DEC 20	3.45	FEB 20	4.70	APR 20	4.01	JUN 20	5.96	AUG 22	7.99
NOV 22	4.39	JAN 24	4.12	MAR 22	4.60	MAY 20	4.55	JUL 25	8.68	SEP 22	5.62

421120070562801. Weymouth well XGW 4.

LOCATION.--Lat 42°11'20", long 70°56'28", Hydrologic Unit 01090001, at median strip of State Highway 3 and 0.8 mi south of State Highway 18 in Weymouth.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2 in, depth 22.6 ft, screened 20.6 to 22.6 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 90 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.5 ft above land-surface datum.

PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water-level measured, 4.75 ft below land-surface datum, Mar. 29, 1983; lowest measured, 10.45 ft below land-surface datum, Sept. 27, 1965.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	7.67	DEC 20	4.85	FEB 20	6.36	APR 20	5.15	JUN 20	7.54	AUG 22	8.09
NOV 22	5.85	JAN 24	5.59	MAR 22	6.18	MAY 20	6.05	JUL 25	8.07	SEP 22	6.60

PLYMOUTH COUNTY

420321070433502. Duxbury well D4W 79.

LOCATION.--Lat 42°03'21", long 70°43'35", Hydrologic Unit 01090002, 30 ft west of State Highway 3 and about 300 ft north of State Highway 14 in Duxbury.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and silty clay of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in, depth 23.5 ft, screened 21.5 to 23.5 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 55 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.5 ft above land-surface datum.

PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.10 ft below land-surface datum, Jan. 26, 1978; lowest measured, 10.68 ft below land-surface datum, Sept. 28, 1965.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	9.19	DEC 20	7.25	FEB 21	8.01	APR 22	7.25	JUN 25	8.73	AUG 25	9.51
NOV 23	8.07	JAN 24	7.36	MAR 23	7.92	MAY 22	7.84	JUL 23	9.09	SEP 22	8.94

GROUND-WATER LEVELS IN MASSACHUSETTS

PLYMOUTH COUNTY--Continued

420317070432901. Duxbury well D4W 80.

LOCATION.--Lat 42°03'17", long 70°43'29", Hydrologic Unit 01090002, 78 ft south of State Highway 14 and 250 ft east of State Highway 3 in Duxbury.

Owner: The Commonwealth of Massachusetts Department of Public Works.

AQUIFER.--Bedrock.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 6.0 in, depth 181 ft, cased to 59 ft, open hole.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 65 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of hole in concrete cover, at land-surface datum.

PERIOD OF RECORD.--April 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 19.53 ft below land-surface datum, Jan. 26, 1978; lowest measured, 24.02 ft below land-surface datum, Sept. 28, 1965.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	22.67	DEC 20	20.77	FEB 21	21.63	APR 22	20.72	JUN 25	22.11	AUG 25	22.56
NOV 23	21.77	JAN 24	20.55	MAR 23	21.51	MAY 22	21.31	JUL 23	22.47	SEP 22	22.40

420056070575701. East Bridgewater well EBW 30.

LOCATION.--Lat 42°00'56", long 70°57'57", Hydrologic Unit 01090004, about 100 ft north of State Highway 106 and 800 ft west of State Highway 18 in East Bridgewater.

Owner: East Bridgewater Medical Center.

AQUIFER.--Glacial till of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 36 in, depth 24 ft, cased with stone to 24 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 85 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of stone casing curb, 2.6 ft above land-surface datum.

PERIOD OF RECORD.--July 1958 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.40 ft below land-surface datum, Mar. 27, 1969; lowest measured, 17.83 ft below land-surface datum, Dec. 28, 1965.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	12.11	DEC 20	3.61	FEB 21	5.85	APR 22	3.56	JUN 25	9.25	AUG 25	13.63
NOV 23	11.34	JAN 24	3.88	MAR 23	5.61	MAY 22	5.58	JUL 23	11.41	SEP 22	12.41

415820070522801. Halifax well HBW 97.

LOCATION.--Lat 41°58'20", long 70°52'28", Hydrologic Unit 01090004, 1,950 ft west of South Street and 130 ft south of River Street in Halifax.

Owner: Richard W. Green.

AQUIFER.--Sandstone interbedded with shale and conglomerate of Carboniferous age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 3.0 in, depth 945 ft, cased to 90 ft, open hole.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 35 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.5 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.30 ft below land-surface datum, Jan. 26, 1978; lowest measured, 5.82 ft below land-surface datum, Oct. 24, 1980.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 23	3.63	JAN 24	3.17	MAR 23	3.30	MAY 22	3.03	JUL 23	4.66	SEP 22	4.30
DEC 20	2.93	FEB 21	3.39	APR 22	2.88	JUN 25	4.12	AUG 25	5.01		

GROUND-WATER LEVELS IN MASSACHUSETTS

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PLYMOUTH COUNTY--Continued

420353070520301. Hanson well HGW 76.

LOCATION.--Lat 42°03'53", long 70°52'03", Hydrologic Unit 01090002, 100 ft south of State Highway 14 and 150 ft west of town hall in Hanson.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in, depth 26.6 ft, screened 24.6 to 26.6 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 71 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.5 ft above land-surface datum.

REMARKS.--Water level affected by Wampatuck Pond.

PERIOD OF RECORD.--June 1964 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.50 ft below land-surface datum, Mar. 26, 1969; lowest measured, 6.53 ft below land-surface datum, Sept. 25, 1980.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	5.18	DEC 20	3.39	FEB 21	4.37	APR 22	3.53	JUN 25	4.93	AUG 25	5.74
NOV 23	4.23	JAN 24	3.68	MAR 23	4.11	MAY 22	4.25	JUL 23	5.34	SEP 22	4.46

415228070554601. Lakeville well LKW 14.

LOCATION.--Lat 41°52'28", long 70°55'46", Hydrologic Unit 01090004, 30 ft west of parking lot at Lakeville State Hospital in Lakeville.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2 in, depth 41 ft, screened 39 to 41 ft.

INSTRUMENTATION.--Monthly or more frequent measurements with chalked tape by observer. Digital recorder (60-min punch) July 1986 to current year.

DATUM.--Elevation of land-surface datum is 105 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.5 ft above land-surface datum.

PERIOD OF RECORD.--June 1964 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.28 ft below land-surface datum, Mar. 29, 1983; lowest measured, 23.59 ft below land-surface datum, Oct. 26, 1966.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.73	20.45	19.93	16.75	---	---	---	---	11.80	13.83	---	---
2	19.73	20.48	19.86	16.63	---	---	---	---	11.89	13.90	---	---
3	19.76	20.49	19.77	16.53	---	---	---	---	11.96	13.94	---	---
4	19.77	20.51	19.70	16.42	---	---	---	---	12.02	13.98	---	---
5	19.81	20.53	19.62	16.29	---	---	---	---	12.09	14.06	---	---
6	19.83	20.54	19.52	16.17	---	---	---	---	12.16	14.12	---	---
7	19.87	20.57	19.43	16.03	---	---	---	---	12.25	14.18	---	---
8	19.92	20.58	19.35	15.93	---	---	---	---	12.29	14.23	---	---
9	19.94	20.59	19.25	15.85	---	---	---	---	12.35	14.24	---	---
10	19.97	20.61	19.16	15.75	---	---	---	---	12.42	14.29	---	---
11	19.99	20.62	19.07	15.64	---	---	---	---	12.50	14.32	---	---
12	20.01	20.63	18.98	15.60	---	---	---	---	12.55	14.35	---	---
13	20.04	20.64	18.91	---	---	---	---	10.28	12.60	14.37	---	---
14	20.05	20.65	18.84	---	---	---	---	10.35	12.67	14.39	---	---
15	20.08	20.65	18.76	---	---	---	---	10.39	12.74	14.44	---	---
16	20.11	20.65	18.69	15.40	---	---	---	10.51	12.81	14.54	---	---
17	20.14	20.65	18.63	15.38	---	---	---	10.58	12.91	14.58	---	---
18	20.15	20.65	18.56	15.33	---	---	---	10.70	13.00	14.66	---	---
19	20.16	20.65	18.44	15.28	---	---	---	10.81	13.05	14.72	---	---
20	20.18	20.65	18.34	15.26	---	---	---	10.91	13.13	14.76	---	---
21	20.21	20.62	18.20	15.24	m14.59	---	---	10.99	13.19	---	---	---
22	20.25	20.59	18.04	15.19	---	---	m10.08	11.06	13.23	---	---	m17.27
23	20.27	20.50	17.88	15.14	---	m13.85	---	11.14	13.28	m14.95	---	---
24	20.30	20.39	17.72	15.15	---	---	---	11.22	13.34	---	---	---
25	20.32	20.33	17.54	15.13	---	---	---	11.30	13.40	---	m16.83	---
26	20.34	20.26	17.40	---	---	---	---	11.36	13.46	---	---	---
27	20.35	20.20	17.27	---	---	---	---	11.45	13.52	---	---	---
28	20.37	20.13	17.15	---	---	---	---	11.50	13.59	---	---	---
29	20.40	20.03	17.03	---	---	---	---	11.57	13.68	---	---	---
30	20.41	19.98	16.90	---	---	---	---	11.62	13.76	---	---	---
31	20.41	---	16.83	---	---	---	---	11.71	---	---	---	---
MEAN	20.1	20.5	18.5	---	---	---	---	---	12.8	---	---	---
LOW	20.41	20.65	19.93	---	---	---	---	---	13.76	---	---	---
HIGH	19.73	19.98	16.83	---	---	---	---	---	11.80	---	---	---

WTR YR 1987 HIGH 10.08 APR 22 LOW 20.65 NOV 13-21

m Measured

GROUND-WATER LEVELS IN MASSACHUSETTS

PLYMOUTH COUNTY--Continued

415433070583302. Middleborough well MTW 82.

LOCATION.--Lat 41°54'33", long 70°58'33", Hydrologic Unit 01090004, 15 ft southeast of southbound side of State Highway 25 and 435 ft southeast of Puddingshear Brook in Middleborough.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial till of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in, depth 26.5 ft, screened 24.5 to 26.5 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 45 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.5 ft above land-surface datum.

PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.50 ft below land-surface datum, Mar. 24, 1983; lowest measured, 17.58 ft below land-surface datum, Oct. 24, 1980.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	9.54	DEC 20	4.15	FEB 21	5.30	APR 22	2.61	JUN 25	9.12	AUG 25	15.39
NOV 23	14.57	JAN 24	2.88	MAR 23	5.07	MAY 22	4.37	JUL 23	12.77	SEP 22	15.86

415453070434901. Plymouth well PWV 22.

LOCATION.--Lat 41°54'53", long 70°43'49", Hydrologic Unit 01090004, 10 ft from northeast corner of main building at Plymouth Airport.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial outwash of Pleistocene age.

WELL CHARACTERISTICS.--Driven observation water-table well, diameter 1.25 in, depth 42 ft, screened 40 to 42 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 145 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, at land-surface datum.

PERIOD OF RECORD.--November 1956 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 19.82 ft below land-surface datum, May 26, 1958; lowest measured, 28.99 ft below land-surface datum, Jan. 28, 1966.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 23	26.32	JAN 24	24.49	APR 22	21.48	JUN 25	21.21	AUG 25	23.19
DEC 20	26.05	MAR 23	23.62	MAY 22	20.73	JUL 23	21.92	SEP 22	22.89

414518070435701. Wareham well WFW 51.

LOCATION.--Lat 41°45'18", long 70°43'57", Hydrologic Unit 01090002, 50 ft east of U.S. Highway 6 and 100 ft north of Exxon service station in Wareham.

Owner: Thomas B. Rogers.

AQUIFER.--Glacial outwash of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 30 in, depth 9.65 ft, cased with tile to 9.65 ft, open end. Prior to September 1980, well depth was 12.5 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 21 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top edge of tile casing, 2.5 ft above land-surface datum.

PERIOD OF RECORD.--July 1959 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.34 ft below land-surface datum, Jan. 26, 1978; lowest measured, 10.98 ft below land-surface datum, Dec. 28, 1965; well found dry several months in water years 1980-84.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	9.66	DEC 20	8.51	FEB 21	6.62	APR 22	4.83	JUN 25	6.26	AUG 25	9.05
NOV 23	9.24	JAN 24	7.19	MAR 23	6.50	MAY 22	4.98	JUL 23	8.01	SEP 22	8.37

GROUND-WATER LEVELS IN MASSACHUSETTS

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SUFFOLK COUNTY

422133071033801. Boston well BGW 925.

LOCATION.--Lat 42°21'33", long 71°03'38", Hydrologic Unit 01090001, in basement room at Scollay Building, intersection of Court and Tremont Streets in Boston.

Owner: United States Trust.

AQUIFER.--Cambridge slate of Carboniferous age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 8.0 in, depth 624 ft, cased to 90 ft, open hole.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 35 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 15 ft below land-surface datum.

REMARKS.--Water levels affected by tide and barometric pressure.

PERIOD OF RECORD.--February 1960 to current year. Water-level recorder October 1977 to September 1982. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water-level measured, 17.49 ft below measuring point, Jan. 22, 1985; lowest measured, 26.20 ft below measuring point, Oct. 7, 1966.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	24.25	DEC 23	23.41	FEB 25	23.20	APR 23	23.42	JUN 22	23.68	AUG 28	22.59
NOV 25	23.93	JAN 28	22.91	MAR 25	23.43	MAY 27	23.07	JUL 26	22.80		

WORCESTER COUNTY

422058072085501. Hardwick well HHW 1.

LOCATION.--Lat 42°20'58", long 72°08'55", Hydrologic Unit 01080204, 30 ft southeast of State Highway 32 and 0.6 mi southwest of Hardwick Road in Hardwick.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in, depth 33.2 ft, screened 31.2 to 33.2 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 580 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.5 ft above land-surface datum.

PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.21 ft below land-surface datum, Apr. 21, 1983; lowest measured, 17.77 ft below land-surface datum, Nov. 22, 1965.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	16.54	DEC 22	14.32	FEB 23	15.64	APR 21	11.56	JUN 19	14.80	AUG 21	16.03
NOV 21	16.41	JAN 21	14.74	MAR 18	14.58	MAY 21	13.49	JUL 21	15.59	SEP 21	15.85

422020072145901. Hardwick well HHW 31.

LOCATION.--Lat 42° 20' 20", long 72° 14' 59", Hydrologic Unit 01080204, 5 ft north of Patrill Hollow Road and approximately 250 ft west of Muddy Brook in Hardwick.

Owner: Town of Hardwick.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in, depth 71.0 ft, screened 67.0 ft to 71.0 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 490 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.0 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.55 ft below land-surface datum, Apr. 22, 1987; lowest measured, 12.00 ft below land-surface datum, Nov. 25, 1984.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	11.67	DEC 23	11.26	FEB 21	11.43	APR 22	10.55	JUN 24	11.39	AUG 23	11.50
NOV 21	11.40	JAN 22	11.21	MAR 21	11.25	MAY 23	11.03	JUL 22	11.63	SEP 24	11.34

GROUND-WATER LEVELS IN MASSACHUSETTS

WORCESTER COUNTY--Continued

420610071421401. Northbridge well NXW 1.

LOCATION.--Lat 42°06'10", long 71°42'14", Hydrologic Unit 01090003, about 100 ft northeast of the intersection of State Highway 146 and Main Street in Northbridge.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2 in, depth 12 ft, screened 10 to 12 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 370 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.0 ft above land-surface datum.

PERIOD OF RECORD.--January 1965 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.88 ft below land-surface datum, Mar. 27, 1978; lowest measured, 5.14 ft below land-surface datum, Oct. 22, 1986.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	5.14	DEC 22	4.20	FEB 23	3.62	APR 21	3.33	JUN 19	4.15	AUG 21	4.67
NOV 21	4.91	JAN 21	4.39	MAR 18	4.07	MAY 21	3.72	JUL 21	4.40	SEP 21	4.54

422906072124301. Petersham well PHW 16.

LOCATION.--Lat 42°29'06", long 72°12'43", Hydrologic Unit 01080204, 0.6 mi east of West Street Cemetery, 500 ft south of West Street, and 100 ft west of access road in Petersham.

Owner: Mr. Berry.

AQUIFER.--Glacial sand and gravel of the Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in PVC, depth 39.0 ft, screened 29.0 to 39.0 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 790 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.0 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.71 ft below land-surface datum, June 5, 1984; lowest measured, 16.53 ft below land-surface datum, Oct. 24, 1984

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	15.73	DEC 23	10.92	FEB 21	14.12	APR 22	8.05	JUN 24	14.62	AUG 23	15.85
NOV 21	15.32	JAN 22	13.06	MAR 21	13.74	MAY 23	13.20	JUL 22	12.24	SEP 24	16.39

422805071480801. Sterling well SYW 1.

LOCATION.--Lat 42°28'05", long 71°48'08", Hydrologic Unit 01070004, 45 ft northeast of Justice Hill Road and 0.8 mi west of South Nelson Road in Sterling.

Owner: N. Lanciani.

AQUIFER.--Glacial till of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 24 in, depth 15 ft, cased with stone to 15 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 710 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top edge of angle iron, at land-surface datum.

PERIOD OF RECORD.--May 1947 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.66 ft below land-surface datum, Mar. 26, 1969; dry, Nov. 28, 1964

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	9.87	DEC 22	3.10	FEB 23	3.20	APR 21	3.09	JUN 19	5.35	AUG 21	9.92
NOV 21	6.29	JAN 21	3.11	MAR 18	3.10	MAY 21	3.68	JUL 21	7.36	SEP 21	7.55

GROUND-WATER LEVELS IN MASSACHUSETTS

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WORCESTER COUNTY--Continued

423717072043101. Templeton well TMW 3.

LOCATION.--Lat 42°37'17", long 72°04'31", Hydrologic Unit 01080202, 60 ft east of U.S. Highway 202 and 0.2 mi south of Winchendon town line in Templeton.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.25 in, depth 14 ft, screened 12 to 14 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 900 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 4.2 ft above land-surface datum.

PERIOD OF RECORD.--December 1957 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.45 ft below land-surface datum, Mar. 21, 1986; lowest measured, 5.10 ft below land-surface datum, Sept. 29, 1964.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	3.87	DEC 22	2.89	FEB 23	3.82	APR 21	3.22	JUN 19	4.03	AUG 21	4.30
NOV 21	3.14	JAN 21	3.67	MAR 18	3.55	MAY 21	3.78	JUL 21	3.90	SEP 21	3.49

420314071514001. Webster well WLW 1.

LOCATION.--Lat 42°03'14", long. 71°51'40", Hydrologic Unit 01100001, 100 ft east of State Highway 52 and 100 ft south of Memorial Beach Drive in Webster.

Owner: Town of Webster.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Driven observation water-table well, diameter 2.5 in, depth 27.0 ft, cased to 27.0 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 500 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, at land-surface datum.

PERIOD OF RECORD.--September 1958 to November 1979, October 1981 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.28 ft below land-surface datum, Mar. 25, 1968; lowest measured, 17.90 ft below land-surface datum, Dec. 20, 1965; dry, Oct. 27, 1981.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	16.05	DEC 22	13.86	FEB 23	15.14	APR 21	11.31	JUN 19	14.14	AUG 21	15.43
NOV 21	15.85	JAN 21	13.63	MAR 18	14.33	MAY 21	12.06	JUL 21	14.42	SEP 21	15.68

421410072081301. West Brookfield well WUW 2.

LOCATION.--Lat 42°14'10", long 72°08'13", Hydrologic Unit 01080204, about 50 ft north of State Highway 9 and about 500 ft south of State Highway 67 in West Brookfield.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.25 in, depth 43.0 ft, screened 40 to 43 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 630 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.0 ft above land-surface datum.

PERIOD OF RECORD.--October 1959 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.79 ft below land-surface datum, May 22, 1983; lowest measured, 23.63 ft below land-surface datum, Feb. 21, 1966.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	19.63	DEC 22	19.80	APR 21	18.06	JUN 19	18.09	AUG 21	18.97
NOV 21	19.93	MAR 18	19.50	MAY 21	17.73	JUL 21	18.56	SEP 21	19.30

GROUND-WATER LEVELS IN MASSACHUSETTS

WORCESTER COUNTY--Continued

421522072113401. West Brookfield well WUW 10.

LOCATION.--Lat 42°15'22", long 72°11'34", Hydrologic Unit 01080204, 15 ft east of Coy Hill Road and 1,850 ft south of State Highway 9 in West Brookfield.

Owner: The Commonwealth of Massachusetts Department of Public Works.

AQUIFER.--Brimfield schist.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 2.5 in, depth 64.5 ft, cased to 40 ft, open hole.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 833.23 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.85 ft above land-surface datum.

PERIOD OF RECORD.--October 1970 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.57 ft below land-surface datum, Feb. 2, 1976; lowest measured, 12.36 ft below land-surface datum, Nov. 20, 1985.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	11.91	DEC 22	5.46	FEB 23	6.99	APR 21	2.20	JUN 19	7.22	AUG 21	10.28
NOV 21	11.80	JAN 21	5.55	MAR 18	4.07	MAY 21	4.62	JUL 21	9.14	SEP 21	10.38

423430072015201. Winchendon well XNW 13.

LOCATION.--Lat 42°42'04", long 72°01'52", Hydrologic Unit 01080202, about 50 ft east of Forristall Road, 0.2 mi north of Elmwood Road, and 1.6 mi northeast of Winchendon.

Owner: W. B. Hart.

AQUIFER.--Glacial till of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 24 in, depth 12 ft, cased with stone to 12 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 1,209.36 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of extension pipe, 3.8 ft above land-surface datum.

PERIOD OF RECORD.--October 1939 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.86 ft below land-surface datum, Mar. 20, 1948; lowest measured, 13.36 ft below land-surface datum, Dec. 24, 1964.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	8.55	DEC 22	3.66	FEB 23	6.74	APR 21	3.29	JUN 19	6.94	AUG 21	10.18
NOV 21	6.54	JAN 21	5.10	MAR 18	5.26	MAY 21	5.02	JUL 21	8.11	SEP 21	11.58

421538071451301. Worcester well XSW 274.

LOCATION.--Lat 42°15'38", long 71°45'13", Hydrologic Unit 01090003, about 300 ft north of Hamilton Street and about 300 ft east of North Lake Avenue in Worcester.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in, depth 54.6 ft, screened 52.6 to 54.6 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 400 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.0 ft above land-surface datum.

REMARKS.--Water levels affected by Lake Quinsigamond.

PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 22.23 ft below land-surface datum, Mar. 27, 1972; lowest measured, 24.70 ft below land-surface datum, Oct. 26, 1983.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	24.48	DEC 22	23.08	FEB 23	24.18	APR 21	23.16	JUN 19	23.85	AUG 21	23.91
NOV 21	24.03	JAN 21	23.93	MAR 18	23.75	MAY 21	23.92	JUL 21	23.83	SEP 21	23.41

GROUND-WATER LEVELS IN RHODE ISLAND

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KENT COUNTY

414022071332801. Coventry well COW 411.

LOCATION.--Lat 41°40'22", long 71°33'28", Hydrologic Unit 01090004, town of Coventry, about 75 ft west of house on Powhattan Avenue, 1.3 mi southeast of Washington.

Owner: Robert Card.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 24 in, depth 26 ft, cased with concrete to 26 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Elevation of land-surface datum is 260 ft. Measuring point: Hole in top of concrete cover, 1.24 ft above land-surface datum.

PERIOD OF RECORD.--October 1961 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 16.43 ft below land-surface datum, Apr. 23, 1983; dry on Oct. 25, 1986.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	DRY	DEC 27	19.93	FEB 23	21.27	APR 25	19.02	JUN 27	21.44	AUG 25	22.57
NOV 22	22.66	JAN 24	20.12	MAR 26	21.15	MAY 23	20.06	JUL 27	22.12	SEP 25	22.52

413907071465001. West Greenwich well WGW 181.

LOCATION.--Lat 41°39'07", long 71°46'50", Hydrologic Unit 01090005, town of West Greenwich, about 50 ft from southeast corner of a house 1.3 mi north of intersection of Hazard and Muddy Brook Roads, and 1.8 mi northwest of West Greenwich Center.

Owner: E. Lambert.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 30 in, depth 18.5 ft, lined with stone to 18.5 ft, shored.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Elevation of land-surface datum is 380 ft. Measuring point: Edge of marble slab, 0.30 ft above land-surface datum.

PERIOD OF RECORD.--January 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.15 ft below land-surface datum, Jan. 27, 1979; lowest measured, 17.78 ft below land-surface datum, Dec. 22, 1984.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	16.61	DEC 27	13.87	FEB 24	16.09	APR 25	14.40	JUN 27	16.28	AUG 25	16.70
NOV 22	15.06	JAN 24	15.22	MAR 25	15.44	MAY 23	15.76	JUL 27	16.57	SEP 25	16.56

PROVIDENCE COUNTY

415710071402201. Burrillville well BUW 187.

LOCATION.--Lat 41°57'10", long 71°40'22", Hydrologic Unit 01090003, town of Burrillville, 25 ft east of road and 75 ft southwest of a house 0.6 mi north of intersection of Harrisville and Lapham Farm Roads, and 0.9 mi south of Harrisville.

Owner: Brothers of the Sacred Heart.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 24 in, depth 19.8 ft, lined with stone to 19.8 ft, shored.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Elevation of land-surface datum is 462 ft. Measuring point: Hole in base of shelter, 0.59 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.74 ft below land-surface datum, Apr. 23, 1983; lowest measured, 18.83 ft below land-surface datum, Nov. 3, 1970.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	15.16	DEC 27	13.38	FEB 24	14.16	APR 25	12.25	JUN 27	14.21	AUG 25	15.70
NOV 22	14.89	JAN 27	13.80	MAR 25	13.70	MAY 23	13.08	JUL 27	14.91	SEP 25	15.31

GROUND-WATER LEVELS IN RHODE ISLAND

PROVIDENCE COUNTY--Continued

415626071254601. Cumberland well CUW 265.

LOCATION.--Lat 41°56'26", long 71°25'46", Hydrologic Unit 01090003, town of Cumberland, at 27 Scott Street, 900 ft northeast of intersection of Scott Street and Mendon Road in Ashton.

Owner: Francis J. Varone.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 24 in, depth 20 ft, lined with stone to 20 ft, shored.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Elevation of land-surface datum is 130 ft. Measuring point: Hole in wooden cover, 0.06 ft above land-surface datum.

PERIOD OF RECORD.--August 1946 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.20 ft below land-surface datum, Jan. 27, 1979; lowest measured, 17.20 ft below land-surface datum, Sept. 29, 1949.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	15.03	DEC 27	9.77	FEB 24	12.06	APR 25	11.13	JUN 27	14.07	AUG 25	15.45
NOV 22	12.77	JAN 24	11.28	MAR 25	12.00	MAY 23	12.22	JUL 27	15.13	SEP 25	12.70

415437071242201. Lincoln well LIW 84.

LOCATION.--Lat 41°54'37", long 71°24'22", Hydrologic Unit 0190003, town of Lincoln, at north side of Maplehurst Farms building, and 800 ft west of Blackstone River bridge in Lonsdale.

Owner: Maplehurst Farms, Inc.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 8 in, depth 107 ft, cased to 107 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Elevation of land-surface datum is 60 ft. Measuring point: Inside lower lip of 8-in pipe, 3.32 ft above land-surface datum.

REMARKS.--Water level affected by Blackstone River floods.

PERIOD OF RECORD.--June 1946 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.97 ft above land-surface datum, Jan. 28, 1976, lowest measured, 7.30 ft below land-surface datum, Aug. 24, 1966.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	5.60	DEC 27	2.24	FEB 24	5.01	APR 25	3.10	JUN 27	5.15	AUG 25	5.51
NOV 22	3.52	JAN 24	3.90	MAR 25	3.64	MAY 23	4.37	JUL 27	5.31	SEP 25	4.95

415948071325001 North Smithfield Well NSW 21

LOCATION.--Lat 41°59'48", long 71°32'50", Hydrologic Unit 1090003, town of North Smithfield, 500 ft southwest of State Highway 146A, 900 ft west of intersection of State Highway 146A and Harkness Road at Branch Village.

Owner: Thomas E. Esty.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Dug domestic water-table well, diameter 24 in, depth 16 ft, cased with tile to 16 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Land-surface datum is 238.68 ft above National Geodetic Vertical Datum of 1929. Measuring point: Hole in concrete cover at top of tile casing, 1.84 ft below land-surface datum.

REMARKS.--Well used for domestic supply. Water levels affected by pumping.

PERIOD OF RECORD.--May 1947 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.67 ft below land-surface datum, Mar. 26, 1969; lowest measured, 11.71 ft below land-surface datum, Oct. 28, 1957.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	9.74	DEC 27	5.30	FEB 24	7.83	APR 25	5.96	JUN 27	9.15	AUG 25	10.46
NOV 22	8.57	JAN 24	6.68	MAR 25	6.70	MAY 23	7.37	JUL 27	9.93	SEP 25	10.16

GROUND-WATER LEVELS IN RHODE ISLAND

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PROVIDENCE COUNTY--Continued

415318071220401. Pawtucket well PAW 136.

LOCATION.--Lat 41°53'18", long 71°22'04", Hydrologic Unit 01090004, city of Pawtucket, at 314 Woodbine Street, and 1,500 ft northeast of intersection of Cottage Street and Central Avenue.

Owner: Greenhalgh Mills, Inc.

AQUIFER.--Gravel of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 2 in, depth 43 ft, cased to about 40 ft, screened about 40 to 43 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Elevation of land-surface datum is 86 ft. Measuring point: Top of casing, 3.15 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.98 ft below land-surface datum, Apr. 23, 1983; lowest measured, 7.28 ft below land-surface datum, Jan. 29, 1966.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	5.48	DEC 27	3.17	FEB 24	3.85	APR 25	2.38	JUN 27	4.11	AUG 25	5.36
NOV 22	5.24	JAN 24	3.49	MAR 25	3.97	MAY 23	2.90	JUL 27	4.60	SEP 25	4.47

414746071255601. Providence well PRW 48.

LOCATION.--Lat 41°47'46", long 71°25'56", Hydrologic Unit 01090004, city of Providence, at 333 Adelaide Avenue, and 800 ft northwest of Adelaide and 800 ft west of Narragansett Avenues.

Owner: Gorham Division of Textron.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 8 in, depth 124 ft, cased to 116 ft, screened 116 to 124 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Land-surface datum is 45.79 ft, above National Geodetic Vertical Datum of 1929. Measuring point: Top edge of hole in center of steel cover, 0.48 ft below land-surface datum.

REMARKS.--Water level affected by pumping from one or more nearby wells.

PERIOD OF RECORD.--December 1944 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.78 ft below land-surface datum, Apr. 23, 1983; lowest measured, 10.22 ft below land-surface datum, Oct. 20, 1947.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	5.02	DEC 29	4.01	MAY 28	3.83	AUG 25	4.81
NOV 24	4.66	FEB 24	4.31	JUN 29	4.22	SEP 25	4.35

414939071260801. Providence well PRW 1051.

LOCATION.--Lat 41°49'39", long 71°26'08", Hydrologic Unit 01090004, city of Providence, at 10 Eagle Street, and 200 ft south of Valley and 300 ft east of Eagle Streets.

Owner: Licht Industries.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 10 in, depth 82 ft, cased to 82 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Elevation of land-surface datum is 10 ft. Measuring point: Floor of recorder shelter, 1.65 ft above land surface datum.

REMARKS.--Water level affected by pumping from one or more nearby wells. Since October 1971, reduced pumping has resulted in higher water levels.

PERIOD OF RECORD.--January 1948 to current year. January 1948 to March 1949, weekly water level measurements.

April 1949 to February 1976, continuous graphic recorder (published water levels were monthly lows). Since

April 1976, water levels measured near end of month.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, observed flowing at times in 1978-80; lowest measured, 16.10 ft below land-surface datum, Jan. 16, 1948.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	1.82	DEC 27	0.54	FEB 23	0.77	APR 25	0.24	JUN 27	0.40	AUG 25	-0.08
NOV 22	0.62	JAN 24	0.78	MAR 26	0.66	MAY 23	0.22	JUL 27	0.01	SEP 25	-0.02

GROUND-WATER LEVELS IN RHODE ISLAND

WASHINGTON COUNTY

412214071394001. Charlestown well CHW 18.

LOCATION.--Lat 41°22'14", long 71°39'40", Hydrologic Unit 01090005, town of Charlestown, 1,900 ft southeast of U.S. Highway 1, at former U.S. Navy Auxiliary Air Station.

Owner: U.S. General Services Administration.

AQUIFER.--Sand and clay of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 8 in, depth 32 ft, cased to 32 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Elevation of land-surface datum is 26 ft. Measuring point: Top of casing, at land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.09 ft below land-surface datum, Apr. 23, 1983; lowest measured, 21.63 ft below land-surface datum, Dec. 29, 1965.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	18.30	DEC 27	13.84	FEB 24	15.53	APR 25	13.93	JUN 27	17.36	AUG 25	19.67
NOV 22	18.05	JAN 24	14.44	MAR 26	15.77	MAY 23	14.97	JUL 27	18.71	SEP 25	19.89

413423071431901. Exeter well EXW 6.

LOCATION.--Lat 41°34'23", long 71°43'19", Hydrologic Unit 01090005, town of Exeter, in Arcadia State Forest, 150 ft west of Wood River, 250 ft south of Ten Rod Road, and 2.0 mi west of Millville.

Owner: State Dept. of Natural Resources.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 30 in, depth 10 ft, cased with concrete to 10 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Land-surface datum is 132.80 ft above National Geodetic Vertical Datum of 1929. Measuring point: Hole on east side of concrete cover, at land-surface datum.

REMARKS.--Water level affected by stage of nearby Wood River.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.34 ft below land-surface datum, Jan. 27, 1979; lowest measured, 7.97 ft below land-surface datum, Sept. 26, 1981.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	6.65	DEC 27	3.65	FEB 24	5.38	APR 25	3.96	JUN 27	5.93	AUG 25	6.98
NOV 22	4.90	JAN 24	4.31	MAR 25	5.31	MAY 23	4.90	JUL 27	6.54	SEP 25	6.78

413307071323601. Exeter well EXW 16.

LOCATION.--Lat 41°33'07", long 71°32'36", Hydrologic Unit 01090005, town of Exeter, about 25 ft southwest of fire station at Exeter State (Dr. Joseph H. Ladd) School.

Owner: State Dept. of Public Welfare.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Driven observation water-table well, diameter 2.5 in, depth 27 ft, cased to 27 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Land-surface datum is 154.47 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.78 ft above land-surface datum.

REMARKS.--Nearby well either being pumped or pumped recently.

PERIOD OF RECORD.--July 1946 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.98 ft below land-surface datum, May 21, 1983; lowest measured, 15.40 ft below land-surface datum, Oct. 30, 1957.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	12.32	DEC 27	8.50	FEB 24	6.767	APR 25	7.06	JUN 23	8.35	AUG 25	10.74
NOV 22	11.60	JAN 24	6.52	MAR 25	8.55	MAY 23	8.67	JUL 27	11.17	SEP 25	10.75

GROUND-WATER LEVELS IN RHODE ISLAND

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WASHINGTON COUNTY--Continued

413358071433801. Exeter well EXW 475.

LOCATION.--Lat 41°33'58", long 71°43'38", Hydrologic Unit 01090005, town of Exeter, 70 ft east of Mt. Tom Road, 50 ft north of Blitzkrieg Trail, and 2.4 mi northwest of Barbersville.

Owner: State Department of Environmental Management.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 8 in, depth 40 ft, cased to 38 ft, screened 38 to 40 ft.

INSTRUMENTATION.--Continuous graphic recorder.

DATUM.--Land-surface datum is 142.92 ft above National Geodetic Vertical Datum of 1929. Measuring point: floor of recorder shelter, 3.48 ft above land-surface datum.

PERIOD OF RECORD.--March 1981 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 9.58 ft below land-surface datum, Apr. 28, 29, 1983; lowest, 16.74 ft below land-surface datum, Oct. 19, 1981.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
HIGH FOR DAY

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 05	15.67	DEC 05	13.98	FEB 10	12.71	APR 15	11.76	JUN 20	13.60	AUG 25	m15.75
10	15.73	10	13.44	15	12.89	20	11.69	23	13.71	31	15.81
15	15.77	15	13.21	20	13.08	25	11.73	30	14.00	SEP 05	15.89
20	15.82	20	12.81	25	13.28	30	11.69	JUL 05	14.17	10	15.96
25	15.88	27	m12.34	28	13.39	MAY 05	11.81	10	14.34	15	15.97
31	15.94	31	12.21	MAR 05	13.36	10	11.91	15	14.48	20	16.02
NOV 05	16.00	JAN 05	12.04	10	13.34	15	12.08	20	14.66	25	m16.08
10	15.94	10	11.96	15	13.35	20	12.27	25	14.83	30	16.14
15	15.87	15	12.07	20	13.43	25	12.47	31	15.03		
20	15.85	20	12.18	25	13.52	31	12.70	AUG 05	15.18		
22	m15.59	25	12.28	31	13.26	JUN 05	12.93	10	15.34		
25	15.33	31	12.34	APR 05	12.30	10	13.14	15	15.47		
30	14.90	FEB 05	12.57	10	11.93	15	13.37	20	15.61		

WTR YR 1987 MAX 11.68 APR 21, 29 MIN 16.15 SEP 30
m Measured

413148071281601. North Kingstown well NKW 255.

LOCATION.--Lat 41°31'48", long 71°28'16", Hydrologic Unit 01090004, town of North Kingstown, 100 ft east of Pendar Road, 0.6 mi south of intersection of Pendar and Tower Hill Roads, and 1.0 mi south of Allenton.

Owner: Carlton Cook.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 24 in, depth 14 ft, cased with concrete to 14 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Elevation of land-surface datum is 50 ft. Measuring point: Top edge of casing on west rim of well, at land-surface datum.

PERIOD OF RECORD.--August 1954 to December 1963, January 1966 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.81 ft below land-surface datum, Mar. 26, 1968; lowest measured, 13.03 ft below land-surface datum, Oct. 26, 1981.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	9.73	DEC 27	6.51	FEB 24	7.97	APR 25	6.46	JUN 27	8.55	AUG 25	9.93
NOV 22	8.50	JAN 25	6.70	MAR 25	7.54	MAY 23	7.20	JUL 27	9.39	SEP 25	9.27

413308071280501. North Kingstown well NKW 450.

LOCATION.--Lat 41°33'08", long 71°28'05", Hydrologic Unit 01090004, town of North Kingstown, at 890 Tower Hill Road in Belleville, and 0.35 mi north of intersection of alternate U.S. Highway 1 and West Allenton Road.

Owner: Richard S. Bannister.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 24 in, depth 17 ft, cased with concrete to 17 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Elevation of land-surface datum is 60 ft. Measuring point: Hole in top of wooden base, 2.80 ft above land-surface datum.

PERIOD OF RECORD.--October 1961 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 8.32 ft below land-surface datum, Apr. 23, 1983; lowest measured, well dry several times in water years 1981-82, 1984.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	15.00	DEC 27	11.37	FEB 24	11.92	APR 25	10.47	JUN 27	12.82	AUG 25	14.65
NOV 22	14.30	JAN 25	10.95	MAR 25	11.75	MAY 23	11.16	JUL 27	13.99	SEP 25	14.76

GROUND-WATER LEVELS IN RHODE ISLAND

WASHINGTON COUNTY--Continued

412717071415301. Richmond well RIW 231.

LOCATION.--Lat 41°27'17", long 71°41'53", Hydrologic Unit 01090005, town of Richmond, about 50 ft west of Narragansett Trail, and 1.2 mi north of Wood River Junction.

Owner: N. D. MacLeod.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 30 in, depth 29 ft, lined with stone to 29 ft, shored.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Elevation of land-surface datum is 84 ft. Measuring point: Hole in top of concrete cover, 0.06 ft above land-surface datum.

PERIOD OF RECORD.--May 1955 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 19.38 ft below land-surface datum, May 21, 1983. Dry several times in water years 1965-67, 1977, 1981-82.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	27.09	DEC 27	24.92	FEB 24	23.54	APR 25	22.64	JUN 27	23.05	AUG 25	25.11
NOV 22	27.49	JAN 24	23.57	MAR 25	23.37	MAY 23	22.13	JUL 27	24.12	SEP 25	26.02

412932071374302. Richmond well RIW 417.

LOCATION.--Lat 41°29'32", long 71°37'43", Hydrologic Unit 01090005, town of Richmond, about 50 ft south of State Highway 138, about 75 ft west of Beaver River, and 3.3 mi north of Kenyon.

Owner: State Department of Transportation.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 6 in, depth 40 ft, cased to 37 ft, screened 37 to 40 ft.

INSTRUMENTATION.--Continuous graphic recorder.

DATUM.--Land-surface datum is 115.56 ft, above National Geodetic Vertical Datum of 1929. Measuring point: Floor of recorder shelter, 0.65 ft above land-surface datum.

REMARKS.--Water level affected by stage of nearby Beaver River.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 4.08 ft below land-surface datum, Apr. 25, 1983; lowest, 8.02 ft below land-surface datum, Oct. 3, 1980.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
HIGH FOR DAY

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 05	7.34	DEC 05	5.42	FEB 28	6.66	MAY 10	5.81	JUL 10	7.27	SEP 10	m7.76
10	7.42	10	5.56	MAR 05	6.19	15	6.00	15	7.33	15	7.48
15	7.39	15	5.73	10	6.22	20	6.16	20	7.44	20	7.63
20	7.46	20	5.34	15	6.33	23	m6.31	25	7.53	25	m7.74
25	7.50	27	m5.50	20	6.41	25	6.34	27	m7.56	30	7.78
31	7.53	31	5.64	25	m6.54	31	6.50	31	7.58		
NOV 05	7.56	JAN 05	5.54	31	6.09	JUN 05	6.64	AUG 05	7.61		
10	7.24	10	5.74	APR 05	5.61	10	6.74	10	7.62		
15	7.26	15	5.86	10	5.57	15	6.88	15	7.70		
20	7.17	20	5.88	15	5.62	20	7.01	20	7.79		
22	m6.65	25	5.91	20	5.69	27	m7.11	25	m7.85		
25	6.67	27	m6.01	25	m5.79	30	7.14	31	7.73		
30	6.44	FEB 24	m6.61	MAY 05	5.68	JUL 05	7.18	SEP 05	7.80		

WTR YR 1987 MAX 5.56 APR 7-9 MIN 7.85 AUG 25-27

m Measured

GROUND-WATER LEVELS IN RHODE ISLAND

237

WASHINGTON COUNTY--Continued

412844071422802. Richmond well RIW 600.

LOCATION.--Lat 41°28'44", long 71°42'28", Hydrologic Unit 01090005, town of Richmond, about 50 ft west of Hope Valley Road, and 1.5 mi northeast of Woodville.

Owner: State Department of Transportation.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 8 in, depth 54 ft, cased to 49 ft, screened 49 to 54 ft.

INSTRUMENTATION.--Continuous graphic recorder.

DATUM.--Land-surface datum is 100.17 ft, above National Geodetic Vertical Datum of 1929. Measuring point: Floor of recorder shelter, 2.68 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 31.42 ft below land-surface datum, June 11, 1982; lowest, 35.94 ft below land-surface datum, Feb. 2, 1981.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
HIGH FOR DAY

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 05	34.49	MAR 31	33.34	MAY 25	33.08	AUG 20	34.54	JUL 10	34.13	AUG 31	34.18
10	34.53	APR 05	33.05	31	33.17	25	m34.65	15	34.12	SEP 05	34.22
15	34.56	10	32.88	JUN 05	33.28	31	34.68	20	34.12	10	34.27
20	34.59	15	32.76	10	33.36	SEP 05	34.70	24	34.17	15	34.32
25	34.64	20	32.74	15	33.46	10	34.76	28	m34.16	20	34.37
31	34.68	25	m32.78	20	33.56	15	34.71	31	34.08	25	34.41
NOV 05	34.73	30	32.74	27	m33.70	20	34.72	AUG 05	34.06	27	m34.44
22	m34.45	MAY 05	32.79	JUL 27	m34.17	25	m34.80	10	34.06	30	34.46
DEC 27	m32.80	10	32.84	31	34.23	30	34.85	15	34.07		
JAN 24	m32.93	15	32.91	AUG 05	34.32						
FEB 24	m33.37	20	32.98	10	34.40						
MAR 25	m33.40	23	m33.05	15	34.46						

WTR YR 1987 MAX 32.74 APR 18-21 MIN 34.87 SEP 30

m Measured

412918071321001. South Kingstown well SNW 6.

LOCATION.--Lat 41°29'18", long 71°32'10", Hydrologic Unit 01090005, town of South Kingstown, at northwest corner of Mead Field at University of Rhode Island, and 0.9 mi northwest of Kingston.

Owner: University of Rhode Island.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water table well, diameter 10 in, depth 34 ft, cased to 34 ft, open end.

INSTRUMENTATION.--Continuous graphic recorder.

DATUM.--Land-surface datum is 111.89 ft above National Geodetic Vertical Datum of 1929. Measuring point: Floor of recorder shelter, 0.57 ft above land-surface datum (since July 12, 1973).

RECORD OF PERIOD.--November to December 1947, February 1955 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 6.91 ft below land-surface datum, Apr. 25, 26, 1983; lowest, 15.06 ft below land-surface datum, Dec. 29, 1965.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
HIGH FOR DAY

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 05	13.54	DEC 05	11.60	MAR 10	10.49	MAY 15	10.02	JUL 10	12.32	SEP 10	13.77
10	13.57	10	11.21	15	10.66	20	10.15	15	12.49	15	13.56
15	13.65	15	11.08	20	10.84	23	m10.41	20	12.65	20	13.60
20	13.67	20	10.64	25	m11.09	25	10.47	25	12.80	25	m13.64
25	13.74	24	10.51	31	10.98	31	10.74	29	m12.97	30	13.71
31	13.81	27	m10.26	APR 05	10.32	JUN 05	10.98	31	13.01		
NOV 05	13.87	JAN 24	m9.89	10	10.10	10	11.18	AUG 05	13.14		
10	13.80	25	9.89	15	9.97	15	11.38	10	13.28		
15	13.63	31	9.97	20	9.91	20	11.60	15	13.36		
20	13.60	FEB 05	10.22	25	m9.98	24	11.79	20	13.44		
22	m13.28	24	m10.90	30	9.79	29	m11.98	25	m13.54		
25	13.13	28	11.05	MAY 05	9.81	30	11.99	31	13.59		
30	12.80	MAR 05	10.34	10	9.85	JUL 05	12.15	SEP 05	13.66		

WTR YR 1987 MAX 9.79 SEVERAL DAYS IN APRIL AND MAY MIN 13.87 NOV 5-9

m Measured

GROUND-WATER LEVELS IN RHODE ISLAND

WASHINGTON COUNTY--Continued

412923071361601. South Kingstown well SNW 515.

LOCATION.--Lat 41°29'23", long 71°36'16", Hydrologic Unit 01090005, town of South Kingstown, at Laurel Lane Golf Course, 2.7 mi west of West Kingston.

Owner: R. R. Holley.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 36 in, depth 30 ft, lined with stone to 30 ft, shored. INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Land-surface datum is 127.84 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top edge of concrete casing on south rim of well, 2.11 ft above land-surface datum. Dec. 27, 1975, to Apr. 25, 1981, measuring point 1.61 ft lower.

PERIOD OF RECORD.--May 1955 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 23.73 ft below land-surface datum, Apr. 23, 1983, Dry several times in water years 1978, 1980-85.240-241

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	DRY	DEC 27	25.01	FEB 24	26.56	APR 25	25.38	JUN 27	27.57	AUG 25	DRY
NOV 22	28.03	JAN 24	25.54	MAR 25	26.61	MAY 23	25.94	JUL 27	28.49	SEP 25	28.42

412154071462901. Westerly well WEW 522.

LOCATION.--Lat 41°21'54", long 71°46'29", Hydrologic Unit 01090005, town of Westerly, 350 ft northwest of intersection of Pound and Old Shore Roads and 1.0 mi north of Dunn Corner.

Owner: S. Panciera.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 30 in, depth 16 ft, lined with stone to 16 ft, shored. INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Elevation of land-surface datum is 45 ft. Measuring point: Southwest corner of stone casing, 0.91 ft above land-surface datum.

PERIOD OF RECORD.--January 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.23 ft below land-surface datum, Apr. 23, 1983; lowest measured, 14.61 ft below land-surface datum, Sept. 24, 1980.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	13.15	DEC 27	10.19	FEB 24	11.38	APR 25	10.73	JUN 27	12.57	AUG 25	14.11
NOV 22	11.92	JAN 24	10.90	MAR 26	11.45	MAY 23	11.49	JUL 27	13.39	SEP 25	13.48

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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 2.54×10^{-2}	millimeters (mm) 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 4.047×10^{-1} 4.047×10^{-3}	square meters (m ²) square hectometers (hm ²) 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 3.785×10^0 3.785×10^{-3}	liters (L) cubic decimeters (dm ³) cubic meters (m ³)
million gallons	3.785×10^3 3.785×10^{-3}	cubic meters (m ³) cubic hectometers (hm ³)
cubic feet (ft ³)	2.832×10^1 2.832×10^{-2}	cubic decimeters (dm ³) cubic meters (m ³)
cfs-days	2.447×10^3 2.447×10^{-3}	cubic meters (m ³) cubic hectometers (hm ³)
acre-feet (acre-ft)	1.233×10^3 1.233×10^{-3} 1.233×10^{-6}	cubic meters (m ³) cubic hectometers (hm ³) cubic kilometers (km ³)
<i>Flow</i>		
cubic feet per second (ft ³ /s)	2.832×10^1 2.832×10^1 2.832×10^{-2}	liters per second (L/s) cubic decimeters per second (dm ³ /s) cubic meters per second (m ³ /s)
gallons per minute (gal/min)	6.309×10^{-2} 6.309×10^{-2} 6.309×10^{-5}	liters per second (L/s) cubic decimeters per second (dm ³ /s) cubic meters per second (m ³ /s)
million gallons per day	4.381×10^1 4.381×10^{-2}	cubic decimeters per second (dm ³ /s) 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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